

Taeniatherum caput-medusae (L.) Nevski. *Acta Inst. Bot. Acad. Sc. URSS, Ser. I. Fasc. 1*, 22 (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), D.Sharp, D. & B.K.Simon, *AusGrass* (2002), N.L.Bor, *Grasses of Burma, Ceylon, India and Pakistan* (1960) (as *T. crinitum*), T.G.Tutin et al, *Flora Europaea* 5 (1980), N.Tsvelev, *Grasses of the Soviet Union* (1983) (as *T. crinitum* & *T. asperum*).

TYPE from Portugal. **Basionym or Replaced Name:** *Elymus caput-medusae* L., *Sp. Pl.* 1: 84 (1753). T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: LT: (LINN-100.6). LT designated [as 106.6] by Humphries in *Bot. J. Linn. Soc.* 76: 342 (1978).

Recent Synonyms: *Taeniatherum crinitum* (Schreb.) Nevski, *Acta Inst. Bot. Acad. Sc. URSS, Ser. I. Fasc. 1*, 22 (1933). *Taeniatherum asperum*.

Illustrations (Books): N.Feinbrun-Dothan, *Flora Palaestina* 4 (1986) (Pl 227 as *T. crinitum*), L.Boulos, *Flora of Egypt* 4 (2005) (201, Pl. 58), N.L.Bor, *Gramineae in Flora of Iraq* (1968) (263, Pl. 91 as *T. crinitum*), T.A.Cope, *Flora of Pakistan* 143: *Poaceae* (1982) (631, Fig 74 as *T. crinitum*), J.P.Jessop, G.R.M. Dashorst & F.M.James, *Grasses of South Australia* (2006) (276, Fig 214), A.Wilson (ed.), *Flora of Australia*, Vol 44A. *Poaceae* (2009) (117, Fig 18), 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) (259).

Classification. Subfamily Pooideae. Tribe: Triticeae.

Habit, Vegetative Morphology. Annual. Culms erect or decumbent, 5–50 cm long. Leaf-sheath oral hairs lacking. Leaf-sheath auricles falcate. Ligule an eciliate membrane. Leaf-blades convolute, 3–12 cm long, 2–5 mm wide, glaucous. Leaf-blade surface pilose, hairy adaxially. Leaf-blade margins ciliate.

Inflorescence. Inflorescence composed of racemes. Racemes 1, single, oblong, bilateral, 3–7 cm long. Rhachis glabrous on surface, glabrous on margins. Spikelet packing broadside to rhachis. Spikelets ascending, in pairs. Fertile spikelets sessile, 2 in the cluster.

Fertile Spikelets. Spikelets comprising 1 fertile florets, with diminished florets at the apex. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets linear, dorsally compressed, 8–12 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus disarticulating obliquely.

Glumes. Glumes collateral, persistent, similar, exceeding apex of florets, parallel to lemmas or recurved at apex. Lower glume subulate, 17–27 mm long, 1 length of upper glume. Lower glume primary vein scabrous. Upper glume subulate, 17–27 mm long. Upper glume surface scabrous.

Florets. Fertile lemma lanceolate, 8–12 mm long, chartaceous, without keel, 5 -veined, more than 3-veined. Lemma surface scabrous. Lemma apex acuminate, awned, 1 -awned. Principal lemma awn straight or curved, 70–120 mm long overall, limb scabrous. Palea 1 length of lemma, 2 -veined. Palea keels scabrous. Apical sterile florets 1 in number, barren, linear.

Flower and Fruit. Ovary with a fleshy appendage below style insertion, pubescent on apex. Caryopsis with adherent pericarp, linear, dorsally compressed, sulcate on hilar side, hairy at apex, apex fleshy. Embryo 0.1 length of caryopsis. Hilum linear, 1 length of caryopsis.

$N = 7$ (2 refs TROPICOS). $2n = 14$ (3 refs TROPICOS).

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

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

Country /Province /State. : GB Aliens (Ryves et al). : France, Portugal, Sardinia, Spain. : Albania, Bulgaria, Greece, Italy, Romania, Sicily, Turkey Europe, Yugoslavia. Krym, Northwest European Russia, Ukraine. **Northern Africa.** Algeria, Egypt, Morocco, Tunisia. **Middle Asia, Caucasus, Western Asia, Arabian Peninsula.** Kazakhstan, Kirgizistan, Turkmenistan, Tadjikistan, Uzbekistan. Iran, Iraq. **Indian Subcontinent.** Pakistan. **Australia.** South Australia (*). **Northwest USA, Southwestern USA.** Idaho, Washington. California, Nevada, Utah. **Southern South America.** Chile Central.

TDWG4. Southern. O'Higgins, Maule.

Taeniorhachis repens T.A. Cope. *Kew Bull.*, 48(2): 403 (1993).

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

TYPE from Somalia. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: Somalia: Shabeellaha Dhexe, 33 km NE of Mogadishu along road to Warshiikh, 2.10N 45.35E, 5 May 1990, *Thulin, Hedren & Dahir 7183* (HT: UPS; IT: K).

Illustrations (Books): T.A.Cope, in M.Thulin, *Poaceae* (Gramineae). *Flora of Somalia* (1995) (243, Fig 141).

Illustrations (Journals): *Kew Bulletin* (48: 404, Fig.1 (1993)).

Derivation (Clifford & Bostock 2007): L. repo, crawl. Rhizome well developed.

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

Habit, Vegetative Morphology. Perennial, culms solitary. Rhizomes elongated. Stolons present. Culms erect, 4–8 cm long. Leaves distichous. Ligule an eciliate membrane. Leaf-blades lanceolate or oblong, flat or conduplicate, 0.5–2 cm long, 1 mm wide, stiff. Leaf-blade surface pubescent, hairy on both sides. Leaf-blade margins cartilaginous.

Inflorescence. Inflorescence composed of racemes. Racemes 2, paired, unilateral, 1.5–2.5 cm long. Rhachis deciduous from axis, broadly winged, with sharp-edged midrib, 2.5–3 mm wide. Spikelets in pairs. Fertile spikelets sessile and pedicelled, 2 in the cluster. Pedicels present.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets lanceolate or elliptic, dorsally compressed, acuminate, 6–6.5 mm long, falling entire.

Glumes. Glumes dissimilar, shorter than spikelet, thinner than fertile lemma. Lower glume ovate, 0.5–0.6 mm long, 0.1 length of spikelet, hyaline, 0 -veined. Lower glume lateral veins absent. Upper glume elliptic, 0.66 length of spikelet, membranous, without keels, 3 -veined. Upper glume surface pubescent, hairy between veins. Upper glume apex acute.

Florets. Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret elliptic, 1 length of spikelet, membranous, 9–11 -veined, prominently veined, villous on margins, acute. Fertile lemma elliptic, 6 mm long, cartilaginous, much thinner on margins, pallid, without keel. Lemma surface striate. Lemma margins flat, covering most of palea. Lemma apex acuminate. Palea cartilaginous.

Distribution (TDWG). Continent. Africa.

Country /Province /State. Northeast tropical Africa. Somalia.

Taeniostachyum Genus

Tarigidia aequiglumis (Goossens) Stent. *Kew Bull.* 1932, 151. (1932).

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:** *Anthephora aequiglumis* Gooss., *Trans. Roy. Soc. South Africa* 20: 195, f. 3 (1932). T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: LT: *Schultz s.n.*, South Africa: Orange Free State: Hoopstad District: Odendaalsrust, on an empty plot (PRE-8344). LT designated by Stent, *Bull. Misc. Inform.* 1932: 152 (1932). ST: *Potts 2674*, South Africa: Kroonstad District: Groenebloem (PRE).

Illustrations (Books): L.K.A. Chippindall, *Grasses and Pastures of South Africa* (1955) (421, Fig 350), G.E.Gibbs Russell et al, *Grasses of Southern Africa* (1990) (331, Fig 213).

Derivation (Clifford & Bostock 2007): L. aequus, equal; gluma, husk. Glumes subequal.

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

Habit, Vegetative Morphology. Perennial, caespitose. Rhizomes short. Culms 80–110 cm long. Ligule an eciliate membrane. Leaf-blades 10–30 cm long, 3–4 mm wide. Leaf-blade surface ribbed.

Inflorescence. Inflorescence composed of racemes. Racemes borne along a central axis, closely spaced, in a multilateral false spike, appressed, oblong, unilateral, 0.5–3 cm long. Central inflorescence axis 5–12 cm long. Spikelet packing crowded. 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, 4–4.5 mm long, falling entire.

Glumes. Glumes dissimilar, shorter than spikelet, thinner than fertile lemma. Lower glume linear, 1 length of upper glume, 0.66 length of spikelet, membranous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume surface glabrous or villous. Lower glume apex acuminate. Upper glume lanceolate, 0.66 length of adjacent fertile lemma, membranous, without keels, 3 -veined. Upper glume surface villous. Upper glume apex acute.

Florets. Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret ovate, 1 length of spikelet, membranous, 5–7 -veined, villous, acute. Fertile lemma ovate, 4–4.5 mm long, cartilaginous, without keel. Lemma margins flat. Lemma apex acute. Palea cartilaginous.

Distribution (TDWG). Continent. Africa.

Country /Province /State. Southern Africa. Namibia, North-West, Free State.

Tarigidia axelrodii Vega et al. *Systematic Botany* 35 (1): 96–101 (2010).

Illustrations (Journals): *Systematic Botany* (35 (1): 96–101 (2010)).

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

Distribution (TDWG). Continent. South America.

Country /Province /State. Caribbean. Puerto Rico.

Tatianyx arnacites (Trinius) F.O. Zuloaga & T.R. Soderstrom. *Smithsonian Contrib. Bot.*, 59: 56 (1985).

Accepted by: R.J.Soreng et al., *Catalogue of New World 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 arnacites* Trin., *Sp. Gram.* 3(27): , t. 317 (1829–1830)

. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: HT: *Langsdorff s.n.*, Nov 1824, Brazil: Serra da Lapa (LE-TRIN-0586.02; IT: LE-TRIN-0586.01, US-974682 (fragm. ex LE)).

Recent Synonyms: *Panicum arnacites* Trin., *Sp. Gram.* Ic.3: t. 317. (1832).

Illustrations (Books): S.A.Renvoize, *The Grasses of Bahia*, 1984 (144, Fig.60 as *Panicum arnacites*).

Derivation (Clifford & Bostock 2007): Gk. arnakis, sheep fleece; -ites, resemblance. Glumes and lower lemma densely woody.

Classification. Subfamily Panicoideae. Tribe: Paspaleae. Subtribe ARTHROPOGONINE.

Habit, Vegetative Morphology. Perennial, caespitose. Butt sheaths scarious, dark brown, pubescent or woolly. Culms erect, 24–56 cm long. Leaves mostly basal. Ligule a fringe of hairs. Leaf-blades 6–13 cm long, 1–2 mm wide.

Inflorescence. Inflorescence a panicle. Panicle open, ovate, 3.5–9 cm long. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, filiform, tip oblique.

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. Spikelet callus oblong, 0.5 mm long, pilose, base obtuse, attached obliquely.

Glumes. Glumes dissimilar, reaching apex of florets, thinner than fertile lemma. Lower glume ovate, 0.75 length of spikelet, membranous, without keels, 5 -veined. Lower glume surface villous. Lower glume apex acuminate. Upper glume ovate, membranous, without keels, 9 -veined. Upper glume surface villous. Upper glume apex acute.

Florets. Basal sterile florets 1, barren, with palea. Lemma of lower sterile floret ovate, 1 length of spikelet, membranous, 9 -veined, villous, hairy in the middle, bearing hairs 1–1.5 mm long, obtuse. Fertile lemma ovate, 3–3.5 mm long, coriaceous, without keel, 5 -veined, more than 3-veined. Lemma margins involute. Lemma apex obtuse. Palea indurate.

Flower and Fruit. Hilum linear.

Distribution (TDWG). Continent. South America.

Country /Province /State. Brazil. Brazil Northeast, Brazil Southeast.

TDWG4. Bahia, Minas Gerais, Rio de Janeiro, Espirito Santo.

Temburongia simplex S. Dransfield & K.M. Wong. *Sandakania*, 7: 55 (1996).

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

TYPE from Brunei. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: Brunei, Kuala Belalong: *Dransfield 1200* (BRUN holo, K).

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

Derivation (Clifford & Bostock 2007): L. simple. Culms or inflorescences unbranched.

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms scandent, pendulous at the tip, 1000 cm long, 7–30 mm diam., woody. Culm-internodes terete, thin-walled, 20–30 cm long, light green, distally pruinose or glabrous or pubescent. Culm-nodes flanged. Lateral branches dendroid. Bud complement 1. Branch complement several, in a clump, with 1 branch dominant. Culm-sheaths present, 15.5 cm long, 4 times as long as wide, purple, glabrous, truncate at apex, auriculate, with obtuse auricles. Culm-sheath ligule 0.2 mm high. Culm-sheath blade lanceolate, demarcated but persistent, erect, 6–13 cm long, 9–15 mm wide, glabrous on surface. Leaves 10–19 per branch. Leaf-sheaths glabrous on surface. Leaf-sheath auricles erect (on one side only), 2–3 mm long. Ligule an eciliate membrane, 0.5–1 mm long. Leaf-blade base truncate, with a brief petiole-like connection to sheath. Leaf-blades lanceolate, 7–30 cm long, 9–32 mm wide. Leaf-blade surface pubescent, hairy abaxially. Leaf-blade apex attenuate.

Inflorescence. Synflorescence bractiferous, linear or clustered at the nodes, in untidy tufts (of 1–3 spikelets), 30–40 cm long, open, with glumaceous subtending bracts, without axillary buds at base of spikelet, prophyllate below lateral spikelets, 3–5 cm long overall.

Fertile spikelets sessile.

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, 7–17 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes elongated below proximal fertile floret. Rhachilla elongation 4 mm long.

Glumes. Glumes persistent, similar, shorter than spikelet, thinner than fertile lemma. Lower glume ovate, 2 mm long, scarious, without keels. Lower glume apex acute. Upper glume ovate, 3 mm long, scarious, without keels. Upper glume apex acute.

Florets. Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret similar to upper glume, ovate, 7 mm long. Fertile lemma ovate, 7 mm long, coriaceous, without keel. Lemma apex obtuse. Palea 8.5 mm long, coriaceous. Rhachilla extension 8 mm long. Apical sterile florets 1 in number, barren, linear, 4 mm long.

Flower and Fruit. Lodicules 3, ovate, obtuse or acute. Anthers 6. Stigmas 3. Ovary umbonate, glabrous. Caryopsis with adherent pericarp, oblong, 4–5 mm long.

Distribution (TDWG). Continent. Tropical Asia.

Country /Province /State. Malesia. Borneo.

Temochloa liliana Dransfield. *Thai For. Bull.* 28:180 (2000).

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

TYPE from Thailand. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Thailand, Khao Samkob, *Shimizu, Fukuoka & Nalampoon 2904* (HT: BKF).

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

Derivation (Clifford & Bostock 2007): In honor of Liliana Zimmermann, sister of R. C. Zimmermann whose generosity supported the field work which led to the description of the species.

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms arching or leaning, slender, drooping at the tip, 200 cm long, 1–2 mm diam., woody. Culm-internodes terete, thin-walled, 10–15 cm long. Lateral branches dendroid. Bud complement 1. Branch complement two or three, with subequal branches. Culm-sheaths present, deciduous, 4 cm long, glabrous. Leaves 8–11 per branch. Leaf-sheaths glabrous on surface. Ligule an eciliate membrane. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades lanceolate, 4–7 cm long, 5–9 mm wide. Leaf-blade surface glabrous. Leaf-blade apex attenuate.

Inflorescence. Inflorescence composed of racemes or comprising only a few spikelets, comprising 1(–4) fertile spikelets. Racemes 1, single, 1–4 cm long, bearing few fertile spikelets, bearing 2–4 fertile spikelets on each.

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 oblanceolate, laterally compressed, 15 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes elongated below proximal fertile floret. Rhachilla elongation 7 mm long, glabrous.

Glumes. Glumes persistent, similar, shorter than spikelet. Lower glume lanceolate, 5 mm long, 5 -veined. Lower glume surface glabrous. Lower glume apex setaceously acuminate. Upper glume lanceolate, 6 mm long, 5 -veined. Upper glume surface glabrous. Upper glume apex setaceously acuminate.

Florets. Fertile lemma ovate, 7 mm long, chartaceous, without keel, 9 -veined, more than 3-veined. Lemma surface glabrous. Lemma apex setaceously acuminate. Palea 7 mm long, chartaceous, 4 -veined, 2-keeled. Palea surface glabrous. Palea apex dentate, 2 -fid. Apical sterile florets 1 in number, barren, linear, 3 mm long.

Flower and Fruit. Ovary glabrous.

Distribution (TDWG). Continent. Tropical Asia.

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

Tenacistachya minor L. Liou. *Pl. Res. Gram.* 11: 90 (1989).

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

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

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.
Distribution (TDWG). Continent. Temperate Asia.
Country /Province /State. China. China South Central.
TDWG4. Sichuan.

Tenacistachya sichuanensis L. Liou. *Pl. Res. Gram.* 11: 89 (1989).

Illustrations (Books): No illustration found (BKS).
Derivation (Clifford & Bostock 2007): L. -ensis, denoting origin. From Sichuan Province, China.
Classification. Subfamily Bambusoideae. Tribe: Bambuseae.
Distribution (TDWG). Continent. Temperate Asia.
Country /Province /State. China. China South Central.
TDWG4. Sichuan.

Tenaxia aureocephala (J.G. Anders.) N.P. Barker & H.P. Linder. *Ann. Mo. Bot. Gard.* 97 (3): 351 (2010).

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

TYPE from South Africa. **Basionym or Replaced Name:** *Danthonia aureocephala* J. G. Anders., *Bothalia*, 8: 170 (1964). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: South Africa, KwaZulu-Natal, Cathedral Peak Forest Research Station, *Killick 1727* (holo PRE, iso K).

Recent Synonyms: *Merxmuellera aureocephala* (J. G. Anders.) Conert, *Senck. Biol.* 51: 132 (1970).

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

Derivation (Clifford & Bostock 2007): L. aurea, golden; Gk. kephale, head. Inflorescence golden-yellow.

Classification. Subfamily Danthonioideae. Tribe: Danthonieae.

Habit, Vegetative Morphology. Perennial, caespitose. Butt sheaths glabrous. Culms 90 cm long. Ligule a fringe of hairs. Leaf-blades 20–40 cm long, 1.5 mm wide.

Inflorescence. Inflorescence a panicle. Panicle contracted, oblong, interrupted, 8–17 cm long. 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. Floret callus evident, pilose.

Glumes. Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma, gaping. Lower glume lanceolate, 15–20 mm long, 1 length of upper glume, membranous, light brown, without keels, 3–5 -veined. Lower glume apex attenuate. Upper glume lanceolate, 15–20 mm long, 1.7 length of adjacent fertile lemma, membranous, light brown, without keels, 3–5 -veined. Upper glume apex attenuate.

Florets. Fertile lemma oblong, 9–12 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, 3 -awned. Principal lemma awn from a sinus, geniculate, simple at base, 15 mm long overall, with a straight or slightly twisted column. Lateral lemma awns present, arising on apex of lobes, 1 mm long. Palea keels pubescent. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, membranous, ciliate. Anthers 3. Caryopsis with adherent pericarp.

Distribution (TDWG). Continent. Africa.

Country /Province /State. Southern Africa. Kwazulu-Natal, Lesotho.

Tenaxia cachemyriana (Jaub. & Spach) N.P. Barker & H.P. Linder. *Ann. Mo. Bot. Gard.* 97 (3): 352 (2010).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online (as *Danthonia*), U.Quattrocchi, *CRC World Dictionary of Grasses* (2006) (as *Danthonia*), S-L Chen et al, *Flora of China* 22 (Poaceae) (2006) (as *Danthonia*), N.L.Bor, *Grasses of Burma, Ceylon, India and Pakistan* (1960) (as *Danthonia*).

TYPE from India. **Basionym or Replaced Name:** *Danthonia cachemyriana* Jaub. & Spach, *Illustr.* 4: 46 (1851). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: India: ad rupes editissimas Emodi Cachemyriani, Aug. 1831, V. *Jacquemont 1041* (HT: P; IT: L).

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

Derivation (Clifford & Bostock 2007): L. -ana, indicating location. From Emodi Cachemyriana, that is Kashmir.

Classification. Subfamily Danthonioideae. Tribe: Danthonieae.

Habit, Vegetative Morphology. Perennial, caespitose, clumped densely. Butt sheaths coriaceous, glabrous. Culms erect, 10–25 cm long. Culm-nodes glabrous. Lateral branches lacking. Ligule a fringe of hairs. Leaf-blades filiform, involute, 3–6 cm long, 0.5–1 mm wide. Leaf-blade surface ribbed, scaberulous, rough adaxially.

Inflorescence. Inflorescence a panicle. Panicle contracted, oblong or ovate, 1–3 cm long, bearing many spikelets or few spikelets. Primary panicle branches indistinct the panicle almost racemose. Panicle branches glabrous or pilose. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

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, 10–12 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes 1.5 mm long. Floret callus evident, 0.5 mm long, bearded.

Glumes. Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma, gaping. Lower glume lanceolate, 10 mm long, 0.8 length of upper glume, membranous, much thinner on margins, without keels, 3–5 -veined. Lower glume primary vein scaberulous. Lower glume apex acuminate. Upper glume lanceolate, 12 mm long, 2.5 length of adjacent fertile lemma, membranous, with hyaline margins, without keels, 5 -veined. Upper glume primary vein smooth or scaberulous. Upper glume apex acuminate.

Florets. Fertile lemma elliptic, 4.5 mm long, chartaceous, without keel, 5–7 -veined, more than 3-veined. Lemma surface pubescent, with a transverse row of hair tufts, bearing 2–4 hair tufts in all. Lemma margins ciliate. Lemma apex lobed, 2 -fid, with lobes 1 mm long, incised 0.25 of lemma length, awned, 3 -awned. Principal lemma awn from a sinus, geniculate, flat below, 15 mm long overall, with twisted column. Column of lemma awn 3 mm long. Lateral lemma awns present, arising on apex of lobes, 5.5 mm long, shorter than principal. Palea 1 length of lemma, 2 -veined. Palea keels scabrous. Palea surface pilose, hairy on back or on flanks, hairy below. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, cuneate, fleshy, ciliate. Anthers 3, 1.25–1.5 mm long. Caryopsis with adherent pericarp, obovoid, 1.5 mm long. Embryo 0.5 length of caryopsis. Hilum elliptic.

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

Country /Province /State. **Western Asia, China.** Afghanistan, Iran. Tibet. **Indian Subcontinent.** Assam, Pakistan, West Himalaya.

TDWG4. Himachal Pradesh, Jammu Kashmir.

Tenaxia cumminsii (Hook. f.) N.P. Barker & H.P. Linder. *Ann. Mo. Bot. Gard.* 97 (3): 352 (2010).

Accepted by: W.D. Clayton & K. Harman, *GrassBase* (2008) and online (as *Danthonia*), U. Quattrocchi, *CRC World Dictionary of Grasses* (2006) (as *Danthonia*), S-L Chen et al, *Flora of China* 22 (Poaceae) (2006) (as *Danthonia*), N.L. Bor, *Grasses of Burma, Ceylon, India and Pakistan* (1960) (as *Danthonia jacquemontii*).

TYPE from Bhutan. **Basionym or Replaced Name:** *Danthonia cumminsii* Hook. f., *Fl. Brit. Ind.* 7: 282 (1896). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Bhutan: Guatong in the Sikkim frontier, 4000 m, pre-1893, *Cummins s.n.* (HT: K).

Recent Synonyms: *Danthonia schneideri* Pilger, Fedde, *Repert.* 17: 131 (1921).

Illustrations (Books): H.J. Noltie, *The Grasses of Bhutan* (2000) (645, Fig. 31), S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 631).

Derivation (Clifford & Bostock 2007): L. in honor of Henry Alfred Cummins (1864–1939) Irish-born physician who collected in India.

Classification. Subfamily Danthonioidae. Tribe: Danthonieae.

Habit, Vegetative Morphology. Perennial, caespitose. Rootstock evident. Butt sheaths coriaceous, yellow, glossy, glabrous or pubescent. Basal innovations flabellate. Culms erect, 30–60 cm long. Culm-nodes glabrous. Lateral branches lacking. Ligule a fringe of hairs. Leaf-blades filiform or linear, involute or convolute, 15–30 cm long, 1–2 mm wide. Leaf-blade surface ribbed, smooth or scaberulous, rough adaxially, glabrous or pilose, sparsely hairy, hairy abaxially. Leaf-blade margins cartilaginous, scabrous. Leaf-blade apex acuminate.

Inflorescence. Inflorescence a panicle. Panicle open, lanceolate, 6–12.5 cm long, bearing many spikelets or few spikelets. Primary panicle branches indistinct the panicle almost racemose. Panicle branches glabrous or pilose. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 2–5 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets cuneate, laterally compressed, 15–25 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus evident, 0.5–0.75 mm long, bearded. Floret callus hairs 3.5 mm long.

Glumes. Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma, shiny, gaping. Lower glume lanceolate or elliptic, 15–25 mm long, 1 length of upper glume, membranous, much thinner on margins, without keels, 3–5 -veined. Lower glume apex acuminate, mucronate. Upper glume lanceolate or elliptic, 15–25 mm long, 1.5–2.5 length of adjacent fertile lemma, membranous, with hyaline margins, without keels, 5–7 -veined. Upper glume apex acuminate, mucronate.

Florets. Fertile lemma elliptic, 9.5–10 mm long, chartaceous, without keel, 9 -veined, more than 3-veined. Lemma surface pilose, hairy above, without hair tufts. Lemma margins ciliate. Lemma apex lobed, 2 -fid, with lobes 3.5 mm long, incised 0.33 of lemma length, awned, 3 -awned. Principal lemma awn from a sinus, geniculate, flat below, 22–25 mm long overall, with twisted column. Column of lemma awn 3–4 mm long. Lateral lemma awns present, arising on apex of lobes, 6–8 mm long, shorter than principal. Palea 1 length of lemma, 2 -veined. Palea keels scabrous. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, cuneate, fleshy, ciliate. Anthers 3, 4.5–5.5 mm long. Caryopsis with adherent pericarp, obovoid, 2.3 mm long.

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

Country /Province /State. China. China South Central, Tibet. **Indian Subcontinent.** Eastern Himalaya, Nepal, Pakistan.

TDWG4. Sichuan, Yunnan. Bhutan, Sikkim.

Tenaxia disticha (Nees) N.P. Barker & H.P. Linder. *Ann. Mo. Bot. Gard.* 97 (3): 352 (2010).

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 disticha* Nees, *Fl. Afr. Austr.* 335 (1841). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: LT: *Drège s.n.*, South Africa: in siccis ad Sternbergspruit, alt. 5000–5500 Fuss LT designated by Conert, *Senckenb. Biol.* 51: 132 (1970).

Recent Synonyms: *Rytidosperma distichum* (Nees) T.A. Cope, *Fl. Zambes.*, 10(2): 9 (1999). *Merxmuellera disticha* (Nees) Conert, *Senck. Biol.* 51: 132 (1970).

Illustrations (Books): G.V.Pope et al., *Flora Zambesiaca* 10 (as *Rytidosperma*), L.K.A. Chippindall, *Grasses and Pastures of South Africa* (1955) (248, Fig.220, as *Danthonia*).

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

Derivation (Clifford & Bostock 2007): Gk. distichos, two-rowed. Plants with conspicuously two-rowed spikelets or leaves.

Classification. Subfamily Danthonioideae. Tribe: Danthonieae.

Habit, Vegetative Morphology. Perennial, caespitose. Butt sheaths glabrous. Culms 15–20 cm long. Ligule a fringe of hairs. Leaf-blades filiform, convolute, 10–50 cm long, 2–3.5 mm wide.

Inflorescence. Inflorescence composed of racemes. Racemes 1, single, unilateral, 2–10 cm long. Rhachis angular. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, 1 mm long.

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 cuneate, laterally compressed, 9–20 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, 9–20 mm long, 1 length of upper glume, membranous, without keels, 1–3 -veined. Lower glume apex acute or acuminate. Upper glume lanceolate, 9–20 mm long, 1–1.3 length of adjacent fertile lemma, membranous, without keels, 1–3 -veined. Upper glume apex acute or acuminate.

Florets. Fertile lemma oblong, 9–15 mm long, chartaceous, without keel, 9 -veined, more than 3-veined. Lemma surface glabrous, with basal hair tufts near margin, bearing 2 hair tufts in all. Lemma margins ciliate. Lemma apex lobed, 2 -fid, incised 0.5 of lemma length, awned, 1 -awned. Principal lemma awn from a sinus, geniculate, 10–16 mm long overall, with twisted column. Palea keels scaberulous. 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. South tropical Africa, Southern Africa. Zimbabwe. Free State, Kwazulu-Natal, Lesotho, Western Cape, Eastern Cape.

Tenaxia dura (Stapf) N.P. Barker & H.P. Linder. *Ann. Mo. Bot. Gard.* 97 (3): 352 (2010).

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 dura* Stapf, *Fl. Cap.* 7: 527–528 (1899)

. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: South Africa, Kamiesbergen: Drege (K holo).

Recent Synonyms: *Merxmuellera dura* (Stapf) Conert, *Senck. Biol.* 51: 132 (1970).

Illustrations (Books): G.E.Gibbs Russell et al., *Grasses of Southern Africa* (1990).

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

Derivation (Clifford & Bostock 2007): L. hard. Lemmas hard or tough.

Classification. Subfamily Danthonioideae. Tribe: Danthonieae.

Habit, Vegetative Morphology. Perennial, caespitose. Rhizomes short. Butt sheaths glabrous. Culms 60–90 cm long. Leaf-sheath oral hairs bearded. Ligule a fringe of hairs. Leaf-blades aciculate, convolute, 30–60 cm long, 1–1.5 mm wide, coriaceous, stiff, glaucous. Leaf-blade apex pungent.

Inflorescence. Inflorescence a panicle. Panicle contracted, lanceolate, 10–18 cm long, 2–3 cm wide. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 4–7 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets cuneate, laterally compressed, 13–18 mm long, 6–8 mm wide, 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, 13–18 mm long, 1 length of upper glume, membranous, without keels, 3–5 -veined. Lower glume apex acute or acuminate. Upper glume lanceolate, 13–18 mm long, 1.5–2 length of adjacent fertile lemma, membranous, without keels, 3–5 -veined. Upper glume apex acute or acuminate.

Florets. Fertile lemma oblong, 7–12 mm long, chartaceous, without keel, 9 -veined, more than 3-veined. Lemma surface glabrous, with basal hair tufts near margin, bearing 2 hair tufts in all. Lemma margins eciliate. Lemma apex lobed, 2 -fid, incised 0.33–0.5 of lemma length, awned, 3 -awned. Principal lemma awn from a sinus, geniculate, simple at base, 10–15 mm long overall, with twisted column. Lateral lemma awns present, arising on apex of lobes, 2 mm long. Palea keels pubescent. Palea surface puberulous, hairy on back or 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. Northern Cape.

Tenaxia guillarmodiae (Conert) N.P. Barker & H.P. Linder. *Ann. Mo. Bot. Gard.* 97 (3): 352 (2010).

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

TYPE from Lesotho. **Basionym or Replaced Name:** *Merxmuellera guillarmodiae* Conert, *Senckenberg. Biol.*, 56(1–3): 145 (1975). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Lesotho, Ischyanlana valley: Jacot-Guillarmod 2320 (RUH holo, FR).

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

Derivation (Clifford & Bostock 2007): in honor of Amy Jacot Guillarmod (1911–) South African botanist.

Classification. Subfamily Danthonioideae. Tribe: Danthonieae.

Habit, Vegetative Morphology. Perennial, caespitose. Butt sheaths glabrous. Culms 12–40(–70) cm long. Ligule a fringe of hairs. Leaf-blades filiform, convolute, 20–40 cm long, 0.4–0.6 mm wide, coriaceous, stiff.

Inflorescence. Inflorescence a panicle. Panicle contracted, linear, interrupted, 4–9 cm long. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 3–4(–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, 9–14 mm long, 6–8 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, 3–5 -veined. Lower glume apex acuminate. Upper glume lanceolate, 9–14 mm long, 1.5–2 length of adjacent fertile lemma, membranous, without keels, 3–5 -veined. Upper glume apex acuminate.

Florets. Fertile lemma oblong, 6–7 mm long, chartaceous, without keel, 9 -veined, more than 3-veined. Lemma surface glabrous or pubescent, hairy below, with marginal hair tufts, bearing 4–6 hair tufts in all. Lemma margins eciliate. Lemma apex lobed, 2 -fid, incised 0.5 of lemma length, awned, 3 -awned. Principal lemma awn from a sinus, geniculate, adnate to lemma lobes at base, 5–11 mm long overall, with twisted column. Lateral lemma awns present, arising on apex of lobes, 1.5–2 mm long. Palea keels pubescent. Palea surface puberulous, hairy on back. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, oblong, fleshy, veined, ciliate. Anthers 3. Caryopsis with adherent pericarp.

Distribution (TDWG). Continent. Africa.

Country /Province /State. Southern Africa. Free State, Kwazulu-Natal, Lesotho.

Tenaxia stricta (Schrad.) N.P. Barker & H.P. Linder. *Ann. Mo. Bot. Gard.* 97 (3): 352 (2010).

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 stricta* Schrad., *Mant.* 2: 383 (1824). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: South Africa, Cape: Hesse (holo GOET 2247 iso C).

Recent Synonyms: *Merxmuellera stricta* (Schrad.) Conert, *Senck. Biol.* 51: 133 (1970).

Illustrations (Journals): *Ann. Missouri Bot. Gard.* (97: 350, Fig. 16 (2010)).

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

Derivation (Clifford & Bostock 2007): L. erect. Inflorescence branches erect.

Classification. Subfamily Danthonioideae. Tribe: Danthonieae.

Habit, Vegetative Morphology. Perennial, caespitose. Butt sheaths glabrous. Culms 30–80 cm long. Leaf-sheath oral hairs bearded. Ligule a fringe of hairs. Leaf-blades filiform, 10–45 cm long, 0.5 mm wide, stiff.

Inflorescence. Inflorescence a panicle. Panicle open or contracted, linear or lanceolate, interrupted, 3–13 cm long, bearing few spikelets. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, ciliate, hairy at tip.

Fertile Spikelets. Spikelets comprising 5–7 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets cuneate, laterally compressed, 11–22 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, 11–22 mm long, 1 length of upper glume, membranous, without keels, 3–7 -veined. Lower glume apex acuminate. Upper glume lanceolate, 11–22 mm long, 1.8–2.5 length of adjacent fertile lemma, membranous, without keels, 3–7 -veined. Upper glume apex acuminate.

Florets. Fertile lemma oblong, 6–9 mm long, chartaceous, without keel, 9 -veined, more than 3-veined. Lemma surface glabrous, with marginal hair tufts, bearing 8 hair tufts in all. Lemma apex lobed, 2 -fid, incised 0.5 of lemma length, awned, 3 -awned. Principal lemma awn from a sinus, geniculate, adnate to lemma lobes at base, 6–12 mm long overall, with twisted column. Lateral lemma awns present, arising on apex of lobes, 2–3 mm long. Palea lacks ciliolate. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, cuneate, fleshy, ciliate. Anthers 3. Caryopsis with adherent pericarp.

Distribution (TDWG). Continent. Africa.

Country /Province /State. Southern Africa. Namibia, Kwazulu-Natal, Lesotho, Northern Cape, Western Cape, Eastern Cape.

Tenaxia subulata (A. Rich.) N.P. Barker & H.P. Linder. *Ann. Mo. Bot. Gard.* 97 (3): 352 (2010).

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

TYPE from Ethiopia. **Basionym or Replaced Name:** *Danthonia subulata* A. Rich., *Tent. Fl. Abyss* 2: 420 (1850). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Crescit in montosis provinciae Ouodgerate, Petit (P holo; fragm K).

Recent Synonyms: *Rytidosperma subulatum* (A. Rich.) Cope, *Kew Bull.* 39: 835 (1985).

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

Derivation (Clifford & Bostock 2007): L. subulus, a fine point; -ata, possessing. Glumes, lemmas or calluses sharply tapered.

Classification. Subfamily Danthonioideae. Tribe: Danthonieae.

Habit, Vegetative Morphology. Perennial, caespitose. Rhizomes short. Culms erect or geniculately ascending, 15–45 cm long, 2–3 -noded. Culm-internodes distally glabrous. Ligule a fringe of hairs. Leaf-blades erect, straight or curled, filiform, convolute, 10–20 cm long, 1 mm wide, stiff.

Inflorescence. Inflorescence a panicle or composed of racemes or comprising only a few spikelets, comprising 1–5 fertile spikelets. Panicle open, linear, 5–8 cm long, bearing few spikelets. Primary panicle branches simple, bearing 1–2 fertile spikelets on each lower branch. Racemes 1, single, paucilateral, 5–8 cm long. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, 1.5 mm long, pubescent.

Fertile Spikelets. Spikelets comprising 3–7 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets cuneate, laterally compressed, 12–15 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus evident, 0.5 mm long, pilose.

Glumes. Glumes persistent, similar, shorter than spikelet, thinner than fertile lemma, gaping. Lower glume lanceolate, 10–12 mm long, 1 length of upper glume, membranous, without keels, 3 -veined. Lower glume apex acute. Upper glume elliptic, 10–12 mm long, 1.3–1.7 length of adjacent fertile lemma, membranous, without keels, 5 -veined. Upper glume apex acute.

Florets. Fertile lemma oblong, 6–9 mm long, coriaceous, without keel, 9 -veined, more than 3-veined. Lemma surface glabrous, with marginal hair tufts, bearing 2–4 hair tufts in all. Lemma apex lobed, 2 -fid, with lanceolate lobes, incised 0.5–0.7 of lemma length, acute or acuminate, awned, 1 -awned. Principal lemma awn from a sinus, geniculate, 6–12 mm long overall, with twisted column. Column of lemma awn 3–4 mm long. Lateral lemma awns absent. Palea 1 length of lemma. Palea keels scaberulous. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, cuneate, fleshy, ciliate. Anthers 3, 4 mm long. Caryopsis with adherent pericarp, oblong, 3 mm long.

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

Country /Province /State. Northeast tropical Africa. Ethiopia (inc. Eritrea). Arabian Peninsula. Yemen.

Tetrachaete elionuroides Chiov. *Ann. Ist. Bot. Roma*, viii. 28 (1908).

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

TYPE from Eritrea. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Eritrea: Assaorta: Pianura Hamas, 6 Mar 1892, *Terracciano 2656*.

Illustrations (Books): R.M.Phillips, F.T.E.A., *Gramineae* (2(1974):398, Fig.107), S.Phillips, *Poaceae* (Gramineae) in I.Hedberg & S.Edwards, *Flora of Ethiopia and Eritrea* (1995) (183, Fig. 77), T.A.Cope, in M.Thulin, *Poaceae* (Gramineae). *Flora of Somalia* (1995) (218, Fig. 124), R.Pilger, *Die Natürlichen Pflanzenfamilien* 14e (1940) (85, Fig. 53).

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

Classification. Subfamily Chloridoideae. Tribe: Chloridoideae incertae sedis.

Habit, Vegetative Morphology. Annual, caespitose. Culms decumbent, 4–25 cm long, wiry. Ligule a ciliate membrane. Leaf-blades flat or convolute, 0.5–2 cm long, 0.5–3 mm wide.

Inflorescence. Inflorescence composed of racemes, subtended by a spatheole, embraced at base by subtending leaf. Racemes numerous, borne along a central axis, closely spaced, in a multilateral false spike, oblong, bearing few fertile spikelets, bearing 2 fertile spikelets on each. Central inflorescence axis 1–3.5 cm long. Rhachis obsolete, deciduous from axis. Spikelets in pairs. Fertile spikelets sessile, 2 in the cluster.

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 cuneate, laterally compressed, 3–4 mm long, falling entire, deciduous with accessory branch structures.

Glumes. Glumes collateral, similar, subequal in width, exceeding apex of florets. Lower glume subulate, 7–13 mm long, 1 length of upper glume. Lower glume surface villous. Upper glume subulate, 7–13 mm long. Upper glume surface villous.

Florets. Fertile lemma ovate, gibbous, 2–2.5 mm long, coriaceous, keeled, 3 -veined, 0–3 -veined. Lemma midvein ciliate. Lemma margins ciliate. Lemma apex acute, awned, 1 -awned. Principal lemma awn 3–4.5 mm long overall. Palea 1 length of lemma, coriaceous, 2 -veined.

Flower and Fruit. Anthers 3. Caryopsis with adherent pericarp, obovoid, isodiametric, trigonous, 1 mm long.

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

Country /Province /State. Northeast tropical Africa, East tropical Africa. Eritrea, Ethiopia (inc. Eritrea), Somalia. Kenya, Tanzania. Arabian Peninsula. Oman, Saudi Arabia, Yemen.

Tetrachne dregei Nees. *Fl. Afr. Austr. Gram.* 376 (1841).

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

TYPE from Pakistan. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: ST: A.H. Khan s.n., 1959, Pakistan: Baluchistan: (introduced) (K).

Illustrations (Books): L.K.A. Chippindall, *Grasses and Pastures of South Africa* (1955) (188, Fig 165), G.E.Gibbs Russell et al, *Grasses of Southern Africa* (1990) (332, Fig 214), E.G.Nicora, *Los Generos de Gramineas de America Austral* (1987) (372, Fig. 129).

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

Derivation (Clifford & Bostock 2007): in honor of Johann Franz Drege (1794–1881) German horticulturalist and plant collector in South Africa.

Classification. Subfamily Chloridoideae. Tribe: Eragrostideae.

Habit, Vegetative Morphology. Perennial, caespitose. Culms 50–70 cm long. Ligule a fringe of hairs. Leaf-blades involute, 5–20 cm long, 1–3 mm wide. Leaf-blade surface ribbed.

Inflorescence. Inflorescence composed of racemes. Racemes 5–15, borne along a central axis (their own length apart), unilateral, 1–4 cm long. Central inflorescence axis 5–30 cm long. Rhachis flattened. Spikelets solitary. Fertile spikelets sessile.

Fertile Spikelets. Spikelets comprising 2 basal sterile florets, 4–5 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets ovate, laterally compressed, compressed strongly, 4–6 mm long, falling entire.

Glumes. Glumes similar, shorter than spikelet, thinner than fertile lemma. Lower glume lanceolate, 2.5–3.5 mm long, 1 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume lateral veins absent. Lower glume apex acute. Upper glume lanceolate, 2.5–3.5 mm long, 0.75 length of adjacent fertile lemma, membranous, 1-keeled, 1 -veined. Upper glume lateral veins absent. Upper glume apex acute.

Florets. Basal sterile florets 2 or more, similar, barren, without significant palea. Lemma of lower sterile floret similar to upper glume, lanceolate, 3–3.5 mm long, membranous, 1-keeled, 1 -veined, without lateral veins, acute. Fertile lemma elliptic, 3.5–4.5 mm long, coriaceous, keeled, 5 -veined, more than 3-veined. Lemma midvein ciliolate. Lemma apex acute. Palea coriaceous, 2 -veined. Palea keels winged, narrowly winged, ciliolate. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, cuneate, fleshy. Caryopsis with free soft pericarp, ellipsoid.

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

Country /Province /State. Southern Africa. Free State, Lesotho, Northern Cape, Western Cape, Eastern Cape. Indian Subcontinent. Pakistan.

Tetrapogon bidentatus Pilger. *Engl. Jahrb.* iv. 129. (1904).

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 Synonymy Database: Ostafrika: Kilimandschargebiet, Steppe am Ostfluss des Pare, 800 m, 1901, *Uhlig 864* (HT: B).

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

Derivation (Clifford & Bostock 2007): L. bis, twice; dens, tooth; - ata, possessing. Lemma apex bifid.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose. Rhizomes short. Basal innovations flabellate (loosely). Culms erect or geniculately ascending, 25–85 cm long, 3–5 -noded. Culm-nodes pallid, glabrous. Ligule a ciliolate membrane. Leaf-blades 5–15 cm long, 2–3 mm wide. Leaf-blade apex attenuate.

Inflorescence. Inflorescence composed of racemes. Racemes 2, paired, ascending, unilateral, 4–10 cm long. Rhachis angular. Spikelet packing broadside to rhachis, regular, 2 -rowed. Spikelets ascending, solitary. Fertile spikelets sessile.

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, 4–6 mm long, breaking up at maturity, disarticulating above glumes but not between florets. Floret callus pilose.

Glumes. Glumes persistent, similar, shorter than spikelet, thinner than fertile lemma, gaping. Lower glume lanceolate, 2–3.5 mm long, 0.7 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume lateral veins absent. Lower glume apex acuminate. Upper glume lanceolate, 3–5 mm long, 1.2–2 length of adjacent fertile lemma, membranous, 1-keeled, 1 -veined. Upper glume lateral veins absent. Upper glume apex acuminate.

Florets. Fertile lemma cuneate, 2.5–3 mm long, coriaceous, much thinner on margins, keeled, winged on margins, 3 -veined, 0–3 -veined. Lemma midvein ciliate. Lemma margins ciliate. Lemma apex dentate, 2 -fid, awned, 1 -awned. Principal lemma awn subapical, 5–9 mm long overall. Palea 2 -veined. Palea keels ciliolate. Apical sterile florets 2–3 in number, barren, in a clump, cuneate, 2–3 mm long. Apical sterile lemmas awned, 1 -awned. Apical sterile lemma awns 2–4 mm long, 2–3 per spikelet in number.

Flower and Fruit. Caryopsis with free soft pericarp, oblong, dorsally compressed, biconvex, 1.5 mm long.

Distribution (TDWG). Continent. Africa.

Country /Province /State. East tropical Africa. Kenya, Tanzania.

Tetrapogon cenchriformis (A. Rich.) Clayton. *Kew Bull.* xvi. 250 (1962).

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

TYPE from Ethiopia. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Ethiopia, Wojera: Quartin Dillon & Petit (P holo).

Illustrations (Books): H.Jacques-Felix, *Les Graminees d'Afrique tropicale* (1962) (as *T. spathaceus*), R.M.Phillips, F.T.E.A., *Gramineae* (2(1974):349, Fig.98), S.Phillips, *Poaceae* (Gramineae) in I.Hedberg & S.Edwards, *Flora of Ethiopia and Eritrea* (1995) (162, Fig 66), L.Boulos, *Flora of Egypt* 4 (2005) (278, Pl. 82), T.A.Cope, in M.Thulin, *Poaceae* (Gramineae). *Flora of Somalia* (1995) (203, Fig 110).

Derivation (Clifford & Bostock 2007): L. forma, appearance. Similar to *Cenchrus*.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Annual or perennial, short-lived, caespitose. Basal innovations flabellate. Culms erect or geniculately ascending, 30–60 cm long, 3–6 -noded. Culm-nodes black. Ligule a ciliolate membrane. Leaf-blades 3–12 cm long, 2–4 mm wide. Leaf-blade apex obtuse.

Inflorescence. Inflorescence composed of racemes, subtended by an inflated leaf-sheath, embraced at base by subtending leaf. Racemes 1–2, single or paired, ascending, unilateral, 3–6 cm long. Rhachis angular. Spikelet packing broadside to rhachis, regular, 2 -rowed. Spikelets ascending, solitary. Fertile spikelets sessile.

Fertile Spikelets. Spikelets comprising 3–5(–7) fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets cuneate, laterally compressed, 7–12 mm long, breaking up at maturity, disarticulating above glumes but not between florets. Floret callus pilose.

Glumes. Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma, gaping. Lower glume lanceolate, 5–9 mm long, 0.7–0.8 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume lateral veins absent. Lower glume apex acuminate or setaceously acuminate. Upper glume lanceolate, 7–12 mm long, 1.7–2 length of adjacent fertile lemma, membranous, 1-keeled, 1 -veined. Upper glume lateral veins absent. Upper glume apex acuminate or setaceously acuminate.

Florets. Fertile lemma ovate, 4–6 mm long, coriaceous, keeled, 3 -veined, 0–3 -veined. Lemma midvein ciliate. Lemma margins ciliate. Lemma apex acute, awned, 1 -awned. Principal lemma awn subapical, 7–11 mm long overall. Palea 2 -veined. Palea keels ciliolate. Apical sterile florets (1–)4(–6) in number, barren, in a clump, cuneate. Apical sterile lemmas glabrous or pilose, awned, 1 -awned. Apical sterile lemma awns 2–8 mm long.

Flower and Fruit. Caryopsis with free soft pericarp, obovoid, dorsally compressed, biconvex, 2–2.5 mm long.

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

Country /Province /State. Northern Africa, Macaronesia, West tropical Africa, Northeast tropical Africa, East tropical Africa. Egypt. Cape Verde. Mali, Mauritania, Nigeria, Senegal. Chad, Eritrea, Ethiopia (inc. Eritrea), Somalia, Sudan. Kenya, Tanzania, Uganda. **Arabian Peninsula.** Saudi Arabia.

Tetrapogon ferrugineus (Renvoize) S.M. Phillips. *Kew Bull.*, 42:478 (1987).

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

TYPE from Kenya. **Basionym or Replaced Name:** *Chloris ferruginea* Renvoize, *Kew Bull.* 28(2): 195, f. 1 (1973)

. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Kenya: Northern Frontier Prov.: Mandera Distr.: NW slopes of the Danissa Hills, in dense *Acacia nubica* and *Commiphora* spp. thicket, at 700 m, 15 Dec 1971, A. Radcliffe-Smith 14603 (HT: K).

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

Derivation (Clifford & Bostock 2007): L. light-brown. Glumes and/or lemmas invested in light-brown hairs.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose. Rhizomes short. Basal innovations flabellate. Culms geniculately ascending or decumbent, 15–104 cm long, 2–4 -noded. Leaf-sheaths keeled. Ligule a ciliolate membrane. Leaf-blades filiform, involute, 25–35 cm long, 3–4 mm wide. Leaf-blade apex attenuate.

Inflorescence. Inflorescence composed of racemes. Racemes 8, digitate, unilateral, 4–11 cm long. Spikelet packing broadside to rhachis. Spikelets solitary. Fertile spikelets sessile.

Fertile Spikelets. Spikelets comprising 1 fertile florets, with diminished florets at the apex. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets cuneate, laterally compressed, 2–2.5 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus pilose, obtuse.

Glumes. Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma, gaping. Lower glume lanceolate, 4–4.5 mm long, 0.8 length of upper glume, membranous, pallid, 1-keeled, 1 -veined. Lower glume lateral veins absent. Lower glume apex acuminate, muticous or mucronate. Upper glume lanceolate, 4–5.5 mm long, 2 length of adjacent fertile lemma, membranous, pallid, 1-keeled, 1 -veined. Upper glume lateral veins absent. Upper glume apex acuminate, muticous or mucronate.

Florets. Fertile lemma elliptic, laterally compressed, elliptic in profile, 2.5 mm long, coriaceous, dark brown, keeled, 3 -veined, 0–3 -veined. Lemma lateral veins close to margins. Lemma surface pubescent, with conspicuous apical hairs. Lemma hairs red. Lemma apex obtuse, awned, 1 -awned. Principal lemma awn subapical, 3.5–4 mm long overall. Apical sterile florets 2 in number, barren, separate, elliptic. Apical sterile lemmas pubescent, awned, 1 -awned. Apical sterile lemma awns subapical, 2 per spikelet in number.

Flower and Fruit. Lodicules 2, cuneate, fleshy. Anthers 3. Stigmas 2. Caryopsis with adherent pericarp, trigonous. Hilum punctiform.

Distribution (TDWG). Continent. Africa.

Country /Province /State. Northeast tropical Africa, East tropical Africa. Ethiopia (inc. Eritrea), Somalia. Kenya.

Tetrapogon tenellus (Roxb.) Chiov. *Ann. Ist. Bot. Roma*, viii. 352 (1908).

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:** *Chloris tenella* J. König ex Roxb., *Fl. Ind.*, ed. 1820 1: 330 (1820). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: LT: *Roxburgh painting 2022*, India (K). LT designated by ?; cited by Ali Chaudahry, *Grass. Saudi Arabia* 302 (1989).

Illustrations (Books): G.V.Pope et al., *Flora Zambesiaca* 10 (2(1999):208 t. 60), G.E.Gibbs Russell et al., *Grasses of Southern Africa* (1990) (333, Fig 215), S.Phillips, *Poaceae* (Gramineae) in I.Hedberg & S.Edwards, *Flora of Ethiopia and Eritrea* (1995) (162, Fig 66).

Derivation (Clifford & Bostock 2007): L. slender. Culms or inflorescence branches slender.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Annual or perennial, short-lived, caespitose. Basal innovations flabellate. Culms erect or geniculately ascending, 40–80 cm long, 4–6 -noded. Culm-nodes pallid. Ligule a ciliolate membrane. Leaf-blades 10–24 cm long, 2–4 mm wide. Leaf-blade apex attenuate.

Inflorescence. Inflorescence composed of racemes. Racemes 1–2, single or paired, ascending, unilateral, 3–5(–8) cm long. Rhachis angular. Spikelet packing broadside to rhachis, regular, 2 -rowed. Spikelets ascending, solitary. Fertile spikelets sessile.

Fertile Spikelets. Spikelets comprising (3–)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, 4–6.5 mm long, breaking up at maturity, disarticulating above glumes but not between florets. Floret callus pilose.

Glumes. Glumes persistent, similar, shorter than spikelet, thinner than fertile lemma, gaping. Lower glume lanceolate, 3–3.5(–6) mm long, 0.6–0.8 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume lateral veins absent. Lower glume apex acute or acuminate or setaceously acuminate. Upper glume lanceolate, 3.5–6(–9) mm long, 0.8–0.9 length of adjacent fertile lemma, membranous, 1-keeled, 1 -veined. Upper glume lateral veins absent. Upper glume apex acute or acuminate or setaceously acuminate.

Florets. Fertile lemma obovate, 4–6.5 mm long, coriaceous, keeled, 3 -veined, 0–3 -veined. Lemma midvein eciliate. Lemma margins eciliate or ciliolate. Lemma apex acute, awned, 1 -awned. Principal lemma awn subapical, 3–11 mm long overall. Palea 2 -veined. Palea keels ciliolate. Apical sterile florets (1–)2 in number, barren, in a clump, cuneate. Apical sterile lemmas muticous.

Flower and Fruit. Caryopsis with free soft pericarp, oblong, dorsally compressed, biconvex, 2–3 mm long. $N = 10$ (1 ref TROPICOS).

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

Country /Province /State. Northeast tropical Africa, East tropical Africa, South tropical Africa, Southern Africa. Eritrea, Ethiopia (inc. Eritrea), Socotra, Somalia, Sudan. Kenya, Tanzania, Uganda. Angola, Mozambique, Zimbabwe. Namibia, Limpopo. **Arabian Peninsula.** Oman. **Indian Subcontinent.** India, Pakistan.

TDWG4. Maharashtra, Punjab, Rajasthan, Tamilnadu.

Tetrapogon villosus Desf. *Fl. Atlant.* ii. 388. t. 255. (1799).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), N.L.Bor, *Grasses of Burma, Ceylon, India and Pakistan* (1960), N.Tsvelev, *Grasses of the Soviet Union* (1983).

TYPE from Tunisia. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Africa: Tunisia: Cafsam, desert areas and dry mountain slopes, *Desfontaines s.n.* (HT: P).

Illustrations (Books): N.Feinbrun-Dothan, *Flora Palaestina* 4 (1986) (Pl. 386), S.Phillips, *Poaceae* (Gramineae) in I.Hedberg & S.Edwards, *Flora of Ethiopia and Eritrea* (1995) (162, Fig 66).

Derivation (Clifford & Bostock 2007): L. villi, long weak hairs; -osa, abundance. The plant in whole or in part covered with long hairs.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose. Basal innovations flabellate. Culms erect, 20–40 cm long, 3–4 -noded. Culm-nodes black. Ligule a ciliolate membrane. Leaf-blades 2–6(–10) cm long, 1–2 mm wide. Leaf-blade apex obtuse or acute.

Inflorescence. Inflorescence composed of racemes. Racemes 2, paired, appressed back to back, erect, unilateral, 2–8 cm long. Rhachis angular. Spikelet packing broadside to rhachis, regular, 2 -rowed. Spikelets ascending, solitary. Fertile spikelets sessile.

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 cuneate, laterally compressed, 3–4 mm long, breaking up at maturity, disarticulating above glumes but not between florets. Floret callus pilose.

Glumes. Glumes persistent, dissimilar, exceeding apex of florets or reaching apex of florets, thinner than fertile lemma, gaping. Lower glume lanceolate, 2–3 mm long, 0.66–0.75 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume lateral veins absent. Lower glume apex acuminate. Upper glume ovate, 3–4 mm long, 1–1.1 length of adjacent fertile lemma, membranous, 1-keeled, 1 -veined. Upper glume lateral veins absent. Upper glume apex truncate or obtuse or acute, mucronate.

Florets. Fertile lemma ovate, 3–3.5 mm long, coriaceous, keeled, 3 -veined, 0–3 -veined. Lemma midvein ciliate. Lemma margins ciliate. Lemma apex acute, awned, 1 -awned. Principal lemma awn subapical, 8–10 mm long overall. Palea 2 -veined. Palea keels ciliolate. Apical sterile florets 3 in number, barren, in a clump, cuneate. Apical sterile lemmas awned, 1 -awned. Apical sterile lemma awns 2–4 mm long.

Flower and Fruit. Caryopsis with free soft pericarp, oblong, dorsally compressed, biconvex, 1.5 mm long. $N = 10$ (1 ref TROPICOS).

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

Country /Province /State. Northern Africa, Macaronesia, West tropical Africa, Northeast tropical Africa, East tropical Africa. Algeria, Egypt, Libya, Morocco, Tunisia. Canary Is, Cape Verde. Djibouti, Eritrea, Ethiopia (inc. Eritrea), Somalia, Sudan. Uganda. Middle Asia, Western Asia, Arabian Peninsula. Tadjikistan. Afghanistan, Iran, Lebanon-Syria, Palestine, Israel & Jordan. Gulf States, Oman, Saudi Arabia. Indian Subcontinent. India, Pakistan, West Himalaya.

TDWG4.

Tetrarrhena acuminata R. Br. *Prod.* 210 (1810).

Accepted by: U.Quattrocchi, *CRC World Dictionary of Grasses* (2006) (as *Ehtharta*), D.Sharp, D. & B.K.Simon, *AusGrass* (2002).

TYPE from Australia. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: Tasmania: *Brown 6167* (K iso).

Recent Synonyms: *Ehrharta acuminata* (R. Br.) Spreng., *Syst. Veg.* 2: 114 (825).

Illustrations (Books): J.P.Jessop, G.R.M. Dashorst & F.M.James, *Grasses of South Australia* (2006) (60, Fig 24), N.Walsh & T.Entwistle, *Flora of Victoria* Vol 2 (1994) (370, Fig 73).

Images: D.Sharp & B.K.Simon, *AusGrass*. Grasses of Australia. CD-Rom Version 1.0. (2002);

Classification. Subfamily Ehrhartoideae. Tribe: Ehrharteae.

Habit, Vegetative Morphology. Perennial. Stolons present. Culms erect or geniculately ascending, slender, 6–60 cm long. Ligule an eciliate membrane, 0.5 mm long, erose. Leaf-blades 1–12 cm long, 1–4 mm wide.

Inflorescence. Inflorescence composed of racemes or comprising only a few spikelets. Racemes 1, single, unilateral, 2–5 cm long, bearing few fertile spikelets, bearing 2–10 fertile spikelets on each. Rhachis angular. Spikelet packing contiguous or lax. Spikelets solitary. Fertile spikelets sessile.

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, 6–10 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, similar, shorter than spikelet, thinner than fertile lemma. Lower glume oblate, 0.6 mm long, 0.33 length of upper glume, hyaline, without keels. Lower glume apex obtuse. Upper glume ovate, 1.7 mm long, 0.15–0.25 length of spikelet, hyaline, without keels. Upper glume apex obtuse.

Florets. Basal sterile florets 2 or more, dissimilar, barren, without significant palea, attached to and deciduous with the fertile. Lemma of lower sterile floret elliptic, 5–8 mm long, 0.75 length of spikelet, coriaceous, 1-keeled, 5 -veined, ribbed, scabrous, rough on veins, acute, mucronate. Lemma of upper sterile floret oblong, 6–10 mm long, 1.3 length of lower sterile floret, coriaceous, scabrous or ribbed, obtuse. Fertile

lemma elliptic, 5–7 mm long, coriaceous, keeled, 5 -veined, more than 3-veined. Lemma lateral veins obscure. Lemma apex obtuse.

Flower and Fruit. Lodicules 2, membranous. Anthers 4, 2.5 mm long.

Distribution (TDWG). Continent. Australasia.

Country /Province /State. Australia. South Australia, Victoria, Tasmania.

TDWG4. Southern.

Tetrarrhena distichophylla (Labill.) R. Br. *Prod.* 210 (1810).

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

TYPE from Australia. **Basionym or Replaced Name:** *Ehtharta distichophylla* Labill., *Nov. Holl. Pl.* 40: 217, pl. 8 (1779). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Tasmania: *Webb* (K iso).

Illustrations (Books): J.P.Jessop, G.R.M. Dashorst & F.M.James, *Grasses of South Australia* (2006) (62, Fig 25), N.Walsh & T.Entwistle, *Flora of Victoria* Vol 2 (1994) (370, Fig 73).

Images: D.Sharp & B.K.Simon, *AusGrass*. Grasses of Australia. CD-Rom Version 1.0. (2002);.

Derivation (Clifford & Bostock 2007): Gk. distichos, in two rows; phyllon, leaf. Leaves arranged conspicuously in two rows.

Classification. Subfamily Ehrhartoideae. Tribe: Ehrharteae.

Habit, Vegetative Morphology. Perennial, caespitose. Culms decumbent, 10–40 cm long, wiry. Lateral branches ample. Leaves distichous. Ligule an eciliate membrane. Leaf-blades 1–3 cm long, 1–2 mm wide.

Inflorescence. Inflorescence composed of racemes. Racemes 1, single, unilateral, 2–7 cm long. Rhachis angular. Spikelet packing regular, 2 -rowed. Spikelets solitary. Fertile spikelets sessile.

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 elliptic, laterally compressed, 3.5–4 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, similar, shorter than spikelet, thinner than fertile lemma. Lower glume ovate, 0.8–1 mm long, 0.75 length of upper glume, membranous, without keels, 3 -veined. Lower glume apex obtuse. Upper glume ovate, 1–1.2 mm long, 0.25 length of spikelet, membranous, without keels, 3 -veined. Upper glume lateral veins ribbed. Upper glume apex obtuse.

Florets. Basal sterile florets 2 or more, dissimilar, barren, without significant palea, attached to and deciduous with the fertile. Lemma of lower sterile floret elliptic, 1.7–2 mm long, 0.5 length of spikelet, chartaceous, 1-keeled, 5 -veined, smooth, obtuse. Lemma of upper sterile floret elliptic, 3.5–4 mm long, 2 length of lower sterile floret, coriaceous, pubescent, obtuse. Fertile lemma elliptic, 3.5–4 mm long, coriaceous, keeled, 7 -veined, more than 3-veined. Lemma surface puberulous. Lemma apex obtuse.

Flower and Fruit. Lodicules 2, membranous. Anthers 4.

Distribution (TDWG). Continent. Australasia.

Country /Province /State. Australia. South Australia, Victoria, Tasmania.

TDWG4. Southern.

Tetrarrhena juncea R. Br. *Prod.* 210. (1810).

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

TYPE from Australia. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Australia, Lewin to Wilson promontories: *Brown 6168* (K iso).

Recent Synonyms: *Ehtharta juncea* (R. Br.) Spreng., *Syst. Veg.* 2: 114 (1825).

Illustrations (Books): J.P.Jessop, G.R.M. Dashorst & F.M.James, *Grasses of South Australia* (2006) (61, Fig 25), N.Walsh & T.Entwistle, *Flora of Victoria* Vol 2 (1994) (370, Fig 73), S.W.L.Jacobs, R.D.B.Whalley & D.J.B.Wheeler., *Grasses of New South Wales*, 4th edn (2008) (381), J.C.Tothill, & J.B.Hacker. *The grasses of southern Queensland* (1983) (396), 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) (378, Fig 51), D.Sharp & B.K.Simon, *AusGrass*. Grasses of Australia. CD-Rom Version 1.0. (2002).

Derivation (Clifford & Bostock 2007): L. juncea, rush-like. Leaf-blades convolute resembling those of certain *Juncus* species.

Classification. Subfamily Ehrhartoideae. Tribe: Ehrharteae.

Habit, Vegetative Morphology. Perennial, mat forming. Stolons absent or present. Culms rambling, 50–100 cm long, wiry. Ligule an eciliate membrane, 0.5 mm long. Leaf-blades flat or involute, 3–7 cm long, 1–3 mm wide.

Inflorescence. Inflorescence composed of racemes. Racemes 1, single, 2–5 cm long. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, oblong.

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

Glumes. Glumes persistent, dissimilar, shorter than spikelet, thinner than fertile lemma. Lower glume ovate, 1.5 mm long, 0.75 length of upper glume, membranous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume margins ciliolate. Lower glume apex truncate. Upper glume ovate, 2 mm long, 0.5 length of adjacent fertile lemma, membranous, without keels, 5 -veined. Upper glume apex emarginate.

Florets. Basal sterile florets 2 or more, similar, barren, without significant palea, attached to and deciduous with the fertile. Lemma of lower sterile floret oblong, 5 mm long, 1 length of fertile lemma, coriaceous, 1-keeled, 7 -veined, emarginate. Lemma of upper sterile floret oblong, 5 mm long, 1.1 length of lower sterile floret, coriaceous, emarginate. Fertile lemma ovate, 5 mm long, cartilaginous, keeled, 7 -veined, more than 3-veined. Lemma apex acute. Palea 0.75 length of lemma, 1 -veined, 1-keeled.

Flower and Fruit. Lodicules 2, membranous. Anthers 4, 2 mm long.

Distribution (TDWG). Continent. Australasia.

Country /Province /State. Australia. South Australia, Queensland, New South Wales, Victoria, Tasmania.

TDWG4. Southern. South East. Coast, Tablelands.

Tetrarrhena laevis R. Br. *Prod.* 210 (1810).

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

TYPE from Australia. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Australia, Lewin & Wilson promontories: *Brown 6169* (K iso).

Recent Synonyms: *Ehrharta laevis* (R. Br.) Spreng., *Syst. Veg.* 2: 115 (1825).

Illustrations (Books): C.A.Gardner, *Flora of Western Australia*, Vol 1, Part 1, *Gramineae* (1952) (20, Pl 2), N.Walsh & T.Entwistle, *Flora of Victoria* Vol 2 (1994), A.Wilson (ed.), *Flora of Australia*, Vol 44A. *Poaceae* (2009) (372, Fig 50).

Images: D.Sharp & B.K.Simon, *AusGrass*. Grasses of Australia. CD-Rom Version 1.0. (2002);

Derivation (Clifford & Bostock 2007): L. smooth. Lacking hairs or roughness, usually of leaf-blades or lemmas.

Classification. Subfamily Ehrhartoideae. Tribe: Ehrharteae.

Habit, Vegetative Morphology. Perennial. Rhizomes short. Culms 30–60 cm long, wiry. Ligule an eciliate membrane. Leaf-blades 6–16 cm long, 3–6 mm wide.

Inflorescence. Inflorescence a panicle. Panicle open, linear, 3–8 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 oblong or ovate, laterally compressed, 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 oblong, 3 mm long, 0.75 length of upper glume, chartaceous, without keels, 5 -veined. Lower glume apex acute. Upper glume oblong, 4 mm long, 0.66 length of spikelet, chartaceous, 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 oblong or ovate, 6 mm long, 1 length of spikelet, cartilaginous, 1-keeled, 5 -veined, smooth, obtuse. Lemma of upper sterile floret oblong or ovate, 6 mm long, 1 length of lower sterile floret, cartilaginous, obtuse. Fertile lemma oblong, 5 mm long, coriaceous, keeled, 5 -veined, more than 3-veined. Lemma apex obtuse. Palea 3.5 mm long, 1 -veined, 1-keeled.

Flower and Fruit. Lodicules 2, membranous. Anthers 4.

Distribution (TDWG). Continent. Australasia.

Country /Province /State. Australia. Western Australia.

TDWG4. South-West.

Tetrarrhena oreophila D.I.Morris. *Rec. Queen Victoria Mus.* (Tasmania), 55: 4 (1977).

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

TYPE from Australia. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: Tasmania: Morris (K iso).

Recent Synonyms: *Ehrharta oreophila* (D.I. Morris) L.P.M. Willemse, *Blumea* 28(1): 193 (1982).

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

Images: D.Sharp & B.K.Simon, *AusGrass*. Grasses of Australia. CD-Rom Version 1.0. (2002);.

Derivation (Clifford & Bostock 2007): Gk. oros, mountain; phileo, love. Mountain species.

Classification. Subfamily Ehrhartoideae. Tribe: Ehrharteae.

Habit, Vegetative Morphology. Perennial. Stolons present. Culms decumbent, slender, 15–17 cm long. Leaf-sheath oral hairs ciliate. Ligule an eciliate membrane, 1 mm long, lacerate. Leaf-blades filiform, involute, 5–7 cm long, 0.5 mm wide.

Inflorescence. Inflorescence composed of racemes. Racemes 1, single, unilateral, 1.5–3 cm long, bearing few fertile spikelets, bearing 6–10 fertile spikelets on each. Rhachis angular. Spikelets solitary. Fertile spikelets sessile.

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, 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 elliptic, 1.5 mm long, 0.66 length of upper glume, hyaline, without keels. Lower glume apex acute. Upper glume oblong, 2 mm long, 0.4 length of spikelet, hyaline, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume apex obtuse.

Florets. Basal sterile florets 2 or more, dissimilar, barren, without significant palea, attached to and deciduous with the fertile. Lemma of lower sterile floret oblong, 3 mm long, 0.66 length of spikelet, coriaceous, 1-keeled, 5 -veined, acute, mucronate. Lemma of upper sterile floret elliptic, 5 mm long, 1.5 length of lower sterile floret, coriaceous, acuminate, mucronate. Fertile lemma elliptic, 4 mm long, coriaceous, keeled, more than 3-veined. Lemma apex acute.

Flower and Fruit. Lodicules 2, membranous. Anthers 2, 1.5 mm long.

Distribution (TDWG). Continent. Australasia.

Country /Province /State. Australia. Tasmania.

TDWG4.

Tetrarrhena turfosa N.G. Walsh. *Muelleria*, 7(1): 95 (1989).

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

TYPE from Australia. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: Australia, Victoria, Hall's Gap: Beaglehole 30309 (MEL holo, AD. BRI, CANB, HO, NSW).

Illustrations (Books): J.P.Jessop, G.R.M. Dashorst & F.M.James, *Grasses of South Australia* (2006) (63, Fig 27), N.Walsh & T.Entwistle, *Flora of Victoria* Vol 2 (1994) (370, Fig 73), S.W.L.Jacobs, R.D.B.Whalley & D.J.B.Wheeler., *Grasses of New South Wales*, 4th edn (2008) (381).

Derivation (Clifford & Bostock 2007): L. from a peat bog. Growing in swamps and grasslands.

Classification. Subfamily Ehrhartoideae. Tribe: Ehrharteae.

Distribution (TDWG). Continent. Australasia.

Country /Province /State. Australia. South Australia, New South Wales, Victoria.

TDWG4. Southern. Coast, Tablelands.

Thamnocalamus aristatus (Gamble) E.G.Camus. *Les Bambusees*, 54 (1913).

Regarded by K as a synonym (*T. spathiflorus*).

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 India. **Basionym or Replaced Name:** *Arundinaria aristata* Gamble, *Ann. Bot. Gard. Calc.* 7: 18 (1896). T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: India, Sikkim, Phalut: Gammie (K lecto).

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

Derivation (Clifford & Bostock 2007): L. arista, bristle; -ata, possessing. The apices of lemmas, paleas or glumes drawn out into a distinct awn.

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.
Distribution (TDWG). Continent. Temperate Asia, Tropical Asia, North America (+).
Country /Province /State. China. Xinjiang. **Indian Subcontinent.** Eastern Himalaya.
TDWG4. Arunachal Pradesh, Sikkim.

Thamnocalamus chigar (Stapleton) Stapleton. *J. Bot. Res. Inst. Texas* 1(1): 140, f. 2 (2007).

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

Basionym or Replaced Name: *Borinda chigar* Stapleton, *Edinburgh J. Bot.* 51(2): 286, f. 2 (1994). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Nepal: Kaski Distr.: Karuwa to Pipar, 28.24N 83.58E, 3000 m, 16 Nov 1983, *Stapleton 315* (HT: E).

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

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Thamnocalamus ibityensis (A. Camus) Ohrnberger. *Bamboos World* 10 (1996).

TYPE from Madagascar. **Basionym or Replaced Name:** *Arundinaria ibityensis* A. Camus *Bull. Soc. Bot. France* 107: 211 (1960). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Madagascar; Centre; Province de Vakinankaratra, distr. d'Antsirabe crete rocheuse du Mt. Ibity, alt. 2000–2250m. Viguier & Humbert 1471, Perrier 10761, 13576.

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

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Distribution (TDWG). Continent. Africa.

Country /Province /State. Western Indian ocean. Madagascar.

Thamnocalamus spathiflorus (Trin.) Munro. *Trans. Linn. Soc.* xxvi. 34 (1868).

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

TYPE from Nepal. **Basionym or Replaced Name:** *Arundinaria spathiflora* Trin., *Mem. Acad. Imp. Sci. Saint-Petersbourg, Ser. 6, Sci. Math., Seconde Pt. Sci. Nat.* 1(6): 617 (1835). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: ST: *N. Wallich & E. Rudge s.n.*, no date, Nepal (US-2809002). LT: *Wallich 5041*, Nepal: central Nepal, near Kathmandu (K). LT designated by Chao & Renvoize, *Kew Bull.* 44: 363 (1989).

Illustrations (Books): H.J.Noltie, *The Grasses of Bhutan* (2000) (498, Fig. 4 & 508, Fig. 6), S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 99 as *Thamnocalamus spathiflorus* var. *spathiflorus* ; Fig. 102 as *Thamnocalamus spathiflorus* var. *crassinodus*).

Derivation (Clifford & Bostock 2007): L. spatha, spatula; flos, flower. The racemes enclosed in leafy bracts.

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms erect, 400–700 cm long, 20–25 mm diam., woody. Culm-internodes terete, thin-walled, glaucous, distally pruinose. Lateral branches dendroid. Branch complement several, in a horizontal line, with subequal branches, thinner than stem. Culm-sheaths present, deciduous, coriaceous, glabrous, without auricles, ciliate on shoulders. Culm-sheath ligule 1 mm high, ciliate. Leaf-sheath oral hairs setose, dark. Ligule a ciliolate membrane, scarious. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades lanceolate, 9–13 cm long, 10–13 mm wide. Leaf-blade venation with distinct cross veins.

Inflorescence. Synflorescence bractiferous, fasciculate, 10–15 cm long, with spathaceous subtending bracts, bracts 50–70 mm long, without axillary buds at base of spikelet, with ultimate bract subtending a compact bracteolate fascicle of spikelets.

Fertile spikelets sessile.

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, 30–40 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes eventually visible between lemmas.

Glumes. Glumes persistent, similar, shorter than spikelet. Lower glume lanceolate, 15–25 mm long, 1 length of upper glume, chartaceous, without keels, 9 -veined. Lower glume apex acuminate. Upper glume lanceolate, 15–25 mm long, 1.2–1.6 length of adjacent fertile lemma, chartaceous, without keels, 9 -veined. Upper glume apex acuminate.

Florets. Fertile lemma lanceolate, 12–15 mm long, chartaceous, without keel, 13–15 -veined, more than 3-veined. Lemma surface asperulous. Lemma apex attenuate, awned, 1 -awned. Principal lemma awn 3–4 mm long overall. Palea 4 -veined. Palea keels scabrous, adorned above. Apical sterile florets resembling fertile though underdeveloped.

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

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

Country /Province /State. China. Tibet. **Indian Subcontinent.** Eastern Himalaya, India, Nepal.

TDWG4. Bhutan, Sikkim. Uttah Pradesh.

"Thamnocalamus" tessellatus Genus (Nees) T.R. Soderstrom & R.P. Ellis. *Bothalia*, 14(1): 54: (1982).

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:** *Nastus tessellatus* Nees, *Fl. Afr. Austral. Ill.* 463 (1841). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: LT: *Drége s.n.*, South Africa (K(fragm., PRE)). LT designated by Soderstrom & Ellis, *Bothalia* 14: 54 (1982). ST: *J.F. Drége s.n.*, South Africa (L).

Recent Synonyms: *Arundinaria tessellata* (Nees) Munro, *Trans. Linn. Soc.* 36: 31. (1868).

Illustrations (Books): L.K.A. Chippindall, *Grasses and Pastures of South Africa* (1955) (31, Fig. 1 as *Arundinaria*), G.E.Gibbs Russell et al, *Grasses of Southern Africa* (1990) (333, Fig 216).

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo, caespitose, clumped loosely. Rhizomes elongated (internodes 25–30cm), pachymorph. Butt sheaths absent. Culms erect, 100–500 cm long, 20 mm diam., woody. Culm-internodes terete, thin-walled. Lateral branches dendroid. Bud complement 1. Branch complement many, in a horizontal line, with subequal branches, thinner than stem. Culm-sheaths present, persistent, glabrous, without auricles, ciliate on shoulders. Culm-sheath blade lanceolate, erect. Leaves 3–5 per branch. Ligule a ciliolate membrane, 1–1.5 mm long, scarious, truncate. Leaf-blade base with a brief petiole-like connection to sheath, petiole 0.1–0.2 cm long. Leaf-blades lanceolate, 5–15 cm long, 8–15 mm wide. Leaf-blade midrib prominent beneath. Leaf-blade venation with distinct cross veins. Leaf-blade margins cartilaginous, scabrous. Leaf-blade apex acuminate, hardened.

Inflorescence. Synflorescence bractiferous, fasciculate, 40 cm long, with spathaceous subtending bracts, bracts 40 mm long, without axillary buds at base of spikelet, with ultimate bract subtending a compact bracteolate fascicle of spikelets.

Fertile spikelets sessile.

Fertile Spikelets. Spikelets comprising 1 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets ovate, laterally compressed, 15.4–17.4 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, similar, shorter than spikelet. Lower glume lanceolate, 9.9–11.5 mm long, 0.75 length of upper glume, chartaceous, without keels, 9 -veined. Lower glume lateral veins with cross-veins. Lower glume apex acute. Upper glume lanceolate, 14–15 mm long, 1–1.3 length of adjacent fertile lemma, chartaceous, without keels, 9–13 -veined. Upper glume lateral veins with cross-veins. Upper glume apex acute.

Florets. Fertile lemma oblong, 11–15 mm long, chartaceous, without keel, 10–11 -veined, more than 3-veined. Lemma lateral veins with cross-veins. Lemma margins ciliolate, hairy above. Lemma apex acute. Palea oblong, 10–12.5 mm long, 11 -veined. Palea keels ciliolate. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 3, oblong, 1.8–2.4 mm long, scarious, ciliate, hairy across the apex. Anthers 3, 7.2–8.5 mm long, orange. Stigmas 3. Caryopsis with adherent pericarp.

Distribution (TDWG). Continent. Africa.

Country /Province /State. **Southern Africa, Western Indian ocean.** Free State, Kwazulu-Natal, Lesotho, Eastern Cape. Madagascar.

Thaumastochloa brassii C.E.Hubb. *Hook. Ic. Pl.* iv. sub tt. 3313, 3314, p. 3. (1936).

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

TYPE from Australia. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *Brass* 370, Jun 1923, Australia: Queensland: Burke Distr.: Settlement Cr., 18.00S 138.07E (K; IT: BRI).

Illustrations (Books): D.Sharp & B.K.Simon, *AusGrass*. Grasses of Australia. CD-Rom Version 1.0. (2002).

Illustrations (Journals): *Hooker's Icones Plantarum* (t.3314 (1936)).

Derivation (Clifford & Bostock 2007): in honor of Leonard John Brass (1900–1971) Australian explorer and plant collector.

Classification. Subfamily Panicoideae. Tribe: Andropogoneae. Subtribe *OPHIURUS* + *OXYRACHIS* + *THAUMASTOCHLOA* GROUP.

Habit, Vegetative Morphology. Annual. Culms 7–35 cm long, 10–15 -noded. Leaf-sheaths glabrous on surface or pilose. Ligule a ciliate membrane. Leaf-blades flat or involute, 1–3 cm long, 3 mm wide. Leaf-blade surface glabrous or pilose, sparsely hairy.

Inflorescence. Inflorescence composed of racemes, terminal and axillary, not deciduous as a whole or deciduous as a whole, subtended by a spatheole, embraced at base by subtending leaf. Spatheole linear. Peduncle nodding, 0.8–6 cm long, retrorsely scabrous above, glabrous, widened at apex, disarticulating, disarticulating above uppermost sheath, base pungent. Racemes 1, single, unilateral, 0.3–0.8 cm long, bearing few fertile spikelets, bearing 1(–3) fertile spikelets on each. Rhachis tough or fragile but the lowest internode fused to peduncle, subcylindrical and excavated, 0.8–1 mm wide, glabrous on surface, terminating in a sterile spikelet. Spikelet packing abaxial, regular, 1 -rowed. Rhachis internodes oblong, 3–4 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, fused to internode, united wholly.

Sterile Spikelets. Companion sterile spikelets represented by barren pedicels.

Apical sterile spikelets rudimentary.

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, 2–2.7 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, indurate, 2-keeled, keeled laterally, 7 -veined. Lower glume surface flat, rugose. Lower glume apex obtuse. Upper glume elliptic, coriaceous, with hyaline margins, without keels.

Florets. Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret hyaline. Fertile lemma hyaline, without keel, 2 -veined, 0–3 -veined. Palea hyaline.

Flower and Fruit. Anthers 3, 0.6–0.7 mm long.

Distribution (TDWG). Continent. Australasia.

Country /Province /State. Australia. Northern Territory, Queensland.

TDWG4. Darwin & Gulf, Victoria R & Barkly Tableland. North.

Thaumastochloa heteromorpha B.K.Simon. *Austrobaileya*, 3(1): 90 (1989).

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

TYPE from Australia. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Australia: Queensland: Cabbage Tree Creek on road from Laura to Cooktown, Lakefield National Park, Cape York Peninsula, 5 May 1987, *Clarkson & B.K. Simon 6940* (HT: BRI; IT: K, L, MBA, NSW, PERTH, QRS).

Illustrations (Books): D.Sharp & B.K.Simon, *AusGrass*. Grasses of Australia. CD-Rom Version 1.0. (2002).

Derivation (Clifford & Bostock 2007): Gk. heteros, different; morphe, shape. Spikelets dimorphic.

Classification. Subfamily Panicoideae. Tribe: Andropogoneae. Subtribe *OPHIURUS* + *OXYRACHIS* + *THAUMASTOCHLOA* GROUP.

Habit, Vegetative Morphology. Annual. Culms 20–35 cm long, 6–9 -noded. Lateral branches ample. Leaf-sheaths 0.8–1.5 cm long, pilose. Ligule a ciliate membrane. Leaf-blades straight or curved, flat or involute, 1.5–8 cm long, 1–2 mm wide. Leaf-blade surface pilose.

Inflorescence. Inflorescence composed of racemes, terminal and axillary, subtended by a spatheole, embraced at base by subtending leaf. Spatheole linear. Peduncle straight, widened at apex, disarticulating, disarticulating above uppermost sheath, base pungent. Racemes 1, single, smoothly terete, unilateral, 1–2 cm long, bearing 2–8 fertile spikelets on each or 5–6 fertile spikelets on each (heteromorphic). Rhachis fragile but the lowest internode fused to peduncle, subcylindrical and excavated, 0.5 mm wide or 1–1.5 mm wide, terminating in a sterile spikelet. Spikelet packing abaxial, regular, 1 -rowed or 2 -rowed. Rhachis internodes oblong, 3–4 mm long. Rhachis internode tip transverse or oblique, 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.

Sterile Spikelets. Companion sterile spikelets represented by barren pedicels.

Apical sterile spikelets rudimentary.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets ovate, dorsally compressed, 2.5–3 mm long, falling entire, deciduous with accessory branch structures. Spikelet callus glabrous, base truncate, with central peg, attached transversely or attached obliquely.

Glumes. Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma. Lower glume ovate, 1 length of spikelet, indurate, 2-keeled, keeled laterally, 5–7 -veined. Lower glume surface convex or flat, smooth or areolate. Lower glume apex acute. Upper glume elliptic, coriaceous, with hyaline margins, without keels.

Florets. Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret hyaline. Fertile lemma hyaline, without keel, 2 -veined, 0–3 -veined. Palea hyaline.

Flower and Fruit. Anthers 3.

Distribution (TDWG). Continent. Australasia.

Country /Province /State. Australia. Queensland.

TDWG4. North.

Thaumastochloa major S. T. Blake. *Univ. Queensl. Papers, Dept. Biol.*, i. No. 18, 20 (1941).

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

TYPE from Australia. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *S.T. Blake 13360*, 24 Mar 1938, Australia: Queensland: Cook Distr.: Cairns, 16:55'S 145:46'E, 1.5 m (BRI; IT: L, US-1819361).

Illustrations (Books): J.R.Wheeler et al, *Flora of the Kimberley Region* (1992) (1226, Fig. 347), D.Sharp & B.K.Simon, *AusGrass*. Grasses of Australia. CD-Rom Version 1.0. (2002).

Derivation (Clifford & Bostock 2007): L. larger. Larger in some respect than related species.

Classification. Subfamily Panicoideae. Tribe: Andropogoneae. Subtribe *OPHIURUS + OXYRACHIS + THAUMASTOCHLOA* GROUP.

Habit, Vegetative Morphology. Annual. Culms geniculately ascending or decumbent, 15–35 cm long, 6–9 -noded, rooting from lower nodes. Culm-nodes bearded. Ligule a ciliolate membrane, 0.3 mm long. Leaf-blades 4–12 cm long, 3–5.5 mm wide. Leaf-blade margins cartilaginous. Leaf-blade apex acute.

Inflorescence. Inflorescence composed of racemes, terminal and axillary, subtended by a spatheole, embraced at base by subtending leaf. Spatheole linear, 2.5–4 cm long, herbaceous. Peduncle nodding, retrorsely scabrous above, widened at apex, disarticulating, disarticulating above uppermost sheath, base pungent. Racemes 1, single, unilateral, 2.5–4 cm long, bearing 3–10 fertile spikelets on each. Rhachis fragile but the lowest internode fused to peduncle, subcylindrical and excavated, 2.7–3.1 mm wide, terminating in a sterile spikelet. Spikelet packing abaxial, regular, 2 -rowed. Rhachis internodes oblong, 4.2–6.5 mm long. Rhachis internode tip oblique, 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.

Sterile Spikelets. Companion sterile spikelets represented by barren pedicels.

Apical sterile spikelets rudimentary, 2–3 in number.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets ovate, dorsally compressed, 2.6–3.5 mm long, falling entire, deciduous with accessory branch structures. Spikelet callus base truncate, with central boss, attached obliquely.

Glumes. Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma. Lower glume ovate, 2.6–3.5 mm long, 1 length of spikelet, indurate, 2-keeled, keeled laterally, 9–10 -veined. Lower glume apex obtuse. Upper glume elliptic, coriaceous, with hyaline margins, without keels, 5 -veined. Upper glume margins ciliolate.

Florets. Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret ovate, 2.5–2.75 mm long, hyaline, 2 -veined, ciliolate on margins, obtuse. Fertile lemma ovate, 2.2–2.7 mm long, hyaline, without keel, 0–2 -veined, 0–3 -veined. Lemma margins ciliolate, hairy above. Lemma apex obtuse. Palea oblong, 0.9 length of lemma, 0–2 -veined, without keels.

Flower and Fruit. Anthers 3, 0.9–1 mm long. Caryopsis with adherent pericarp, ovoid, 2.3 mm long.

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

Country /Province /State. Papuaia. New Guinea. **Australia.** Western Australia, Northern Territory, Queensland.

TDWG4. Kimberley. Darwin & Gulf. North, Central.

Thaumastochloa monilifera M.S.M. Sosef & R. de Koning. *Gard. Bull. Singapore*, 36(1): 153 (1983).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, D.Sharp, D. & B.K.Simon, *AusGrass* (2002).

TYPE from Australia. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *L.J. Brass* 19712, 27 Jul 1948, Australia: Queensland, Wenlock, Batavia river, 150 m (L).

Illustrations (Books): 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);.

Classification. Subfamily Panicoideae. Tribe: Andropogoneae. Subtribe *OPHIURUS* + *OXYRACHIS* + *THAUMASTOCHLOA* GROUP.

Habit, Vegetative Morphology. Annual. Culms 35–70 cm long, 5–9 -noded. Leaf-sheaths pilose. Ligule a ciliolate membrane. Leaf-blades 4–11 cm long, 2–5 mm wide. Leaf-blade surface pilose.

Inflorescence. Inflorescence composed of racemes, terminal and axillary, subtended by a spatheole, embraced at base by subtending leaf. Spatheole linear. Peduncle straight, 1–8 cm long, retrorsely scabrous above, glabrous, widened at apex, disarticulating, disarticulating above uppermost sheath, base pungent. Racemes 1, single, moniliform, unilateral, 1–1.5 cm long, bearing 4–8 fertile spikelets on each. Rhachis fragile but the lowest internode fused to peduncle, subcylindrical and excavated, 2–3.5 mm wide, glabrous on surface, terminating in a sterile spikelet. Spikelet packing abaxial, regular, 2 -rowed. Rhachis internodes inflated, 1.7–5 mm long. Rhachis internode tip oblique, 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.

Sterile Spikelets. Companion sterile spikelets represented by barren pedicels.

Apical sterile spikelets rudimentary.

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, 1.6–3.5 mm long, falling entire, deciduous with accessory branch structures. Spikelet callus glabrous, base truncate, with central peg, attached obliquely.

Glumes. Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma. Lower glume ovate, 1 length of spikelet, indurate, 2-keeled, keeled laterally, 7 -veined. Lower glume surface convex, rugose. Lower glume apex obtuse. Upper glume elliptic, coriaceous, with hyaline margins, without keels.

Florets. Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret hyaline. Fertile lemma hyaline, without keel, 0 -veined, 0–3 -veined, without veins. Palea hyaline.

Flower and Fruit. Anthers 3, 0.5–1 mm long.

Distribution (TDWG). Continent. Australasia.

Country /Province /State. Australia. Northern Territory, Queensland.

TDWG4. Darwin & Gulf. North.

Thaumastochloa pubescens (Benth.) C.E.Hubb. *Hook. Ic. Pl.* iv. sub tt. 3313, 3314, p. 2 (1936).

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

TYPE from Australia. **Basionym or Replaced Name:** *Ophiuros corymbosus* var. *pubescens* Benth., *Fl. Austral.* 7: 512 (1878). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *F. von Mueller s.n.*, Australia: Hooker's Creek.

Illustrations (Books): C.A.Gardner, *Flora of Western Australia*, Vol 1, Part 1, *Gramineae* (1952) (311, Pl 91), J.C.Tothill, & J.B.Hacker. *The grasses of southern Queensland* (1983) (398), 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. pubesco*, become hairy. Plant whole or in part hairy.

Classification. Subfamily Panicoideae. Tribe: Andropogoneae. Subtribe *OPHIURUS* + *OXYRACHIS* + *THAUMASTOCHLOA* GROUP.

Habit, Vegetative Morphology. Annual. Culms 12–30 cm long, 5–9 -noded. Leaf-sheaths pilose. Ligule a ciliolate membrane. Leaf-blades 2–9 cm long, 1.5–4 mm wide. Leaf-blade surface pilose.

Inflorescence. Inflorescence composed of racemes, terminal and axillary, subtended by a spatheole, embraced at base by subtending leaf. Spatheole linear. Peduncle straight, 5–10 cm long, retrorsely scabrous above, widened at apex, disarticulating, disarticulating above uppermost sheath, base pungent. Racemes 1, single, smoothly terete, unilateral, 1.5–3.5 cm long, bearing 4–9 fertile spikelets on each. Rhachis fragile but the lowest internode fused to peduncle, subcylindrical and excavated, 1–1.8 mm wide, glabrous on surface or

puberulous on surface, terminating in a sterile spikelet. Spikelet packing abaxial, regular, 2 -rowed. Rhachis internodes oblong, 3–4 mm long. Rhachis internode tip transverse or oblique, 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.

Sterile Spikelets. Companion sterile spikelets represented by barren pedicels.

Apical sterile spikelets rudimentary.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets ovate, dorsally compressed, 2–3 mm long, falling entire, deciduous with accessory branch structures. Spikelet callus glabrous, base truncate, with central peg, attached transversely or attached obliquely.

Glumes. Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma. Lower glume ovate, 1 length of spikelet, indurate, 2-keeled, keeled laterally, 7–9 -veined. Lower glume surface convex or flat, smooth or cancellate. Lower glume apex acute. Upper glume elliptic, coriaceous, with hyaline margins, without keels.

Florets. Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret hyaline. Fertile lemma hyaline, without keel, 2 -veined, 0–3 -veined. Palea hyaline.

Flower and Fruit. Anthers 3, 0.75–1 mm long.

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

Country /Province /State. Papuaia. New Guinea. **Australia.** Western Australia, Northern Territory, Queensland.

TDWG4. Kimberley. Darwin & Gulf, Victoria R & Barkly Tableland. North, Central.

Thaumastochloa rariflora (F. M. Bailey) C.E.Hubb. *Hook. Ic. Pl.* iv. sub tt. 3313, 3314, p. 4 (1936).

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

TYPE from Australia. **Basionym or Replaced Name:** *Rottboellia rariflora* F.M. Bailey, *Queensland Dep. Agric. Bot. Bull.* 8: 86 (1893.). T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: HT: *Bailey 15*, Jun 1897, Australia: Queensland: Cook Distr.: Somerset, 10.45S 142.35E (BRI; IT: K).

Illustrations (Books): C.A.Gardner, *Flora of Western Australia*, Vol 1, Part 1, *Gramineae* (1952) (311, Pl 91), D.Sharp & B.K.Simon, *AusGrass*. Grasses of Australia. CD-Rom Version 1.0. (2002).

Illustrations (Journals): *Hooker's Icones Plantarum* (3313 (1936)).

Images: D.Sharp & B.K.Simon, *AusGrass*. Grasses of Australia. CD-Rom Version 1.0. (2002);

Derivation (Clifford & Bostock 2007): *L. rarus*, far apart; flos, flower. With florets well separated on the rachilla.

Classification. Subfamily Panicoideae. Tribe: Andropogoneae. Subtribe *OPHIURUS* + *OXYRACHIS* + *THAUMASTOCHLOA* GROUP.

Habit, Vegetative Morphology. Annual. Culms 10–60 cm long, (4–)8–12 -noded. Leaf-sheaths pilose. Ligule a ciliolate membrane. Leaf-blades flat or involute, 2–10 cm long, 2–4 mm wide. Leaf-blade surface glabrous or pilose.

Inflorescence. Inflorescence composed of racemes, terminal and axillary, deciduous as a whole, subtended by a spatheole, embraced at base by subtending leaf. Spatheole linear. Peduncle straight or nodding, 0.5–3 cm long, retrorsely scabrous above, glabrous, widened at apex, disarticulating, disarticulating below uppermost sheaths. Racemes 1, single, unilateral, 0.35–0.9 cm long, bearing few fertile spikelets, bearing 1 fertile spikelets on each. Rhachis tough, subcylindrical and excavated, 0.7–1 mm wide, glabrous on surface, terminating in a sterile spikelet. Spikelet packing abaxial. Rhachis internodes oblong, 2.5–3 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, fused to internode, united wholly.

Sterile Spikelets. Companion sterile spikelets represented by barren pedicels.

Apical sterile spikelets rudimentary.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets ovate, dorsally compressed, 2–3 mm long, falling entire, deciduous with accessory branch structures. Spikelet callus glabrous, base truncate, 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, 9 -veined. Lower glume surface concave, smooth. Lower glume apex acute. Upper glume elliptic, coriaceous, with hyaline margins, without keels.

Florets. Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret hyaline. Fertile lemma hyaline, without keel, 0–3 -veined, 0–3 -veined. Palea hyaline.

Flower and Fruit. Anthers 3, 0.5–0.8 mm long.

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

Country /Province /State. Malesia, Papuasia. New Guinea. **Australia.** Queensland.

TDWG4. North.

Thaumastochloa rubra M.S.M. Sosef & R. de Koning. *Gard. Bull. Singapore*, 36(1): 157 (1983).

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

TYPE from Australia. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: IT: *S.T. Blake 17636*, 04 May 1947, Australia: Northern Territory, 198 m (L).

Illustrations (Books): D.Sharp & B.K.Simon, *AusGrass*. Grasses of Australia. CD-Rom Version 1.0. (2002).

Derivation (Clifford & Bostock 2007): L. red. Foliage red.

Classification. Subfamily Panicoideae. Tribe: Andropogoneae. Subtribe *OPHIURUS* + *OXYRACHIS* + *THAUMASTOCHLOA* GROUP.

Habit, Vegetative Morphology. Annual. Culms 20–45 cm long, 4–6 -noded. Leaf-sheaths pilose. Ligule a ciliolate membrane. Leaf-blades flat or involute, 1.5–5 cm long, 1–2 mm wide. Leaf-blade surface pilose.

Inflorescence. Inflorescence composed of racemes, terminal and axillary, subtended by a spatheole, embraced at base by subtending leaf. Spatheole linear. Peduncle straight, 0.5–2 cm long, retrorsely scabrous above, glabrous, widened at apex, disarticulating, disarticulating above uppermost sheath, base pungent. Racemes 1, single, unilateral, 0.9–2.7 cm long, bearing few fertile spikelets, bearing (1–)2 fertile spikelets on each. Rhachis fragile but the lowest internode fused to peduncle, subcylindrical and excavated, 0.7 mm wide, glabrous on surface, terminating in a sterile spikelet. Spikelet packing abaxial. Rhachis internodes oblong, 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, fused to internode, united wholly.

Sterile Spikelets. Companion sterile spikelets represented by barren pedicels.

Apical sterile spikelets rudimentary.

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 with accessory branch structures. Spikelet callus glabrous, base truncate, with central boss, 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, 7 -veined. Lower glume lateral veins ribbed. Lower glume surface convex or flat. Lower glume apex acute. Upper glume elliptic, coriaceous, with hyaline margins, without keels.

Florets. Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret hyaline. Fertile lemma hyaline, without keel, 2 -veined, 0–3 -veined. Palea hyaline.

Flower and Fruit. Anthers 3, 1.1 mm long.

Distribution (TDWG). Continent. Australasia.

Country /Province /State. **Australia.** Northern Territory.

TDWG4. Darwin & Gulf.

Thaumastochloa striata M.S.M. Sosef & R. de Koning. *Gard. Bull. Singapore*, 36(1): 156 (1983).

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

TYPE from Australia. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *M. Lazarides & L.G. Adams 10*, 03 Mar 1965, Australia: Northern Territory, Maranboy (L; IT: CANB, K, NT, US).

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

Images: D.Sharp & B.K.Simon, *AusGrass*. Grasses of Australia. CD-Rom Version 1.0. (2002);.

Classification. Subfamily Panicoideae. Tribe: Andropogoneae. Subtribe *OPHIURUS* + *OXYRACHIS* + *THAUMASTOCHLOA* GROUP.

Habit, Vegetative Morphology. Annual. Culms 15–25 cm long, 5–8 -noded. Leaf-sheaths glabrous on surface or pubescent, outer margin hairy. Ligule a ciliolate membrane. Leaf-blades involute, 2–6 cm long, 1.5–3.5 mm wide. Leaf-blade margins ciliate.

Inflorescence. Inflorescence composed of racemes, terminal and axillary, subtended by a spatheole, embraced at base by subtending leaf. Spatheole linear. Peduncle straight, 4–8 cm long, retrorsely scabrous

above, pubescent above, widened at apex, disarticulating, disarticulating above uppermost sheath, base pungent. Racemes 1, single, unilateral, (0.45–)1.1–2 cm long, bearing few fertile spikelets, bearing 2–3 fertile spikelets on each. Rhachis fragile but the lowest internode fused to peduncle, subcylindrical and excavated, 0.6–1.5 mm wide, glabrous on surface, terminating in a sterile spikelet. Spikelet packing abaxial, regular, 2-rowed. Rhachis internodes oblong. 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.

Sterile Spikelets. Companion sterile spikelets represented by barren pedicels.

Apical sterile spikelets rudimentary.

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 with accessory branch structures. Spikelet callus glabrous, base truncate, 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, 7-veined. Lower glume lateral veins without ribs or ribbed. Lower glume surface convex. Lower glume apex acute. Upper glume elliptic, coriaceous, with hyaline margins, without keels.

Florets. Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret hyaline. Fertile lemma hyaline, without keel, 2-veined, 0–3-veined. Palea hyaline.

Flower and Fruit. Anthers 3, 1.1–1.7 mm long.

Distribution (TDWG). Continent. Australasia.

Country /Province /State. Australia. Northern Territory.

TDWG4. Darwin & Gulf.

Thedachloa annua S.W.L.Jacobs. *Telopea*10(2): 637 (635–636; fig. 1) (2004).

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

TYPE from Australia. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Australia, W Australia, Kalumburu: Jacobs 8061 (NSW holo, B, PERTH, US).

Illustrations (Journals): *Telopea* (10: 636, Fig.1 (2004)).

Derivation (Clifford & Bostock 2007): *L. annuus*, lasting a year. Annuals.

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

Habit, Vegetative Morphology. Annual. Cataphylls inconspicuous. Stolons present. Culms decumbent, slender, 10–30 cm long, rooting from lower nodes. Culm-internodes 3 cm long, ridged, distally glabrous. Culm-nodes constricted. Lateral branches lacking or sparse. Leaf-sheaths ribbed, glabrous on surface, outer margin hairy. Ligule a fringe of hairs, 0.5 mm long. Leaf-blades 1–2 cm long. Leaf-blade venation prominent. Leaf-blade surface glabrous.

Inflorescence. Inflorescence a panicle. Panicle spiciform, ovate, 0.3–0.5 cm long, 0.4 cm wide. 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, laterally compressed, gibbous, 1.7–2.1 mm long, falling entire, readily shedding fertile florets.

Glumes. Glumes shorter than spikelet, thinner than fertile lemma. Lower glume ovate, clasping, 0.6–0.8 mm long, 0.35 length of spikelet, hyaline, without keels, 3-veined. Lower glume lateral veins obscure. Lower glume margins ciliate. Lower glume apex obtuse. Upper glume ovate, gibbous, 1.6–1.9 length of adjacent fertile lemma, 0.85 length of spikelet, membranous, without keels, 7-veined. Upper glume surface setose, hairy above, with tubercle-based hairs. Upper glume apex acute.

Florets. Basal sterile florets 1, male or barren, with palea. Lemma of lower sterile floret similar to upper glume, elliptic, gibbous, 1 length of spikelet, membranous, 7-veined, with unevenly spaced veins (the outer close), sulcate, acute. Palea of lower sterile floret 1.5 mm long, 0.75 length of lemma. Fertile lemma elliptic, 1 mm long, cartilaginous, light brown, shiny, without keel. Lemma surface with distinct germination flap. Lemma margins involute.

Flower and Fruit. Caryopsis with adherent pericarp, 0.8 mm long. Embryo 0.45 length of caryopsis.

Distribution (TDWG). Continent. Australasia.

Country /Province /State. Australia. Western Australia.

Thelepogon australiensis B.K.Simon. *Austrobaileya*, 4(1): 105 (1993).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, D.Sharp, D. & B.K.Simon, *AusGrass* (2002).

TYPE from Australia. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Australia: Queensland: Cook Distr.: 62 km N of Archer R. on Coen to Weipa road, 19 Apr 1991, *J.R. Clarkson & V.J. Nelder 8981* (HT: BRI(AQ570010, 2 sheets); IT: K, MBA, NSW).

Illustrations (Books): D.Sharp & B.K.Simon, *AusGrass*. Grasses of Australia. CD-Rom Version 1.0. (2002).

Illustrations (Journals): *Austrobaileya* (4:106, Fig.1 (1993)).

Derivation (Clifford & Bostock 2007): L. -ensis, denoting origin. From Australia.

Classification. Subfamily Panicoideae. Tribe: Andropogoneae.

Habit, Vegetative Morphology. Annual. Culms erect, 70–140 cm long. Culm-nodes glabrous. Lateral branches sparse. Leaf-sheaths pilose, with tubercle-based hairs. Ligule a ciliolate membrane, 1 mm long. Leaf-blade base broadly rounded. Leaf-blades lanceolate, 5–12 cm long, 6–10 mm wide. Leaf-blade surface pilose, with tubercle-based hairs. Leaf-blade margins tuberculate-ciliate.

Inflorescence. Inflorescence composed of racemes. Racemes 1–3, single or paired or digitate, 2.5–5.5 cm long, bearing 10–13 fertile spikelets on each. Rhachis fragile at the nodes, angular, pilose on surface. Rhachis internodes linear, 3.5 mm long. Rhachis internode tip transverse, cupuliform. Raceme-bases filiform, 8–13 mm long, pubescent. Spikelets in pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, linear, foliaceous, 3 mm long, ciliate.

Sterile Spikelets. Companion sterile spikelets represented by barren pedicels.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets lanceolate or elliptic, dorsally compressed, 6–7 mm long, 1.5 mm wide, falling entire, deciduous with accessory branch structures. Spikelet callus pubescent, base obtuse, inserted.

Glumes. Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma. Lower glume ovate, 1 length of spikelet, indurate, without keels, 7 -veined. Lower glume surface muricate, rough on flanks. Lower glume apex acute. Upper glume elliptic, chartaceous, 1-keeled, keeled above, 3 -veined. Upper glume primary vein scabrous. Upper glume apex acuminate.

Florets. Basal sterile florets 1, male, without significant palea. Lemma of lower sterile floret elliptic, 4 mm long, hyaline. Fertile lemma lanceolate, 4 mm long, hyaline, without keel. Lemma apex lobed, 2 -fid, awned. Principal lemma awn from a sinus, geniculate, 12–16 mm long overall, with twisted column. Column of lemma awn glabrous. Palea 2 mm long, hyaline, without keels.

Flower and Fruit. Anthers 1.2 mm long.

Distribution (TDWG). Continent. Australasia.

Country /Province /State. Australia. Queensland.

TDWG4. North.

Thelepogon elegans Roth ex Roem. & Schult. *Syst.* 2: 788 (1817).

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 India. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *Heyne s.n.*, India (B (destroyed)).

Illustrations (Books): H.Jacques-Felix, *Les Graminees d'Afrique tropicale* (1962) (274, Fig. 207), F.N.Hepper, *F.W.T.A.* 3(2) (1972) (475, Fig.452), R.M.Polhill, F.T.E.A., *Gramineae* (3(1982):745, Fig. 174), G.V.Pope et al., *Flora Zambesiaca* 10, G.E.Gibbs Russell et al, *Grasses of Southern Africa* (1990) (334, Fig. 217), S.Phillips, *Poaceae* (Gramineae) in I.Hedberg & S.Edwards, *Flora of Ethiopia and Eritrea* (1995) (313, Fig. 126), R.Pilger, *Die Natürlichen Pflanzenfamilien* 14e (1940) (129, Fig. 72).

Derivation (Clifford & Bostock 2007): L. elegant. Inflorescence attractive.

Classification. Subfamily Panicoideae. Tribe: Andropogoneae. Subtribe ISCHAEMINAE.

Habit, Vegetative Morphology. Annual. Culms erect, 10–150 cm long. Ligule a ciliolate membrane. Leaf-blade base cordate or amplexicaul. Leaf-blades lanceolate, 4–20 cm long, 5–30 mm wide. Leaf-blade surface glabrous or hispid. Leaf-blade margins ciliate.

Inflorescence. Inflorescence composed of racemes. Racemes 2–17, digitate, in several whorls, 4–15 cm long. Central inflorescence axis 1–5 cm long. Rhachis fragile at the nodes, angular. Rhachis internodes cuneate, 6–9 mm long. Rhachis internode tip transverse, cupuliform. Raceme-bases filiform. Spikelets in pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, linear, foliaceous, curved, 1.1 length of fertile spikelet, glabrous.

Sterile Spikelets. Companion sterile spikelets represented by barren pedicels.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets. 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, 5–13 mm long, falling entire, deciduous with accessory branch structures. Spikelet callus pilose, base obtuse, inserted.

Glumes. Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma. Lower glume ovate, 1 length of spikelet, indurate, without keels, 9 -veined. Lower glume surface rugose. Lower glume apex acute. Upper glume ovate, chartaceous, without keels, 3 -veined. Upper glume surface rugose. Upper glume apex acuminate.

Florets. Basal sterile florets 1, male, with palea. Lemma of lower sterile floret lanceolate, 0.8 length of spikelet, hyaline, 2 -veined. Fertile lemma ovate, 4–10 mm long, hyaline, without keel, 5 -veined, more than 3-veined. Lemma apex lobed, 2 -fid, incised 0.5 of lemma length, awned. Principal lemma awn from a sinus, geniculate, 15–25 mm long overall, with twisted column. Column of lemma awn glabrous. Palea hyaline, without keels.

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

Country /Province /State. West tropical Africa, West-central tropical Africa, Northeast tropical Africa, East tropical Africa, South tropical Africa, Southern Africa. Benin, Ghana, Guinea, Nigeria, Senegal, Niger. Congo. Chad, Eritrea, Ethiopia (inc. Eritrea), Sudan. Tanzania, Uganda. Angola, Malawi, Mozambique, Zambia, Zimbabwe. Namibia. **Indian Subcontinent, Indo-China, Malesia.** India, Pakistan. Myanmar, Thailand. Java, Lesser Sunda Is.

TDWG4. Karnataka. Madhya Pradesh, Maharashtra.

Thellungia advena Stapf. *Vierteljahrsschr. Nat. Ges, Zurich*, lxiv. 814 (1920).

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

TYPE from Australia. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *R. Probst s.n.*, 1918, Switzerland: Solothurn [introduced from Australia] (K; IT: US-2947408).

Recent Synonyms: *Eragrostis advena* (Stapf) S.M. Phillips, *Kew Bull.* 37(1): 159 (1982).

Illustrations (Books): S.W.L.Jacobs, R.D.B.Whalley & D.J.B.Wheeler., *Grasses of New South Wales*, 4th edn (2008) (382), J.C.Tothill, & J.B.Hacker. *The grasses of southern Queensland* (1983) (400), T.D.Stanley & E.Ross, *Flora of South East Queensland, Gramineae* (1989) (179, Fig. 27), K.O.Mallett (ed.), *Flora of Australia*, Vol 44B. *Poaceae* (2004) (374, Fig. 67 as *Eragrostis advena*), D.Sharp & B.K.Simon, *AusGrass*. Grasses of Australia. CD-Rom Version 1.0. (2002).

Illustrations (Journals): *Hooker's Icones Plantarum* (t.3184 (1933)), *Austr. Syst. Bot.* (10: 172, Fig.2 (1997) as *Eragrostis*).

Derivation (Clifford & Bostock 2007): *L. a stranger*. Adventive species described from individuals found growing in countries in which they are not native.

Classification. Subfamily Chloridoideae. Tribe: Zoysieae.

Habit, Vegetative Morphology. Perennial, caespitose. Culms erect or geniculately ascending, 100–150 cm long. Ligule a fringe of hairs. Leaf-blades 10–30 cm long, 2–5 mm wide. Leaf-blade surface scaberulous, rough adaxially.

Inflorescence. Inflorescence a panicle. Panicle contracted, linear, continuous or interrupted, 20–50 cm long. Primary panicle branches appressed, bearing spikelets almost to the base. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 3–4 fertile florets, with a barren rhachilla extension. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets oblong, laterally compressed, 4 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes eventually visible between lemmas.

Glumes. Glumes persistent, similar, shorter than spikelet. Lower glume lanceolate, 1–1.5 mm long, 0.5–0.66 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume lateral veins absent. Lower glume apex acute. Upper glume lanceolate, 2.5–3 mm long, 1 length of adjacent fertile lemma, membranous, 1-keeled, 1 -veined. Upper glume lateral veins absent. Upper glume apex acute.

Florets. Fertile florets divergent, free at tip. Fertile lemma lanceolate, 2.5–3 mm long, membranous, keeled, 3 -veined, 0–3 -veined. Lemma apex acute. Palea 2 -veined. Palea keels scabrous. Rhachilla extension 0.1 length of fertile floret.

Flower and Fruit. Lodicules 2, cuneate, fleshy. Anthers 3, 0.3 mm long. Stigmas 2. Caryopsis with tardily free pericarp.

Distribution (TDWG). Continent. Australasia.

Country /Province /State. Australia. Queensland, New South Wales.

TDWG4. North, Central, South East, Inland. Western Slopes, Western Plains.

Themeda anathera (Nees ex Steud.) Hack. *DC. Monog. Phan.* vi. 669 (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. **Basionym or Replaced Name:** *Anthistiria anathera* Nees ex Steud., *Syn. Pl. Glumac.* 1: 402 (1854). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: India:, *Wallich 8773* (HT: K).

Illustrations (Books): T.A.Cope, *Flora of Pakistan* 143: *Poaceae* (1982) (307, Fig. 34).

Derivation (Clifford & Bostock 2007): Gk. an-, without; ather, spike as of ear of wheat. Fertile spikelets subtended by sterile spikelets.

Classification. Subfamily Panicoideae. Tribe: Andropogoneae. Subtribe **ANDROPOGONINAE**.

Habit, Vegetative Morphology. Perennial, caespitose. Rhizomes elongated. Culms erect or geniculately ascending, 30–120 cm long. Ligule an eciliate membrane. Leaf-blades 15–30 cm long, 2–4 mm wide.

Inflorescence. Synflorescence compound, paniculate, 20–30 cm long.

Inflorescence composed of racemes, terminal and axillary, deciduous as a whole, subtended by a spatheole, enclosed. Spatheole lanceolate, 1.5–2 cm long, scarious, red or purple or grey, without tubercles, glabrous. Racemes 1, single, oblong, bearing few fertile spikelets, bearing 2–4 fertile spikelets on each. Rhachis tough. Spikelets in pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, oblong, 0.5 mm long.

Sterile Spikelets. Basal sterile spikelets well-developed, 4 in number, forming an involucre about the fertile, subsessile, deciduous with the fertile, lanceolate, 5–8 mm long, equalling fertile. Basal sterile spikelet glumes smooth on margins or tuberculate on margins or ciliate on margins, lower glume muticous.

Companion sterile spikelets well-developed, male, lanceolate, 6–8 mm long, longer than fertile, deciduous with the fertile. Companion sterile spikelet callus oblong. Companion sterile spikelet glumes smooth or tuberculate, puberulous or pilose. Companion sterile spikelet lemmas 2, enclosed by glumes.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets elliptic, dorsally compressed, compressed slightly, 5–7 mm long, falling entire, deciduous with accessory branch structures. Spikelet callus oblong, 1 mm long, bearded, base obtuse, attached obliquely.

Glumes. Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma. Lower glume oblong, 1 length of spikelet, coriaceous, without keels. Lower glume surface glabrous or puberulous or pilose, with tubercle-based hairs. Lower glume apex obtuse. Upper glume oblong.

Florets. Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret lanceolate, hyaline. Fertile lemma lanceolate, hyaline, without keel, 1 -veined, 0–3 -veined, one-veined. Lemma apex entire, acute, muticous. Palea absent or minute.

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

Country /Province /State. **Western Asia, China.** Afghanistan. Tibet. **Indian Subcontinent.** India, Nepal, Pakistan, West Himalaya.

TDWG4. Uttah Pradesh. Jammu Kashmir.

Themeda arguens (L.) Hack. *DC. Monog. Phan.* vi. 657 (1889).

Accepted by: R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), D.Sharp, D. & B.K.Simon, *AusGrass* (2002), 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 India. **Basionym or Replaced Name:** *Stipa arguens* L., *Sp. Pl. (ed. 2)* 117 (1762). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: India: Coll?.

Illustrations (Books): H.Duistermaat, *Field Guide to the Grasses of Singapore* (2005) (133, Fig.138), 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) (683), A.S.Hitchcock, *Manual of the Grasses of the West Indies* (1936) (422, Fig. 372), E.Hafliger & E.Schultz, *Grass Weeds*, CIBA-GEIGY (1:138(1980)).

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

Derivation (Clifford & Bostock 2007): L. *arguo*, sharp or penetrating but originally meaning the exposure of a flaw in an argument. Callus sharp-pointed.

Classification. Subfamily Panicoideae. Tribe: Andropogoneae. Subtribe **ANDROPOGONINAE**.

Habit, Vegetative Morphology. Annual, caespitose. Culms erect, 20–120 cm long. Leaves mostly basal. Ligule an eciliate membrane, 1 mm long. Leaf-blade base broadly rounded. Leaf-blades flat or conduplicate, 5–30 cm long, 4–7 mm wide. Leaf-blade apex acuminate.

Inflorescence. Synflorescence compound, fasciculate.

Inflorescence composed of racemes, terminal and axillary, subtended by a spatheole, enclosed. Spatheole lanceolate, 2.5–3.5 cm long, scarious, without tubercles, glabrous. Racemes 1, single, cuneate, bearing few fertile spikelets, bearing 1 fertile spikelets on each. Rhachis fragile at the nodes. Spikelets in threes (basal paired). Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 2 in the cluster. Pedicels present, oblong, 1 mm long, tip oblique.

Sterile Spikelets. Basal sterile spikelets represented by a single scale, 4 in number, forming an involucre about the fertile, with both pairs arising at about the same level, subsessile, 6–10 mm long, equalling fertile. Basal sterile spikelet glumes smooth, glabrous, lower glume muticous.

Companion sterile spikelets well-developed, comprising 2 subequal glumes without lemmas, lanceolate, 6 mm long, shorter than fertile, separately deciduous. Companion sterile spikelet callus linear, 2–3 mm long, truncate. Companion sterile spikelet glumes herbaceous, glabrous, acuminate.

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, subterete, 8–10 mm long, falling entire, deciduous with accessory branch structures. Spikelet callus linear, 3 mm long, bearded, base pungent, attached obliquely. Spikelet callus hairs red.

Glumes. Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma. Lower glume oblong, 1 length of spikelet, coriaceous, dark brown, without keels, 7 -veined. Lower glume surface pilose, hairy above. Lower glume hairs dark brown. Lower glume apex truncate. Upper glume oblong, coriaceous, with membranous margins, 3 -veined. Upper glume surface pilose, hairy above. Upper glume margins ciliate. Upper glume hairs dark brown. Upper glume apex truncate.

Florets. Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret oblong, 2.8 mm long, hyaline, ciliate on margins. Fertile lemma oblong, 3 mm long, hyaline, without keel, 1 -veined, 0–3 -veined, one-veined. Lemma apex entire, awned, 1 -awned. Principal lemma awn apical, geniculate, 50–70 mm long overall, with twisted column. Column of lemma awn hispidulous. Palea absent or minute.

Flower and Fruit. Anthers 1.4 mm long.

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

Country /Province /State. Indo-China, Malesia, Papuasias. Andaman Is, Laos, Myanmar, Thailand, Vietnam. Java, Lesser Sunda Is, Moluccas, Sumatra, Sulawesi, Malaya, Singapore. New Guinea West Papua (Irian Jaya). New Guinea. **Australia.** Western Australia, Northern Territory, Queensland. **Southwestern Pacific.** Fiji (*). **Southeastern USA.** Maryland, Virginia. **Caribbean.** Jamaica, Leeward Is (*), Windward Islands (*).

TDWG4. Kimberley, Darwin & Gulf. North.

Themeda arundinacea (Roxb.) A.Camus. *Lecomte, Fl. Gen. Indo-Chine* 17:363 (1922).

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)*, N.L.Bor, *Grasses of Burma, Ceylon, India and Pakistan* (1960) (& as *T. subsericans*).

TYPE from Bangladesh. **Basionym or Replaced Name:** *Anthistiria arundinacea* Roxb., *Fl. Ind., ed. 1820* 1: 256–257 (1820). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Bangladesh,.

Recent Synonyms: *Themeda subsericans* (Nees ex Steud.) Ridley, *Fl. Mal. Penins.* 5: 212 (1925).

Illustrations (Books): H.J.Noltie, *The Grasses of Bhutan* (2000) (821, Fig. 60 & 823, Fig. 61 as *T. subsericans*).

Derivation (Clifford & Bostock 2007): *L. arundo*, reed; -acea, like. Culm tall, thereby resembling a reed.

Classification. Subfamily Panicoideae. Tribe: Andropogoneae. Subtribe **ANDROPOGONINAE**.

Habit, Vegetative Morphology. Perennial. Culms erect, 100–150 cm long. Culm-internodes solid. Leaf-sheaths keeled, glabrous on surface or pubescent. Ligule a ciliolate membrane. Leaf-blades 30–60 cm long, 3–6 mm wide. Leaf-blade surface scabrous, rough adaxially, glabrous. Leaf-blade margins scabrous. Leaf-blade apex acuminate.

Inflorescence. Synflorescence compound, linear, 30–60 cm long, lax.

Inflorescence composed of racemes, terminal and axillary, subtended by a spatheole, enclosed. Spatheole linear or lanceolate, 4–4.5 cm long, scarious, without tubercles, glabrous. Racemes 1, single, cuneate, bearing few fertile spikelets, bearing 1–2 fertile spikelets on each. Rhachis fragile at the nodes. Spikelets in pairs or in

threes. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster or 2 in the cluster. Pedicels present, oblong, 1 mm long, tip oblique.

Sterile Spikelets. Basal sterile spikelets well-developed, 4 in number, forming an involucre about the fertile, with normal internodes, subsessile, 12–20 mm long, larger than fertile. Basal sterile spikelet glumes scarious, pilose, with red hairs, lower glume muticous.

Companion sterile spikelets well-developed, containing empty lemmas or male, lanceolate, 10–15 mm long, as long as fertile or longer than fertile, separately deciduous. Companion sterile spikelet callus linear, 2–2.5 mm long, truncate. Companion sterile spikelet glumes tuberculate, villous, with red hairs. 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, subterete, 10 mm long, falling entire, deciduous with accessory branch structures. Spikelet callus cuneate, 2 mm long, pubescent, base pungent, attached obliquely. Spikelet callus hairs red.

Glumes. Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma. Lower glume oblong, 1 length of spikelet, coriaceous, without keels. Lower glume surface pubescent. Lower glume hairs red. Upper glume oblong, coriaceous, 3 -veined. Upper glume surface pubescent. Upper glume hairs red.

Florets. Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret oblong, hyaline. Fertile lemma linear, hyaline, without keel, 1 -veined, 0–3 -veined, one-veined. Lemma apex entire, awned, 1 -awned. Principal lemma awn apical, geniculate, 35–70 mm long overall, with twisted column. Column of lemma awn hispidulous. Palea absent or minute.

Flower and Fruit. $2n = 40$ (1 ref TROPICOS).

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

Country /Province /State. **China.** China South Central, China Southeast. **Indian Subcontinent, Indo-China, Malesia.** Bangladesh, Eastern Himalaya, India, Nepal. Cambodia, Laos, Myanmar, Thailand, Vietnam. Borneo, Java, Lesser Sunda Is, Malaya, Philippines, Sumatra.

TDWG4. Guangxi, Guizhou, Yunnan. Bhutan, Sikkim. Meghalaya. Bihar. Madhya Pradesh, Uttah Pradesh, West Bengal.

Themeda avenacea (F. Muell.) Dur.& Jacks. *Ind. Kew., Suppl.* 1:424 (1906).

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

TYPE from Australia. **Basionym or Replaced Name:** *Anthistiria avenacea* F. Muell., *Fragm.* 5: 206 (1866). T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: Australia, Peak Downs: Mueller (K iso).

Illustrations (Books): J.P.Jessop, G.R.M. Dasher & F.M.James, *Grasses of South Australia* (2006) (534, Fig 455), S.W.L.Jacobs, R.D.B.Whalley & D.J.B.Wheeler, *Grasses of New South Wales*, 4th edn (2008) (383), 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. -acea, resembling. With inflorescences and/or spikelets similar to those of *Avena*.

Classification. Subfamily Panicoideae. Tribe: Andropogoneae. Subtribe ANDROPOGONINAE.

Habit, Vegetative Morphology. Perennial, caespitose. Butt sheaths woolly. Culms robust, 100–200 cm long, 2–4 mm diam., 2–3 -noded. Culm-nodes glabrous or pubescent. Ligule an eciliate membrane. Leaf-blade base simple or tapering to the midrib. Leaf-blades 15–100 cm long, 1–1.5 mm wide. Leaf-blade surface scaberulous. Leaf-blade margins scabrous. Leaf-blade apex attenuate.

Inflorescence. Synflorescence compound, linear, 15–100 cm long.

Inflorescence composed of racemes, terminal and axillary, subtended by a spatheole, enclosed. Spatheole linear or lanceolate, 3–9 cm long, scarious, green or purple, without tubercles. Peduncle 1–2 cm long, pubescent above. Racemes 1, single, cuneate, bearing few fertile spikelets, bearing 1–2 fertile spikelets on each. Rhachis fragile at the nodes. Spikelets in pairs or in threes (basal paired). Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster or 2 in the cluster. Pedicels present, oblong, 0.5 mm long.

Sterile Spikelets. Basal sterile spikelets well-developed, 4 in number, forming an involucre about the fertile, subsessile, male, linear or lanceolate, 20–30 mm long, larger than fertile. Basal sterile spikelet glumes chartaceous, lower glume muticous.

Companion sterile spikelets well-developed, containing empty lemmas, linear or lanceolate, symmetrical or asymmetrical, 20–30 mm long, longer than fertile, separately deciduous. Companion sterile spikelet callus

linear. Companion sterile spikelet glumes chartaceous, thinner on margins, winged on margins, smooth, glabrous. Companion sterile spikelet lemmas 2, enclosed by glumes.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets oblong, subterete, 13–17 mm long, falling entire, deciduous with accessory branch structures. Spikelet callus linear, 5–7 mm long, bearded, base pungent, attached obliquely.

Glumes. Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma. Lower glume oblong, 1 length of spikelet, cartilaginous, much thinner on margins, without keels, 11 -veined. Lower glume surface villous. Lower glume hairs dark brown. Lower glume apex obtuse. Upper glume oblong, cartilaginous, 3 -veined. Upper glume surface villous. Upper glume hairs dark brown.

Florets. Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret lanceolate, hyaline, 1 -veined, without lateral veins. Fertile lemma linear, hyaline, without keel, 1 -veined, 0–3 -veined, one-veined. Lemma apex entire, awned, 1 -awned. Principal lemma awn apical, geniculate, 40–100 mm long overall, with twisted column. Column of lemma awn hirsute. Palea absent or minute.

Flower and Fruit. Anthers 3, 4 mm long.

Distribution (TDWG). Continent. Australasia.

Country /Province /State. Australia. Western Australia, Northern Territory, South Australia, Queensland, New South Wales, A.C.T., Victoria.

TDWG4. Kimberley, Ereman, South-West. Darwin & Gulf, Victoria R & Barkly Tableland, Central Australia. NW & Lake Eyre. North, Central, South East, Inland. Western Slopes, Western Plains.

Themeda caudata (Nees ex Hook. & Arn.) A.Camus. Lecomte, *Fl. Gen. Indo-Chine*, vii. 364 (1922).

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*), N.L.Bor, Grasses of Burma, Ceylon, India and Pakistan (1960) (& as *T. longispatha*), T.Koyama, *Grasses of Japan and its neighboring regions* (1987).

TYPE from China. **Basionym or Replaced Name:** *Anthistiria caudata* Nees, *Bot. Beechey Voy.* 245 (1838). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: China, Macao: *Vachell 46*.

Recent Synonyms: *Themeda longispatha* (Hack.) Raiz. & Jain, *Indian Forester* 80: 45 (1954).

Illustrations (Books): C-C Hsu, *Flora of Taiwan*, Vol 5 (1978) (782), C-C Hsu, *Taiwan Grasses* (1975) (as var. *caudata*), H.J.Noltie, *The Grasses of Bhutan* (2000) (823, Fig. 61 & as *T. longispatha*), S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 888).

Derivation (Clifford & Bostock 2007): L. cauda, tail; -ata, possessing. Lemma awned.

Classification. Subfamily Panicoideae. Tribe: Andropogoneae. Subtribe ANDROPOGONINAE.

Habit, Vegetative Morphology. Perennial. Rootstock evident. Culms erect, robust, 300–600 cm long. Leaf-sheaths smooth, glabrous on surface. Ligule a ciliolate membrane. Leaf-blades 100–150 cm long, 8–16 mm wide. Leaf-blade midrib widened. Leaf-blade surface glabrous. Leaf-blade margins scabrous. Leaf-blade apex attenuate.

Inflorescence. Synflorescence compound, paniculate.

Inflorescence composed of racemes, terminal and axillary, subtended by a spatheole, enclosed. Spatheole lanceolate, 3.25–5 cm long, scarious, without tubercles, glabrous. Racemes 1, single, cuneate, bearing few fertile spikelets, bearing 2 fertile spikelets on each. Rhachis fragile at the nodes. Spikelets in pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, oblong, 0.5 mm long, tip oblique.

Sterile Spikelets. Basal sterile spikelets well-developed, 4 in number, forming an involucre about the fertile, with normal internodes, subsessile, male, lanceolate, 10–15 mm long, equalling fertile. Basal sterile spikelet glumes smooth, pilose (on keel), lower glume muticous.

Companion sterile spikelets well-developed, containing empty lemmas or male, lanceolate, 15–16 mm long, longer than fertile, separately deciduous. Companion sterile spikelet callus linear, 2.5–3 mm long, acute. Companion sterile spikelet lemmas 2, enclosed by glumes.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets elliptic, subterete, 9–10 mm long, falling entire, deciduous with accessory branch structures. Spikelet callus linear, 2 mm long, bearded, base pungent, attached obliquely. Spikelet callus hairs dark brown.

Glumes. Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma. Lower glume oblong, 1 length of spikelet, coriaceous, without keels, 11 -veined. Upper glume oblong, coriaceous, 3 -veined. Upper glume primary vein ciliate.

Florets. Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret oblong, hyaline. Fertile lemma linear, hyaline, without keel, 1 -veined, 0–3 -veined, one-veined. Lemma apex entire, awned, 1 -awned. Principal lemma awn apical, geniculate, 20 mm long overall, with twisted column. Column of lemma awn hispidulous. Palea absent or minute.

Flower and Fruit. Caryopsis with adherent pericarp, 3.5 mm long.

$2n = 40$ (2 refs TROPICOS).

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

Country /Province /State. China, Eastern Asia. China South Central, Hainan, China Southeast, Tibet, Taiwan. **Indian Subcontinent, Indo-China, Malesia.** Eastern Himalaya, India, Nepal, Sri Lanka. Myanmar, Thailand, Vietnam. Borneo, Java, Malaya, Philippines, Sumatra.

TDWG4. Fujian, Guangdong, Guangxi, Jiangxi, Zhejiang. Guizhou, Hubei, Sichuan, Yunnan. Darjeeling, Bhutan, Sikkim. Bihar. Madhya Pradesh, Maharashtra, Rajasthan, Uttah Pradesh.

Themeda cymbaria Hack. *DC. Monog. Phan.* vi. 668 (1889).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), N.L.Bor, *Grasses of Burma, Ceylon, India and Pakistan* (1960).

TYPE from India. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: India: Roxburgh.

Illustrations (Books): K.M.Matthew, *Flora Palni Hills* (1996) (875, Pl 875).

Derivation (Clifford & Bostock 2007): Gk. kymbe, boat; -aria, pertaining to inflorescence with boat-like spathes.

Classification. Subfamily Panicoideae. Tribe: Andropogoneae. Subtribe **ANDROPOGONINAE**.

Habit, Vegetative Morphology. Perennial, caespitose. Culms 150–250 cm long. Ligule a ciliate membrane. Leaf-blades 30–60 cm long, 4–8 mm wide, stiff. Leaf-blade surface scabrous.

Inflorescence. Synflorescence compound, paniculate, 50–90 cm long, dense.

Inflorescence composed of racemes, terminal and axillary, subtended by a spatheole, exerted or embraced at base by subtending leaf. Spatheole lanceolate, 1–1.5 cm long, scarious, brown or red, without tubercles, glabrous. Racemes 1, single, cuneate, bearing few fertile spikelets, bearing 1–2 fertile spikelets on each. Rhachis fragile at the nodes. Rhachis internodes linear. Spikelets in pairs or in threes. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster or 2 in the cluster. Pedicels present, oblong, 0.5 mm long.

Sterile Spikelets. Basal sterile spikelets well-developed, 4 in number, forming an involucre about the fertile, subsessile, lanceolate, 5–8 mm long, larger than fertile. Basal sterile spikelet glumes smooth or tuberculate, glabrous or pilose, lower glume muticous.

Companion sterile spikelets well-developed, male, lanceolate, 4.5–8 mm long, longer than fertile, separately deciduous. Companion sterile spikelet callus linear. Companion sterile spikelet glumes smooth, glabrous. Companion sterile spikelet lemmas 2, enclosed by glumes.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets elliptic, subterete, 4–6 mm long, falling entire, deciduous with accessory branch structures. Spikelet callus cuneate, 0.5–1 mm long, bearded, base acute, attached obliquely. Spikelet callus hairs white or dark brown.

Glumes. Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma. Lower glume oblong, 1 length of spikelet, coriaceous, without keels. Lower glume surface glabrous or puberulous. Lower glume apex obtuse. Upper glume oblong.

Florets. Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret lanceolate, hyaline. Fertile lemma linear, hyaline, without keel, 1 -veined, 0–3 -veined, one-veined. Lemma apex entire, awned, 1 -awned. Principal lemma awn apical, geniculate, 10–20 mm long overall, with twisted column. Column of lemma awn puberulous. Palea absent or minute.

Distribution (TDWG). Continent. Tropical Asia.

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

TDWG4. Kerala. Tamilnadu.

Themeda gigantea (Cav.) Hackel ex Duthie. *Fodder Grasses N. India*, 89 (1888).

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 The Philippines. **Basionym or Replaced Name:** *Anthistiria gigantea* Cav., *Icon. Pl.* 5:36 (1799). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Philippine Is., Luzon, Guaz: Coll?.

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

Derivation (Clifford & Bostock 2007): L. very large. Culms tall compared with those of related species.

Classification. Subfamily Panicoideae. Tribe: Andropogoneae. Subtribe **ANDROPOGONINAE**.

Habit, Vegetative Morphology. Perennial, caespitose. Culms erect, robust, 150–400 cm long. Culm-internodes solid, distally pruinose or glabrous. Leaf-sheaths keeled, glabrous on surface, outer margin glabrous or hairy. Ligule a ciliolate membrane, truncate or obtuse. Leaf-blades 30–100 cm long, 5–25 mm wide, stiff. Leaf-blade midrib widened. Leaf-blade surface scabrous, rough adaxially, glabrous. Leaf-blade margins scabrous.

Inflorescence. Synflorescence compound, panicate.

Inflorescence composed of racemes, terminal and axillary, deciduous as a whole, subtended by a spatheole, enclosed. Spatheole lanceolate, 1–1.2 cm long, scarious, without tubercles, glabrous. Peduncle 0.1–0.2 cm long. Racemes 1, single, ovate, 1 cm long, bearing a triad of spikelets, bearing 1 fertile spikelets on each. Rhachis tough. Spikelets in threes. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 2 in the cluster. Pedicels present, linear, 1–1.5 mm long.

Sterile Spikelets. Basal sterile spikelets well-developed, 4 in number, forming an involucre about the fertile, with normal internodes (between them), subsessile, deciduous with the fertile, male, lanceolate or oblong, 6.5–8 mm long, equalling fertile. Basal sterile spikelet glumes tuberculate, hirsute, with tawny hairs, acuminate, lower glume muticous.

Companion sterile spikelets well-developed, male, lanceolate, 4–5 mm long, shorter than fertile, deciduous with the fertile. Companion sterile spikelet callus indistinct. Companion sterile spikelet glumes tuberculate, hirsute, with tawny hairs. Companion sterile spikelet lemmas 2, enclosed by glumes, 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 elliptic, dorsally compressed, compressed slightly, 6.5–7 mm long, falling entire, deciduous with accessory branch structures. Spikelet callus oblong, bearded, base obtuse, attached obliquely. Spikelet callus hairs tawny.

Glumes. Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma. Lower glume oblong, 1 length of spikelet, coriaceous, dark brown, without keels, 5–7 -veined. Lower glume surface flat, pubescent. Lower glume hairs tawny. Lower glume apex acute. Upper glume oblong, coriaceous.

Florets. Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret lanceolate, hyaline. Fertile lemma lanceolate, hyaline, without keel, 1 -veined, 0–3 -veined, one-veined. Lemma apex entire, acute, muticous or awned, 1 -awned. Principal lemma awn 0–10 mm long overall. Palea absent or minute.

Flower and Fruit. Anthers 3.

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

Country /Province /State. **Indo-China, Malesia, Papuaasia.** Vietnam. Lesser Sunda Is, Philippines. New Guinea PNG. New Guinea, Solomon Is. **Southwestern Pacific.** New Caledonia, Vanuatu.

Themeda helferi Hack. *DC. Monog. Phan.* vi. 665. (1889).

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

TYPE from Burma. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Myanmar: Andaman Islands (Bay of Bengal): Tenasserim, March 1862, *J.W. Helfer 6809* (HT: ?; IT: L, US-1127058, US-926345).

Illustrations (Books): S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (fig. 885).

Derivation (Clifford & Bostock 2007): in honor of Johan Wilhem Helfer (1810–1840) Bohemian physician and traveller who collected in Myanmar.

Classification. Subfamily Panicoideae. Tribe: Andropogoneae. Subtribe **ANDROPOGONINAE**.

Habit, Vegetative Morphology. Annual, culms solitary or caespitose, clumped loosely. Culms erect or geniculately ascending, slender, 15–30 cm long. Leaf-sheaths mostly shorter than adjacent culm internode, glabrous on surface. Ligule an eciliate membrane, 1 mm long, truncate. Leaf-blades flat or conduplicate, 5–10 cm long, 2–4 mm wide, flaccid. Leaf-blade surface smooth, glabrous. Leaf-blade margins tuberculate-ciliate, hairy at base. Leaf-blade apex acute.

Inflorescence. Synflorescence compound, scanty, 15–30 cm long (whole culm), with principal spatheoles embracing a compact fascicle of racemes, each subtended by a subsidiary bract.

Inflorescence composed of racemes, terminal and axillary, subtended by a spatheole, enclosed. Spatheole lanceolate, 2 cm long, scarious, without tubercles, glabrous. Racemes 1, single, cuneate, bearing few fertile spikelets, bearing 1 fertile spikelets on each. Rhachis fragile at the nodes. Spikelets in threes (basal paired). Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 2 in the cluster. Pedicels present, oblong, 0.5 mm long.

Sterile Spikelets. Basal sterile spikelets well-developed, 4 in number, forming an involucre about the fertile, with both pairs arising at about the same level, subsessile, male, lanceolate, 4–5 mm long, equalling fertile or larger than fertile. Basal sterile spikelet glumes chartaceous, tuberculate, setose, lower glume muticous.

Companion sterile spikelets well-developed, comprising 2 subequal glumes without lemmas, linear, 5–6 mm long, longer than fertile, separately deciduous. Companion sterile spikelet callus linear. Companion sterile spikelet glumes smooth, 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, subterete, 4 mm long, falling entire, deciduous with accessory branch structures. Spikelet callus oblong, 0.5–1 mm long, bearded, base obtuse, attached obliquely. Spikelet callus hairs tawny.

Glumes. Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma. Lower glume oblong, 1 length of spikelet, coriaceous, much thinner above, without keels. Lower glume surface flat, puberulous. Upper glume oblong.

Florets. Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret lanceolate, hyaline. Fertile lemma linear, hyaline, without keel, 1 -veined, 0–3 -veined, one-veined. Lemma apex entire, awned, 1 -awned. Principal lemma awn apical, geniculate, 3.8–5.5 mm long overall, with twisted column. Column of lemma awn hirtellous. Palea absent or minute.

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

Country /Province /State. China. China South Central. **Indo-China.** Myanmar.

TDWG4. Yunnan.

Themeda hookeri (Griseb.) A.Camus. *Bull. Mus. Hist. Nat. Paris.* xxvi. 425 (1920).

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. **Basionym or Replaced Name:** *Anthistiria hookeri* Griseb., *Nachr. Konigl. Ges. Wiss. Georg-Augusts-Univ.* 3: 91 (1868). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: India, Sikkim: Hooker (K isosyn); India, Khasia: Hooker sn (K isosyn).

Illustrations (Books): H.J.Noltie, *The Grasses of Bhutan* (2000) (821, Fig. 60), S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 887).

Derivation (Clifford & Bostock 2007): in honor of Joseph Dalton Hooker (1817–1911), English botanist, traveller and Garden's Director.

Classification. Subfamily Panicoideae. Tribe: Andropogoneae. Subtribe ANDROPOGONINAE.

Habit, Vegetative Morphology. Perennial. Culms geniculately ascending, 40–90 cm long. Ligule a ciliolate membrane. Leaf-blades 10–20 cm long, 2–3 mm wide. Leaf-blade apex acuminate, filiform.

Inflorescence. Synflorescence compound, scanty.

Inflorescence composed of racemes, terminal and axillary, subtended by a spatheole, enclosed. Spatheole linear or lanceolate, 2.5–3.5 cm long, scarious. Racemes 1, single, cuneate, bearing few fertile spikelets, bearing 2 fertile spikelets on each. Rhachis fragile at the nodes. Spikelets in pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, oblong, 1 mm long, tip oblique.

Sterile Spikelets. Basal sterile spikelets well-developed, 4 in number, forming an involucre about the fertile, with normal internodes, subsessile, lanceolate, 10–19 mm long, larger than fertile. Basal sterile spikelet glumes smooth, glabrous, lower glume muticous.

Companion sterile spikelets well-developed, containing empty lemmas or male, lanceolate, 10 mm long, longer than fertile, separately deciduous. Companion sterile spikelet callus oblong, 1.5 mm long, truncate. Companion sterile spikelet glumes chartaceous, attenuate. 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, subterete, 7 mm long, falling entire, deciduous with accessory branch structures. Spikelet callus cuneate, 2 mm long, pilose, base pungent, attached obliquely.

Glumes. Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma. Lower glume oblong, 1 length of spikelet, coriaceous, without keels. Upper glume oblong, coriaceous, 3 -veined. Upper glume apex truncate.

Florets. Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret oblong, hyaline. Fertile lemma linear, hyaline, without keel, 1 -veined, 0–3 -veined, one-veined. Lemma apex entire, awned, 1 -awned. Principal lemma awn apical, geniculate, 20–40 mm long overall, with twisted column. Column of lemma awn hispidulous. Palea absent or minute.

Flower and Fruit. $N = 10$ (2 refs TROPICOS). $2n = 20$ (1 ref TROPICOS).

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

Country /Province /State. China. China South Central, Tibet. **Indian Subcontinent.** Eastern Himalaya, Nepal.

TDWG4. Guizhou, Sichuan, Yunnan. Sikkim.

Themeda huttonensis Bor. *Indian Forest Rec.*, n. s. Bot., i. 96 (1938).

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. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: India, Naga Hills, Laruri: Coll? (K iso).

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

Derivation (Clifford & Bostock 2007): *L. -ensis*, denoting origin. In honor of J.H. Hutton of the Indian civil service.

Classification. Subfamily Panicoideae. Tribe: Andropogoneae. Subtribe **ANDROPOGONINAE**.

Habit, Vegetative Morphology. Perennial. Culms erect, straight or zigzag, 60–100 cm long, wiry. Culm-internodes elliptical in section. Lateral branches ample. Leaf-sheaths keeled. Ligule an eciliate membrane, 1–1.5 mm long, erose. Leaf-blades 10–20 cm long, 4–8 mm wide. Leaf-blade surface scabrous, rough abaxially, pilose, hairy adaxially, with tubercle-based hairs. Leaf-blade margins scabrous, ciliate, hairy at base. Leaf-blade apex acuminate, filiform.

Inflorescence. Synflorescence compound, paniculate, lax.

Inflorescence composed of racemes, terminal and axillary, subtended by a spatheole, enclosed. Spatheole lanceolate, 2.5–3 cm long, scarious, without tubercles, glabrous. Racemes 1, single, cuneate, bearing few fertile spikelets, bearing 2 fertile spikelets on each. Rhachis fragile at the nodes. Spikelets in pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, oblong, 0.5 mm long, tip oblique.

Sterile Spikelets. Basal sterile spikelets well-developed, 4 in number, forming an involucre about the fertile, with normal internodes, subsessile, lanceolate, 11–12 mm long, larger than fertile. Basal sterile spikelet glumes tuberculate, pilose, lower glume muticous.

Companion sterile spikelets well-developed, containing empty lemmas or male, lanceolate, 11–12 mm long, longer than fertile, separately deciduous. Companion sterile spikelet callus linear, 1.5 mm long, truncate. Companion sterile spikelet glumes glabrous. 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, subterete, 5.5 mm long, falling entire, deciduous with accessory branch structures. Spikelet callus oblong, 1 mm long, pilose, base acute, attached obliquely.

Glumes. Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma, shiny. Lower glume oblong, 1 length of spikelet, chartaceous, without keels, 11 -veined. Lower glume surface scabrous, rough above, glabrous. Lower glume apex truncate. Upper glume oblong, chartaceous, 3 -veined. Upper glume apex truncate.

Florets. Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret oblong, 4.5 mm long, hyaline, 0 -veined, without midvein, without lateral veins, ciliolate on margins. Fertile lemma linear, hyaline, without keel, 1 -veined, 0–3 -veined, one-veined. Lemma apex entire, awned, 1 -awned. Principal lemma awn apical, geniculate, 20–25 mm long overall, with twisted column. Column of lemma awn hispidulous. Palea absent or minute.

Distribution (TDWG). Continent. Tropical Asia.

Country /Province /State. Indian Subcontinent. Assam.

TDWG4. Nagaland.

Themeda idjensis Jansen. *Acta Bot. Neerl.* i. 482 (1952).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, J.F.Veldkamp, Poaceae ms (*Flora Malesiana*).

TYPE from Indonesia. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Java, Idjen Plateau: Koorders 42922.

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

Derivation (Clifford & Bostock 2007): L. -ensis, denoting origin. From Idjin, Java.

Classification. Subfamily Panicoideae. Tribe: Andropogoneae. Subtribe **ANDROPOGONINAE**.

Habit, Vegetative Morphology. Perennial. Culms robust, 300–500 cm long. Ligule a ciliolate membrane. Leaf-blades 50–100 cm long, 6–12 mm wide.

Inflorescence. Synflorescence compound, fasciculate, 50–100 cm long, dense.

Inflorescence composed of racemes, terminal and axillary, subtended by a spatheole, exerted. Spatheole linear, scarious, without tubercles, glabrous. Racemes 1, single, oblong, 2 cm long, bearing few fertile spikelets, bearing 1 fertile spikelets on each. Rhachis fragile at the nodes. Spikelets in threes. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 2 in the cluster. Pedicels present, oblong, 0.5 mm long.

Sterile Spikelets. Basal sterile spikelets well-developed, 4 in number, forming an involucre about the fertile, subsessile, lanceolate, 12–15 mm long, larger than fertile. Basal sterile spikelet glumes glabrous, smooth on margins, acuminate or attenuate or setaceously acuminate, lower glume muticous.

Companion sterile spikelets well-developed, male, lanceolate, 12–15 mm long, longer than fertile, separately deciduous. Companion sterile spikelet callus linear. Companion sterile spikelet glumes smooth, glabrous. Companion sterile spikelet lemmas 2, enclosed by glumes.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets elliptic, dorsally compressed, compressed slightly, 8–10 mm long, falling entire, deciduous with accessory branch structures. Spikelet callus base acute, attached obliquely.

Glumes. Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma. Lower glume oblong, 1 length of spikelet, coriaceous, without keels. Lower glume surface pubescent. Lower glume hairs dark brown. Upper glume oblong.

Florets. Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret lanceolate, hyaline. Fertile lemma lanceolate, hyaline, without keel, 1 -veined, 0–3 -veined, one-veined. Lemma apex entire, awned, 1 -awned. Principal lemma awn apical, geniculate, 15–20 mm long overall, with twisted column. Column of lemma awn glabrous. Palea absent or minute.

Distribution (TDWG). Continent. Tropical Asia.

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

Themeda intermedia (Hack.) Bor. *Indian For. Rec.*, n. s., Bot., i. 96 (1938).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), D.Sharp, D. & B.K.Simon, *AusGrass* (2002), 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 India. **Basionym or Replaced Name:** *Themeda gigantea* var. *intermedia* Hack. in DC., *Monogr. Phan.* 6:675 (1889). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: India, Khasia Hills: *Hooker & Thomson* (K iso).

Illustrations (Books): H.J.Noltie, *The Grasses of Bhutan* (2000) (823, Fig. 61), E.E.Henty, *A Manual of the Grasses of New Guinea* (1969) (187, Pl. 71), D.Sharp & B.K.Simon, *AusGrass*. Grasses of Australia. CD-Rom Version 1.0. (2002).

Derivation (Clifford & Bostock 2007): L. intermediate. Having affinities with but distinct from other species.

Classification. Subfamily Panicoideae. Tribe: Andropogoneae. Subtribe **ANDROPOGONINAE**.

Habit, Vegetative Morphology. Perennial. Culms erect, robust, 300–500 cm long, 10–15 mm diam. Culm-internodes solid, distally glabrous. Leaf-sheaths loose, mostly shorter than adjacent culm internode, keeled, striately veined, smooth, glabrous on surface. Ligule an eciliate membrane. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades 50–100 cm long, 7–15 mm wide. Leaf-blade midrib widened. Leaf-blade surface scabrous, glabrous. Leaf-blade margins scabrous.

Inflorescence. Synflorescence compound, paniculate.

Inflorescence composed of racemes, terminal and axillary, subtended by a spatheole, enclosed. Spatheole lanceolate, 2–3.5 cm long, scarious, without tubercles, glabrous. Racemes 1, single, oblong, 1.5–2 cm long, bearing few fertile spikelets, bearing 2–3 fertile spikelets on each. Rhachis fragile at the nodes. Spikelets in

pairs. Fertile spikelets sessile, 2–3 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, oblong, 0.5 mm long.

Sterile Spikelets. Basal sterile spikelets well-developed, 4 in number, forming an involucre about the fertile, with normal internodes (between them), subsessile, persistent, male, lanceolate or oblong, 10–12 mm long, larger than fertile. Basal sterile spikelet glumes tuberculate, hirsute, with tawny hairs, acuminate, lower glume muticous.

Companion sterile spikelets well-developed, male, lanceolate or oblong, 10–12 mm long, longer than fertile, deciduous with the fertile. Companion sterile spikelet callus oblong, 1.5–2 mm long. Companion sterile spikelet glumes tuberculate, pilose. Companion sterile spikelet lemmas 2, enclosed by glumes, 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 elliptic, dorsally compressed, compressed slightly, 7–9 mm long, falling entire, deciduous with accessory branch structures. Spikelet callus oblong, 2 mm long, bearded, base obtuse, attached obliquely. Spikelet callus hairs tawny.

Glumes. Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma. Lower glume oblong, 1 length of spikelet, coriaceous, dark brown, without keels. Lower glume surface flat, pubescent. Lower glume hairs tawny. Lower glume apex acute. Upper glume oblong, coriaceous, 3 -veined.

Florets. Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret lanceolate, hyaline. Fertile lemma lanceolate, hyaline, without keel, 1 -veined, 0–3 -veined, one-veined. Lemma apex entire, acute, muticous. Palea absent or minute.

Flower and Fruit. Anthers 3, 8 mm long.

N = 20 (1 ref TROPICOS).

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

Country /Province /State. Indian Subcontinent, Indo-China, Malesia, Papuaia. Eastern Himalaya, India. Laos, Myanmar. Borneo, Lesser Sunda Is, Moluccas, Philippines, Sulawesi. New Guinea PNG, or West Papua (Irian Jaya). New Guinea, Solomon Is. **Australia.** Queensland. **Southwestern Pacific.** Vanuatu.

TDWG4. Bhutan. Meghalaya. North.

Themeda laxa (Anderss.) A.Camus. *Bull. Mus. Hist. Nat. Paris.* xxvi. 423 (1920).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, N.L.Bor, Grasses of Burma, Ceylon, India and Pakistan (1960).

TYPE from Nepal. **Basionym or Replaced Name:** *Anthistiria laxa* Anderss., *Nov. Act. Upsal.* Ser. III. 2: 243 (1856). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: Wallich 8775; ; Nepal (S; IT: E, K, K-W).

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

Derivation (Clifford & Bostock 2007): L. loose. Inflorescence much branched either as a single panicle or from branching of the culms.

Classification. Subfamily Panicoideae. Tribe: Andropogoneae. Subtribe **ANDROPOGONINAE.**

Habit, Vegetative Morphology. Perennial, caespitose. Culms erect, 60–120 cm long. Lateral branches ample. Ligule absent. Leaf-blades 7–15 cm long, 3–5 mm wide. Leaf-blade surface pilose, sparsely hairy, hairy abaxially. Leaf-blade margins scabrous, ciliate (hairs 4–5 mm).

Inflorescence. Synflorescence compound, paniculate.

Inflorescence composed of racemes, terminal and axillary, subtended by a spatheole, enclosed. Spatheole lanceolate, 2.5–3.5 cm long, scarious, without tubercles, glabrous. Racemes 1, single, cuneate, bearing few fertile spikelets, bearing 1 fertile spikelets on each. Rhachis fragile at the nodes. Spikelets in threes (basal paired). Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 2 in the cluster. Pedicels present, oblong, 0.5 mm long, tip oblique.

Sterile Spikelets. Basal sterile spikelets well-developed, 4 in number, forming an involucre about the fertile, with both pairs arising at about the same level, subsessile, barren or male, oblong, 5–6 mm long, larger than fertile. Basal sterile spikelet glumes tuberculate, tuberculate on margins, lower glume muticous.

Companion sterile spikelets well-developed, containing empty lemmas or male, linear, 2.5 mm long, shorter than fertile, separately deciduous. Companion sterile spikelet callus linear, 2–3 mm long. Companion sterile spikelet glumes herbaceous, ciliate on margins, acute. 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, subterete, 4.25 mm long, falling entire, deciduous with accessory branch structures. Spikelet callus cuneate, 1 mm long, pubescent, base acute, attached obliquely. Spikelet callus hairs dark brown.

Glumes. Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma. Lower glume oblong, 1 length of spikelet, coriaceous, without keels, 9 -veined. Lower glume surface scabrous, rough above. Lower glume apex truncate. Upper glume oblong, coriaceous, 3 -veined.

Florets. Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret linear, 3 mm long, hyaline. Fertile lemma linear, 1 mm long, hyaline, without keel, 1 -veined, 0–3 -veined, one-veined. Lemma apex entire, awned, 1 -awned. Principal lemma awn apical, geniculate, 30–35 mm long overall, with twisted column. Column of lemma awn hispidulous. Palea absent or minute.

Distribution (TDWG). Continent. Tropical Asia.

Country /Province /State. Indian Subcontinent. India.

TDWG4. Madhya Pradesh.

Themeda minor L. Liou. *Fl. Xizangica*, 5: 343 (1987).

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

TYPE from China. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: China, Xizang, Zayu: Qinghai-Xizang Exped. 73–654.

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

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

Classification. Subfamily Panicoideae. Tribe: Andropogoneae. Subtribe **ANDROPOGONINAE**.

Habit, Vegetative Morphology. Perennial. Culms geniculately ascending, 30–40 cm long. Lateral branches ample. Ligule a ciliolate membrane. Leaf-blades 3–8 cm long, 1–2 mm wide. Leaf-blade apex acuminate, filiform.

Inflorescence. Synflorescence compound, scanty.

Inflorescence composed of racemes, terminal and axillary, subtended by a spatheole, enclosed. Spatheole linear or lanceolate, 1.5 cm long, scarious. Racemes 1, single, cuneate, 0.8–1.6 cm long, bearing few fertile spikelets, bearing 1–2 fertile spikelets on each. Rhachis fragile at the nodes. Spikelets in pairs or in threes. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster or 2 in the cluster. Pedicels present, oblong, tip oblique.

Sterile Spikelets. Basal sterile spikelets well-developed, 4 in number, forming an involucre about the fertile, with normal internodes, subsessile, lanceolate, 5 mm long, larger than fertile. Basal sterile spikelet glumes tuberculate, pilose, lower glume mucous.

Companion sterile spikelets well-developed, containing empty lemmas or male, lanceolate, 3 mm long, shorter than fertile, separately deciduous. Companion sterile spikelet callus oblong, truncate. Companion sterile spikelet glumes chartaceous. 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, subterete, 4 mm long, falling entire, deciduous with accessory branch structures. Spikelet callus cuneate, base pungent, attached obliquely.

Glumes. Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma. Lower glume oblong, 1 length of spikelet, coriaceous, without keels. Upper glume oblong, coriaceous. Upper glume apex truncate.

Florets. Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret oblong, hyaline. Fertile lemma linear, hyaline, without keel, 1 -veined, 0–3 -veined, one-veined. Lemma apex entire, awned, 1 -awned. Principal lemma awn apical, straight, 4 mm long overall. Palea absent or minute.

Distribution (TDWG). Continent. Temperate Asia.

Country /Province /State. China. Tibet.

Themeda mooneyi Bor. *Kew Bull.* 1951, 451 (1952).

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. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: India, Pottangi: Mooney 4064 (K holotype).

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

Derivation (Clifford & Bostock 2007): in honor of Herbert Francis Mooney (1897–1964) Irish-born Indian forester and plant collector.

Classification. Subfamily Panicoideae. Tribe: Andropogoneae. Subtribe **ANDROPOGONINAE**.

Habit, Vegetative Morphology. Perennial. Culms erect, 20–40 cm long. Lateral branches ample. Leaf-sheaths keeled. Ligule a ciliolate membrane, 1.5 mm long, scaberulous on abaxial surface. Leaf-blades 15–30 cm long, 2–4 mm wide. Leaf-blade surface scabrous, rough on both sides. Leaf-blade apex attenuate, filiform.

Inflorescence. Synflorescence compound, scanty.

Inflorescence composed of racemes, terminal and axillary, subtended by a spatheole, enclosed. Spatheole lanceolate, 5 cm long, without tubercles, glabrous. Peduncle 2–5 cm long. Racemes 1, single, oblong, bearing few fertile spikelets, bearing 2 fertile spikelets on each. Rhachis fragile at the nodes. Rhachis internodes linear. Spikelets in pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, oblong, 0.5 mm long.

Sterile Spikelets. Basal sterile spikelets well-developed, 4 in number, forming an involucre about the fertile, with normal internodes, subsessile, male, elliptic, 11 mm long, larger than fertile. Basal sterile spikelet glumes tuberculate, pilose, with grey hairs, scabrous on margins, lower glume muticous, lemmas awnless.

Companion sterile spikelets well-developed, male, lanceolate, 8.5 mm long, longer than fertile, separately deciduous. Companion sterile spikelet callus linear, 1.5 mm long. Companion sterile spikelet glumes chartaceous, smooth, glabrous, acuminate. 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, subterete, 6.5 mm long, falling entire, deciduous with accessory branch structures. Spikelet callus oblong, 1.5 mm long, bearded, base obtuse, attached obliquely. Spikelet callus hairs tawny.

Glumes. Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma. Lower glume oblong, 1 length of spikelet, coriaceous, dark brown, without keels, 5 -veined. Lower glume surface concave, asperulous, glabrous. Lower glume hairs red. Lower glume apex truncate. Upper glume oblong.

Florets. Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret ovate, hyaline. Fertile florets female. Fertile lemma linear, hyaline, without keel, 1 -veined, 0–3 -veined, one-veined. Lemma apex entire, awned, 1 -awned. Principal lemma awn apical, geniculate, 25–45 mm long overall, with twisted column. Column of lemma awn 12–25 mm long, puberulous. Palea absent or minute.

Flower and Fruit. Anthers 3, 3.5 mm long.

$2n = 20$ (2 refs TROPICOS).

Distribution (TDWG). Continent. Tropical Asia.

Country /Province /State. Indian Subcontinent. India.

TDWG4. Orissa.

Themeda novoguineensis (Reeder) Jansen. *Acta Bot. Neerl.* i. 483 (1952).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, J.F.Veldkamp, Poaceae ms (*Flora Malesiana*).

TYPE from Papua New Guinea. **Basionym or Replaced Name:** *Themeda gigantea* var. *novoguineensis* Reeder, *J. Arnold Arbor.* 29(4): 374 (1948). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Papua New Guinea: Central Division, Baroka, Nakeo District, on lower Eucalyptus forest ridges in large clumps, 50 m, April 1933, *Brass 3710* (HT: GH; IT: US).

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

Derivation (Clifford & Bostock 2007): L. -ensis, denoting origin. From New Guinea, now included in Papua New Guinea.

Classification. Subfamily Panicoideae. Tribe: Andropogoneae. Subtribe ANDROPOGONINAE.

Habit, Vegetative Morphology. Perennial, caespitose. Culms erect, robust, 150–400 cm long. Leaf-sheaths keeled. Ligule a ciliolate membrane. Leaf-blades 30–100 cm long, 5–25 mm wide. Leaf-blade midrib conspicuous. Leaf-blade surface scaberulous, rough abaxially. Leaf-blade margins scabrous.

Inflorescence. Synflorescence compound, linear, 30–40 cm long.

Inflorescence composed of racemes, terminal and axillary, subtended by a spatheole, enclosed. Spatheole lanceolate, 1–1.2 cm long, scarious. Racemes 1, single, cuneate, bearing a triad of spikelets, bearing 1 fertile spikelets on each. Rhachis fragile at the nodes. Spikelets in threes (basal paired). Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 2 in the cluster. Pedicels present, oblong, 0.5 mm long, tip oblique.

Sterile Spikelets. Basal sterile spikelets well-developed, 4 in number, forming an involucre about the fertile, with normal internodes, subsessile, lanceolate, 7–9 mm long, equalling fertile. Basal sterile spikelet glumes scaberulous, glabrous, lower glume muticous.

Companion sterile spikelets well-developed, containing empty lemmas or male, lanceolate, 7–9 mm long, as long as fertile, separately deciduous. Companion sterile spikelet callus linear, 2 mm long, truncate. Companion sterile spikelet glumes chartaceous, acuminate. 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, subterete, 7–9 mm long, falling entire, deciduous with accessory branch structures. Spikelet callus linear, 2–3 mm long, pilose, base pungent, attached obliquely.

Glumes. Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma. Lower glume oblong, 1 length of spikelet, coriaceous, without keels. Lower glume surface puberulous. Upper glume oblong, coriaceous, 3 -veined.

Florets. Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret oblong, hyaline. Fertile lemma linear, hyaline, without keel, 1 -veined, 0–3 -veined, one-veined. Lemma apex entire, awned, 1 -awned. Principal lemma awn apical, geniculate, 25–30 mm long overall, with twisted column. Column of lemma awn hispidulous. Palea absent or minute.

Distribution (TDWG). Continent. Tropical Asia.

Country /Province /State. Malesia, Papuasia. Lesser Sunda Is. New Guinea PNG. New Guinea.

Themeda pseudotremula Potdar et al. *Kew Bull.* 58:243 (2003).

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

TYPE from India. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: India, Maharashtra, TillariGhat: Potdar 801 (CAL holo, BSI, K).

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

Derivation (Clifford & Bostock 2007): Gk *pseudos*, false. Resembling *Themeda tremula*..

Classification. Subfamily Panicoideae. Tribe: Andropogoneae. Subtribe ANDROPOGONINAE.

Habit, Vegetative Morphology. Perennial. Culms erect or geniculately ascending, 80–200 cm long. Culm-nodes glabrous. Leaf-sheaths 5–10 cm long, outer margin hairy. Ligule a ciliolate membrane, 1.5 mm long. Leaf-blades 30–60 cm long, 5–12 mm wide. Leaf-blade surface glabrous or hirsute, hairy abaxially.

Inflorescence. Synflorescence compound, fasciculate, 20–50 cm long.

Inflorescence composed of racemes, terminal and axillary, subtended by a spatheole, enclosed. Spatheole lanceolate, scarious, tuberculate, pilose (on margins). Racemes 1, single, oblong, 0.5–1 cm long, bearing few fertile spikelets, bearing 2 fertile spikelets on each. Rhachis fragile at the nodes. Rhachis internodes linear. Spikelets in pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, oblong, 0.5 mm long, ciliate, with red hairs.

Sterile Spikelets. Basal sterile spikelets well-developed, 4 in number, forming an involucre about the fertile, subsessile, elliptic, 7–9 mm long, larger than fertile. Basal sterile spikelet lower glume muticous.

Companion sterile spikelets well-developed, male, lanceolate, 5–6 mm long, longer than fertile, separately deciduous. Companion sterile spikelet callus linear, 2–2.5 mm long. Companion sterile spikelet glumes 9–11 -veined (lower glume), tuberculate on margins, ciliate on margins. Companion sterile spikelet lemmas 2, enclosed by glumes, 3.5–4 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 elliptic, subterete, 2.5–3 mm long, falling entire, deciduous with accessory branch structures. Spikelet callus oblong, bearded, base obtuse, attached obliquely. Spikelet callus hairs red.

Glumes. Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma. Lower glume lanceolate, 1 length of spikelet, coriaceous, without keels, 8–9 -veined. Lower glume surface with a longitudinal median groove, hirsute. Lower glume hairs red. Lower glume apex obtuse. Upper glume lanceolate, 2.5–3 mm long. Upper glume primary vein ciliate.

Florets. Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret lanceolate, 2–2.5 mm long, hyaline, ciliate on margins, acute. Fertile lemma linear, hyaline, without keel, 1 -veined, 0–3 -veined, one-veined. Lemma apex entire, awned, 1 -awned. Principal lemma awn apical, geniculate, 20–30 mm long overall, with twisted column. Column of lemma awn puberulous. Palea absent or minute.

Flower and Fruit. Lodicules 2, cuneate. Anthers 3, 1.2–3 mm long.

Distribution (TDWG). Continent. Tropical Asia.

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

Themeda quadrivalvis (L.) Kuntze. *Rev. Gen.* 793 (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), 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 Linneus Herbarium. **Basionym or Replaced Name:** *Andropogon quadrivalvis* L., *Syst. Veg.* (ed. 13) 758 (1774). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: LT: (LINN-1211.5). LT designated by Cope in Cafferty et al., *Taxon* 49(2): 246 (2000).

Recent Synonyms: *Themeda chinensis* (L.) Kuntze (A. Camus) S.L. Chen & T.D. Zhuang, *Bull. Bot. Res. North-East. Forest. Inst.*, 9(2): 59: (1989). *Themeda yuanmounensis* S.L. Chen & T.D. Zhuang, *Bull. Bot. Res. North-East. Forest. Inst.*, 9(2): 60 (1989).

Illustrations (Books): J.Bosser, *Graminees des Paturage et des Cultures a Madagascar* (1969) (233, Fig 83), N.L.Bor, *Gramineae* in K.H.Rechinger, *Flora Iranica*. No. 70/30 (1970) (Tab. 72), N.L.Bor, *Gramineae* in *Flora of Iraq* (1968) (553, Pl. 213), H.J.Noltie, *The Grasses of Bhutan* (2000) (821, Fig. 60), S.W.L.Jacobs, R.D.B.Whalley & D.J.B.Wheeler., *Grasses of New South Wales*, 4th edn (2008) (384), 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) (683), E.G.Nicora, *Los Generos de Gramineas de America Austral* (1987) (547, Fig. 199).

Images: D.Sharp & B.K.Simon, *AusGrass*. Grasses of Australia. CD-Rom Version 1.0. (2002);

Derivation (Clifford & Bostock 2007): L. quatuor, four; valva, leaf of a folding door. The four sessile male spikelets form an involucre below the hermaphrodite spikelet.

Classification. Subfamily Panicoideae. Tribe: Andropogoneae. Subtribe ANDROPOGONINAE.

Habit, Vegetative Morphology. Annual. Culms erect or geniculately ascending, 30–200 cm long, 4–6 mm diam., 5–7 -noded, with prop roots. Culm-nodes glabrous. Leaf-sheaths keeled. Ligule an eciliate membrane, 2–2.5 mm long. Leaf-blades 7–30 cm long, 3–6 mm wide, flaccid. Leaf-blade surface smooth or scaberulous, rough adaxially, glabrous or pilose. Leaf-blade margins scabrous. Leaf-blade apex acute or acuminate.

Inflorescence. Synflorescence compound, fasciculate, 15–50 cm long.

Inflorescence composed of racemes, terminal and axillary, subtended by a spatheole, enclosed. Spatheole lanceolate, 7.5–16 cm long, scarious, red, without tubercles or tuberculate, glabrous or pilose. Peduncle 1.3 cm long. Racemes 1, single, cuneate, bearing few fertile spikelets, bearing 1 fertile spikelets on each. Rhachis fragile at the nodes. Spikelets in threes (basal paired). Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, oblong, 0.5 mm long.

Sterile Spikelets. Basal sterile spikelets well-developed, 4 in number, forming an involucre about the fertile, with both pairs arising at about the same level, subsessile, linear or lanceolate, 4.5–6 mm long, equalling fertile. Basal sterile spikelet glumes chartaceous, tuberculate on margins or setose on margins, lower glume muticous.

Companion sterile spikelets well-developed, comprising 2 subequal glumes without lemmas, linear, 5–6 mm long, as long as fertile, separately deciduous. Companion sterile spikelet callus linear. Companion sterile spikelet glumes smooth, 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, subterete, 5–5.5 mm long, falling entire, deciduous with accessory branch structures. Spikelet callus oblong, bearded, base obtuse, attached obliquely. Spikelet callus hairs red.

Glumes. Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma. Lower glume oblong, 1 length of spikelet, coriaceous, much thinner above, dark brown, without keels, 7–9 -veined. Lower glume surface puberulous. Lower glume apex obtuse. Upper glume oblong, 3 -veined. Upper glume margins ciliolate.

Florets. Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret lanceolate, 3 mm long, hyaline, 1 -veined, without lateral veins. Fertile lemma linear, hyaline, without keel, 1 -veined, 0–3 -veined, one-veined. Lemma apex entire, awned, 1 -awned. Principal lemma awn apical, geniculate, 10–45 mm long overall, with twisted column. Column of lemma awn hirtellous. Palea absent or minute.

Flower and Fruit. $N = 9$ (1 ref TROPICOS). $2n = 40$ (2 refs TROPICOS).

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

Country /Province /State. Northeast tropical Africa, Western Indian ocean. Socotra. Mauritius (*), Madagascar (*), Reunion (*), Seychelles (*). Western Asia, Arabian Peninsula, China. Iraq. Oman. China South Central, Hainan, China Southeast. Indian Subcontinent, Indo-China, Malesia, Papuasias. Eastern Himalaya, India, Nepal, Pakistan. Andaman Is, Laos, Myanmar, Thailand, Vietnam. Lesser Sunda Is. New Guinea PNG. New Guinea, Solomon Is (*). Australia. Western Australia (*), Northern Territory (*), Queensland (*), New South Wales (*). Southwestern Pacific. Fiji (*), New Caledonia. Southwestern USA. California. Caribbean, Brazil, Southern South America. Cuba, Dominican Republic, Haiti, Windward Islands. Brazil South. Argentina Northwest (*).

TDWG4. Guangdong, Guangxi. Guizhou, Yunnan. Sikkim. Manipur, Nagaland. Bihar. Maharashtra, Rajasthan, Uttah Pradesh, West Bengal. Kimberley. Darwin & Gulf. North, Central, South East. Coast. Jujuy. Santa Fe.

Themeda sabarimalayana P.V. Sreekumar & V.J. Nair. *Bull. Bot. Surv. India*, 29: 127 (1989).

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

TYPE from India. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: India, Kerala, Sabarimala: Sreekumar 69433 (CAL holo, K, MH).

Illustrations (Books): K.M.Mathew, *Flora Palni Hills* (1996) (876, Pl 876).

Derivation (Clifford & Bostock 2007): L. -ana, indicating location. From Sabarimala, Kerala State, India.

Classification. Subfamily Panicoideae. Tribe: Andropogoneae. Subtribe **ANDROPOGONINAE**.

Habit, Vegetative Morphology. Perennial, caespitose. Culms erect, 50–200 cm long. Culm-nodes glabrous. Leaf-sheaths keeled. Ligule an eciliate membrane, acute. Leaf-blades 15–40 cm long, 5–10 mm wide. Leaf-blade midrib conspicuous. Leaf-blade margins scabrous. Leaf-blade apex acuminate.

Inflorescence. Synflorescence compound, paniculate, 30–60 cm long, lax.

Inflorescence composed of racemes, terminal and axillary, subtended by a spatheole, enclosed. Spatheole lanceolate, 1–2 cm long, scarious. Racemes 1, single, cuneate, bearing few fertile spikelets, bearing 1 fertile spikelets on each. Rhachis fragile at the nodes. Spikelets in threes (basal paired). Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 2 in the cluster. Pedicels present, oblong, 0.5 mm long.

Sterile Spikelets. Basal sterile spikelets well-developed, 4 in number, forming an involucre about the fertile, with both pairs arising at about the same level, subsessile, 6–14 mm long, equalling fertile. Basal sterile spikelet glumes pilose, lower glume muticous.

Companion sterile spikelets well-developed, male, lanceolate, 4–6 mm long, as long as fertile, separately deciduous. Companion sterile spikelet callus linear, 1–1.5 mm long. Companion sterile spikelet lemmas 2, enclosed by glumes.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets lanceolate, subterete, 5–6 mm long, falling entire, deciduous with accessory branch structures. Spikelet callus linear, bearded, base pungent, attached obliquely. Spikelet callus hairs dark brown, 1–3 mm long.

Glumes. Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma. Lower glume lanceolate, 1 length of spikelet, coriaceous, without keels, 9–11 -veined. Lower glume surface pubescent. Lower glume apex truncate. Upper glume lanceolate, 5–5.5 mm long, chartaceous, 2-keeled, 3–5 -veined. Upper glume apex acute.

Florets. Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret elliptic, 3–4 mm long, hyaline, 3–5 -veined, obscurely veined. Fertile lemma linear, 1–2 mm long, hyaline, without keel, 1 -veined, 0–3 -veined, one-veined. Lemma apex entire, awned, 1 -awned. Principal lemma awn apical, geniculate, 15–30 mm long overall, with twisted column. Palea ovate, 0.5 mm long, hyaline.

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

Distribution (TDWG). Continent. Tropical Asia.

Country /Province /State. Indian Subcontinent. India.

Kerala.

Themeda saxicola Bor. *Kew Bull.* 1951, 452 (1952).

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. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: India, Raisili: Mooney 4241 (K holo).

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

Derivation (Clifford & Bostock 2007): L. saxum, rock; -cola, dweller. Growing on or amongst boulders.

Classification. Subfamily Panicoideae. Tribe: Andropogoneae. Subtribe **ANDROPOGONINAE**.

Habit, Vegetative Morphology. Perennial. Butt sheaths pilose, persistent and investing base of culm. Culms erect, 20–35 cm long. Lateral branches lacking. Leaf-sheaths keeled. Ligule a ciliolate membrane, 1 mm long. Leaf-blades 3–6 cm long, 2.5–3 mm wide. Leaf-blade surface pilose, hairy adaxially, with tubercle-based hairs. Leaf-blade margins scabrous. Leaf-blade apex acuminate.

Inflorescence. Synflorescence simple.

Inflorescence composed of racemes, terminal, subtended by a spatheole, exserted. Spatheole linear, 1–2 cm long, without tubercles, glabrous. Peduncle 5 cm long. Racemes 1, single, oblong, bearing few fertile spikelets, bearing 2 fertile spikelets on each. Rhachis fragile at the nodes. Rhachis internodes linear. Spikelets in pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, oblong, 0.5 mm long.

Sterile Spikelets. Basal sterile spikelets well-developed, 4 in number, forming an involucre about the fertile, with normal internodes, subsessile, male, elliptic, 11–15 mm long, larger than fertile. Basal sterile spikelet glumes smooth, glabrous, lower glume muticous, lemmas awnless.

Companion sterile spikelets well-developed, male, elliptic, 10 mm long, longer than fertile, separately deciduous. Companion sterile spikelet callus linear, 2 mm long. Companion sterile spikelet glumes chartaceous, smooth, glabrous, ciliate on margins, acute. 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, subterete, 7.5–8 mm long, falling entire, deciduous with accessory branch structures. Spikelet callus cuneate, curved, 2 mm long, bearded, base pungent, attached obliquely. Spikelet callus hairs red.

Glumes. Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma. Lower glume oblong, 1 length of spikelet, coriaceous, light brown, without keels. Lower glume surface asperulous, pubescent. Lower glume hairs red. Lower glume apex truncate. Upper glume oblong.

Florets. Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret ovate, 4 mm long, hyaline. Fertile florets female. Fertile lemma linear, hyaline, without keel, 1 -veined, 0–3 -veined, one-veined. Lemma apex entire, awned, 1 -awned. Principal lemma awn apical, geniculate, 30 mm long overall, with twisted column. Column of lemma awn 20 mm long, puberulous. Palea absent or minute.

Flower and Fruit. Anthers 3, 3.5–4 mm long.

Distribution (TDWG). Continent. Tropical Asia.

Country /Province /State. Indian Subcontinent. India.

TDWG4. Orissa.

Themeda strigosa (Ham. ex Hook.f.) A.Camus. *Bull. Mus. Hist. Nat. Paris.* xxvi. 423 (1920).

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. **Basionym or Replaced Name:** *Anthistiria strigosa* Buch.-Ham. ex Hook.f., *Fl. Brit. Ind.* 7: 214 (1896). T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: India, Assam: Hamilton ; India: Wallich 8766.

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

Derivation (Clifford & Bostock 2007): L. covered with short, bristle-like hairs. One or more organs covered with bristle-like hairs.

Classification. Subfamily Panicoideae. Tribe: Andropogoneae. Subtribe ANDROPOGONINAE.

Habit, Vegetative Morphology. Perennial. Culms erect, 100–150 cm long. Leaf-sheaths keeled. Ligule a ciliolate membrane. Leaf-blades linear or lanceolate, 15–30 cm long, 3–4 mm wide. Leaf-blade apex attenuate, filiform.

Inflorescence. Synflorescence compound, paniculate, 30–60 cm long.

Inflorescence composed of racemes, terminal and axillary, subtended by a spatheole, enclosed. Spatheole lanceolate, 1–1.25 cm long, scarious, glabrous or pilose (on keel). Racemes 1, single, cuneate, bearing few fertile spikelets, bearing 2 fertile spikelets on each. Rhachis fragile at the nodes. Spikelets in pairs or in threes. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster or 2 in the cluster. Pedicels present, oblong, 0.5 mm long, tip oblique.

Sterile Spikelets. Basal sterile spikelets well-developed, 4 in number, forming an involucre about the fertile, with both pairs arising at about the same level, subsessile, male, oblong, 3–5 mm long, larger than fertile. Basal sterile spikelet glumes tuberculate, tuberculate on margins, lower glume muticous.

Companion sterile spikelets well-developed, containing empty lemmas or male, lanceolate, 3.5 mm long, longer than fertile, separately deciduous. Companion sterile spikelet callus linear, 1 mm long, obtuse. Companion sterile spikelet glumes tuberculate, pilose. 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, subterete, 3.5 mm long, falling entire, deciduous with accessory branch structures. Spikelet callus square, 0.5 mm long, pubescent, base obtuse, attached obliquely.

Glumes. Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma. Lower glume oblong, 1 length of spikelet, coriaceous, without keels. Lower glume surface hispidulous. Upper glume oblong, coriaceous, 3 -veined.

Florets. Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret oblong, hyaline. Fertile lemma linear, hyaline, without keel, 1 -veined, 0–3 -veined, one-veined. Lemma apex entire, awned, 1 -awned. Principal lemma awn apical, geniculate, 10 mm long overall, with twisted column. Column of lemma awn hispidulous. Palea absent or minute.

Flower and Fruit. $2n = 20$ (2 refs TROPICOS).

Distribution (TDWG). Continent. Tropical Asia.

Country /Province /State. Indian Subcontinent. Assam, India.

TDWG4. Sikkim, Assam, Meghalaya, Bihar, Maharashtra, Rajasthan, West Bengal.

Themeda tremula (Nees ex Steud.) Hack. *DC. Monog. Phan.* vi. 667 (1889).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, N.L.Bor, *Grasses of Burma, Ceylon, India and Pakistan* (1960).

TYPE from Sri Lanka. **Basionym or Replaced Name:** *Anthistiria tremula* Nees ex Steud., *Syn. Pl. Gram.* 401 (1854). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Sri Lanka: Wallich 8765 (K iso).

Illustrations (Books): K.M.Mathew, *Flora Palni Hills Supplement* (1998).

Derivation (Clifford & Bostock 2007): L. trembling. Inflorescence subject to movement in a slight breeze.

Classification. Subfamily Panicoideae. Tribe: Andropogoneae. Subtribe ANDROPOGONINAE.

Habit, Vegetative Morphology. Perennial. Culms decumbent, slender, 15–120 cm long, without nodal roots or rooting from lower nodes. Ligule a ciliolate membrane. Leaf-blades 8–30 cm long, 3–8 mm wide.

Inflorescence. Synflorescence compound, fasciculate, 5–30 cm long.

Inflorescence composed of racemes, terminal and axillary, subtended by a spatheole, enclosed. Spatheole lanceolate, 1–2 cm long, scarious, brown or grey, without tubercles or tuberculate, glabrous or pilose. Racemes 1, single, oblong, bearing few fertile spikelets, bearing 2 fertile spikelets on each. Rhachis fragile at the nodes. Rhachis internodes linear. Spikelets in pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, oblong, 0.5 mm long.

Sterile Spikelets. Basal sterile spikelets well-developed, 4 in number, forming an involucre about the fertile, subsessile, elliptic, 5.5–7.5 mm long, larger than fertile. Basal sterile spikelet glumes tuberculate, pilose or villous, lower glume muticous.

Companion sterile spikelets well-developed, male, lanceolate, 4–6.5 mm long, longer than fertile, separately deciduous. Companion sterile spikelet callus linear. Companion sterile spikelet glumes tuberculate, pilose or villous. Companion sterile spikelet lemmas 2, enclosed by glumes.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets elliptic, subterete, 3–3.5 mm long, falling entire, deciduous with accessory branch structures. Spikelet callus oblong, bearded, base obtuse, attached obliquely. Spikelet callus hairs red.

Glumes. Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma. Lower glume oblong, 1 length of spikelet, coriaceous, without keels. Lower glume surface with a longitudinal median groove, pubescent. Lower glume hairs red. Lower glume apex obtuse. Upper glume oblong.

Florets. Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret lanceolate, hyaline. Fertile lemma linear, hyaline, without keel, 1 -veined, 0–3 -veined, one-veined. Lemma apex entire, awned, 1 -awned. Principal lemma awn apical, geniculate, 15–35 mm long overall, with twisted column. Column of lemma awn puberulous. Palea absent or minute.

Flower and Fruit. $2n = 20$ (2 refs TROPICOS).

Distribution (TDWG). Continent. Tropical Asia.

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

TDWG4. Andhra Pradesh, Kerala, Karnataka, Maharashtra, Rajasthan, Tamilnadu, Uttah Pradesh.

Themeda triandra Forsk. *Fl. Aegypt. Arab.* 178 (1775).

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

TYPE from Yemen. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Yemen: Al Hadiyah, 1763, *Forsskel s.n.* (HT: C (destroyed)).

Illustrations (Books): H.Jacques-Felix, *Les Graminees d'Afrique tropicale* (1962) (313, Fig. 251), W. Robyns (1929 and 1934). *Flora Agrostologique du Congo Belge et du Ruanda-Urundi*, I. Maydees et Andropogonees and II. Panicees. Bruxelles, Goemaere (217, Pl. 18, as var. *hispida*), F.N.Hepper, *F.W.T.A.* 3(2) (1972) (472, Fig.450), R.M.Polhill, F.T.E.A., *Gramineae* 3(1982):828, Fig 192), G.V.Pope et al., *Flora Zambesiaca* 10, L.K.A. Chippindall, *Grasses and Pastures of South Africa* (1955) (Plt. 18), M.A.N.Muller, *Grasses of South West Africa/Namibia* (1984), G.E.Gibbs Russell et al, *Grasses of Southern Africa* (1990) (335,

Fig. 218), S.Phillips, *Poaceae* (Gramineae) in I.Hedberg & S.Edwards, *Flora of Ethiopia and Eritrea* (1995) (355, Fig. 145), L.Boulos, *Flora of Egypt* 4 (2005) (342, Pl. 100), T.A.Cope, in M.Thulin, *Poaceae* (Gramineae). *Flora of Somalia* (1995) (266, Fig 159), T.Koyama, *Grasses of Japan and its neighbouring regions* (1987) (451, Fig. 177), C-C Hsu, *Flora of Taiwan*, Vol 5 (1978) (785 as *T. japonica*), C-C Hsu, *Taiwan Grasses* (1975) (as *T. japonica*), N.L.Bor, *The grasses of Burma, Ceylon, India and Pakistan* (1960) (253, Fig. 27), K.M.Mathew, *Illustrations on the Flora of Tamilnadu Carnatic* (1982) (Pl. 943 & 944), H.J.Noltie, *The Grasses of Bhutan* (2000) (821, Fig. 60 as var. *laxa*), E.E.Henty, *A Manual of the Grasses of New Guinea* (1969) (183, Fig. 69 as *T.australis*), J.P.Jessop, G.R.M. Dashorst & F.M.James, *Grasses of South Australia* (2006) (535, Fig 456), C.A.Gardner, *Flora of Western Australia*, Vol 1, Part 1, *Gramineae* (1952) (343, Pl. 100 as *T. australis*), J.R.Wheeler et al, *Flora of the Kimberley Region* (1992) (1189, Fig. 337), S.W.L.Jacobs, R.D.B.Whalley & D.J.B.Wheeler., *Grasses of New South Wales*, 4th edn (2008) (as *T.australis*), J.C.Tothill, & J.B.Hacker. *The grasses of southern Queensland* (1983) (402 as *T.australis*), T.D.Stanley & E.Ross, *Flora of South East Queensland, Gramineae* (1989) (267, Fig. 40), 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) (683), R.Pilger, *Die Natürlichen Pflanzenfamilien* 14e (1940) (179, Fig. 95), S-L Chen et al, *Flora of China*, Illustrations, *Poaceae* (2007) (Fig. 884).

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*;, R.Darke, *Ornamental Grasses* (2004); (*T. japonica*), R.Darke, *The Encyclopaedia of Grasses for Liveable Landscapes* (2007); (as *T. australis* & *T. japonica*), F.van Oudtshoorn, *Guide to Grasses of Southern Africa* (1999).

Derivation (Clifford & Bostock 2007): Gk. treis, three; aner, man. Sessile hermaphrodite spikelet surrounded by three male spikelets.

Classification. Subfamily Panicoideae. Tribe: Andropogoneae. Subtribe ANDROPOGONINAE.

Habit, Vegetative Morphology. Perennial, caespitose. Culms erect, 30–200 cm long. Ligule a ciliate membrane. Leaf-blades 10–30 cm long, 1–8 mm wide.

Inflorescence. Synflorescence compound, fasciculate, 10–30 cm long.

Inflorescence composed of racemes, terminal and axillary, subtended by a spatheole, enclosed. Spatheole lanceolate, 1.5–3.5 cm long, scarious, brown or red, without tubercles or tuberculate. Racemes 1, single, cuneate, bearing few fertile spikelets, bearing 1 fertile spikelets on each. Rhachis fragile at the nodes. Spikelets in threes (basal paired). Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 2 in the cluster. Pedicels present, oblong, 0.5 mm long.

Sterile Spikelets. Basal sterile spikelets well-developed, 4 in number, forming an involucre about the fertile, with both pairs arising at about the same level, subsessile, 6–14 mm long, equalling fertile. Basal sterile spikelet glumes smooth or tuberculate, glabrous or pubescent or pilose, lower glume mucous.

Companion sterile spikelets well-developed, male, elliptic, 6–14 mm long, as long as fertile, separately deciduous. Companion sterile spikelet callus linear, 2–3 mm long, 2-toothed. Companion sterile spikelet glumes smooth or tuberculate, glabrous or pubescent or pilose. 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, subterete, 6–11 mm long, falling entire, deciduous with accessory branch structures. Spikelet callus linear, 2–4 mm long, bearded, base pungent, attached obliquely. Spikelet callus hairs red.

Glumes. Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma, shiny. Lower glume oblong, 1 length of spikelet, coriaceous, dark brown, without keels, 7–9 -veined. Lower glume apex obtuse. Upper glume oblong, 3 -veined.

Florets. Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret lanceolate, 4 mm long, hyaline, 0 -veined, without midvein, without lateral veins. Fertile lemma linear, hyaline, without keel, 1 -veined, 0–3 -veined, one-veined. Lemma apex entire, awned, 1 -awned. Principal lemma awn apical, geniculate, 25–70 mm long overall, with twisted column. Column of lemma awn hispidulous. Palea absent or minute.

Flower and Fruit. $N = 15$ (1 ref TROPICOS), or 20 (4 refs TROPICOS), or 30 (1 ref TROPICOS). $2n = 60$ (2 refs TROPICOS).

Distribution (TDWG). Continent. Africa, Temperate Asia, Tropical Asia, Australasia, Pacific, North 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, Western Indian ocean. Algeria, Egypt, Tunisia. Cape Verde. Burkina, Ghana, Mali, Nigeria, Senegal. Burundi, 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. Madagascar. **China, Eastern Asia.** China South Central, Hainan, China North-Central, China Southeast, Tibet. Japan, Korea, Nansei-Shoto, Taiwan. Japan Honshu, or Shikoku, or Kyushu. **Indian Subcontinent, Indo-China, Malesia, Papuasias.** Eastern Himalaya, India, Nepal, Sri Lanka. Andaman Is, Laos, Myanmar, Thailand, Vietnam. Java, Lesser Sunda Is, Malaya, Moluccas, Philippines, Sulawesi. New Guinea PNG, or West Papua (Irian Jaya). New Guinea. **Australia, New Zealand.** Western Australia, Northern Territory, South Australia, Queensland, New South Wales, A.C.T., Victoria, Tasmania. New Zealand North I, New Zealand South I. **Southwestern Pacific.** New Caledonia (*). Hawaii (*). **South-central USA.** Texas.

TDWG4. Hebei, Shaanxi, Shandong. Anhui, Fujian, Henan, Jiangsu, Jiangxi, Zhejiang. Guizhou, Hubei, Sichuan, Yunnan. Darjeeling, Bhutan, Sikkim. Assam, Manipur, Meghalaya, Mizoram, Nagaland, Tripura. Andhra Pradesh, Bihar, Chandigarh, Chattisgarh, Dadra-Nagar-Haveli, Diu, Delhi, Daman, Goa, Gujarat, Haryana, Jharkhand, Kerala, Karaikal, Karnataka. Mahe, Madhya Pradesh, Maharashtra, Orissa, Pondicherry, Punjab, Rajasthan, Tamilnadu, Uttah Pradesh, West Bengal, Yanam. Himachal Pradesh, Jammu Kashmir, Uttaranchal. Kimberley, Ereman, South-West. Darwin & Gulf, Victoria R & Barkly Tableland, Central Australia. NW & Lake Eyre, Southern. North, Central, South East, Inland. Coast, Tablelands, Western Slopes, Western Plains.

Themeda trichiata S.L. Chen & T.D. Zhuang. *Bull. Bot. Res. North-East. Forest. Inst.*, 9(2): 58 (1989).

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

TYPE from China. T: <Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: China, Guangxi, Bose: Bose Exped. 01104 (JSBI holo).

Illustrations (Books): S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (fig. 888).

Derivation (Clifford & Bostock 2007): Gk. thrix, hair; L. -ata, possessing. Plant densely hairy.

Classification. Subfamily Panicoideae. Tribe: Andropogoneae. Subtribe **ANDROPOGONINAE**.

Habit, Vegetative Morphology. Perennial. Culms erect, robust, 150 cm long, with prop roots. Culm-internodes terete, brown, distally pilose. Leaf-sheaths keeled, hirsute. Ligule a ciliolate membrane. Leaf-blades 40–80 cm long, 4–6 mm wide. Leaf-blade venation distinct. Leaf-blade surface hirsute, densely hairy. Leaf-blade margins scabrous. Leaf-blade apex attenuate.

Inflorescence. Synflorescence compound, fasciculate, lax.

Inflorescence composed of racemes, terminal and axillary, subtended by a spatheole, enclosed. Spatheole lanceolate, 4–6 cm long, scarious, without tubercles, hirsute. Peduncle 2–8 cm long, hirsute above. Racemes 1, single, cuneate, bearing few fertile spikelets, bearing 2 fertile spikelets on each. Rhachis fragile at the nodes. Spikelets in pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster or 2 in the cluster. Pedicels present, oblong, tip oblique.

Sterile Spikelets. Basal sterile spikelets well-developed, 4 in number, forming an involucre about the fertile, with normal internodes, subsessile, barren or male, lanceolate, 10 mm long, equalling fertile. Basal sterile spikelet glumes herbaceous, lower glume muticous.

Companion sterile spikelets well-developed, containing empty lemmas or male, lanceolate, 20 mm long, longer than fertile, separately deciduous. Companion sterile spikelet callus linear, truncate. 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, subterete, 10 mm long, falling entire, deciduous with accessory branch structures. Spikelet callus cuneate, base pungent, attached obliquely.

Glumes. Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma. Lower glume oblong, 1 length of spikelet, coriaceous, without keels. Lower glume surface pubescent. Lower glume hairs tawny. Lower glume apex obtuse. Upper glume oblong, coriaceous.

Florets. Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret oblong, hyaline. Fertile lemma linear, hyaline, without keel, 1 -veined, 0–3 -veined, one-veined. Lemma apex entire, awned, 1 -awned. Principal lemma awn apical, geniculate, 20–40 mm long overall, with twisted column. Column of lemma awn hispidulous. Palea absent or minute.

Distribution (TDWG). Continent. Temperate Asia.

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

TDWG4. Guangxi, Yunnan.

Themeda unica S.L. Chen & T.D. Zhuang. *Bull. Bot. Res. North-East. Forest. Inst.*, 9(2): 56 (1989).

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

TYPE from China. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: China, Anhui, Jing Xian Pan: Courtois 13169 (JSBI holo).

Illustrations (Books): S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (fig. 889).

Derivation (Clifford & Bostock 2007): *L. unicus*, singular. Possibly a reference to the lower glume being one-nerved.

Classification. Subfamily Panicoideae. Tribe: Andropogoneae. Subtribe ANDROPOGONINAE.

Habit, Vegetative Morphology. Perennial, caespitose. Culms erect or geniculately ascending, robust, 100–250 cm long, 4–10 mm diam., 6–8-noded. Culm-internodes terete, distally glabrous. Leaf-sheaths loose, keeled, pilose, with tubercle-based hairs. Ligule an eciliate membrane, 2–7 mm long, obtuse. Leaf-blades 30–60 cm long, 4–10 mm wide. Leaf-blade midrib prominent beneath. Leaf-blade surface glabrous, hairless except near base. Leaf-blade apex acuminate.

Inflorescence. Synflorescence compound, fasciculate, 100–150 cm long, open, with principal spatheoles embracing a compact fascicle of racemes, each subtended by a subsidiary bract (4–6 racemes).

Inflorescence composed of racemes, terminal and axillary, subtended by a spatheole, enclosed. Spatheole lanceolate, 4–9 cm long, scarious, without tubercles, pilose. Racemes 1, single, cuneate, bearing few fertile spikelets, bearing 1 fertile spikelets on each. Rhachis fragile at the nodes. Spikelets in threes (basal paired). Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 2 in the cluster. Pedicels present, oblong, 1 mm long.

Sterile Spikelets. Basal sterile spikelets well-developed, 4 in number, forming an involucre about the fertile, with normal internodes, subsessile, male, lanceolate, 25–40 mm long, larger than fertile. Basal sterile spikelet glumes tuberculate, setose, attenuate, lower glume muticous.

Companion sterile spikelets well-developed, male, lanceolate, 25–40 mm long, longer than fertile, separately deciduous. Companion sterile spikelet callus linear, 3–5 mm long. Companion sterile spikelet glumes herbaceous, pilose, attenuate.

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, subterete, 10 mm long, falling entire, deciduous with accessory branch structures. Spikelet callus oblong, pubescent, attached obliquely.

Glumes. Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma. Lower glume ovate, 1 length of spikelet, coriaceous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume surface hirsute. Upper glume oblong, coriaceous, 3 -veined.

Florets. Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret oblong, hyaline, 0 -veined, without midvein, without lateral veins. Fertile lemma linear, hyaline, without keel, 1 -veined, 0–3 -veined, one-veined. Lemma apex entire, awned, 1 -awned. Principal lemma awn apical, geniculate, 20–40 mm long overall, with twisted column. Column of lemma awn pubescent. Palea absent or minute.

Flower and Fruit. Lodicules 1, cuneate.

Distribution (TDWG). Continent. Temperate Asia.

Country /Province /State. China. China Southeast.

TDWG4. Anhui, Zhejiang.

Themeda villosa (Poir.) A. Camus. Lecomte, *Fl. Gen. Indo-Chine*, vii. 364 (1922).

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)*, N.L. Bor, *Grasses of Burma, Ceylon, India and Pakistan* (1960).

TYPE from Indonesia. **Basionym or Replaced Name:** *Anthistiria villosa* Poir., Lam., *Meth. Bot. Suppl.* 1:396 (1812). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Java: Commerson.

Recent Synonyms: *Pseudanthistiria emeinica* S.L. Chen & T.D. Zhuang, *Bull. Bot. Res. North-East. Forest. Inst.*, 8(3): 45 (1988).

Illustrations (Books): H.J. Noltie, *The Grasses of Bhutan* (2000) (823, Fig. 61), H.B. Gilliland, *Grasses of Malaya* (1971) (302, Fig. 65), H. Duistermaat, *Field Guide to the Grasses of Singapore* (2005) (133, Fig. 139), S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Figs. 886 & 888), E. Hafliger & E. Schultz, *Grass Weeds*, CIBA-GEIGY (1:139(1980)).

Images: H. Duistermaat, *Field Guide to the Grasses of Singapore* (2005);

Derivation (Clifford & Bostock 2007): *L. villi*, long weak hairs; -osa, abundance. The plant in whole or in part covered with long hairs.

Classification. Subfamily Panicoideae. Tribe: Andropogoneae. Subtribe ANDROPOGONINAE.

Habit, Vegetative Morphology. Perennial. Basal innovations flabellate. Culms robust, 200–300 cm long. Ligule a ciliolate membrane. Leaf-blades 50–100 cm long, 6–12 mm wide.

Inflorescence. Synflorescence compound, paniculate, 30–60 cm long, dense.

Inflorescence composed of racemes, terminal and axillary, subtended by a spatheole, embraced at base by subtending leaf. Spatheole lanceolate, 2.5–3.5 cm long, scarious, green, without tubercles, glabrous. Racemes 1, single, oblong, bearing few fertile spikelets, bearing 2–4 fertile spikelets on each. Rhachis fragile at the nodes. Rhachis internodes linear. Spikelets in pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, oblong, 0.5 mm long.

Sterile Spikelets. Basal sterile spikelets well-developed, 4 in number, forming an involucre about the fertile, subsessile, lanceolate, 5–13 mm long, larger than fertile. Basal sterile spikelet glumes smooth or tuberculate, pubescent, smooth on margins or ciliate on margins (rufously), lower glume muticous.

Companion sterile spikelets well-developed, male, lanceolate, 10–12 mm long, longer than fertile, separately deciduous. Companion sterile spikelet callus linear. Companion sterile spikelet glumes smooth, glabrous. 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, compressed slightly, 7–8 mm long, falling entire, deciduous with accessory branch structures. Spikelet callus cuneate, bearded, base acute, attached obliquely. Spikelet callus hairs red.

Glumes. Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma. Lower glume oblong, 1 length of spikelet, coriaceous, without keels. Lower glume surface pubescent. Lower glume hairs red. Lower glume apex obtuse. Upper glume oblong.

Florets. Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret lanceolate, hyaline. Fertile lemma lanceolate, hyaline, without keel, 1 -veined, 0–3 -veined, one-veined. Lemma apex entire, muticous or awned, 1 -awned. Principal lemma awn apical, geniculate, 0–10 mm long overall, with twisted column. Column of lemma awn puberulous. Palea absent or minute.

Flower and Fruit. $N = 20$ (2 refs TROPICOS). $2n = 40$ (1 ref TROPICOS).

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

Country /Province /State. **West-central tropical Africa.** Rwanda. **China.** China South Central, Hainan, Inner Mongolia, China Southeast, Tibet. **Indian Subcontinent, Indo-China, Malesia.** Bangladesh, Eastern Himalaya, India, Nepal, Sri Lanka (*). Andaman Is, Myanmar, Thailand, Vietnam. Borneo, Java, Lesser Sunda Is, Malaya, Singapore, Philippines, Sulawesi, Sumatra. New Guinea PNG. New Guinea. **North-central Pacific.** Hawaii.

TDWG4. Fujian, Guangdong, Guangxi, Henan, Hunan, Jiangxi, Zhejiang. Guizhou, Hubei, Sichuan, Yunnan. Darjeeling, Bhutan, Sikkim. Manipur. Bihar. West Bengal.

Themeda yunnanensis S.L. Chen & T.D. Zhuang. *Bull. Bot. Res. North-East. Forest. Inst.*, 9(2): 58 (1989).

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

TYPE from China. T: <Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: China, Yunnan, Pinbian Xian: Tsai 61976 (JSBI holo, PE).

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

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

Classification. Subfamily Panicoideae. Tribe: Andropogoneae. Subtribe ANDROPOGONINAE.

Habit, Vegetative Morphology. Perennial. Culms 50–100 cm long. Culm-internodes brown, distally glabrous. Leaf-sheaths mostly shorter than adjacent culm internode, keeled, glabrous on surface. Ligule a ciliolate membrane. Leaf-blades 15–30 cm long, 3–5 mm wide. Leaf-blade venation indistinct. Leaf-blade surface glabrous. Leaf-blade margins scabrous. Leaf-blade apex attenuate.

Inflorescence. Synflorescence compound, fasciculate, lax.

Inflorescence composed of racemes, terminal and axillary, subtended by a spatheole, enclosed. Spatheole ovate, 3–5 cm long, scarious, without tubercles, glabrous. Peduncle brief, the inflorescence subsessile. Racemes single, cuneate, 2.5–3.5 cm long, bearing few fertile spikelets, bearing 2 fertile spikelets on each. Rhachis fragile at the nodes. Spikelets in pairs or in threes. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster or 2 in the cluster. Pedicels present, oblong, tip oblique.

Sterile Spikelets. Basal sterile spikelets well-developed, 4 in number, paired, subsessile, male, lanceolate, 15 mm long, larger than fertile. Basal sterile spikelet glumes herbaceous, glabrous, lower glume muticous.

Companion sterile spikelets well-developed, containing empty lemmas or male, lanceolate, 30 mm long, longer than fertile, separately deciduous. Companion sterile spikelet callus linear, truncate. Companion sterile spikelet lemmas 2, enclosed by glumes.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rachilla extension. Spikelets elliptic, 10 mm long, falling entire, deciduous with accessory branch structures. Spikelet callus bearded, base pungent, attached obliquely.

Glumes. Glumes exceeding apex of florets. Lower glume oblong, 1 length of spikelet, coriaceous, without keels. Lower glume surface pubescent, hairy below. Lower glume hairs yellow. Lower glume apex obtuse. Upper glume oblong, coriaceous.

Florets. Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret oblong, hyaline. Fertile lemma linear, hyaline, without keel, 1 -veined, 0–3 -veined, one-veined. Lemma apex awned, 1 -awned. Principal lemma awn geniculate or bigeniculate, 30–60 mm long overall, with twisted column. Column of lemma awn hispidulous. Palea absent or minute.

Flower and Fruit. Anthers 3, 5 mm long.

Distribution (TDWG). Continent. Temperate Asia.

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

TDWG4. Yunnan.

Thinopyrum distichum (Thunb.) A.Lvve. Feddes *Repert.*, 95: 476: (1984).

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

TYPE from South Africa. **Basionym or Replaced Name:** *Triticum distichum* Thunb., *Prodr. Pl. Cap.* 23 (1794). T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: South Africa, Cape: *Thunberg*

Recent Synonyms: *Elymus distichus* (Thunb.) A.Melderis, *Bot. J. Linn. Soc.*, 76(4): 383 (1978).

Illustrations (Books): G.E.Gibbs Russell et al, *Grasses of Southern Africa* (1990) (336, Fig 219).

Derivation (Clifford & Bostock 2007): Gk. distichos, two-rowed. Plants with conspicuously two-rowed spikelets or leaves.

Classification. Subfamily Pooideae. Tribe: Triticeae.

Habit, Vegetative Morphology. Perennial. Rhizomes elongated. Culms robust, 40–60 cm long. Leaves cauline. Leaf-sheaths glabrous on surface. Leaf-sheath auricles absent. Ligule an eciliate membrane. Leaf-blades flat or involute, 20–40 cm long, 5–7 mm wide, coriaceous, stiff, glaucous. Leaf-blade surface ribbed. Leaf-blade apex hardened.

Inflorescence. Inflorescence composed of racemes. Racemes 1, single, erect, linear or oblong, bilateral, 6–25 cm long. Rhachis fragile at the nodes, semiterete, smooth on margins. Spikelet packing broadside to rhachis, regular, 2 -rowed. Rhachis internodes linear, falling with spikelet above. Spikelets appressed, solitary. Fertile spikelets sessile.

Fertile Spikelets. Spikelets comprising 5–11 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets oblong, laterally compressed, (16–)28–40 mm long, breaking up at maturity, disarticulating below each fertile floret. Rachilla internodes obscured by lemmas.

Glumes. Glumes persistent, similar, subequal in width, shorter than spikelet. Lower glume oblong, 17–22 mm long, 1 length of upper glume, coriaceous, without keels, 9–11 -veined. Lower glume lateral veins ribbed. Lower glume surface smooth. Lower glume apex truncate or obtuse. Upper glume oblong, 17–22 mm long, 1.1 length of adjacent fertile lemma, coriaceous, without keels, 9–11 -veined. Upper glume lateral veins ribbed. Upper glume apex truncate or obtuse.

Florets. Fertile lemma ovate, 15–19 mm long, coriaceous, without keel, 7–11 -veined, more than 3-veined. Lemma apex dentate, 3 -fid. Palea 2 -veined. Palea keels winged, narrowly winged. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, membranous. Anthers 3. Stigmas 2. Ovary pubescent on apex. Caryopsis with adherent pericarp, 10 mm long. Hilum linear.

$2n = 21$ (1 ref TROPICOS), or 28 (3 refs TROPICOS).

Distribution (TDWG). Continent. Africa (*), Australasia (*).

Country /Province /State. Southern Africa. Western Cape, Eastern Cape. **Australia.** Western Australia (*).

TDWG4. South-West.

Thinopyrum elongatum (Host) Runemark. *Hereditas*, 70(2): 156 (1972).

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) (as *Elymus*), N.Tsvelev, *Grasses of the Soviet Union* (1983) (as *Elytrigia*).

TYPE from Yugoslavia. **Basionym or Replaced Name:** *Triticum elongatum* Host, *Icon. Descr. Gram. Austriac.*, 2: 18, t. 23 (1802)

. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: Yugoslavia, Ssaule: Coll? (W holo).

Recent Synonyms: *Elytrigia elongata* (Host ex Beauv.) Nevski, *Acta Inst. Bot. Acad. Sc. URSS, Ser- I. Fasc. 1*, 23 (1933). *Elymus elongatus* (Host) Runemark, *Hereditas*, 70(2): 156 (1972).

Agropyron elongatum (Host) Beauv., *Agrost.* 102 (1812).

Illustrations (Books): N.Feinbrun-Dothan, *Flora Palaestina* 4 (1986) (Pl 202, as *Elymus*), J.P.Jessop, G.R.M. Dashorst & F.M.James, *Grasses of South Australia* (2006), N.Walsh & T.Entwistle, *Flora of Victoria* Vol 2 (1994) (512, Fig 100 as *Lophopyrum elongatum*), A.Wilson (ed.), *Flora of Australia*, Vol 44A. *Poaceae* (2009) (117, Fig 18), D.Sharp & B.K.Simon, *AusGrass*. Grasses of Australia. CD-Rom Version 1.0. (2002), K.F.Best, et al, *Prairie Grasses* (1971) (35 as *Agropyron elongatum*), M.N.Correa, *Flora Patagonica* Parte III, Gramineae (1978) (460, Fig. 306 as *Agropyron elongatum*).

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

Derivation (Clifford & Bostock 2007): L. elongated. Inflorescence elongated.

Classification. Subfamily Pooideae. Tribe: Triticeae.

Habit, Vegetative Morphology. Perennial, caespitose. Culms robust, 35–75 cm long. Culm-internodes distally glabrous. Leaf-sheaths outer margin glabrous or hairy. Leaf-sheath auricles falcate. Ligule an eciliate membrane. Leaf-blades convolute, 20–45 cm long, 2.5–5 mm wide, stiff. Leaf-blade surface ribbed, scabrous, rough adaxially, glabrous or pubescent, hairy on both sides.

Inflorescence. Inflorescence composed of racemes. Racemes 1, single, bilateral, 10–25 cm long. Rhachis flattened, smooth on margins or scaberulous on margins. Spikelet packing broadside to rhachis, lax. Spikelets solitary. Fertile spikelets sessile.

Fertile Spikelets. Spikelets comprising 5–12 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets elliptic to oblong, laterally compressed, compressed strongly, 12–25 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, similar, shorter than spikelet. Lower glume oblong, 7–9 mm long, 1 length of upper glume, coriaceous, without keels, 5–9 -veined. Lower glume lateral veins ribbed. Lower glume surface smooth or scabrous, rough on veins. Lower glume apex emarginate or truncate or obtuse. Upper glume oblong, 7–9 mm long, 0.7–0.8 length of adjacent fertile lemma, coriaceous, without keels, 5–9 -veined. Upper glume lateral veins ribbed. Upper glume surface smooth or scabrous, rough on veins. Upper glume apex emarginate or truncate or obtuse.

Florets. Fertile lemma lanceolate to oblong, 9–11 mm long, coriaceous, keeled, keeled above, 5 -veined, more than 3-veined. Lemma apex obtuse, muticous. Palea keels ciliolate, adorned above. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, elliptic, membranous. Anthers 3, 2.5–5.5 mm long. Stigmas 2. Ovary pubescent on apex. Caryopsis with adherent pericarp.

$N = 7$ (1 ref TROPICOS). $2n = 14$ (4 refs TROPICOS), or 28 (1 ref TROPICOS).

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

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

Country /Province /State. : Balears, Corsica, Channel Islands, Portugal, Sardinia, Spain. : Bulgaria, Greece, Italy, Romania, Turkey Europe, Yugoslavia. Krym, East European Russia, South European Russia, Northwest European Russia, Moldova, Ukraine. **Northern Africa.** Algeria, Egypt, Morocco, Tunisia. **Middle Asia, Caucasus, Western Asia, Arabian Peninsula.** Tadzhikistan. Iran. **Australia.** South Australia (*), New South Wales (*), Victoria (*), Tasmania. **Western South America, Southern South America.** Bolivia. Argentina South.

TDWG4. Southern. Coast, Tablelands, Western Slopes, Western Plains. Tierra del Fuego.

Thinopyrum intermedium (Host) M.E. Barkworth & D.R. Dewey. *Amer. J. Bot.*, 72(5): 772 : (1985).

Accepted by: R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), E.Edgar, & H.Connor, *Flora of New Zealand Gramineae* 5 (2000) (as *Elymus*), N.L.Bor, *Grasses of Burma, Ceylon, India and Pakistan* (1960) (as *Agropyron intermedium* & *A. ttichophorum*), T.G.Tutin et al, *Flora Europaea* 5 (1980) (as *Elymus hispidus*), N.Tsvelev, *Grasses of the Soviet Union* (1983) (as *Elytrigia intermedia*).

TYPE from Yugoslavia. **Basionym or Replaced Name:** *Elymus hispidus* (Opiz) A. Melderis, *Bot. J. Linn. Soc.*, 76(4): 380 (1978). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Yugoslavia: Host (W holo).

Recent Synonyms: *Triticum intermedium* Host, *Ic. & Descr. Gramin. Austr.* 3: 23 (1805).

Illustrations (Books): N.L.Bor, *Gramineae* in K.H.Rechinger, *Flora Iranica*. No. 70/30 (1970) (Tab. 24 as *Agropyron trichophorum*), N.L.Bor, *Gramineae* in *Flora of Iraq* (1968) (223, Pl. 75 as *Agropyron trichophorum*), G.Hegi, *Flora von Mitteleuropa* 1 (1909) (as *Agriopyrum intermedium* ssp. *trichophorum*), K.F.Best, et al, *Prairie Grasses* (1971) (37 as *Agropyron intermedium*), M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 24 *Poaceae*, part 1 (2007) (375, as subspecies *intermedium* & *barbulatum*).

Derivation (Clifford & Bostock 2007): L. intermediate. Having affinities with but distinct from other species.

Classification. Subfamily Pooideae. Tribe: Triticeae.

Habit, Vegetative Morphology. Perennial. Rhizomes elongated. Culms erect or geniculately ascending, 40–80 cm long. Culm-nodes glabrous or pubescent. Leaf-sheaths outer margin hairy. Leaf-sheath auricles falcate. Ligule an eciliate membrane. Leaf-blades 15–30 cm long, 2–6 mm wide, glaucous. Leaf-blade surface scabrous, glabrous or pilose, sparsely hairy, axially.

Inflorescence. Inflorescence composed of racemes. Racemes 1, single, bilateral, 10–20 cm long. Rhachis flattened, ciliate on margins. Spikelet packing broadside to rhachis, crowded or contiguous. Spikelets solitary. Fertile spikelets sessile.

Fertile Spikelets. Spikelets comprising 4–6 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets elliptic to oblong, laterally compressed, 10–15 mm long, falling entire.

Glumes. Glumes similar, shorter than spikelet. Lower glume lanceolate or oblong, 5–8.5 mm long, 1 length of upper glume, coriaceous, 1-keeled, keeled above, 5 -veined. Lower glume primary vein scabrous. Lower glume lateral veins ribbed. Lower glume surface glabrous or pilose. Lower glume apex truncate or obtuse, mucronate. Upper glume lanceolate or oblong, 5–8.5 mm long, 0.6–0.75 length of adjacent fertile lemma, coriaceous, 1-keeled, keeled above, 5 -veined. Upper glume primary vein scabrous. Upper glume lateral veins ribbed. Upper glume surface glabrous or pilose. Upper glume apex truncate or obtuse, mucous.

Florets. Fertile lemma lanceolate to oblong, 8–11 mm long, coriaceous, keeled, keeled above, 5 -veined, more than 3-veined. Lemma surface glabrous or pilose. Lemma margins eciliate or ciliate. Lemma apex obtuse, mucous or mucronate or awned, 1 -awned. Principal lemma awn 0–8 mm long overall. Palea keels ciliate. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, elliptic, membranous. Anthers 3, (4–)6–8 mm long. Stigmas 2. Ovary pubescent on apex. Caryopsis with adherent pericarp.

$2n = 42$ (4 refs TROPICOS).

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

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

Country /Province /State. : Austria, Czechoslovakia, Germany, Hungary, Poland, Switzerland. : France, Spain. : Albania, Bulgaria, Greece, Italy, Crete, Romania, Turkey Europe, Yugoslavia. Krym, Central European Russia, East European Russia, South European Russia, Northwest European Russia, Ukraine. **Middle Asia, Caucasus.** Kazakhstan, Turkmenistan, Tadzhikistan. North Caucasus, Transcaucasus. **Indian Subcontinent.** Pakistan. **Subarctic America, Western Canada, Eastern Canada, Northwest USA, Northeast USA, Southwestern USA, South-central USA, Mexico.** Yukon. British Columbia. Nova Scotia. Oregon, Washington. Arizona, California. New Mexico. Northeast Mexico.

TDWG4. Chihuahua.

Thinopyrum junceum (L.) Love. *Taxon* 29:351 (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 (as *Elymus*), U.Quattrocchi, *CRC World Dictionary of Grasses* (2006) (as *Agropyron*).

TYPE from Linneas Herbarium. **Basionym or Replaced Name:** *Agropyron bessarabicum*, *Elymus farctus*, *Triticum junceum* L., *Cent. Pl.* i. 6; *Amoen. Acad.* iv. 266 (1771). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: : Hasselquist, *Herb. Linn.* 104.5 (LINN lecto).

Recent Synonyms: *Thinopyrum junceiforme* (A. Love & D. Love) A. Love, *Taxon*, 29(2–3): 35 (1980).

Illustrations (Books): M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 24 *Poaceae*, part 1 (2007) (375).

Derivation (Clifford & Bostock 2007): L. *juncea*, rush-like. Leaf-blades convolute resembling those of certain *Juncus* species.

Classification. Subfamily Pooideae. Tribe: Triticeae.

Habit, Vegetative Morphology. Perennial, caespitose. Rhizomes elongated. Culms erect, 20–60 cm long. Leaves cauline. Leaf-sheaths glabrous on surface. Leaf-sheath auricles absent. Ligule an eciliate membrane, 0.5–1 mm long, truncate. Leaf-blades flat or involute, 10–35 cm long, 2–6 mm wide, stiff or firm, glaucous. Leaf-blade surface ribbed, pubescent, densely hairy, hairy adaxially. Leaf-blade apex acuminate, pungent.

Inflorescence. Inflorescence composed of racemes. Racemes 1, single, erect, bilateral, 4–20 cm long. Rhachis fragile at the nodes, semiterete, smooth on margins. Spikelet packing broadside to rhachis, 1–2 their length apart, regular, 2 -rowed. Rhachis internodes linear, falling with spikelet above. Spikelets appressed, solitary. Fertile spikelets sessile.

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 oblong or cuneate, laterally compressed, 15–28 mm long, breaking up at maturity, disarticulating below each fertile floret. Spikelet callus glabrous, base truncate. Rhachilla internodes obscured by lemmas.

Glumes. Glumes persistent, similar, subequal in width, shorter than spikelet. Lower glume oblong, 9–20 mm long, 1 length of upper glume, coriaceous, 1-keeled, 7–11 -veined. Lower glume lateral veins ribbed. Lower glume surface smooth. Lower glume apex acute. Upper glume oblong, 9–20 mm long, 0.9–1 length of adjacent fertile lemma, coriaceous, 1-keeled, 7–11 -veined. Upper glume lateral veins ribbed. Upper glume surface smooth. Upper glume apex acute.

Florets. Fertile lemma oblong, 11–20 mm long, coriaceous, keeled, keeled above, 5 -veined, more than 3-veined. Lemma apex emarginate or obtuse, mucronate. Palea lanceolate, 0.8 length of lemma, 2 -veined. Palea keels ciliolate. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, elliptic, membranous. Anthers 3, 6–8 mm long. Stigmas 2, protandrous, laterally exerted. Ovary pubescent on apex. Caryopsis with adherent pericarp, fusiform, isodiametric, estipitate, without sulcus, smooth, apex unappendaged. Embryo 0.2 length of caryopsis. Hilum linear, 0.9 length of caryopsis. Endosperm farinose.

$2n = 42$ (2 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, Norway, Svalbard, Sweden. : Belgium, Germany, Netherlands, Poland. : Balears, Corsica, France, Portugal, Sardinia, Spain. : Albania, Bulgaria, Greece, Italy, Crete, Romania, Malta, Sicily, Turkey Europe, Yugoslavia. Estonia, Latvia, Lithuania, Krym, Ukraine. **Northern Africa, Macaronesia.** Egypt, Libya, Morocco, Tunisia. Madeira. **Western Asia.** Cyprus, East Aegean Is, Lebanon-Syria, Palestine, Israel & Jordan, Sinai. **Eastern Canada, Southwestern USA.** Nova Scotia. California.

Thinopyrum ponticum (Podp.) M.E. Barkworth & D.R. Dewey. *Amer. J. Bot.*, 72(5): 772 (1985).

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

TYPE from Bulgaria. **Basionym or Replaced Name:** *Elymus elongatus*, *Triticum ponticum* Podp., *Verh. Zool-Bot. Ges. Wien*, 52: 681 (1902). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Bulgaria, Kavaklij: Podpera.

Illustrations (Books): S.W.L. Jacobs, R.D.B. Whalley & D.J.B. Wheeler., *Grasses of New South Wales*, 4th edn (2008) (385), M.E. Barkworth et al, *Flora of North America north of Mexico Vol 24 Poaceae*, part 1 (2007) (377).

Derivation (Clifford & Bostock 2007): L. -ica, belonging to. From Pontus in ancient times, a Province of Asia Minor, now Turkey.

Classification. Subfamily Pooideae. Tribe: Triticeae.

Habit, Vegetative Morphology. Perennial, caespitose. Culms robust, 35–75 cm long. Culm-internodes distally glabrous. Leaf-sheaths outer margin glabrous or hairy. Leaf-sheath auricles falcate. Ligule an eciliate membrane. Leaf-blades convolute, 20–45 cm long, 2.5–5 mm wide, stiff. Leaf-blade surface ribbed, scabrous, rough adaxially, glabrous or pubescent, hairy on both sides.

Inflorescence. Inflorescence composed of racemes. Racemes 1, single, bilateral, 10–25 cm long. Rhachis flattened, smooth on margins or scaberulous on margins. Spikelet packing broadside to rhachis, lax. Spikelets solitary. Fertile spikelets sessile.

Fertile Spikelets. Spikelets comprising 5–12 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets elliptic to oblong, laterally compressed, compressed strongly, 12–25 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, similar, shorter than spikelet. Lower glume oblong, 7–9 mm long, 1 length of upper glume, coriaceous, without keels, 5–9 -veined. Lower glume lateral veins ribbed. Lower glume surface smooth or scabrous, rough on veins. Lower glume apex emarginate or truncate or obtuse. Upper glume oblong, 7–9 mm long, 0.7–0.8 length of adjacent fertile lemma, coriaceous, without keels, 5–9 -veined. Upper glume lateral veins ribbed. Upper glume surface smooth or scabrous, rough on veins. Upper glume apex emarginate or truncate or obtuse.

Florets. Fertile lemma lanceolate to oblong, 9–11 mm long, coriaceous, keeled, keeled above, 5 -veined, more than 3-veined. Lemma apex obtuse, muticous. Palea keels ciliolate, adorned above. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, elliptic, membranous. Anthers 3, 2.5–5.5 mm long. Stigmas 2. Ovary pubescent on apex. Caryopsis with adherent pericarp.

$2n = 56$ (1 ref TROPICOS), or 70 (2 refs TROPICOS).

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

Region. Southwestern Europe, Southeastern Europe, Eastern Europe.

Country /Province /State. : Balears, Corsica, France, Portugal, Sardinia, Spain. : Bulgaria, Greece, Italy, Romania, Turkey Europe, Yugoslavia. Krym, South European Russia, Ukraine. **Northern Africa.** Algeria, Morocco, Tunisia. **Middle Asia, Caucasus, Western Asia.** Turkmenistan. North Caucasus, Transcaucasus. Cyprus, Lebanon-Syria, Palestine, Israel & Jordan, Sinai, Turkey. **Australia.** South Australia, New South Wales, Victoria. **Subarctic America, Western Canada, Eastern Canada, Northwest USA, North-central USA, Southwestern USA, South-central USA.** Yukon. Alberta, British Columbia, Manitoba, Saskatchewan. Nova Scotia, Ontario. Oregon, Washington. Iowa, Kansas, North Dakota, Nebraska, Oklahoma, South Dakota. Arizona, California, Nevada, Utah. New Mexico, Texas. **Western South America.** Bolivia.

TDWG4. Salta. La Pampa. Chubut, Tierra del Fuego.

Thinopyrum pungens (Pers.) Barkworth. *Phytologia* 83(4): 304. 1997 [1998].

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online (as *Elymus*), U.Quattrocchi, *CRC World Dictionary of Grasses* (2006) (as *Agropyron*), T.G.Tutin et al, *Flora Europaea* 5 (1980) (as *Elymus*).

TYPE from UK. **Basionym or Replaced Name:** *Triticum pungens* Pers., *Syn. Pl.* 1: 109 (1805). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Britain: Coll?.

Recent Synonyms: *Elymus pungens* (Pers.) A. Melderis, *Bot. J. Linn. Soc.*, 76(4): 380 (1978). *Elytrgia pungens* (Pers.) Tutin, *Watsonia* 2: 186 (1952).

Illustrations (Books): C.E.Hubbard, *Grasses* (1968) (100 as *Agropyron pungens*).

Derivation (Clifford & Bostock 2007): *L. pungo*, prick. Leaf-blades sharp-pointed.

Classification. Subfamily Pooideae. Tribe: Triticeae.

Habit, Vegetative Morphology. Perennial, culms solitary. Rhizomes elongated. Culms 40–100 cm long. Leaf-sheaths puberulous, outer margin glabrous or hairy. Ligule an eciliate membrane. Leaf-blades 2.5–10 mm wide. Leaf-blade venation prominent. Leaf-blade surface scabrous, rough adaxially. Leaf-blade margins unthickened. Leaf-blade apex pungent.

Inflorescence. Inflorescence composed of racemes. Racemes 1, single, bilateral, 7–25 cm long. Rhachis flattened. Spikelet packing broadside to rhachis. Rhachis internodes linear. Spikelets solitary. Fertile spikelets sessile.

Fertile Spikelets. Spikelets comprising 5–7 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets elliptic to oblong, laterally compressed, 10–18 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, similar, shorter than spikelet. Lower glume lanceolate or oblong, 6.5–9.6 mm long, 1 length of upper glume, coriaceous, 1-keeled, 5–7 -veined. Lower glume lateral veins prominent. Lower glume surface glabrous or pubescent. Lower glume apex obtuse, muticous or mucronate. Upper glume lanceolate or oblong, 6.5–9.6 mm long, 0.75–0.9 length of adjacent fertile lemma, coriaceous, 1-keeled, 5–7 -veined. Upper glume lateral veins prominent. Upper glume surface glabrous or pubescent. Upper glume apex obtuse, muticous or mucronate.

Florets. Fertile lemma oblong, 8.5–11 mm long, coriaceous, 5 -veined, more than 3-veined. Lemma surface glabrous or puberulous. Lemma apex obtuse, muticous. Palea keels ciliolate. Apical sterile florets resembling fertile though underdeveloped.

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

Distribution (TDWG). **Continent.** Europe, Australasia.

Region. Southwestern Europe.

Country /Province /State. : Baleares, France, Portugal, Spain. **Australia.** Victoria (*).
TDWG4.

Thinopyrum pycnanthum (Godr.) M.E. Barkworth. *Phytologia*, 83(4): 304 (1998).

Accepted by: R.J.Soreng et al., *Catalogue of 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 *Elymus*), T.Koyama, *Grasses of Japan and its neighboring regions* (1987) (as *Lolium subulatum*).

TYPE from France. **Basionym or Replaced Name:** *Triticum pycnanthum* Godr., *Mem. Soc. Emul. Doubs*, Ser. II. 5: 10 (1854). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: France, Perols: Coll? (P holotype).

Recent Synonyms: *Elytrigia pycnantha* (Godr.) Á.Löve, *Taxon* 29(2–3): 351 (1980). *Elymus pycnanthus* (Godron) A. Melderis, *Bot. J. Linn. Soc.*, 76(4): 378 (1978).

Illustrations (Books): T.A.Cope, *Flora of Pakistan* 143: *Poaceae* (1982) (387, Fig. 41 as *Lolium subulatum*), S.A.Renvoize, *Gramineas de Bolivia* (1998) (377).

Derivation (Clifford & Bostock 2007): Gk. pyknos, thick; anthos, flower. Spikelets relatively broad.

Classification. Subfamily Pooideae. Tribe: Triticeae.

Habit, Vegetative Morphology. Perennial, short-lived, culms solitary or caespitose. Rhizomes elongated. Culms erect or geniculately ascending, 20–120 cm long, 3–4 -noded. Leaves cauline. Leaf-sheaths glabrous on surface. Leaf-sheath oral hairs lacking. Leaf-sheath auricles falcate. Ligule an eciliate membrane, 0.3–1 mm long, truncate. Leaf-blades flat or involute, 8–35 cm long, 2–6 mm wide, stiff. Leaf-blade surface ribbed, smooth or scaberulous, glabrous. Leaf-blade margins scaberulous. Leaf-blade apex acuminate, pungent, hardened.

Inflorescence. Inflorescence composed of racemes. Racemes 1, single, erect, bilateral, 4–20 cm long. Rhachis flattened, scabrous on margins. Spikelet packing broadside to rhachis, 0.5–1 their length apart, regular, 2 -rowed. Spikelets appressed, solitary. Fertile spikelets sessile.

Fertile Spikelets. Spikelets comprising 3–10 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 elliptic to oblong, laterally compressed, 10–20 mm long, falling entire or breaking up at maturity, disarticulating below each fertile floret. Spikelet callus glabrous, base truncate. Rhachilla internodes obscured by lemmas.

Glumes. Glumes persistent, similar, subequal in width, shorter than spikelet. Lower glume lanceolate, 8–10 mm long, 1 length of upper glume, coriaceous, 1-keeled, 5–7 -veined. Lower glume primary vein scabrous. Lower glume lateral veins ribbed. Lower glume apex acute. Upper glume lanceolate, 8–10 mm long, 0.9–1.1 length of adjacent fertile lemma, coriaceous, 1-keeled, 5–7 -veined. Upper glume primary vein scabrous. Upper glume lateral veins ribbed. Upper glume apex acute.

Florets. Fertile lemma oblong, 7–11 mm long, coriaceous, keeled, keeled above, 5 -veined, more than 3-veined. Lemma apex obtuse or acute. Palea lanceolate, 1 length of lemma, 2 -veined. Palea keels scabrous. Palea apex truncate. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, elliptic, membranous. Anthers 3, 5–7 mm long, dehiscent by a longitudinal slit. Stigmas 2, protandrous, laterally exerted. Ovary pubescent on apex. Caryopsis with adherent pericarp, fusiform, isodiametric, estipitate, without sulcus, smooth, apex unappendaged. Embryo 0.2 length of caryopsis. Hilum linear, 0.9 length of caryopsis. Endosperm farinose.

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

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

Country /Province /State. : Denmark, Great Britain (*), Ireland. : Austria, Belgium, Germany, Netherlands, Switzerland. : Baleares, Corsica, France, Portugal, Azores. : Albania, Bulgaria, Greece, Italy, Romania, Yugoslavia. Northwest European Russia. **Macaronesia.** Azores. **Western Asia.** East Aegean Is, Turkey. **New Zealand.** New Zealand North I, New Zealand South I. **Northeast USA.** Maine.

Thrasypsis juergensii (Hack.) Soderstr. ex A.G. Burman. *Brittonia*, 32(2): 221 (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 Brazil. **Basionym or Replaced Name:** *Panicum juergensii* Hack., *Verh. K.K. Zool.-Bot. Ges. Wien* 65(1–2): 70–71 (1915). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: C. Jürgens G412, 1912, Brazil: Rio Grande do Sul: Mun. Soledade: Lagão, in campis siccis, alt. 600 m (W; IT: US-79765).

Recent Synonyms: *Thrasypsis rawitscheri* L. Parodi, *Bol. Soc. Argent. Bot.* 1: 295 (1946).

Illustrations (Books): L.B. Smith, D.C. Wasshausen, R.M. Klein *Flora Illustrada Catarinensis Gramineas* (1981–1982) (1077, Fig. 209), R.Pilger, *Die Natürlichen Pflanzenfamilien* 14e (1940) (190, Fig. 2 as *T. rawitscheri*).

Derivation (Clifford & Bostock 2007): in honor of Carlo Juergens (fl. 1905) who collected in Brazil.

Classification. Subfamily Panicoideae. Tribe: Paspaleae. Subtribe PASPALINAE.

Habit, Vegetative Morphology. Perennial, caespitose. Rhizomes short. Culms erect, 70–80 cm long. Ligule an eciliate membrane. Leaf-blades 15–20 cm long, 8–12 mm wide, stiff. Leaf-blade surface pilose, hairy on both sides.

Inflorescence. Inflorescence composed of racemes. Racemes 1, single, linear, arcuate, unilateral, 10–15 cm long. Rhachis broadly winged, membranous, folded longitudinally to embrace spikelets, with rounded midrib, 5–6 mm wide, pubescent on surface (along keel). Spikelet packing crowded, regular, 4 -rowed. Spikelets in pairs. Fertile spikelets sessile and pedicelled, 2 in the cluster. Pedicels present, oblong, 0.5–0.8 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 oblong, dorsally compressed, compressed slightly, obtuse, 4.5 mm long, falling entire.

Glumes. Glumes dissimilar, shorter than spikelet, thinner than fertile lemma. Lower glume ovate, 0.2–2.5 mm long, 0–0.5 length of spikelet, membranous, without keels, 1–5 -veined. Lower glume apex acute. Upper glume obovate, 4 mm long, 0.9 length of spikelet, chartaceous, without keels, 13–15 -veined. Upper glume lateral veins ribbed. Upper glume apex dentate, 7 -fid, truncate (hooded).

Florets. Basal sterile florets 1, male, with palea. Lemma of lower sterile floret oblong, 4 mm long, 0.9 length of spikelet, coriaceous, 5 -veined, sulcate, obtuse, mucronate (2 mucros). Awn of lower sterile floret subapical. Palea of lower sterile floret becoming indurate on keels at maturity, winged on keels. Fertile lemma elliptic, 4 mm long, indurate, without keel. Lemma surface punctate. Lemma margins involute. Lemma apex acute. Palea indurate.

Flower and Fruit. Anthers 3, 2–2.5 mm long.

Distribution (TDWG). Continent. South America.

Country /Province /State. Brazil. Brazil South.

TDWG4. Sao Paulo Parana, Catarina, Rio Grande do Sul.

Thrasypsis repanda (Nees) L. Parodi. *Bol. Soc. Argent. Bot.* i. 297, (1946).

Accepted by: R.J.Soreng et al., *Catalogue of New World 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 repandum* Nees, *Fl. Bras. Enum. Pl.* 2(1): 98 (1829). T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: HT: *no date*, F. Sellow 1246, Brazil: Barro de Pixa (B, BAA-1954 (fragm. ex B), US-81111 (fragm. ex B)).

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

Derivation (Clifford & Bostock 2007): L. bent backwards. Axis of inflorescence winged with the margins reflexed.

Classification. Subfamily Panicoideae. Tribe: Paspaleae. Subtribe PASPALINAE.

Habit, Vegetative Morphology. Perennial, caespitose. Butt sheaths persistent and investing base of culm, with fibrous dead sheaths. Culms 50–70 cm long. Ligule an eciliate membrane. Leaf-blades 5–25 cm long, 3–5 mm wide. Leaf-blade surface pubescent, densely hairy, hairy on both sides.

Inflorescence. Inflorescence composed of racemes. Racemes 1–2, single or borne along a central axis, oblong, unilateral, 1.5–4 cm long. Central inflorescence axis 0–2 cm long. Rhachis broadly winged, with rounded midrib, 1.5–2 mm wide, pubescent on surface. Spikelet packing crowded, regular, 4 -rowed. Spikelets in pairs. Fertile spikelets sessile and pedicelled, 2 in the cluster. 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, dorsally compressed, compressed slightly, obtuse, 5 mm long, falling entire.

Glumes. Glumes dissimilar, reaching apex of florets, thinner than fertile lemma. Lower glume oblong, 0.7–0.8 length of spikelet, membranous, without keels, 9 -veined. Lower glume lateral veins ribbed. Lower glume apex obtuse. Upper glume oblong, coriaceous, without keels, 9–11 -veined. Upper glume lateral veins ribbed. Upper glume apex obtuse (hooded).

Florets. Basal sterile florets 1, male, with palea. Lemma of lower sterile floret oblong, coriaceous, 7–9 -veined, sulcate, acute. Palea of lower sterile floret becoming indurate on keels at maturity. Fertile lemma ovate, 4.5 mm long, indurate, without keel, 5 -veined, more than 3-veined. Lemma margins involute. Lemma apex obtuse. Palea indurate.

Distribution (TDWG). Continent. South America.
Country /Province /State. Brazil. Brazil Southeast, Brazil South.
TDWG4. Minas Gerais, Rio de Janeiro, Espirito Santo, Sao Paulo Parana.

Thuarea involuta (G. Forst.) R. Br. ex Smith. Rees, *Cycl.* :35, 2:70 [May] (1817).

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), 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), W.D.Clayton & N.Snow, *Key to Pacific Grasses* (2010).

TYPE from Society Islands. **Basionym or Replaced Name:** *Ischaemum involutum* G. Forst., *Fl. Ins. Austr.* 73 (1786). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Societatis insule et passim intra tropicos,.

Illustrations (Books): J.Bosser, *Graminees des Paturage et des Cultures a Madagascar* (1969) (277, Fig. 101), T.Koyama, *Grasses of Japan and its neighbouring regions* (1987) (387, Fig. 152), C-C Hsu, *Flora of Taiwan*, Vol 5 (1978) (632), C-C Hsu, *Taiwan Grasses* (1975) (613, Pl. 1452), H.B.Gilliland, *Grasses of Malaya* (1971) (Pl. 18), H.Duistermaat, *Field Guide to the Grasses of Singapore* (2005) (137, Fig.141), E.E.Henty, *A Manual of the Grasses of New Guinea* (1969) (186, Pl. 70), J.C.Tothill, & J.B.Hacker. *The grasses of southern Queensland* (1983) (406), *Flora of Australia Oceanic Islands Poaceae* 50(1993) & 49(1994) (50:490 Fig.91 (1993)), D.Sharp & B.K.Simon, *AusGrass. Grasses of Australia. CD-Rom Version 1.0.* (2002), S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 733), E.Hafliger & E.Schultz, *Grass Weeds*, CIBA-GEIGY (1:140(1980)).

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);.

Derivation (Clifford & Bostock 2007): L. involvo, inroll. Leaf-blades inrolled.

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

Habit, Vegetative Morphology. Perennial. Culms prostrate, 5–10 cm long, rooting from lower nodes. Leaf-sheaths pubescent. Ligule a fringe of hairs. Leaf-blades lanceolate, 1.5–5 cm long, 3–10 mm wide. Leaf-blade surface pubescent. Leaf-blade margins scaberulous.

Inflorescence. Inflorescence composed of racemes, deciduous as a whole, subtended by sheathless blades, enclosed. Peduncle terete (5mm long), widened at apex, disarticulating, disarticulating above uppermost sheath, base blunt. Racemes 1, single, erect, lanceolate, unilateral, 1–1.5 cm long, bearing few fertile spikelets, bearing 1(–2) fertile spikelets on each. Rhachis broadly winged, foliaceous, folded transversely to form a capsule, puberulous on surface, terminating in a sterile spikelet. Spikelet packing adaxial, regular, 1 -rowed. Spikelets solitary. Fertile spikelets sessile.

Sterile Spikelets. Apical sterile spikelets male (deciduous), 4–6 in number, 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 ovate, dorsally compressed, 5.3 mm long, falling entire, deciduous with accessory branch structures.

Glumes. Glumes one the lower absent or obscure, exceeding apex of florets, thinner than fertile lemma. Upper glume ovate, 5.3 mm long, membranous, without keels, 5–7 -veined. Upper glume surface pubescent. Upper glume margins ciliate. Upper glume apex acute.

Florets. Basal sterile florets 1, male or barren, with palea. Lemma of lower sterile floret similar to upper glume, ovate, 4.8 mm long, 0.9 length of spikelet, membranous, 5 -veined, pubescent, ciliate on margins, acute. Palea of lower sterile floret pilose. Fertile lemma ovate, 4.4 mm long, indurate, without keel, 5 -veined, more than 3-veined. Lemma apex acute. Palea indurate.

Flower and Fruit. Anthers 3, 2.2 mm long.

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

Country /Province /State. Western Indian ocean. Madagascar. **China, Eastern Asia.** Hainan, China Southeast. Kazan-retto, Nansei-Shoto, Ogosawara-shoto, Taiwan. **Indian Subcontinent, Indo-China, Malesia, Papuasias.** Laccadive Is, Sri Lanka. Andaman Is, Cambodia, Nicobar Is, Thailand, Vietnam. Borneo, Cocos (Keeling) Is, Java, Lesser Sunda Is, Malaya, Singapore, Moluccas, Philippines, Sulawesi, Sumatra. New Guinea West Papua (Irian Jaya). New Guinea, Solomon Is. **Australia.** Northern Territory, Queensland. **Southwestern Pacific, South-central Pacific, Northwestern Pacific.** Fiji, Gilbert Is, New Caledonia, Samoa, Tonga, Vanuatu, Wallis-Futuna Is. Cook Is, Pitcairn Is, Society Is, Tuamotu Is, Tubuai Is. Caroline Is, Marianas, Marshall Is. Hawaii.

TDWG4. Guangdong, Maharashtra. Darwin & Gulf. North, Central, South East.

Thuarea perrieri A.Camus. *Bull. Soc. Bot. France* lxxv. 912 (1929).

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 Synonymy Database: ST: *Perrier de la Bathie 11098*, Madagascar occid.: environs de Marovay 6 more syntypes cited.

Illustrations (Books): J.Bosser, *Graminees des Paturage et des Cultures a Madagascar* (1969) (277, Fig 101).

Derivation (Clifford & Bostock 2007): in honor of Joseph Marie Henri Alfred Perrier de la Bbthie (1872–1958) French botanist.

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

Habit, Vegetative Morphology. Annual. Stolons present. Culms decumbent, 15–30 cm long, rooting from lower nodes. Culm-internodes distally glabrous. Culm-nodes pubescent. Ligule a fringe of hairs. Leaf-blades lanceolate, 2–8 cm long, 4–10 mm wide. Leaf-blade surface glabrous or pilose, sparsely hairy. Leaf-blade apex acute.

Inflorescence. Inflorescence composed of racemes, deciduous as a whole, subtended by sheathless blades, exerted. Peduncle widened at apex, disarticulating, disarticulating above uppermost sheath, base blunt. Racemes 1, single, erect, lanceolate, unilateral, 1.5–2 cm long, bearing few fertile spikelets, bearing 2 fertile spikelets on each. Rhachis broadly winged, foliaceous, folded transversely to form a capsule, glabrous on surface to pubescent on surface, terminating in a sterile spikelet. Spikelet packing adaxial, regular, 1-rowed. Spikelets solitary. Fertile spikelets sessile.

Sterile Spikelets. Apical sterile spikelets male (deciduous), 2–7 in number, 4–5 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 elliptic, dorsally compressed, 5–6 mm long, falling entire, deciduous with accessory branch structures.

Glumes. Glumes one the lower absent or obscure, shorter than spikelet, thinner than fertile lemma. Upper glume ovate, 0.75 length of spikelet, membranous, without keels, 3–5 -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, ovate, 0.9 length of spikelet, membranous, 5 -veined, acute. Fertile lemma elliptic, 5–6 mm long, indurate, without keel. Lemma margins involute. Lemma apex acute. Palea indurate.

Flower and Fruit. Anthers 3.

Distribution (TDWG). Continent. Africa.

Country /Province /State. Western Indian ocean. Madagascar.

Thyridachne tisserantii C.E.Hubb. *Kew Bull.* 4:364 (1949).

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

TYPE from Centrl African Republic. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Rep. Centre Afr., Moroubas: Tisserant 1712 (K holo).

Illustrations (Books): H.Jacques-Felix, *Les Graminees d'Afrique tropicale* (1962) (255, Fig. 186).

Derivation (Clifford & Bostock 2007): in honor of Charles Tisserant (1886–1962) French cleric ethnologist, botanist and traveller.

Classification. Subfamily Panicoideae. Tribe: Paspaleae. Subtribe SUBTRIBE “SISTER TO OTHER PASPALAEAE”.

Habit, Vegetative Morphology. Annual. Culms erect, 30–70 cm long, spongy. Ligule an eciliate membrane. Leaf-blades convolute, 10–20 cm long, 1–2 mm wide. Leaf-blade surface pubescent, densely hairy, hairy adaxially.

Inflorescence. Inflorescence a panicle. Panicle spiciform, linear, curved, 5–15 cm long, 2–3 cm wide. Primary panicle branches accrescent to a central axis, with evident branchlets on axis. Panicle axis with rounded ribs. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, filiform, glabrous, tip discoid.

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, curved, dorsally compressed, gibbous, acuminate, 3–4 mm long, falling entire.

Glumes. Glumes dissimilar, reaching apex of florets, firmer than fertile lemma. Lower glume oblate, 0.2–0.3 length of spikelet, hyaline, without keels, 0 -veined. Lower glume lateral veins absent. Lower glume apex obtuse. Upper glume ovate, gibbous, coriaceous, without keels, 5 -veined. 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, coriaceous, 5 -veined, acute. Palea of lower sterile floret hyaline. Fertile lemma elliptic, 2–3 mm long, cartilaginous, without keel, 3 -veined, 0–3 -veined. Lemma margins flat. Lemma apex acuminate. Palea cartilaginous.

Distribution (TDWG). Continent. Africa.

Country /Province /State. West-central tropical Africa. Central African Republic, DRC.

Thyridolepis mitchelliana (Nees) S. T. Blake. *Contrib. Queensl. Herb.*, 13: 27 (1972).

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

TYPE from Australia. **Basionym or Replaced Name:** *Neurachne mitchelliana* Nees, *Hooker's J. Bot. Kew Gard. Misc.* 2: 410 (1843). T:<Type of Basionym>; *vide* TROPICOS and Kew Synonymy Database: T: *Mitchell 46*, 1836, Australia: interior of New Holland [Lachlan River?] (CGE).

Illustrations (Books): J.P.Jessop, G.R.M. Dashorst & F.M.James, *Grasses of South Australia* (2006) (505, Fig 433 and Pl. 18), C.A.Gardner, *Flora of Western Australia*, Vol 1, Part 1, *Gramineae* (1952) (272, Pl 78 as *Neurachne*), S.W.L.Jacobs, R.D.B.Whalley & D.J.B.Wheeler, *Grasses of New South Wales*, 4th edn (2008) (385), J.C.Tothill, & J.B.Hacker. *The grasses of southern Queensland* (1983) (408), 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).

Illustrations (Journals): *Hooker's Icones Plantarum* (t.1240 (1877) as *Neurachne*), *Contr.Qld.Herb.* (13:46, Fig.5 (1972)).

Images: D.Sharp & B.K.Simon, *AusGrass*. Grasses of Australia. CD-Rom Version 1.0. (2002);

Derivation (Clifford & Bostock 2007): L. -ana, indicating connection. In honor of Thomas Livingstone Mitchell (1792–1855) Scots- born Australian surveyor and explorer.

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

Habit, Vegetative Morphology. Perennial, caespitose. Butt sheaths pilose. Culms erect, 30–40 cm long. Culm-internodes distally pubescent. Culm-nodes pubescent. Ligule a fringe of hairs. Leaf-blades 1–6 cm long, 3–5 mm wide, stiff. Leaf-blade midrib indistinct. Leaf-blade margins ciliate. Leaf-blade apex acute or acuminate.

Inflorescence. Inflorescence a panicle. Panicle spiciform, linear, 2–4 cm long. Primary panicle branches accrescent to a central axis, with lateral stumps on axis. Panicle axis angular, pubescent. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, oblong, pubescent, tip discoid.

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, 5–7 mm long, falling entire. Spikelet callus pubescent. Rhachilla internodes elongated between glumes.

Glumes. Glumes dissimilar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 5–7 mm long, 1 length of spikelet, coriaceous, without keels, 3–5 -veined. Lower glume lateral veins ribbed. Lower glume surface with a longitudinal median groove, fenestrate, glabrous or pubescent, with a dorsal tuft of hair. Lower glume apex obtuse. Upper glume elliptic, 4.5–6.5 mm long, coriaceous, with membranous margins, without keels, 5–7 -veined. Upper glume lateral veins ribbed. Upper glume surface tuberculate, rough below, glabrous or pubescent. Upper glume margins tuberculate, setose. Upper glume apex obtuse.

Florets. Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret ovate, 0.8 length of spikelet, herbaceous, 5 -veined, pubescent, hairy between veins, cuspidate. Fertile lemma ovate, 4 mm long, chartaceous, without keel, 3 -veined, 0–3 -veined. Lemma apex cuspidate. Palea 2 -veined.

Flower and Fruit. Anthers 3. Stigmas 2.

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

Distribution (TDWG). Continent. Australasia.

Country /Province /State. Australia. Western Australia, Northern Territory, South Australia, Queensland, New South Wales.

TDWG4. Eremean, South-West. Central Australia. NW & Lake Eyre, Southern. Central, South East, Inland. Coast, Western Slopes, Western Plains.

Thyridolepis multiculmis (Pilger) S. T. Blake. *Contrib. Queensl. Herb.*, 13: 32 (1972).

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

TYPE from Australia. **Basionym or Replaced Name:** *Neurachne multiculmis* Pilg., *Bot. Jahrb. Syst.* 35: 68 (1904). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *Diels 4217*, Australia: Western Australia: Irwin District: near Greenough River along the road to Mullewa (B (destroyed)).

Illustrations (Books): J.P.Jessop, G.R.M. Dashorst & F.M.James, *Grasses of South Australia* (2006) (506, Fig 434), D.Sharp & B.K.Simon, *AusGrass*. Grasses of Australia. CD-Rom Version 1.0. (2002).

Illustrations (Journals): *Contr.Qld.Herb.* (13:48, Fig.6 (1972)).

Images: D.Sharp & B.K.Simon, *AusGrass*. Grasses of Australia. CD-Rom Version 1.0. (2002);.

Derivation (Clifford & Bostock 2007): L. multus, many; culmus, stalk. Plants densely caespitose.

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

Habit, Vegetative Morphology. Perennial, caespitose. Butt sheaths thickened and forming a bulb, woolly. Culms erect or geniculately ascending, 15–70 cm long, 3–6 -noded. Culm-internodes distally glabrous. Culm-nodes glabrous or pubescent. Leaf-sheaths glabrous on surface or pilose, outer margin glabrous or hairy. Ligule a fringe of hairs, 0.8–1.2 mm long. Leaf-blades flat or involute, 2–10 cm long, 2.5–5 mm wide, stiff. Leaf-blade surface pubescent. Leaf-blade margins smooth or scaberulous.

Inflorescence. Inflorescence a panicle. Panicle spiciform, linear, interrupted (spikelets distant below), 4.5–10 cm long. Primary panicle branches accrescent to a central axis, with lateral stumps on axis. Panicle axis angular, pubescent. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, oblong, 0.5–1.4 mm long, 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 or oblong, dorsally compressed, 5.6–8 mm long, falling entire. Spikelet callus pubescent. Rhachilla internodes elongated between glumes.

Glumes. Glumes dissimilar, exceeding apex of florets, thinner than fertile lemma. Lower glume oblong, 4.8–7.5 mm long, 0.8–0.9 length of spikelet, cartilaginous, without keels, 7 -veined. Lower glume surface with a longitudinal median groove, fenestrate, pubescent or pilose, with a dorsal tuft of hair. Lower glume apex obtuse. Upper glume lanceolate or oblong, 5.1–7.5 mm long, 0.7–0.85 length of spikelet, coriaceous, without keels, 9 -veined. Upper glume surface pilose. Upper glume margins tuberculate, ciliate or setose. Upper glume apex obtuse or acute.

Florets. Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret lanceolate, 4–5 mm long, 0.6–0.7 length of spikelet, chartaceous, 5 -veined, pubescent, obtuse. Fertile lemma lanceolate, 4.1–4.9 mm long, membranous, without keel. Lemma apex obtuse. Palea 2 -veined.

Flower and Fruit. Anthers 3, 0.4–0.8 mm long. Stigmas 2.

$2n = 36$ (1 ref TROPICOS).

Distribution (TDWG). Continent. Australasia.

Country /Province /State. Australia. Western Australia, Northern Territory, South Australia.

TDWG4. Ereman, South-West. Central Australia. NW & Lake Eyre.

Thyridolepis xerophila (Domin) S. T Blake. *Contrib. Queensl. Herb.*, 13: 33 (1972).

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

TYPE from Australia. **Basionym or Replaced Name:** *Neurachne xerophila* Domin, *Biblioth. Bot.* 85: 284 (1915). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Australia, Jericho: *Domin* (PR holo).

Illustrations (Books): J.P.Jessop, G.R.M. Dashorst & F.M.James, *Grasses of South Australia* (2006) (506, Fig 435), S.W.L.Jacobs, R.D.B.Whalley & D.J.B.Wheeler., *Grasses of New South Wales*, 4th edn (2008) (386), T.D.Stanley & E.Ross, *Flora of South East Queensland, Gramineae* (1989) (248, Fig. 38).

Images: D.Sharp & B.K.Simon, *AusGrass*. Grasses of Australia. CD-Rom Version 1.0. (2002);.

Derivation (Clifford & Bostock 2007): Gk. xeros, dry; phileo, love. Desert species.

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

Habit, Vegetative Morphology. Perennial, caespitose. Butt sheaths thickened and forming a bulb, woolly. Culms erect or geniculately ascending, 15–60 cm long, 5–9 -noded. Culm-internodes distally pubescent. Culm-nodes pubescent. Ligule a fringe of hairs, 0.3–0.6 mm long. Leaf-blades flat or involute, 1.5–9 cm long, 1–4 mm wide, stiff.

Inflorescence. Inflorescence a panicle. Panicle spiciform, linear or oblong, continuous, 1.5–4 cm long. Primary panicle branches accrescent to a central axis, with lateral stumps on axis. Panicle axis angular, pubescent. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, oblong, 0.3–0.8 mm long, 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 lanceolate, dorsally compressed, 3.9–5.3 mm long, falling entire.

Spikelet callus pilose. Spikelet callus hairs 0.8 mm long, 0.15–0.2 length of spikelet. Rhachilla internodes elongated between glumes.

Glumes. Glumes dissimilar, exceeding apex of florets, thinner than fertile lemma. Lower glume oblong or ovate, 3.9–5.3 mm long, 1 length of spikelet, cartilaginous, without keels, 7–9 -veined. Lower glume surface with a longitudinal median groove, fenestrate, glabrous, with a dorsal tuft of hair. Lower glume apex truncate or obtuse. Upper glume lanceolate, 3.4–4.9 mm long, 0.9 length of spikelet, chartaceous or cartilaginous, without keels, 7–9 -veined. Upper glume surface glabrous or pubescent. Upper glume margins ciliate. Upper glume apex entire or dentate, 3 -fid, truncate or obtuse.

Florets. Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret lanceolate or elliptic, 2.7–3.5 mm long, 0.6–0.7 length of spikelet, membranous or chartaceous, 5 -veined, pubescent, obtuse. Fertile lemma lanceolate or elliptic, 2.9–4 mm long, membranous, without keel. Lemma apex obtuse. Palea 2 -veined.

Flower and Fruit. Anthers 3, 1.5–2.3 mm long. Stigmas 2.

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

Distribution (TDWG). Continent. Europe (*), Australasia.

Region. Northern Europe (*).

Country /Province /State. : GB Aliens (Ryves et al). **Australia.** Western Australia, Northern Territory, South Australia, Queensland, New South Wales.

TDWG4. Eremean. Central Australia. NW & Lake Eyre. Central, South East, Inland. Western Slopes, Western Plains.

Thyrsostachys oliveri Gamble. *Ann. Roy. Bot. Gard., Calc.* vii. 58 (1896).

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

TYPE from Myanmar. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Burma, Shan Hills: Abdul Huk ; Burma: Oliver (K iso).

Illustrations (Books): S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 34).

Derivation (Clifford & Bostock 2007): in honor of John William Oliver (1833–1907) Irish-born forester in India and Myanmar.

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms erect, 1500–2500 cm long, 50–70 mm diam., woody. Culm-internodes terete, 40–60 cm long. Lateral branches dendroid. Branch complement many, in a horizontal line, with 1 branch dominant, thinner than stem. Culm-sheaths present, persistent, 0.75 length of internode, chartaceous, pubescent, hairy throughout, with white hairs, without auricles. Culm-sheath ligule 0.2 mm high. Culm-sheath blade linear, 20–25 cm long, pubescent. Leaves cauline. Ligule a ciliolate membrane. Leaf-blade base with a brief petiole-like connection to sheath, petiole 0.2–0.5 cm long. Leaf-blades deciduous at the ligule, lanceolate, 17–20 cm long, 12–18 mm wide. Leaf-blade venation without cross veins. Leaf-blade surface scaberulous, rough on both sides, pubescent, hairy abaxially. Leaf-blade margins scabrous. Leaf-blade apex acuminate.

Inflorescence. Synflorescence bractiferous, linear, with spathaceous subtending bracts, bracts 12–18 mm long, with axillary buds at base of spikelet, with simple branching, prophyllate below lateral spikelets.

Fertile spikelets sessile.

Fertile Spikelets. Spikelets comprising 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 ovate, laterally compressed, 12–25 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes pubescent.

Glumes. Glumes persistent, similar, shorter than spikelet. Lower glume ovate, 10–12 mm long, 0.8–1 length of upper glume, membranous, without keels, 11–13 -veined. Lower glume lateral veins with cross-veins. Lower glume surface pubescent. Lower glume apex acute. Upper glume ovate, 12 mm long, 0.5–0.75 length of adjacent fertile lemma, membranous, without keels, 12–13 -veined. Upper glume lateral veins with cross-veins. Upper glume surface pubescent. Upper glume apex acute.

Florets. Fertile lemma oblong, 17–25 mm long, membranous, without keel, 9–13 -veined, more than 3-veined. Lemma lateral veins with cross-veins. Lemma surface pubescent. Lemma apex acute. Palea 1 length of lemma, 3–5 -veined, 2-keeled but the uppermost without keels. Palea keels ciliate. Palea surface pubescent, hairy on back. Palea apex dentate (upper) or lobed (lower for 0.25 its length).

Flower and Fruit. Lodicules 2, lanceolate, ciliate, acute. Anthers 6. Stigmas 3. Ovary umbonate, glabrous. Caryopsis with adherent pericarp, 10 mm long.

$2n = 72$ (1 ref TROPICOS).

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

Country /Province /State. China. China South Central. **Indian Subcontinent, Indo-China.** India. Myanmar, Thailand.

TDWG4. Yunnan. West Bengal.

Thyrsostachys siamensis Gamble. *Ann. Bot. Gard. Calc.* 7: 59 (1896).

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

TYPE from Thailand. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: LT: *Kurz s.n.*, Thailand LT designated by Stapleton, *Taxon* 47: 739 (1998).

Recent Synonyms: *Thyrsostachys regia* (Thomson ex Munro) Bennet, *Indian Forester*, 114(10): 711: (1988).

Illustrations (Books): C-C Hsu, *Taiwan Grasses* (1975) (769, Pl. 1513), S.Dransfield, & E.A. Widjaja, *Plant Resources of South-East Asia No. 7, Bamboos* (1995), S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 34).

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

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms erect, 700–1300 cm long, 20–60 mm diam., woody. Culm-internodes terete, thick-walled, 15–30 cm long. Lateral branches dendroid. Branch complement many, in a horizontal line, with 1 branch dominant, thinner than stem. Culm-sheaths present, persistent, chartaceous, pubescent, hairy throughout, with white hairs, without auricles. Culm-sheath blade triangular. Leaves cauline, 4–12 per branch. Leaf-sheath oral hairs lacking or scanty. Ligule an eciliate membrane. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades deciduous at the ligule, lanceolate, 7–15 cm long, 6–12 mm wide. Leaf-blade venation without cross veins. Leaf-blade surface pubescent, hairy abaxially. Leaf-blade margins scabrous.

Inflorescence. Synflorescence bractiferous, fasciculate, with spathaceous subtending bracts, bracts 10–20 mm long, with axillary buds at base of spikelet, with ultimate bract subtending a compact bracteolate fascicle of spikelets, prophyllate below lateral spikelets.

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 lanceolate, laterally compressed, 17 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, similar, shorter than spikelet. Lower glume oblong, 0.7–0.8 length of upper glume, membranous, without keels, 9 -veined. Lower glume surface pubescent. Lower glume apex acute. Upper glume oblong, 1 length of adjacent fertile lemma, membranous, without keels, 9 -veined. Upper glume surface pubescent. Upper glume apex acute.

Florets. Fertile lemma oblong, 12.5 mm long, membranous, without keel, 13–19 -veined, more than 3-veined. Lemma surface pubescent. Lemma apex acute. Palea 1 length of lemma, chartaceous, 7–9 -veined. Palea keels ciliate. Palea apex dentate (upper) or lobed (lower for 0.5 its length). Rhachilla extension 0.5 length of fertile floret.

Flower and Fruit. Lodicules absent. Anthers 6, 3.5 mm long. Stigmas 1. Ovary umbonate, glabrous. Caryopsis with adherent pericarp, 6–8 mm long.

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

Country /Province /State. China. China South Central. **Indo-China.** Myanmar, Thailand. Yunnan.

Thysanolaena latifolia (Roxb. ex Hornem.) Honda. *J. Fac. Sci. Univ. Tokyo* 3 Bot. :312 (1980).

Accepted by: R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), S-L Chen et al, *Flora of China* 22 (Poaceae) (2006), W.D.Clayton & N.Snow, *Key to Pacific Grasses* (2010).

TYPE from India. **Basionym or Replaced Name:** *Melica latifolia* Roxb. ex Hornem., T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: India, Garrow hill: Kyd.

Recent Synonyms: *Thysanolaena maxima* (Roxb.) Kuntze, *Rev. Gen.* (1891) 794 (1891).

Illustrations (Books): H.Jacques-Felix, *Les Graminees d'Afrique tropicale* (1962) (146, Fig. 61, as *T.maxima*), H.J.Noltie, *The Grasses of Bhutan* (2000) (645, Fig. 31), T.Koyama, *Grasses of Japan and its neighbouring regions* (1987) (245, Fig. 91, as *T.maxima*), C-C Hsu, *Flora of Taiwan*, Vol 5 (1978) (238, as *T.maxima*), C-C Hsu, *Taiwan Grasses* (1975) (396, Pl. 1374, as *T.maxima*), N.L.Bor, *The grasses of Burma, Ceylon, India and Pakistan* (1960) (46, Fig. 1, as *T.maxima*), K.M.Matthew, Illustrations on the *Flora of*

Tamilnadu Carnatic (1982) (Pl. 945 & 946, as *T. maxima*), H.B. Gilliland, *Grasses of Malaya* (1971) (46, Fig. 1), H. Duistermaat, *Field Guide to the Grasses of Singapore* (2005) (133, Fig. 140, as *T. maxima*), M.E. Barkworth et al., *Flora of North America north of Mexico Vol 25 Poaceae*, part 2 (2003) (350), S-L Chen et al., *Flora of China*, Illustrations, Poaceae (2007) (Fig. 624).

Images: H.B. Gilliland et al., *Flora of Malaya Vol. 3 Grasses* (1971); (as *T. maxima*), R. Darke, *Ornamental Grasses* (2004); (as *T. maxima*), R. Darke, *The Encyclopaedia of Grasses for Liveable Landscapes* (2007);

Derivation (Clifford & Bostock 2007): *L. latus*, broad; folium, leaf. Leaf-blades broad or relatively broad with respect to related species.

Classification. Subfamily Panicoideae. Tribe: Arundineae. Tribe: Thysanolaeneae.

Habit, Vegetative Morphology. Perennial, caespitose. Culms 200–400 cm long. Culm-internodes solid. Ligule an eciliate membrane, 1–2 mm long. Leaf-blades deciduous at the ligule, 30–60 cm long, 30–70 mm wide, stiff. Leaf-blade venation with distinct cross veins. Leaf-blade margins cartilaginous, scaberulous.

Inflorescence. Inflorescence a panicle, bearing juvenile spikelets at emergence. Panicle open, oblong or ovate, 30–60 cm long, 15–30 cm wide, contracted about primary branches. Primary panicle branches appressed or spreading. Panicle branches stiff, bearded in axils. Spikelets solitary or in pairs. Fertile spikelets pedicelled, 1–2 in the cluster. Pedicels present, filiform, 0.5–1 mm long, scaberulous.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile floret, with a barren 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, 1.5–2 mm long, falling entire, deciduous with the pedicel, readily shedding fertile florets, pedicel base truncate.

Glumes. Glumes similar, shorter than spikelet, thinner than fertile lemma. Lower glume ovate, 0.65 mm long, 1 length of upper glume, membranous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume apex acute. Upper glume ovate, 0.7 mm long, 0.5 length of adjacent fertile lemma, membranous, without keels, 1 -veined. Upper glume apex acute.

Florets. Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret similar to fertile lemma, lanceolate, 1.8 mm long, 1 length of spikelet, membranous, 1–3 -veined, eciliate on margins or ciliate on margins, acute. Fertile lemma lanceolate, 1.4 mm long, membranous, much thinner on margins, without keel, 3 -veined, 0–3 -veined. Lemma margins ciliate. Lemma apex acute. Palea 0.5 length of lemma. Rhachilla extension 0.1 length of fertile floret.

Flower and Fruit. Lodicules 2. Anthers 2, 0.6–1 mm long. Stigmas 2. Ovary glabrous. Caryopsis with adherent pericarp, 0.5–0.6 mm long. Hilum punctiform.

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

Country /Province /State. **Western Indian ocean.** Seychelles. **China, Eastern Asia.** China South Central, Hainan, China Southeast. Taiwan. **Indian Subcontinent, Indo-China, Malesia, Papuasia.** Bangladesh, Eastern Himalaya, India, Nepal, Sri Lanka. Andaman Is, Cambodia, Laos, Myanmar, Thailand, Vietnam. Malaya, Singapore, Philippines. **North-central Pacific.** Hawaii (*). **Mesoamerica, Brazil.** El Salvador. Brazil West Central.

TDWG4. Guangdong, Guangxi, Guizhou, Yunnan. Darjeeling, Bhutan, Sikkim.

Toliara arenacea Judz. ms.

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

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Distribution (TDWG). **Continent.** Africa.

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

Torreyochloa erecta (Hitchcock) Church. *Amer. Journ. Bot.* vi. 163 (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 USA. **Basionym or Replaced Name:** *Glyceria erecta* Hitchc., *Fl. Calif.* 1: 161 (1912). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: A.S. Hitchcock 3250–1/2; 19 Aug 1908; USA: California: Tuolumne-Mariposa-Madera-Mono Co. (US-81966).

Illustrations (Books): M.E. Barkworth et al., *Flora of North America north of Mexico Vol 24 Poaceae*, part 1 (2007) (609).

Derivation (Clifford & Bostock 2007): *L. held* upright. Spikelets or inflorescence branches held erect.

Classification. Subfamily Pooideae. Tribe: Poeae.

Habit, Vegetative Morphology. Perennial. Rhizomes elongated. Culms geniculately ascending, 10–40 cm long. Ligule an eciliate membrane. Leaf-blades 5–12 cm long, 4–9 mm wide.

Inflorescence. Inflorescence a panicle. Panicle open, elliptic or ovate, dense, 3–8 cm long. 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 oblong, laterally compressed, 3–4.5 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, similar, shorter than spikelet, thinner than fertile lemma. Lower glume ovate, 0.75 mm long, 0.75 length of upper glume, membranous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume apex obtuse. Upper glume ovate, 1 mm long, 0.3–0.4 length of adjacent fertile lemma, membranous, without keels, 3 -veined. Upper glume apex obtuse.

Florets. Fertile lemma oblong, 2.5–3 mm long, chartaceous, without keel, 7 -veined, more than 3-veined. Lemma lateral veins ribbed. Lemma surface scaberulous, rough on veins. Lemma apex erose, truncate or obtuse. Palea 2 -veined. Palea keels scaberulous. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Hilum punctiform.

Distribution (TDWG). Continent. North America.

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

Torreyochloa natans (Komarov) Church. *Amer. Journ. Bot.* vi. 164 (1949).

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

TYPE from Russia. **Basionym or Replaced Name:** *Glyceria natans* Kom., Fedde, *Repert.* 13: 86 (1914). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: V. Komarov 2944; 9 Jul 1909; Russia: Kamchatka basin, near village of Nashura, in the lake near the bank (LE; IT: LE, LE, LE, LE).

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

Derivation (Clifford & Bostock 2007): L. nato, swim. Culms floating.

Classification. Subfamily Pooideae. Tribe: Poeae.

Habit, Vegetative Morphology. Perennial. Rhizomes absent. Culms erect, 20–40 cm long. Ligule an eciliate membrane, 3 mm long. Leaf-blades 6–12 cm long, 2 mm wide. Leaf-blade surface scabrous.

Inflorescence. Inflorescence a panicle. Panicle open, ovate, 4–8 cm long. Panicle branches scabrous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 4–6 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets oblong or ovate, laterally compressed, 2–5 mm long, 1–2 mm wide, 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 length of upper glume, membranous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume apex obtuse. Upper glume ovate, 0.5 length of adjacent fertile lemma, membranous, without keels, 3 -veined. Upper glume apex obtuse.

Florets. Fertile lemma elliptic, 1.5–2.5 mm long, chartaceous, without keel, 7 -veined, more than 3-veined. Lemma lateral veins ribbed, excurrent. Lemma surface scaberulous, rough on veins. Lemma apex erose, obtuse. Palea 2 -veined. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Caryopsis with adherent pericarp. Hilum punctiform.

Distribution (TDWG). Continent. Temperate Asia.

Country /Province /State. Russian far east. Amur, Kamchatka, Kuril Is, Primorye, Sakhalin.

TDWG4.

Torreyochloa pallida (Torr.) Church. *Amer. Journ. Bot.* vi. 164 (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), T.Koyama, *Grasses of Japan and its neighboring regions* (1987) (as *Puccinellia*).

TYPE from USA. **Basionym or Replaced Name:** *Puccinellia pallida*, *Windsoria pallida* Torr., *Cat. Pl. N. York*, 91 (1819). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: USA, New York: Torrey (K iso).

Recent Synonyms: *Torreyochloa fernaldii* (Hitchcock) Church, *Amer. Journ. Bot.* vi. 164 (1949).

Illustrations (Books): M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 24 *Poaceae*, part 1 (2007) (609 as var. *fernalidii*, var. *pallida* & var. *pauciflora*).

Derivation (Clifford & Bostock 2007): L. pale-colored. Spikelets or grain pale-green.

Classification. Subfamily Pooideae. Tribe: Poeae.

Habit, Vegetative Morphology. Perennial. Culms rambling, slender, 20–50 cm long. Leaves cauline. Ligule an eciliate membrane, 3–6 mm long, white, acute. Leaf-blades 5–10 cm long, 1.5–3 mm wide. Leaf-blade apex abruptly acute.

Inflorescence. Inflorescence a panicle. Panicle open, ovate, 6–10 cm long, 2–4 cm wide. Primary panicle branches 2–4-nate. Panicle branches scabrous. 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 oblong, laterally compressed, 4–6 mm long, 1.5–2 mm wide, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, similar, shorter than spikelet, thinner than fertile lemma. Lower glume ovate, 1–1.25 mm long, 0.75 length of upper glume, membranous, without keels, 1-veined. Lower glume lateral veins absent. Lower glume apex obtuse. Upper glume ovate, 1.4–1.6 mm long, 0.66 length of adjacent fertile lemma, membranous, without keels, 3-veined. Upper glume apex obtuse.

Florets. Fertile lemma elliptic, 2–2.5 mm long, chartaceous, without keel, 7-veined, more than 3-veined. Lemma lateral veins ribbed, extending close to apex. Lemma surface scaberulous, rough on veins. Lemma apex erose, obtuse. Palea 1.8–2.2 mm long, 2-veined. Palea keels scaberulous. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Anthers 0.25–0.3 mm long. Caryopsis ellipsoid, 1 mm long. Hilum punctiform.

$2n = 14$.

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

Country /Province /State. Eastern Asia. Japan. Japan Hokkaido, or Honshu. **Subarctic America, Western Canada, Eastern Canada, Northwest USA, Northeast USA, Southwestern USA, South-central USA.** Yukon. Alberta, British Columbia, Manitoba, Saskatchewan. New Brunswick, Newfoundland, Nova Scotia, Ontario, Prince Edward I, Quebec. Colorado, Idaho, Montana, Oregon, Washington, Wyoming. Connecticut, Indiana, Maine, Massachusetts, Michigan, Ohio, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, Vermont, West Virginia. Arizona, California, Nevada, Utah. New Mexico.

Torreyochloa pauciflora (Presl & J. S. Presl) Church. *Amer. Journ. Bot.* vi. 163 (1949).

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:** *Glyceria pauciflora* J. & C. Presl, *Rel. Haenk.* 1: 257 (1830). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: USA, Nootka: Haenke (PR hol).

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

Derivation (Clifford & Bostock 2007): L. paucus, few; flos, flower. Florets few per spikelet.

Classification. Subfamily Pooideae. Tribe: Poeae.

Habit, Vegetative Morphology. Perennial. Culms decumbent, 50–120 cm long, rooting from lower nodes. Ligule an eciliate membrane. Leaf-blades 10–15 cm long, 5–15 mm wide. Leaf-blade surface scaberulous, rough on both sides.

Inflorescence. Inflorescence a panicle. Panicle open, elliptic, 10–25 cm long. Primary panicle branches 2–4-nate. Panicle branches flexuous, scabrous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, linear or oblong.

Fertile Spikelets. Spikelets comprising 5–6 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets oblong, laterally compressed, 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 ovate, 1 mm long, 0.66 length of upper glume, membranous, without keels, 1-veined. Lower glume lateral veins absent. Lower glume apex erose, obtuse. Upper glume ovate, 1.5 mm long, 0.66 length of adjacent fertile lemma, membranous, without keels, 1-veined. Upper glume apex erose, obtuse.

Florets. Fertile lemma oblong, 2–2.5 mm long, herbaceous, much thinner above, without keel, 7-veined, more than 3-veined. Lemma lateral veins ribbed, stopping well short of apex. Lemma surface scaberulous, rough on veins. Lemma apex erose, obtuse. Palea 2-veined. Palea keels scaberulous. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Hilum punctiform.

Distribution (TDWG). Continent. North America.

Country /Province /State. Western Canada, Northwest USA, Southwestern USA. British Columbia. Colorado, Idaho, Montana, Oregon, Washington, Wyoming. Arizona, California, Nevada, Utah.

Tovarocholea peruviana T.D. Macfarlane & P.P.-H. But. *Brittonia*, 34(4): 478 (1982).

Accepted by: R.J.Soreng et al., *Catalogue of New World 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>: *vide* TROPICOS and Kew Synonymy Database: Peru, Ausangate: Rauh & Hirsch 1208 (US holo).

Illustrations (Journals): *Ruizia* (13:166, Fig 181-o (1993)).

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

Classification. Subfamily Pooideae. Tribe: Poeae.

Habit, Vegetative Morphology. Annual. Culms 0.4–1 cm long. Leaves without demarcation between sheath and blade. Leaf-sheaths inflated. Ligule an eciliate membrane, 0.3 mm long. Leaf-blades triangular, 0.2–0.3 cm long, 1.5 mm wide.

Inflorescence. Inflorescence a panicle, comprising 1–30 fertile spikelets, shorter than basal leaves, subtended by an inflated leaf-sheath, embraced at base by subtending leaf. Panicle capitate, 0.3–0.8 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 oblong, laterally compressed, 3–3.5 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, similar, reaching apex of florets or shorter than spikelet, thinner than fertile lemma, parallel to lemmas or recurved at apex. Lower glume oblong, 1 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume lateral veins absent. Lower glume apex cuspidate. Upper glume oblong, 0.9–1 length of adjacent fertile lemma, membranous, 1-keeled, 1 -veined. Upper glume lateral veins absent. Upper glume apex cuspidate.

Florets. Fertile lemma oblong, 3–3.5 mm long, membranous, keeled, 1–5 -veined, 0–3 -veined or more than 3-veined. Lemma surface pubescent. Lemma apex cuspidate, muticous or mucronate. Palea 1 length of lemma, 1–2 -veined, without keels. Palea surface pubescent, hairy on back.

Flower and Fruit. Lodicules 2, membranous, 2-toothed. Anthers 3, 0.4–0.6 mm long. Stigmas 2. Ovary glabrous. Caryopsis with adherent pericarp, oblong, laterally compressed, 1.3–1.7 mm long. Embryo 0.4 length of caryopsis, projecting below grain. Hilum punctiform.

Distribution (TDWG). Continent. South America.

Country /Province /State. Western South America. Peru.

Trachypogon chevalieri (Stapf) Jacques-Felix. *Journ. Agric. Trop. & Bot. Appliq.* i. 60 (1954).

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

TYPE from CAR. **Basionym or Replaced Name:** *Homopogon chevalieri* Stapf, *Bull. Soc. Bot. France*, 55 Mem. VIII. 103 (1908). T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: Rep. Centre Afr., Dati: Chevalier 5761 (P holo).

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

Derivation (Clifford & Bostock 2007): in honor of Jean Baptiste Auguste Chevalier (1873–1956) French botanist and collector in tropical Africa, SE Asia and Brazil.

Classification. Subfamily Panicoideae. Tribe: Andropogoneae. Subtribe ANDROPOGONINAE.

Habit, Vegetative Morphology. Perennial, caespitose. Culms 30–100 cm long. Culm-nodes bearded. Ligule an eciliate membrane. Leaf-blades linear, flat, 5–20 cm long, 1–4 mm wide.

Inflorescence. Inflorescence composed of racemes. Racemes 1, single, straight or flexuous, 2–8 cm long. Rhachis tough, subterete. Rhachis internodes linear, 4 mm long. Rhachis internode tip oblique, flat. Spikelets in pairs. Fertile spikelets pedicelled, 1–2 in the cluster, on longer pedicels than sterile. Companion sterile spikelets pedicelled, 0–1 in the cluster. Pedicels present, linear, tip oblique.

Sterile Spikelets. Companion sterile spikelets well-developed, containing empty lemmas or male, linear, subterete, 4–10 mm long, shorter than fertile, persistent. Companion sterile spikelet glumes coriaceous, inconspicuously veined, truncate. Companion sterile spikelet lemmas 2, enclosed by glumes, 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 linear, subterete, 7–9 mm long, falling entire, deciduous from the base or with accessory branch structures. Spikelet callus linear, 2–3 mm long, bearded, base pungent, attached obliquely. Spikelet callus hairs yellow.

Glumes. Glumes dissimilar, firmer than fertile lemma, dull or shiny. Lower glume oblong, 1 length of spikelet, coriaceous, grey to dark brown, without keels, 7–9 -veined. Lower glume surface glabrous or pubescent.

Florets. Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret oblong, 0.9 length of spikelet, hyaline, 2 -veined, ciliate on margins, obtuse. Fertile lemma linear, 0.5 mm long, hyaline, without keel, 3 -veined, 0–3 -veined. Lemma apex entire, acute, awned, 1 -awned. Principal lemma awn apical, geniculate, 30–70 mm long overall, with twisted column. Column of lemma awn pubescent. Palea absent or minute.

Distribution (TDWG). Continent. Africa.

Country /Province /State. West tropical Africa, West-central tropical Africa, East tropical Africa, South tropical Africa. Nigeria. Burundi, Central African Republic, Cameroon, DRC. Tanzania. Zambia.

Trachypogon macroglossus Trin. *Mem. Acad. Petersb. Ser. VI. ii. 257* (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 Synonymy Database: Brazil: Coll?.

Illustrations (Books): A.S.Hitchcock, *Manual of the Grasses of the West Indies* (1936) (416, Fig. 366 as *T. filifolius*), S.A.Renvoize, *The Grasses of Bahia*, 1984 (268, Fig. 101), R.Pilger, *Die Natürlichen Pflanzenfamilien* 14e (1940) (182, Fig. 96 as *T. filifolius*).

Derivation (Clifford & Bostock 2007): Gk *macro*, large; *glossa*, tongue. Ligule long.

Classification. Subfamily Panicoideae. Tribe: Andropogoneae. Subtribe ANDROPOGONINAE.

Habit, Vegetative Morphology. Perennial, caespitose. Rootstock evident. Culms 40–100 cm long, wiry. Culm-nodes bearded. Leaf-sheath auricles absent or erect, 3–5(–50) mm long. Ligule an eciliate membrane, 3–5(–50) mm long. Leaf-blades filiform, convolute, 8–45 cm long, 1–2 mm wide.

Inflorescence. Inflorescence composed of racemes. Racemes 1, single, straight or flexuous, 5–15.5 cm long. Rhachis tough, subterete. Rhachis internodes linear. Rhachis internode tip oblique, flat. Spikelets in pairs. Fertile spikelets pedicelled, 1 in the cluster, on longer pedicels than sterile. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, linear, tip oblique.

Sterile Spikelets. Companion sterile spikelets well-developed, male, oblong, dorsally compressed, 5–6 mm long, shorter than fertile, persistent. Companion sterile spikelet glumes chartaceous, winged on margins (narrowly), distinctly veined, pilose, emarginate or truncate or obtuse. Companion sterile spikelet lemmas 2, enclosed by glumes, mucous.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets linear, subterete, 6.5–8.5 mm long, falling entire. Spikelet callus linear, 1.5 mm long, bearded, base pungent, attached obliquely. Spikelet callus hairs white.

Glumes. Glumes dissimilar, firmer than fertile lemma, dull or shiny. Lower glume oblong, 1 length of spikelet, coriaceous, grey to dark brown, without keels. Lower glume surface pilose.

Florets. Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret oblong, 0.9 length of spikelet, hyaline, 2 -veined, ciliate on margins, obtuse. Fertile lemma linear, 3.5 mm long, hyaline, without keel, 3 -veined, 0–3 -veined. Lemma apex entire, acute, awned, 1 -awned. Principal lemma awn apical, geniculate, 15–45(–65) mm long overall, with twisted column, limb puberulous (limb). Column of lemma awn hirsute. Palea absent or minute.

Distribution (TDWG). Continent. South America.

Country /Province /State. Brazil. Brazil West Central, Brazil Northeast.

TDWG4. Goias, Bahia, Minas Gerais, Rio de Janeiro, Espirito Santo.

Trachypogon spicatus (L.f.) Kuntze. *Rev. Gen. 794* (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 South Africa, Cape. **Basionym or Replaced Name:** *Trachypogon plumosus*, *Stipa spicata* L.f., *Suppl.* 111 (1781). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: South Africa, Cape: Thunberg (LINN holo).

Recent Synonyms: *Trachypogon montufarii* (HBK) Nees, *Agrost. Bras.* 342 (1829). *Trachypogon glaucescens* Pilger, *Notizbl. Bot. Gart. Berlin* 11: 803 (1933).

Illustrations (Books): H.Jacques-Felix, *Les Graminees d'Afrique tropicale* (1962) (311, Fig. 249 as *T. tholloni*), W. Robyns (1929 and 1934). *Flora Agrostologique du Congo Belge et du Ruanda-Urundi*, I. Maydees et Andropogonees and II. Panicees. Bruxelles, Goemaere (209, Pl. 16, as *T. thollonii*), R.M.Phillip, F.T.E.A., *Gramineae* (3(1982):710, Fig. 163), G.V.Pope et al., *Flora Zambesiaca* 10, L.K.A. Chippindall, *Grasses and Pastures of South Africa* (1955) (Pl. 20), G.E.Gibbs Russell et al, *Grasses of Southern Africa* (1990) (337, Fig. 220), J.Bosser, *Graminees des Paturage et des Cultures a Madagascar* (1969) (229, Fig. 82), S.Phillips,

Poaceae (Gramineae) in I.Hedberg & S.Edwards, *Flora of Ethiopia and Eritrea* (1995) (298, Fig. 119), M.E.Barkworth et al, *Flora of North America north of Mexico Vol 25 Poaceae*, part 2 (2003) (627 as *T. secundus*), F.W.Gould, *The Grasses of Texas* (1975) (613, Fig. 324 as *T. secundus*), S.A.Renvoize, *Gramineas de Bolivia* (1998) (576, Fig. 135), S.A.Renvoize, *The Grasses of Bahia*, 1984 (268, Fig. 101), J.A.Steyermark et al, *Flora of the Venezuelan Guayana Vol. 8* (2004) (290, Fig. 234 as *Thrasya petrosa*), E.G.Nicora, *Los Generos de Gramineas de America Austral* (1987) (506, Fig.180 as *T. montufarii*), L.B. Smith, D.C. Wasshausen, R.M. Klein *Flora Illustrada Catarinensis Gramineas* (1981–1982) (1196, Fig. 234 & 1200, Fig. 236 as *T. montufarii*), A.Burkat, *Flora Ilustrada de Entre Rios (Argentina)*, Pt II, Gramineas (1969) (503, Fig. 212 as *T. montufarii*), A.L.Cabrera, *Flora de la Provincia de Buenos Aires, IV Pt 2 Gramineas* (1970) (572, Fig. 152 as *T. montufarii* var. *mollis*), B.Rosengurt, *Gramineas Uruguayas I* (1970) (204, Fig. 84 as *T. montufarii*), G.Harling & C.Persson, *Flora of Ecuador* (2006), E.Judziewicz, *Flora of the Guianas*, 187. *Poaceae* (1990) (641, Fig. 111).

Illustrations (Journals): *Ruizia* (13:430 Fig 57a-b (1993)).

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

Derivation (Clifford & Bostock 2007): *L. spica*, thorn; -ata, possessing; Inflorescence a spike or spicate panicle.

Classification. Subfamily Panicoideae. Tribe: Andropogoneae. Subtribe ANDROPOGONINAE.

Habit, Vegetative Morphology. Perennial, caespitose. Culms 30–200 cm long. Culm-nodes bearded. Ligule an eciliate membrane. Leaf-blades filiform or linear, flat or convolute, 15–40 cm long, 1–7 mm wide.

Inflorescence. Inflorescence composed of racemes. Racemes 1(–3), single or paired or digitate, straight or flexuous, 4–30 cm long. Rhachis tough, subterete. Rhachis internodes linear, 4–5 mm long. Rhachis internode tip oblique, flat. Spikelets in pairs. Fertile spikelets pedicelled, 1 in the cluster, on longer pedicels than sterile. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, linear, tip oblique.

Sterile Spikelets. Companion sterile spikelets well-developed, male, oblong, dorsally compressed, 8–13 mm long, as long as fertile, persistent. Companion sterile spikelet glumes chartaceous, winged on margins (narrowly), distinctly veined, emarginate or truncate or obtuse. Companion sterile spikelet lemmas 2, enclosed by glumes, muticous.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets linear, subterete, 8–13 mm long, falling entire. Spikelet callus linear, 1–3 mm long, bearded, base pungent, attached obliquely. Spikelet callus hairs white.

Glumes. Glumes dissimilar, firmer than fertile lemma, dull or shiny. Lower glume oblong, 1 length of spikelet, coriaceous, grey to dark brown, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume surface glabrous or pubescent or villous.

Florets. Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret oblong, 0.9 length of spikelet, hyaline, 2 -veined, ciliate on margins, obtuse. Fertile lemma linear, 0.5 mm long, hyaline, without keel, 3 -veined, 0–3 -veined. Lemma apex entire, acute, awned, 1 -awned. Principal lemma awn apical, geniculate, 40–100 mm long overall, with twisted column. Column of lemma awn plumose. Palea absent or minute.

Distribution (TDWG). Continent. Africa, 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.** Benin, Burkina, Ghana, Ivory Coast, Nigeria, Togo. Burundi, Congo, Gabon, Rwanda, DRC. Ethiopia (inc. Eritrea), Sudan. Kenya, Tanzania, Uganda. Angola, Malawi, Mozambique, Zambia, Zimbabwe. Namibia, Botswana, Limpopo, North-West, Gauteng, Mpumalanga, Swaziland, Free State, Kwazulu-Natal, Lesotho, Western Cape, Eastern Cape. Madagascar. **South-central 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. Cuba, Trinidad-Tobago. French Guiana, Guyana, Surinam, Venezuela. Bolivia, Colombia, Ecuador, Peru. Brazil West Central, Brazil Northeast, Brazil Southeast, Brazil South. Argentina Northeast, Paraguay, Uruguay.

TDWG4. Minas Gerais, Rio de Janeiro, Espirito Santo, Sao Paulo Parana, Catarina, Rio Grande do Sul. Buenos Aires, Corrientes, Entre Rios, Misiones. Distrito Federal, Mexico State, Morelos, Puebla. Aguascalientes, Chihuahua, Durango, Guanajuato, Queretaro, San Luis Potosi, Tamaulipas, Zacatecas. Veracruz. Baja California, Sonora. Colima, Guerrero, Jalisco, Michoacan, Nayarit, Oaxaca. Chiapas, Tabasco, Yucatan.

Trachypogon vestitus Anderss. *Oefv. Vet. Akad. Foerhandl. Stockh.* xiv. 52. (1857).

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

TYPE from Brazil. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: HT: G. Gardner 2342; no date; Brazil: Piaui (W; IT: US-825441).

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

Derivation (Clifford & Bostock 2007): *L. vestio*, clothe. Plant in some respect hairy.

Classification. Subfamily Panicoideae. Tribe: Andropogoneae. Subtribe **ANDROPOGONINAE**.

Habit, Vegetative Morphology. Perennial, caespitose. Culms erect, 40–110 cm long. Leaf-sheaths pilose. Ligule an eciliate membrane, 1–10 mm long. Leaf-blades flat or conduplicate, 15–30 cm long, 2–5 mm wide. Leaf-blade surface pilose, densely hairy, hairy on both sides.

Inflorescence. Inflorescence composed of racemes. Racemes 1(–3), single or paired or digitate, straight or flexuous, 5–23 cm long. Central inflorescence axis with scattered hairs. Rhachis tough, subterete. Rhachis internodes linear. Rhachis internode tip oblique, flat. Spikelets in pairs. Fertile spikelets pedicelled, 1 in the cluster, on longer pedicels than sterile. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, linear, tip oblique.

Sterile Spikelets. Companion sterile spikelets well-developed, male, oblong, dorsally compressed, 5.7–7 mm long, shorter than fertile, persistent. Companion sterile spikelet glumes chartaceous, distinctly veined, 9–11 -veined, pubescent, obtuse. Companion sterile spikelet lemmas 2, enclosed by glumes, 4–6 mm long, muticous.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets linear, subterete, 6–9 mm long, falling entire. Spikelet callus linear, 1–2 mm long, bearded, base pungent, attached obliquely.

Glumes. Glumes dissimilar, firmer than fertile lemma. Lower glume oblong, 1 length of spikelet, coriaceous, without keels, 7–9 -veined. Lower glume surface grooved on either side of midvein.

Florets. Basal sterile florets 1, male, with palea. Lemma of lower sterile floret oblong, 6 mm long, 0.9 length of spikelet, hyaline, ciliate on margins. Fertile lemma linear, 0.5 mm long, hyaline, without keel, 0–3 -veined. Lemma apex entire, acute, awned, 1 -awned. Principal lemma awn apical, geniculate, 30–60 mm long overall, with twisted column. Column of lemma awn plumose. Palea absent or minute.

Flower and Fruit. Anthers 3, 4 mm long.

Distribution (TDWG). Continent. South America.

Country /Province /State. Mesoamerica, Northern South America, Western South America, and Brazil. Costa Rica, Honduras, Nicaragua. Venezuela. Colombia. Brazil West Central, Brazil Northeast, Brazil North, Brazil Southeast.

Trachys copeana Kabeer & Nair. *Kew Bull.* 62: 503 (2007).

TYPE from India. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: India: Tamil Nadu: inter Kollengode et Chinnathurai, prope Marthandam (Kanyakumari Distr.), *K.A.A. Kabeer 117134* (HT: CAL; IT: K, MH).

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

Classification. Subfamily Panicoideae. Tribe: Paspaleae. Subtribe SUBTRIBE “SISTER TO OTHER PASPALEAE”.

Habit, Vegetative Morphology. Annual or perennial, short-lived. Culms decumbent, 20–40 cm long, rooting from lower nodes. Culm-nodes bearded. Leaf-sheaths 2–3.5 cm long, longer than adjacent culm internode, pubescent. Ligule an eciliate membrane, 0.6–0.8 mm long. Leaf-blade base truncate. Leaf-blades linear or lanceolate, flat or involute, 4–4.5 cm long, 4 mm wide. Leaf-blade surface pubescent, densely hairy, hairy on both sides. Leaf-blade margins scaberulous. Leaf-blade apex acute or acuminate.

Inflorescence. Inflorescence composed of racemes. Peduncle 5–8 cm long, pilose above. Racemes 2(–3), paired, unilateral, 4–5.5 cm long, secondarily branched, secondary branches glomerate. Rhachis fragile at the nodes, broadly winged, foliaceous, 1.3–2 mm wide. Spikelets in threes. Fertile spikelets sessile, 3 in the cluster. Pedicels present, oblong, 0.6–1 mm long.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets ovate, dorsally compressed, 4–4.2 mm long, falling entire, deciduous with accessory branch structures (rachis segment and 3 spikelets together).

Glumes. Glumes dissimilar, shorter than spikelet, thinner than fertile lemma. Lower glume ovate, 0.3–0.4 mm long, 0.1 length of spikelet, coriaceous, 0 -veined. Lower glume lateral veins absent. Upper glume lanceolate, 1.8–3 mm long, 0.25 length of spikelet, chartaceous, 3 -veined. Upper glume margins ciliate. Upper glume apex acute or acuminate.

Florets. Basal sterile florets 1, barren, with palea. Lemma of lower sterile floret lanceolate or ovate, 1 length of spikelet, coriaceous, much thinner on margins, 11–13 -veined, prominently veined, with veins transversely connected at apex, acute. Palea of lower sterile floret membranous, 1.4 mm long. Fertile lemma ovate, 3.2–3.8 mm long, chartaceous, much thinner on margins, without keel, 3 -veined, 0–3 -veined. Lemma margins flat. Lemma apex acute. Palea cartilaginous.

Flower and Fruit. Lodicules 2, oblong, 0.4–0.5 mm long, membranous. Anthers 3, 1.3–1.5 mm long. Caryopsis with adherent pericarp, oblong, 1.6–2 mm long. Embryo 0.5 length of caryopsis. Hilum punctiform.

Distribution (TDWG). Continent. Tropical Asia.

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

Trachys muricata (L.) Pers. ex Trin. *Mem. Acad. Sci. Petersb. ser.6*, 3:189 (1834).

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:** *Cenchrus muricatus* L., *Mant.* 302 (1771). T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: India, Tamil Nadu: Venugopal 21360 (K neo, RHT).

Illustrations (Books): N.L.Bor, *The grasses of Burma, Ceylon, India and Pakistan* (1960) (370, Fig 42), K.M.Matthew, *Illustrations on the Flora of Tamilnadu Carnatic* (1982) (Pl. 947 & 948), R.Pilger, *Die Natürlichen Pflanzenfamilien* 14e (1940) (105, Fig. 62).

Derivation (Clifford & Bostock 2007): L. rough. Glumes bear short hard points.

Classification. Subfamily Panicoideae. Tribe: Paspaleae. Subtribe SUBTRIBE "SISTER TO OTHER PASPALEAE".

Habit, Vegetative Morphology. Annual. Culms geniculately ascending or decumbent, 15–30 cm long. Ligule a fringe of hairs. Leaf-blades 2.5–5 cm long, 6–12 mm wide. Leaf-blade surface pilose, densely hairy, hairy on both sides.

Inflorescence. Inflorescence composed of racemes. Racemes 1–3, single or paired or digitate, unilateral, 2.5–5 cm long, secondarily branched, secondary branches involucre. Rhachis fragile at the nodes, broadly winged, foliaceous, 2.5–4 mm wide. Spikelets subtended by an involucre. Fertile spikelets sessile, 2–6 in the cluster. Companion sterile spikelets sessile, 2–6 in the cluster. Involucre composed of imperfect spikelets, oblong, 3–6 mm long.

Sterile Spikelets. Companion sterile spikelets well-developed, containing empty lemmas, ovate, dorsally compressed, shorter than fertile, deciduous with the fertile. Companion sterile spikelet lemmas exerted from 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, 3–6 mm long, falling entire, deciduous with accessory branch structures.

Glumes. Glumes dissimilar, shorter than spikelet, thinner than fertile lemma. Lower glume subulate, 0.2–0.3 length of spikelet. Upper glume lanceolate, 0.5–0.8 length of adjacent fertile lemma, membranous, 3 -veined. Upper glume apex acute.

Florets. Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret ovate, 1 length of spikelet, coriaceous, 9–13 -veined, cuspidate (spinous). Fertile lemma ovate, 2.5–5 mm long, cartilaginous, without keel, 5 -veined, more than 3-veined. Lemma margins flat. Lemma apex acute. Palea cartilaginous.

Distribution (TDWG). Continent. Tropical Asia.

Country /Province /State. Indian Subcontinent, Indo-China. India, Sri Lanka. Myanmar.
TDWG4. Gujarat, Kerala.

Tragus andicola M.A.Zapater & Sulekic. *Darwiniana* 39(3–4): 248 (2001).

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

TYPE from Argentina. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: Argentina, Serranias la Apacheta: Sulekic & Cano 2698 (SI holo, US).

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

Derivation (Clifford & Bostock 2007): L. -cola, dweller. Andean species.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Annual. Culms erect or geniculately ascending, 4–30 cm long. Leaf-sheaths mostly shorter than adjacent culm internode, glabrous on surface, outer margin glabrous or hairy. Ligule

a fringe of hairs, 0.8–1 mm long. Leaf-blades 1.5–6 cm long, 1.5–5 mm wide. Leaf-blade surface glabrous. Leaf-blade margins cartilaginous, tuberculate-ciliate.

Inflorescence. Inflorescence composed of racemes. Racemes numerous, borne along a central axis, closely spaced, in a multilateral false spike, spreading, cuneate, bearing few fertile spikelets, bearing 2–5 fertile spikelets on each. Central inflorescence axis 2–10 cm long, pubescent. Rhachis evident, deciduous from axis, subterete, terminating in a barren extension, extension subulate, extension 0.3–2 mm long. Raceme-bases linear, 0.2–0.5 mm long, pubescent. Spikelets solitary. Fertile spikelets sessile.

Sterile Spikelets. Apical sterile spikelets rudimentary.

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, 2.8–4.2 mm long, falling entire, deciduous with accessory branch structures.

Glumes. Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma. Lower glume ovate, 0.2–0.4 mm long, 0.1 length of upper glume, hyaline, without keels, 0 -veined. Lower glume lateral veins absent. Lower glume apex acute. Upper glume elliptic, 2.8–4.2 mm long, 1.3–1.5 length of adjacent fertile lemma, membranous, without keels, 5 -veined. Upper glume lateral veins thickened, ribbed. Upper glume surface with hooked spines, rough on veins. Upper glume apex acuminate.

Florets. Fertile lemma elliptic, dorsally compressed, 2.2–2.8 mm long, membranous, without keel, 3 -veined, 0–3 -veined. Lemma surface glabrous or puberulous, hairy in the middle. Lemma apex acuminate, muticous or mucronate. Palea 1.7–2 mm long, hyaline, 2 -veined. Palea apex erose.

Flower and Fruit. Lodicules 2, cuneate, 0.3–0.4 mm long, fleshy. Anthers 3, 0.5 mm long. Caryopsis with adherent pericarp, ellipsoid, dorsally compressed, 1.4–1.7 mm long. Embryo 0.5 length of caryopsis. Hilum punctiform.

Distribution (TDWG). Continent. South America.

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

TDWG4. Jujuy, Salta.

Tragus australianus S. T. Blake. *Univ. Queensl. Papers, Dept. Biol.*, i. No. 18, 12 (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), D.Sharp, D. & B.K.Simon, *AusGrass* (2002), W.D.Clayton & N.Snow, *Key to Pacific Grasses* (2010).

TYPE from Australia. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: Queensland--Maranoa District...Noondoo, near Dirranbandi, on sand in Callitris forest, also on heavier soils, ca. 550 ft., Blake 10660.

Illustrations (Books): J.P.Jessop, G.R.M. Dasher & F.M.James, *Grasses of South Australia* (2006) (402, Fig 335), C.A.Gardner, *Flora of Western Australia*, Vol 1, Part 1, *Gramineae* (1952) (187, Pl. 54 as *T. australiensis*), J.R.Wheeler et al, *Flora of the Kimberley Region* (1992) (1224, Fig. 346), N.Walsh & T.Entwistle, *Flora of Victoria* Vol 2 (1994) (581, Fig. 117), S.W.L.Jacobs, R.D.B.Whalley & D.J.B.Wheeler., *Grasses of New South Wales*, 4th edn (2008) (387), J.C.Tothill, & J.B.Hacker. *The grasses of southern Queensland* (1983) (410), T.D.Stanley & E.Ross, *Flora of South East Queensland, Gramineae* (1989) (190, Fig. 29), K.O.Mallett (ed.), *Flora of Australia*, Vol 44B. *Poaceae* (2004) (267, Fig. 40), 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) (282), S.A.Renvoize, *Gramineas de Bolivia* (1998) (346, Fig. 73).

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

Derivation (Clifford & Bostock 2007): L. -anus, indicating location. From Australia.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Annual. Culms erect, 20–40 cm long, 2–4 -noded. Ligule a ciliolate membrane, 0.5–1 mm long. Leaf-blades 2–5 cm long, 2.5–5 mm wide, stiff, glaucous. Leaf-blade margins cartilaginous, tuberculate-ciliate. Leaf-blade apex acuminate.

Inflorescence. Inflorescence composed of racemes. Racemes numerous, borne along a central axis, closely spaced, in a multilateral false spike, spreading, oblong, 0.4–0.5 cm long, bearing few fertile spikelets, bearing 2 fertile spikelets on each. Central inflorescence axis 5–8 cm long, pubescent. Rhachis obsolete, deciduous from axis. Raceme-bases brief, 0.5 mm long. Spikelets in pairs. Fertile spikelets sessile, the upper smaller.

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, 5 mm long, falling entire, deciduous with accessory branch structures.

Glumes. Glumes one the lower absent or obscure or two, exceeding apex of florets, firmer than fertile lemma. Lower glume lanceolate, 0–0.5 mm long, 0–0.1 length of upper glume, hyaline, 0 -veined. Upper glume ovate, 4 mm long, 1 length of adjacent fertile lemma, membranous, without keels, 5 -veined. Upper glume lateral veins thickened, ribbed. Upper glume surface with hooked spines, rough on veins, glabrous or puberulous. Upper glume apex acute.

Florets. Fertile lemma ovate, 4 mm long, hyaline, without keel, 3 -veined, 0–3 -veined. Lemma apex acuminate. Palea 2 -veined.

Flower and Fruit. Lodicules 2, cuneate, fleshy. Anthers 3, 0.5 mm long. Caryopsis with adherent pericarp.

Distribution (TDWG). Continent. Europe (*), Australasia, Pacific, North America, South America.

Region. Northern Europe (*).

Country /Province /State. : GB Aliens (Ryves et al). **Australia.** Western Australia, Northern Territory, South Australia, Queensland, New South Wales, A.C.T., Victoria. **Southwestern Pacific.** New Caledonia. **Southeastern USA.** South Carolina. **Western South America, Southern South America.** Bolivia. Argentina Northwest, Argentina Northeast.

TDWG4. Kimberley, Eremean, South-West. Victoria R & Barkly Tableland, Central Australia. NW & Lake Eyre, Southern. North, Central, South East, Inland. Coast, Western Slopes, Western Plains. Jujuy, La Rioja, San Luis. La Pampa.

Tragus berteronianus Schult. *Mant.* ii. 205 (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), S-L Chen et al, *Flora of China* 22 (Poaceae) (2006), W.D.Clayton & N.Snow, *Key to Pacific Grasses* (2010).

TYPE from Dominican Rep. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: West Indies: Dominican Republic: Santo Domingo, poor sandy or stony soil, *Bertero s.n.* (HT: B; IT: M, US-92008 (fragm. ex B)).

Illustrations (Books): R.M.Phill, F.T.E.A., *Gramineae* (2(1974):401, Fig.108), G.V.Pope et al., *Flora Zambesiaca* 10 (2(1999):247, t. 76), L.K.A. Chippindall, *Grasses and Pastures of South Africa* (1955) (107, Fig. 79), G.E.Gibbs Russell et al, *Grasses of Southern Africa* (1990) (338, Fig. 221), J.Bosser, *Graminees des Paturage et des Cultures a Madagascar* (1969) (111, Fig. 33), 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) (214, Fig 120), W.L.Wagner et al., *Manual of the Flowering Plants of Hawai'i*, Vol. 2 (1990) (1600, Pl. 237), M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 25 *Poaceae*, part 2 (2003) (282), F.W.Gould, *The Grasses of Texas* (1975) (371, Fig. 196), A.S.Hitchcock, *Manual of the Grasses of the West Indies* (1936) (101, Fig. 59), S.A.Rennoize, *Gramineas de Bolivia* (1998) (346, Fig. 73), S.A.Rennoize, *The Grasses of Bahia*, 1984 (58, Fig. 20), G.Harling & C.Persson, *Flora of Ecuador* (2006) (68: 121, Fig. 18 (2001)), S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 701), E.Hafliger & E.Schultz, *Grass Weeds*, CIBA-GEIGY (2:133(1980)).

Illustrations (Journals): *Ruizia* (13:289, Fig 35j-k (1993)).

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

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

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Annual, caespitose. Culms erect or geniculately ascending, 5–60 cm long. Ligule a fringe of hairs. Leaf-blades 1–6 cm long, 2–5 mm wide. Leaf-blade margins ciliate.

Inflorescence. Inflorescence composed of racemes. Racemes numerous, borne along a central axis, closely spaced, in a multilateral false spike, spreading, oblong, 0.3–0.7 cm long, bearing few fertile spikelets, bearing 2 fertile spikelets on each. Central inflorescence axis 2–15 cm long. Rhachis evident, deciduous from axis, subterete. Raceme-bases filiform, 0.5 mm long. Spikelets in pairs. Fertile spikelets sessile, 2 in the cluster, the upper smaller.

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, 2–3 mm long, falling entire, deciduous with accessory branch structures.

Glumes. Glumes one the lower absent or obscure, exceeding apex of florets, firmer than fertile lemma. Upper glume ovate, 2–3 mm long, 1.2 length of adjacent fertile lemma, membranous, without keels, 5 -veined. Upper glume lateral veins thickened, ribbed. Upper glume surface with hooked spines (often bulbous), rough on veins. Upper glume apex acute.

Florets. Fertile lemma ovate, dorsally compressed, 1.5–2.5 mm long, membranous, without keel, 3 -veined, 0–3 -veined. Lemma surface puberulous. Lemma apex acuminate. Palea 2 -veined.

Flower and Fruit. Lodicules 2, cuneate, fleshy. Anthers 3, 0.4–0.6 mm long. Caryopsis with adherent pericarp, ellipsoid, dorsally compressed, biconvex, 1–2 mm long. Embryo 0.5 length of caryopsis.

$N = 10$ (2 refs TROPICOS). $2n = 20$ (1 ref TROPICOS).

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

Region. Northern Europe (*).

Country /Province /State. : GB Aliens (Ryves et al). **Northern Africa, West tropical Africa, West-central tropical Africa, Northeast tropical Africa, East tropical Africa, South tropical Africa, Southern Africa, Western Indian ocean.** Egypt. Ivory Coast, Mali. Burundi, Rwanda. Chad, Djibouti, Eritrea, Ethiopia (inc. Eritrea), Socotra, Somalia, Sudan. Kenya, Tanzania, Uganda. Angola, Malawi, Mozambique, Zambia, Zimbabwe. Namibia, Botswana, Limpopo, North-West, Gauteng, Mpumalanga, Swaziland, Free State, Kwazulu-Natal, Northern Cape, Western Cape, Eastern Cape. Madagascar. **Western Asia, Arabian Peninsula, China.** Afghanistan, Iran. Gulf States, Oman, Saudi Arabia. China South Central, Inner Mongolia, China North-Central, China Southeast. **Indian Subcontinent.** Pakistan. **Southwestern Pacific, Northwestern Pacific.** Hawaii (*). **Southwestern USA, South-central USA, Mexico.** Arizona. New Mexico. Texas. Central Mexico, Northeast Mexico, Northwest Mexico, Southwest Mexico. **Mesoamerica, Caribbean, Northern South America, Western South America, Brazil, Southern South America.** Bahamas, Cayman Is, Cuba, Dominican Republic, Haiti, Jamaica, Leeward Is, Windward Islands, Trinidad-Tobago. Bolivia, Colombia. Brazil Northeast. Argentina Northwest, Argentina Northeast.

TDWG4. Gansu, Hebei, Shaanxi. Nei Mongol. Anhui, Jiangsu. Sichuan. Catamarca, Jujuy, La Rioja, Mendoza, Salta, Santiago del Estero, San Luis, Tucuman. Cordoba, Formosa, La Pampa. Distrito Federal, Mexico State, Puebla. Aguascalientes, Coahuila, Chihuahua, Durango, Guanajuato, Hidalgo, Neuvo Leon, Queretaro, San Luis Potosi, Tamaulipas, Zacatecas. Baja California, Baja California Sur, Sonora. Guerrero, Jalisco, Oaxaca.

Tragus heptaneuron Clayton. *Kew Bull.* 27(1): 151 (1972).

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

TYPE from Kenya. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: Kenya, Samburu: Bogdan 3619 (K holotype).

Illustrations (Books): M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 25 *Poaceae*, part 2 (2003) (282).

Derivation (Clifford & Bostock 2007): Gk *hepta*, seven; *neuron*, nerve. Upper glume seven-nerved.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Annual, caespitose. Culms erect or geniculately ascending, 15–20 cm long. Ligule a fringe of hairs. Leaf-blades 1–5 cm long, 1.5–4 mm wide. Leaf-blade margins ciliate.

Inflorescence. Inflorescence composed of racemes. Racemes numerous, borne along a central axis, closely spaced, in a multilateral false spike, spreading, oblong, 0.4–0.5 cm long, bearing few fertile spikelets, bearing 2 fertile spikelets on each. Central inflorescence axis 3–9 cm long. Rhachis obsolete, deciduous from axis. Raceme-bases linear, 0.5 mm long. Spikelets in pairs. Fertile spikelets sessile, 2 in the cluster, the upper smaller.

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, 3–3.5 mm long, falling entire, deciduous with accessory branch structures.

Glumes. Glumes one the lower absent or obscure, exceeding apex of florets, firmer than fertile lemma. Upper glume ovate, 3–3.5 mm long, 1.1 length of adjacent fertile lemma, membranous, without keels, 7 -veined. Upper glume lateral veins thickened, ribbed. Upper glume surface with hooked spines, rough on veins. Upper glume apex acute.

Florets. Fertile lemma ovate, dorsally compressed, 2–2.5 mm long, membranous, without keel, 3 -veined, 0–3 -veined. Lemma surface puberulous. Lemma apex acuminate. Palea 2 -veined.

Flower and Fruit. Lodicules 2, cuneate, fleshy. Anthers 3, 0.4–0.6 mm long. Caryopsis with adherent pericarp, ellipsoid, dorsally compressed, biconvex, 1.2–1.6 mm long.

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

Country /Province /State. **Northeast tropical Africa, East tropical Africa.** Somalia. Kenya, Tanzania. **Southeastern USA.** South Carolina.

Tragus koelerioides Aschers. *Verh. Bot. Ver. Brandenb.* xx. p. (1878).

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>: *vide* TROPICOS and Kew Synonymy Database: South Africa, Grootrivier: Drege 4335 ; South Africa, Uitenhage: Ecklon & Zeyher 103.

Illustrations (Books): L.K.A. Chippindall, *Grasses and Pastures of South Africa* (1955) (105, Fig 77).

Derivation (Clifford & Bostock 2007): Gk. -oides, resembling. Similar to *Koeleria* especially with respect to the inflorescence.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose. Stolons present. Culms 12–65 cm long. Ligule a fringe of hairs. Leaf-blades 1–5 cm long, 2–3 mm wide, stiff. Leaf-blade margins cartilaginous, spinulose. Leaf-blade apex acuminate.

Inflorescence. Inflorescence composed of racemes. Racemes numerous, borne along a central axis, closely spaced, in a multilateral false spike, spreading, oblong, 0.4–0.5 cm long, bearing few fertile spikelets, bearing 2–5 fertile spikelets on each. Central inflorescence axis 4–8 cm long. Rhachis evident, deciduous from axis, subterete, terminating in a barren extension, extension bristle-like, extension 1–1.5 mm long. Raceme-bases brief, 0.2–0.5 mm 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, subterete, 3.5–4.8 mm long, falling entire, deciduous with accessory branch structures.

Glumes. Glumes one the lower absent or obscure or two, exceeding apex of florets, firmer than fertile lemma. Lower glume lanceolate, 0–1 mm long, 0–0.2 length of upper glume, hyaline, 0 -veined. Upper glume ovate, 3.5–4.8 mm long, 1.2 length of adjacent fertile lemma, membranous, without keels, 5 -veined. Upper glume lateral veins thickened, ribbed. Upper glume surface spinose, rough on veins. Upper glume apex acute.

Florets. Fertile lemma ovate, 3–4 mm long, hyaline, without keel, 3 -veined, 0–3 -veined. Lemma apex acuminate. Palea 2 -veined.

Flower and Fruit. Lodicules 2, cuneate, fleshy. Anthers 3, 1.8–2.5 mm long. Caryopsis with adherent pericarp.

Distribution (TDWG). Continent. Europe (*), Africa.

Region. Northern Europe (*).

Country /Province /State. : GB Aliens (Ryves et al). **South tropical Africa, Southern Africa.** Zimbabwe. Namibia, Botswana, North-West, Gauteng, Free State, Lesotho, Northern Cape, Western Cape, Eastern Cape.

Tragus mongolorum Ohwi. *Acta Phytotax. & Geobot., Kyoto*, x. 268 (1941).

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

TYPE from Mongolia. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: Mongolia, Paoto: Ohwi 10029.

Recent Synonyms: *Tragus roxburghii* Panigrahi, *Kew Bull.*, 29(3): 496 (1974).

Illustrations (Books): S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 701).

Derivation (Clifford & Bostock 2007): L. of the Mongols. From Mongolia.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Annual, mat forming. Culms decumbent, 3–20 cm long. Ligule a fringe of hairs. Leaf-blades 0.5–5 cm long, 1–4 mm wide. Leaf-blade margins ciliate.

Inflorescence. Inflorescence composed of racemes. Racemes numerous, borne along a central axis, closely spaced, in a multilateral false spike, spreading, oblong, bearing few fertile spikelets, bearing 2 fertile spikelets on each. Central inflorescence axis 1–4 cm long. Rhachis obsolete, deciduous from axis. Raceme-bases filiform, 0.5 mm long. Spikelets in pairs. Fertile spikelets sessile, 2 in the cluster, subequal.

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, 2.5–4 mm long, falling entire, deciduous with accessory branch structures.

Glumes. Glumes one the lower absent or obscure, exceeding apex of florets, firmer than fertile lemma. Upper glume ovate, 2.5–4 mm long, 1.2 length of adjacent fertile lemma, membranous, without keels, 5 -veined. Upper glume lateral veins thickened, ribbed. Upper glume surface with hooked spines (never bulbous), rough on veins. Upper glume apex acute.

Florets. Fertile lemma ovate, dorsally compressed, 2–3.5 mm long, membranous, without keel, 3 -veined, 0–3 -veined. Lemma surface puberulous. Lemma apex acuminate. Palea 2 -veined.

Flower and Fruit. Lodicules 2, cuneate, fleshy. Anthers 3, 0.4–0.6 mm long. Caryopsis with adherent pericarp, ellipsoid, dorsally compressed, biconvex. Embryo 0.5 length of caryopsis.

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

Country /Province /State. Middle Atlantic ocean and Western Indian ocean. St Helena. Madagascar. Western Asia, China. China South Central, Inner Mongolia, China North-Central, Qinghai, Tibet. **Indian Subcontinent, Indo-China, Malesia.** Bangladesh, India, Pakistan, West Himalaya. Myanmar, Thailand. Malaya.

TDWG4. Gansu, Hebei, Shanxi. Sichuan, Yunnan.

Tragus pedunculatus Pilger. *Engl. Jahrb.* xlv. 208 (1910).

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 Synonymy Database: Namibia, Grootfontein: Dinter 689.

Illustrations (Books): L.K.A. Chippindall, *Grasses and Pastures of South Africa* (1955) (108, Fig 80).

Derivation (Clifford & Bostock 2007): L. pes, foot; -culus, diminutive; -ata, possessing. Fascicles of spikelets borne on long peduncles.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Annual, mat forming. Culms erect or geniculately ascending, 10–40 cm long. Ligule a fringe of hairs. Leaf-blades 20–60 cm long, 2 mm wide.

Inflorescence. Inflorescence composed of racemes. Racemes 2–8, borne along a central axis, distant, spreading, cuneate, 1.1–2.2 cm long, bearing few fertile spikelets, bearing 1–4 fertile spikelets on each. Central inflorescence axis 2.5–5 cm long. Rhachis evident, deciduous from axis, subterete, terminating in a barren extension, extension subulate. Raceme-bases linear, 4–12 mm long, pubescent. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, linear or oblong, flattened, 1–2.5 mm long, ciliate.

Sterile Spikelets. Apical sterile spikelets rudimentary, 1–2 in number (per raceme).

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, acuminate, 6–10 mm long, falling entire, deciduous with accessory branch structures.

Glumes. Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma. Lower glume ovate, 1–2 mm long, 0.2 length of upper glume, hyaline, without keels, 0 -veined. Lower glume lateral veins absent. Lower glume apex acute. Upper glume lanceolate, 6–10 mm long, 1.1 length of adjacent fertile lemma, membranous, without keels, 7 -veined. Upper glume lateral veins thickened, ribbed. Upper glume surface setose, hairy on veins, with tubercle-based hairs. Upper glume apex acuminate.

Florets. Fertile lemma lanceolate, dorsally compressed, 5–8 mm long, membranous, without keel, 3 -veined, 0–3 -veined. Lemma apex acuminate. Palea 2 -veined.

Flower and Fruit. Lodicules 2, cuneate, fleshy. Anthers 3. Caryopsis with adherent pericarp, ellipsoid, dorsally compressed, biconvex.

Distribution (TDWG). Continent. Africa.

Country /Province /State. Southern Africa. Namibia, Botswana.

Tragus racemosus (L.) All. *Fl. Pedem.* ii. 241. (1785).

Accepted by: R.J.Soreng et al., *Catalogue of 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)*, N.L.Bor, *Grasses of Burma, Ceylon, India and Pakistan* (1960) (as *T. biflorus*), T.G.Tutin et al, *Flora Europaea* 5 (1980), N.Tsvelev, *Grasses of the Soviet Union* (1983).

TYPE from Southern Europe. **Basionym or Replaced Name:** *Tragus biflorus*, *Cenchrus racemosus* L., *Sp. Pl.* 1049 (1753). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Europe: Herb.. Burser I:5 (UPS lecto).

Illustrations (Books): N.N.Tsvelev, *Grasses of the Soviet Union* (1983) (969 (641), Pl.14), H.Jacques-Felix, *Les Graminees d'Afrique tropicale* (1962) (229, Fig. 154), L.K.A. Chippindall, *Grasses and Pastures of South Africa* (1955) (106, Fig. 78), L.Boulos, *Flora of Egypt* 4 (2005) (283, Pl. 84), N.L.Bor, *Gramineae in Flora of Iraq* (1968) (469, Pl. 180), M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 25 *Poaceae*, part 2 (2003) (282), E.G.Nicora, *Los Generos de Gramineas de America Austral* (1987) (341, Fig. 116), A.L.Cabrera, *Flora de la Provincia de Buenos Aires, IV Pt 2 Gramineas* (1970) (370, Fig. 94), R.Pilger, *Die Natürlichen Pflanzenfamilien* 14d (1956) (135, Fig. 34), E.Hafliger & E.Schultz, *Grass Weeds*, CIBA-GEIGY (2:134(1980)).

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 Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Annual, caespitose. Culms 3–25 cm long. Ligule a fringe of hairs. Leaf-blades 1–4 cm long, 1–3 mm wide.

Inflorescence. Inflorescence composed of racemes, subtended by an inflated leaf-sheath. Racemes numerous, borne along a central axis, closely spaced, in a multilateral false spike, spreading, cuneate, 0.4–0.9 cm long, bearing few fertile spikelets, bearing 2–4 fertile spikelets on each. Central inflorescence axis (2–)5–7.5 cm long. Rhachis evident, deciduous from axis, subterete, terminating in a barren extension, extension subulate. Raceme-bases linear, 0.5–1.5 mm long, pubescent, hairy in axils. Spikelets solitary. Fertile spikelets sessile.

Sterile Spikelets. Apical sterile spikelets rudimentary, 1–2 in number (per raceme).

Fertile Spikelets. Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, dorsally compressed, 4–5.5 mm long, falling entire, deciduous with accessory branch structures.

Glumes. Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma. Lower glume ovate, 0.5–1 mm long, 0.1–0.2 length of upper glume, hyaline, without keels, 0 -veined. Lower glume lateral veins absent. Lower glume apex acute. Upper glume elliptic, 4–5.5 mm long, 1.1 length of adjacent fertile lemma, membranous, without keels, 7 -veined. Upper glume lateral veins thickened, ribbed. Upper glume surface with hooked spines, rough on veins. Upper glume apex acuminate.

Florets. Fertile lemma elliptic, dorsally compressed, 3.5–5 mm long, membranous, without keel, 3 -veined, 0–3 -veined. Lemma apex acuminate. Palea 2 -veined.

Flower and Fruit. Lodicules 2, cuneate, fleshy. Anthers 3. Caryopsis with adherent pericarp, ellipsoid, dorsally compressed, biconvex.

$N = 10$ (1 ref TROPICOS). $2n = 40$ (7 refs TROPICOS).

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

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

Country /Province /State. : GB Aliens (Ryves et al.) : Austria, Czechoslovakia, Germany, Hungary, Switzerland. : Balears, Corsica, France, Sardinia, Spain. : Albania, Bulgaria, Greece, Italy, Romania, Sicily, Turkey Europe, Yugoslavia. Krym, East European Russia, South European Russia, Northwest European Russia, Ukraine. **Northern Africa, Macaronesia, West tropical Africa, West-central tropical Africa, Northeast tropical Africa, East tropical Africa, South tropical Africa, Southern Africa, Western Indian ocean.** Algeria, Egypt, Libya, Morocco, Tunisia. Cape Verde. Mali, Mauritania. Central African Republic. Chad, Ethiopia (inc. Eritrea), Somalia, Sudan. Kenya. Angola, Zimbabwe. Namibia, Botswana, Limpopo, North-West, Gauteng, Mpumalanga, Free State, Kwazulu-Natal, Lesotho, Northern Cape, Western Cape, Eastern Cape. Mauritius. **Middle Asia, Caucasus, Western Asia, Arabian Peninsula, China, Mongolia.** Kazakhstan, Tadjikistan. Iran. Gulf States, Oman. China South Central, Inner Mongolia, China North-Central, Qinghai. **Malesia.** Java. **Northeast USA, Southwestern USA, Southeastern USA.** Maine, New York, Pennsylvania. Arizona. North Carolina. **Southern South America.** Argentina Northeast.

TDWG4. Gansu, Hebei, Shanxi. Sichuan, Yunnan. Buenos Aires.

Tribolium acutiflorum (Nees) S.A. Renvoize. *Kew Bull.*, 40(4): 798 (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 South Africa. **Basionym or Replaced Name:** *Brizopyrum acutiflorum* Nees, *Fl. Afr. Austral. Ill.* 371 (1841). T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: LT: *Drhge s.n.*, South Africa: Cape Prov.: in dumetis ad Ebenzar et in Groenvalley ad montem Piquetberg (K(fragm., PRE); ILT: BM, K, LE). LT designated by Linder & Davidse, *Bot. Jahr. Syst.* 119: 477 (1998).

Illustrations (Books): J.P.Jessop, G.R.M. Dashorst & F.M.James, *Grasses of South Australia* (2006) (315, Fig 246), N.Walsh & T.Entwistle, *Flora of Victoria Vol 2* (1994) (523, Fig 102), K.O.Mallett (ed.), *Flora of Australia*, Vol 44B. *Poaceae* (2004) (36, Fig 7), D.Sharp & B.K.Simon, *AusGrass*. Grasses of Australia. CD-Rom Version 1.0. (2002).

Illustrations (Journals): *Engler's Bot. Jahrb.* (119:478, Fig.10 (1997)).

Images: D.Sharp & B.K.Simon, *AusGrass*. Grasses of Australia. CD-Rom Version 1.0. (2002);

Derivation (Clifford & Bostock 2007): L. acuo, sharpen; flos, flower. Paleas, lemmas or glumes with sharp apices.

Classification. Subfamily Danthonioideae. Tribe: Danthonieae.

Habit, Vegetative Morphology. Perennial, caespitose. Culms geniculately ascending or decumbent, 10–30 cm long. Ligule a fringe of hairs. Leaf-blades 50–120 cm long, 2–3 mm wide.

Inflorescence. Inflorescence a panicle, embraced at base by subtending leaf. Panicle spiciform, linear or oblong, 1–2.5 cm long. Spikelets solitary. Fertile spikelets sessile.

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, 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 ovate, 2 mm long, 0.5–0.66 length of upper glume, coriaceous, 1-keeled, 5 -veined. Lower glume surface glabrous. Lower glume apex acute to setaceously acuminate. Upper glume ovate, 3.5 mm long, 1.2–1.3 length of adjacent fertile lemma, coriaceous, 1-keeled, 5 -veined. Upper glume lateral veins ribbed. Upper glume surface glabrous. Upper glume apex acute to setaceously acuminate.

Florets. Fertile lemma ovate, 2.5–3 mm long, coriaceous, without keel, 7 -veined, more than 3-veined. Lemma midvein ciliate or ciliate, hairy below. Lemma surface glabrous. Lemma margins ciliate, hairy below. Lemma apex acute. Palea 2 -veined. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Caryopsis with tardily free pericarp.

N = 12 (1 ref TROPICOS).

Distribution (TDWG). Continent. Africa, Australasia (*).

Country /Province /State. Southern Africa. Northern Cape, Western Cape. **Australia.** South Australia (*), New South Wales (*).

TDWG4. Southern.

Tribolium alternans (Nees) S.A. Renvoize. *Kew Bull.*, 40(4): 798 (1985).

Regarded by K as a synonym (*T. uniolae*).

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:** *Brizopyrum alternans* Nees, *Fl. Afr. Austral. Ill.* 1: 369 (1841). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *Drège s.n.*, South Africa: Du Toits Kloof, as *rupes catarracae* in solo humoso, alt. 2000 ft, fruit mature in Feb (B (fragm., PRE); IT: K, MO).

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

Derivation (Clifford & Bostock 2007): *L. alternans*, change. Rhachis produced into setaceous lobes opposite all or some of the spikelets.

Classification. Subfamily Danthonioideae. Tribe: Danthonieae.

Habit, Vegetative Morphology. Perennial, caespitose. Culms erect, 35–70 cm long. Ligule a fringe of hairs. Leaf-blades 15–30 cm long, 2–5 mm wide.

Inflorescence. Inflorescence composed of racemes, without bracts or bracteate at pedicel base, embraced at base by subtending leaf. Racemes 1, single, linear, unilateral, 4–6 cm long. Rhachis angular. Spikelet packing broadside to rhachis, lax, regular, 2 -rowed. Spikelets appressed, solitary. Fertile spikelets sessile.

Fertile Spikelets. Spikelets comprising 4–8 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets ovate, laterally compressed, 6–7(–10) mm long, 4 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, 6 mm long, 1 length of upper glume, coriaceous, 1-keeled, 5 -veined. Lower glume surface pilose, with tubercle-based hairs. Lower glume apex acuminate. Upper glume ovate, 6 mm long, 1–1.1 length of adjacent fertile lemma, coriaceous, 1-keeled, 5 -veined. Upper glume surface pilose, with tubercle-based hairs. Upper glume apex acuminate.

Florets. Fertile lemma ovate, 6 mm long, coriaceous, without keel, 7 -veined, more than 3-veined. Lemma surface pubescent, hairy below, with clavate hairs. Lemma apex acute. Palea 2 -veined. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, cuneate, fleshy. Caryopsis with tardily free pericarp.

Distribution (TDWG). Continent. Africa.

Country /Province /State. Southern Africa. Western Cape.

Tribolium amplexum S.A. Renvoize. *Kew Bull.*, 40(4): 797 (1985).

Regarded by K as a synonym (*T. uniolae*).

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

TYPE from South Africa. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: Boucher 2287; 8 Oct 1973; South Africa: French Hoek Pass summit parking area, 2400 ft, Worcester 3319CC (K; IT: PRE, STE).

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

Derivation (Clifford & Bostock 2007): L. encircling. The inflorescence only shortly exerted from the flag-leaf.

Classification. Subfamily Danthoioideae. Tribe: Danthoieae.

Habit, Vegetative Morphology. Perennial, caespitose. Rhizomes short. Culms erect, 20–70 cm long. Ligule a fringe of hairs. Leaf-blades involute, 10–20 cm long, 2–4 mm wide. Leaf-blade apex obtuse or acute.

Inflorescence. Inflorescence composed of racemes, embraced at base by subtending leaf. Racemes 1, single, linear, unilateral, 2.5–5 cm long, 5–7 mm wide. Rhachis angular, scabrous on margins. Spikelet packing broadside to rhachis, regular, 2 -rowed. Spikelets appressed, solitary. Fertile spikelets sessile.

Fertile Spikelets. Spikelets comprising 4–6 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets ovate, laterally compressed, 4–7 mm long, 1.5–3.5 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, 4–5 mm long, 0.66–0.8 length of upper glume, coriaceous, 1-keeled, 5 -veined. Lower glume surface glabrous. Lower glume apex acute or acuminate. Upper glume ovate, 6 mm long, 1.2–1.5 length of adjacent fertile lemma, coriaceous, 1-keeled, 5 -veined. Upper glume surface glabrous. Upper glume apex acute.

Florets. Fertile lemma ovate, 4–5 mm long, coriaceous, much thinner on margins, without keel, 7 -veined, more than 3-veined. Lemma surface pubescent, hairy below, with clavate hairs. Lemma margins eciliate. Lemma apex acute. Palea 2 -veined. Palea keels winged, narrowly winged, ciliolate. Palea surface glabrous. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, cuneate, fleshy. Caryopsis with tardily free pericarp.

Distribution (TDWG). Continent. Africa.

Country /Province /State. Southern Africa. Western Cape.

Tribolium brachystachyum (Nees) S.A. Renvoize. *Kew Bull.*, 40(4): 798 (1985).

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:** *Brizopyrum capense* var. *brachystachyum* Nees, *Fl. Afr. Austral. Ill.* 1: 373 (1841). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *Drège s.n.*, South Africa: Cape: Du Toits Kloof, solo turfoso argillaceo subhumido alt. 2500–3500 (B (fragm., PRE); IT: K, MO).

Recent Synonyms: *Plagiochloa brachystachya* (Nees) Adamson & Sprague, *Journ. S. Afr. Bot.* 7: 91 (1941).

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

Derivation (Clifford & Bostock 2007): Gk. brachys, short; stachys, ear of corn. Inflorescence comprised of short branches or spikelets short.

Classification. Subfamily Danthoioideae. Tribe: Danthoieae.

Habit, Vegetative Morphology. Perennial, caespitose. Culms decumbent, 5–30 cm long. Ligule a fringe of hairs. Leaf-blades 1–12 cm long, 2.5 mm wide.

Inflorescence. Inflorescence composed of racemes. Racemes 1, single, oblong, unilateral, 1–2.5 cm long. Rhachis angular. Spikelet packing broadside to rhachis, regular, 2 -rowed. Spikelets solitary. Fertile spikelets sessile.

Fertile Spikelets. Spikelets comprising (4–)5–6 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets ovate, laterally compressed, 4–5 mm long, 3.5 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, 3 mm long, 0.75 length of upper glume, coriaceous, 1-keeled, 5 -veined. Lower glume surface setose, with tubercle-based hairs. Lower glume apex acute. Upper glume ovate, 4 mm long, 1 length of adjacent fertile lemma, coriaceous, 1-keeled, 5 -veined. Upper glume surface setose, with tubercle-based hairs. Upper glume apex acute.

Florets. Fertile lemma ovate, 4 mm long, coriaceous, much thinner on margins, without keel, 5 -veined, more than 3-veined. Lemma surface pubescent, hairy below, with clavate hairs. Lemma margins eciliate. Lemma apex obtuse. Palea 2 -veined. Palea keels winged, narrowly winged, ciliolate. Palea surface pilose, hairy on back, with turgid hairs. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, cuneate, fleshy. Caryopsis with tardily free pericarp.

N = 12 (1 ref TROPICOS).

Distribution (TDWG). Continent. Africa.

Country /Province /State. Southern Africa. Western Cape.

Tribolium ciliare (Stapf) S.A. Renvoize. *Kew Bull.*, 40(4): 799 (1985).

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:** *Dactylis ciliaris* Thunb., *Prodr. Pl. Cap.* . . . 22 (1794). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *Thunberg s.n.*, South Africa: Cape Province (UPS (fragm., K)).

Illustrations (Journals): *Hooker's Icones Plantarum* (t.2602 (1899) as *Brizopyrum*).

Derivation (Clifford & Bostock 2007): *L. cilium*, eyelid; -are, pertaining to. Glumes or lemmas ciliate on nerves or margins.

Classification. Subfamily Danthoioideae. Tribe: Danthoieae.

Habit, Vegetative Morphology. Annual, caespitose, clumped loosely. Culms 5–10 cm long. Ligule a fringe of hairs. Leaf-blades 1–2 cm long, 1 mm wide.

Inflorescence. Inflorescence a panicle, embraced at base by subtending leaf. Panicle spiciform, oblong, 0.5–1 cm long. Spikelets solitary. Fertile spikelets sessile.

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 orbicular, laterally compressed, 2–3 mm long, 2–3 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, 2 mm long, 0.75 length of upper glume, membranous, 1-keeled, 5 -veined. Lower glume surface setose, with tubercle-based hairs. Lower glume apex acute. Upper glume ovate, 2.5 mm long, 0.8 length of adjacent fertile lemma, membranous, 1-keeled, 5 -veined. Upper glume surface setose, with tubercle-based hairs. Upper glume apex acute.

Florets. Fertile lemma ovate, 2 mm long, membranous, without keel, 7 -veined, more than 3-veined. Lemma surface glabrous. Lemma margins tuberculate, setose. Lemma apex obtuse. Palea 2 -veined. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Caryopsis with tardily free pericarp.

N = 6 (3 refs TROPICOS).

Distribution (TDWG). Continent. Africa.

Country /Province /State. Southern Africa. Western Cape.

Tribolium curvum (Nees) Verboom & H.P. Linder. *Ann. Mo. Bot. Gard.* 97 (3): 355 (2010).

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

TYPE from South Africa. **Basionym or Replaced Name:** *Danthonia curva* Nees, *Fl. Afr. Austr.* 328 (1841). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: LT: *Ecklon 841*, South Africa (B). LT designated by Conert & Türpe, *Senckenb. Biol.* 50: 298 (1969).

ST: *Ecklon & Zeyher s.n.*, South Africa (BREM, E, F, GH, GOET, L, W).

IT: *C.F. Ecklon s.n.*, South Africa: Cape: Kaap de Goede Hoop (L).

Recent Synonyms: *Karroochloa curva* (Nees) Conert & Turpe, *Senck. Biol.* 50: 295 (1969).

Illustrations (Books): L.K.A. Chippindall, *Grasses and Pastures of South Africa* (1955) (243, Fig 214 as *Danthonia*), G.E.Gibbs Russell et al, *Grasses of Southern Africa* (1990) (192, Fig 114).

Derivation (Clifford & Bostock 2007): *L. bent*. Panicle branches more or less secund.

Classification. Subfamily Danthoioideae. Tribe: Danthoieae.

Habit, Vegetative Morphology. Perennial, caespitose. Stolons present. Culms 30–40 cm long. Leaf-sheaths glabrous on surface. Leaf-sheath oral hairs ciliate. Ligule a fringe of hairs. Leaf-blades flat or convolute, 10–25 cm long, 1–2 mm wide. Leaf-blade surface glabrous.

Inflorescence. Inflorescence a panicle. Panicle contracted, lanceolate or oblong, 1.5–5 cm long. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

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, 3.5–6 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 elliptic, 3.5–6 mm long, 1 length of upper glume, membranous, without keels, 3 -veined. Lower glume apex acute. Upper glume elliptic, 3.5–6 mm long, 1.4–1.7 length of adjacent fertile lemma, membranous, without keels, 3 -veined. Upper glume apex acute.

Florets. Fertile lemma oblong, 2.5–3.5 mm long, chartaceous, without keel, 9 -veined, more than 3-veined. Lemma surface pubescent, hairy below, with a transverse row of hair tufts. Lemma margins eciliate. Lemma apex lobed, 2 -fid, incised 0.5 of lemma length, awned, 3 -awned. Principal lemma awn from a sinus, geniculate, 4–5.5 mm long overall, without a column or with a straight or slightly twisted column. Lateral lemma awns present, arising on apex of lobes, 0.5 mm long. Palea 2.2–2.5 mm long. Palea surface pubescent, hairy on back. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, fleshy, ciliate. Anthers 3, 1 mm long. Caryopsis with adherent pericarp.

Distribution (TDWG). Continent. Africa.

Country /Province /State. Southern Africa. Free State (?), Western Cape, Eastern Cape.

Tribolium echinatum (Thunb.) S.A. Renvoize. *Kew Bull.*, 40(4): 798 (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 South Africa. **Basionym or Replaced Name:** *Alopecurus echinatus* Thunb., *Prodr. Pl. Cap.* 19 (1794). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: ST: *Thunberg 1711*, South Africa (UPS). ST: *Thunberg 1712*, South Africa (UPS).

Illustrations (Journals): *Ann. Missouri Bot. Gard.* (97: 354, Fig.18 (2010)).

Images: D.Sharp & B.K.Simon, *AusGrass*. Grasses of Australia. CD-Rom Version 1.0. (2002);.

Derivation (Clifford & Bostock 2007): *L. spiny*. Inflorescence a very condensed panicle and the spikelets or auxillary structures are awned the whole thereby resemble a hedgehog.

Classification. Subfamily Danthoioideae. Tribe: Danthoieae.

Habit, Vegetative Morphology. Annual, caespitose. Culms decumbent, 10–25 cm long. Ligule a fringe of hairs. Leaf-blades 7–15 cm long, 2–5 mm wide. Leaf-blade surface pubescent.

Inflorescence. Inflorescence a panicle, embraced at base by subtending leaf. Panicle spiciform, oblong, interrupted, 2–4 cm long. Spikelets solitary. Fertile spikelets sessile.

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 oblong, laterally compressed, 3.5–4 mm long, 1–1.5 mm wide, 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 ovate, 3–3.5 mm long, 1 length of upper glume, chartaceous, 1-keeled, 5 -veined. Lower glume surface setose, with tubercle-based hairs. Lower glume apex setaceously acuminate. Upper glume ovate, 3.5–4 mm long, 1.1–1.4 length of adjacent fertile lemma, membranous, 1-keeled, 5 -veined. Upper glume surface setose, with tubercle-based hairs. Upper glume apex setaceously acuminate.

Florets. Fertile lemma ovate, 2.5–3 mm long, membranous, without keel, 7 -veined, more than 3-veined. Lemma surface glabrous. Lemma margins ciliate. Lemma apex acute. Palea 2 -veined. Palea surface glabrous. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Caryopsis with tardily free pericarp.

N = 6 (1 ref TROPICOS).

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

Region. Northern Europe (*).

Country /Province /State. : Great Britain (*). Southern Africa. Northern Cape, Western Cape. Australia. Western Australia (*).

TDWG4. South-West.

Tribolium hispidum (Thunb.) Desv. *Opusc.* 64 (1831).

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:** *Dactylis hispida* Thunb., *Prodr. Pl. Cap.* . . . 22 (1794). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: LT: *C. Thunberg s.n.*, South Africa: Cape Prov. (UPS). LT designated by Linder & Davidse, *Bot. Jahrb. Syst.* 119: 490 (1998).

Illustrations (Books): L.K.A. Chippindall, *Grasses and Pastures of South Africa* (1955) (115, Fig 85 as *Lasiochloa longifolia*).

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

Derivation (Clifford & Bostock 2007): L. bearing coarse stiff hairs. Plant wholly or partly rough to the touch.

Classification. Subfamily Danthonioideae. Tribe: Danthonieae.

Habit, Vegetative Morphology. Perennial, caespitose. Culms erect, 10–40 cm long. Leaves mostly basal. Leaf-sheath oral hairs bearded. Ligule a fringe of hairs. Leaf-blades convolute, 3–10 cm long, 1–3 mm wide. Leaf-blade surface glabrous or pilose, hairy abaxially, with tubercle-based hairs.

Inflorescence. Inflorescence a panicle. Panicle spiciform, oblong or ovate, continuous or interrupted, 1–7 cm long. Panicle branches terete. Spikelets solitary. Fertile spikelets sessile.

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, 3–4 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, similar, exceeding apex of florets or reaching apex of florets, firmer than fertile lemma. Lower glume ovate, 1 length of upper glume, herbaceous, 1-keeled, 5 -veined. Lower glume surface pilose, with tubercle-based hairs. Lower glume apex acuminate. Upper glume ovate, 1.2 length of adjacent fertile lemma, herbaceous, 1-keeled, 5 -veined. Upper glume surface pilose, with tubercle-based hairs. Upper glume apex acuminate.

Florets. Fertile lemma ovate, 2.5–3 mm long, chartaceous, without keel, 7 -veined, more than 3-veined. Lemma surface glabrous. Lemma margins ciliate, hairy below. Lemma apex obtuse. Palea 2 -veined. Palea keels scaberulous. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Caryopsis with tardily free pericarp.

N = 6 (1 ref TROPICOS).

Distribution (TDWG), Continent. Africa.

Country /Province /State. Southern Africa. Northern Cape.

Tribolium obliterum (Hemsl.) S.A. Renvoize. *Kew Bull.*, 40(4): 798 (1985).

Accepted by: R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), D.Sharp, D. & B.K.Simon, *AusGrass* (2002).

TYPE from St. Helena Island. **Basionym or Replaced Name:** *Desmazeria oblitera* Hemsl., *Rep. Challenger, Bot.* 1(2): 90, t. 51, f. 1–8 (1885). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *Burchell 59*, St. Helena (K).

Illustrations (Books): J.P.Jessop, G.R.M. Dashorst & F.M.James, *Grasses of South Australia* (2006) (316, Fig 247), M.E.Barkworth et al, *Flora of North America north of Mexico Vol 25 Poaceae*, part 2 (2003) (313).

Illustrations (Journals): *Hooker's Icones Plantarum* (t.2603 (1899) as *Brizopyrum glomeratum*).

Derivation (Clifford & Bostock 2007): L. weakly developed. Florets few per spikelet.

Classification. Subfamily Danthonioideae. Tribe: Danthonieae.

Habit, Vegetative Morphology. Perennial, caespitose. Stolons absent or present. Culms geniculately ascending or decumbent, 10–35 cm long. Ligule a fringe of hairs. Leaf-blades filiform, involute, 2–15 cm long, 1–2 mm wide.

Inflorescence. Inflorescence a panicle, exserted or embraced at base by subtending leaf. Panicle spiciform, oblong, 1.5–2.5 cm long. Spikelets solitary. Fertile spikelets sessile.

Fertile Spikelets. Spikelets comprising 3–4(–6) fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets ovate, laterally compressed, 4–5 mm long, 2 mm wide, 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 ovate, 4–5 mm long, 1 length of upper glume, coriaceous, 1-keeled, 5 -veined. Lower glume surface glabrous. Lower glume apex acute. Upper glume ovate, 4–5 mm long, 1 length of adjacent fertile lemma, coriaceous, 1-keeled, 5 -veined. Upper glume surface glabrous. Upper glume apex acute.

Florets. Fertile lemma ovate, 4–5 mm long, coriaceous, without keel, 7 -veined, more than 3-veined. Lemma midvein ciliate or ciliate. Lemma surface glabrous. Lemma margins ciliate, hairy below. Lemma apex acute. Palea 2 -veined. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Caryopsis with tardily free pericarp.

N = 12 (1 ref TROPICOS), or 18 (1 ref TROPICOS).

Distribution (TDWG). Continent. Africa, Australasia (*), North America.

Country /Province /State. Southern Africa, Middle Atlantic ocean. Western Cape. Ascension, St Helena. Australia. Western Australia (*), South Australia (*), Victoria (*). Southwestern USA. California.

TDWG4. South-West. Southern.

Tribolium obtusifolium (Nees) S.A. Renvoize. *Kew Bull.*, 40(4): 799 (1985).

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:** *Lasiochloa obtusifolia* Nees, *Fl. Afr. Austral. Ill.* 1: 430 (1841). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *Drège s.n.*, Dec, South Africa: Locis aridis flume Zwartkopsrivier, alt. I, et in calcareis ad Zautpanskop iuxta eudum fluvium (B fragm., PRE)).

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

Derivation (Clifford & Bostock 2007): *L. obtusus*, blunt; folium, leaf. Apices of leaf-blades rounded.

Classification. Subfamily Danthonioideae. Tribe: Danthonieae.

Habit, Vegetative Morphology. Perennial. Stolons present. Culms 10–25 cm long. Ligule a fringe of hairs. Leaf-blades filiform, 10–20 cm long, 1 mm wide.

Inflorescence. Inflorescence a panicle. Panicle spiciform, oblong, 2–3 cm long. Spikelets solitary. Fertile spikelets sessile.

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, 3–4 mm long, 1.5–2 mm wide, 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 ovate, 3–4 mm long, 1 length of upper glume, coriaceous, 1-keeled, 5 -veined. Lower glume surface pilose, with tubercle-based hairs. Lower glume apex acute. Upper glume ovate, 3–4 mm long, 1–1.3 length of adjacent fertile lemma, coriaceous, 1-keeled, 5 -veined. Upper glume surface pilose, with tubercle-based hairs. Upper glume apex acute.

Florets. Fertile lemma ovate, 3 mm long, coriaceous, without keel, 7–9 -veined, more than 3-veined. Lemma surface glabrous. Lemma margins ciliate, hairy below. Lemma apex acute. Palea 2 -veined. Palea keels ciliate. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Caryopsis with tardily free pericarp.

Distribution (TDWG). Continent. Africa.

Country /Province /State. Southern Africa. Western Cape, Eastern Cape.

Tribolium pleuropogon (Stapf) Verboom & H.P. Linder. *Ann. Mo. Bot. Gard.* 97 (3): 356 (2010).

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

TYPE from South Africa. **Basionym or Replaced Name:** *Schismus pleuropogon* Stapf, *Kew Bull.* 1916, 234. (1916). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: South Africa, Riversdale: Schlechter 1759 (K holo).

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

Derivation (Clifford & Bostock 2007): Gk. pleuron, rib; pogon, beard. Nerves of lemma densely bearded.

Classification. Subfamily Danthonioideae. Tribe: Danthonieae.

Habit, Vegetative Morphology. Perennial, mat forming. Stolons present. Culms erect or geniculately ascending, 12–25 cm long, 2–4 -noded. Leaf-sheath oral hairs scanty. Ligule a fringe of hairs, 0.2 mm long. Leaf-blades filiform, involute, 3–8 cm long, 0.5 mm wide.

Inflorescence. Inflorescence a panicle. Panicle spiciform, oblong, 1.5–8 cm long, 0.5–0.8 cm wide. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, linear, 0.5–1 mm long, scaberulous.

Fertile Spikelets. Spikelets comprising 5–7 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets oblong, laterally compressed, 3–5 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes definite, 0.3–0.5 mm long. Floret callus pubescent, obtuse.

Glumes. Glumes persistent, similar, shorter than spikelet, similar to fertile lemma in texture, gaping. Lower glume ovate, 3–4 mm long, 1 length of upper glume, membranous, without keels, 3 -veined. Lower glume primary vein scaberulous. Lower glume lateral veins ribbed. Lower glume apex acute. Upper glume ovate, 3–4

mm long, 1.2–1.4 length of adjacent fertile lemma, membranous, without keels, 5 -veined. Upper glume primary vein scaberulous. Upper glume lateral veins ribbed. Upper glume apex acute.

Florets. Fertile lemma ovate, 2.6–2.8 mm long, membranous, much thinner above, much thinner on margins, without keel, 9 -veined, more than 3-veined. Lemma surface glabrous. Lemma margins ciliate, hairy below. Lemma apex dentate, 2 -fid, awned, 1 -awned. Principal lemma awn from a sinus, 1–1.5 mm long overall. Palea 2 -veined. Palea keels ciliolate. Palea surface pubescent, hairy on flanks (below). Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, cuneate, fleshy, ciliate. Anthers 3, 0.6–0.8 mm long. Ovary glabrous. Caryopsis with adherent pericarp, obovoid, concavo-convex, 0.8–1 mm long. Embryo 0.33 length of caryopsis. Hilum elliptic.

Distribution (TDWG). Continent. Africa.

Country /Province /State. Southern Africa. Western Cape.

Tribolium pusillum (Nees) H.P. Linder & Davidse. *Bot. Jahrb. Syst.* 119(4): 495, f. 17 (1997).

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

TYPE from South Africa. **Basionym or Replaced Name:** *Urochlaena pusilla* Nees, *Fl. Afr. Austral.* 3: 438 (1841). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: South Africa, Ebenezar: Drege (B: holo; K, MO, PRE iso).

Illustrations (Books): L.K.A. Chippindall, *Grasses and Pastures of South Africa* (1955) (117, Fig 87 as *Urochlaena pusilla*).

Illustrations (Journals): *Engler's Bot. Jahrb.* (119:496, Fig.17 (1997)).

Derivation (Clifford & Bostock 2007): L. very small. Plants of small stature.

Classification. Subfamily Danthonioideae. Tribe: Danthonieae.

Habit, Vegetative Morphology. Annual, caespitose. Culms geniculately ascending or decumbent, 5–30 cm long. Leaves mostly basal. Leaf-sheath oral hairs bearded. Ligule a fringe of hairs. Leaf-blades 0.5–3 cm long, 0.5–3 mm wide, flaccid.

Inflorescence. Inflorescence a panicle, deciduous as a whole, subtended by an inflated leaf-sheath, embraced at base by subtending leaf. Peduncle disarticulating, disarticulating below uppermost sheaths. Panicle capitate, oblong or globose, 0.5–2 cm long. Panicle branches terete, pilose. Spikelets solitary. Fertile spikelets sessile.

Fertile Spikelets. Spikelets comprising 3–7 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets oblong, laterally compressed, 4–6 mm long, falling entire, deciduous with accessory branch structures.

Glumes. Glumes similar, shorter than spikelet, similar to fertile lemma in texture, recurved at apex. Lower glume elliptic, 2.5–3 mm long, 0.75 length of upper glume, membranous, 1-keeled, 5–7 -veined. Lower glume surface pilose, with tubercle-based hairs. Lower glume apex acuminate, awned, awn 8–13 mm long. Upper glume elliptic, 3–3.5 mm long, 0.8 length of adjacent fertile lemma, membranous, 1-keeled, 5–7 -veined. Upper glume surface pilose, with tubercle-based hairs. Upper glume apex acuminate, awned, awn 8–13 mm long.

Florets. Fertile lemma oblong, 3.5–4 mm long, membranous, without keel, 7–9 -veined, more than 3-veined. Lemma lateral veins prominent. Lemma surface pilose, hairy below, with capitate hairs. Lemma margins ciliate (tuberculate). Lemma apex acuminate, awned, 1 -awned. Principal lemma awn curved, 1–4 mm long overall. Palea 2 -veined. Palea keels scaberulous. Palea apex ciliate. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, cuneate, fleshy, truncate.

$2n = 12$.

Distribution (TDWG). Continent. Africa.

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

Tribolium purpureum (L. f.) Verboom & H.P. Linder. *Ann. Mo. Bot. Gard.* 97 (3): 356 (2010).

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 South Africa. **Basionym or Replaced Name:** *Avena purpurea* L. f., *Suppl.* 112 (1781) . T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: South Africa, Cape: *Thunberg* (lecto UPS 2620, iso S).

Recent Synonyms: *Karoochloa purpurea* (L. f.) Conert & Turpe, *Senck. Biol.* 50: 303 (1969).

Illustrations (Books): M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 25 *Poaceae*, part 2 (2003) (309).

Derivation (Clifford & Bostock 2007): L. purple to reddish. Usually of purple spikelets.

Classification. Subfamily Danthonioideae. Tribe: Danthonieae.

Habit, Vegetative Morphology. Perennial, caespitose. Rhizomes short. Culms 10–22 cm long. Leaf-sheaths hispid. Ligule a fringe of hairs. Leaf-blades curved, aciculate, convolute, 2–4 cm long, 0.5–1 mm wide, coriaceous, stiff. Leaf-blade surface hispid, sparsely hairy.

Inflorescence. Inflorescence a panicle. Panicle contracted, oblong or globose, 0.5–2 cm long. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 3–5 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets cuneate, laterally compressed, 5–8 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 elliptic, 5–8 mm long, 1 length of upper glume, membranous, purple, without keels, 3 -veined. Lower glume apex acuminate. Upper glume elliptic, 5–8 mm long, 1.7–2.3 length of adjacent fertile lemma, membranous, purple, without keels, 3 -veined. Upper glume apex acuminate.

Florets. Fertile lemma oblong, 3–3.5 mm long, chartaceous, without keel, 9 -veined, more than 3-veined. Lemma surface glabrous, with 2 transverse rows of hair tufts. Lemma hairs 1.5–2 mm long. Lemma apex lobed, 2 -fid, incised 0.5 of lemma length, obtuse, awned, 1 -awned. Principal lemma awn from a sinus, geniculate, 3–4 mm long overall, with a straight or slightly twisted column. Palea 2.8–3.2 mm long. Palea surface pubescent, hairy on back. Apical sterile florets resembling fertile though underdeveloped.

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

Distribution (TDWG). Continent. Africa.

Country /Province /State. Southern Africa. Free State, Kwazulu-Natal, Lesotho, Northern Cape, Western Cape, Eastern Cape.

Tribolium tenellum (Nees) Verboom & H.P. Linder. *Ann. Mo. Bot. Gard.* 97 (3): 356 (2010).

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

TYPE from South Africa. **Basionym or Replaced Name:** *Danthonia tenella* Nees, *Fl. Afr. Austr.* 324 (1841). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: South Africa, Inter Buffelrivier (Koussie) flumen et zilverfontein in elice ab aquis relicta inter praerupta montium alt. 2000', August, *Drège* (HBG,holo; iso, K, S).

Recent Synonyms: *Karooochloa tenella* (Nees) Conert & Turpe, *Senck. Biol.* 50: 308 (1969).

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

Derivation (Clifford & Bostock 2007): L. slender. Culms or inflorescence branches slender.

Classification. Subfamily Danthonioideae. Tribe: Danthonieae.

Habit, Vegetative Morphology. Annual, caespitose. Culms erect or geniculately ascending, 2–8 cm long, 2–3 -noded. Leaf-sheath oral hairs bearded. Ligule a fringe of hairs, 0.5 mm long. Leaf-blades curled, convolute, 0.5–1.5 cm long, 0.5–0.8 mm wide. Leaf-blade apex obtuse.

Inflorescence. Inflorescence a panicle. Panicle contracted, ovate, 0.5–2 cm long, 0.5–1.5 cm wide. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, 1–3 mm long.

Fertile Spikelets. Spikelets comprising 3–5 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets cuneate, laterally compressed, 4–7 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes 0.5 mm long. Floret callus evident, pilose.

Glumes. Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma, gaping. Lower glume lanceolate, 4–7 mm long, 1 length of upper glume, membranous, much thinner on margins, without keels, 5 -veined. Lower glume apex acute. Upper glume lanceolate, 4–7 mm long, 2–3 length of adjacent fertile lemma, membranous, with hyaline margins, without keels, 5 -veined. Upper glume apex acuminate.

Florets. Fertile lemma oblong, 2 mm long, membranous, much thinner on margins, without keel, 9 -veined, more than 3-veined. Lemma surface glabrous, with a transverse row of hair tufts or with marginal hair tufts, bearing 12–16 hair tufts in all. Lemma hairs 1–1.2 mm long. Lemma apex lobed, 2 -fid, with ovate lobes, incised 0.5 of lemma length, obtuse, awned, 1 -awned. Principal lemma awn from a sinus, geniculate, 3–4 mm long overall, with twisted column. Column of lemma awn 1.3–1.6 mm long. Palea 1 length of lemma. Palea keels ciliate. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, cuneate, fleshy, glabrous or ciliate. Anthers 3, 1.4–1.8 mm long. Caryopsis with adherent pericarp, obovoid, concavo-convex, 0.8 mm long, dark brown. Embryo 0.5 length of caryopsis. Hilum linear, 0.25 length of caryopsis. Endosperm flinty.

Distribution (TDWG). Continent. Africa.

Country /Province /State. Southern Africa. Northern Cape, Western Cape.

Tribolium uniolae (L.f.) S.A. Renvoize. *Kew Bull.*, 40(4): 797 (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 South Africa. **Basionym or Replaced Name:** *Cynosurus uniolae* L. f., *Suppl. Pl.* 110 (1781) [1782]. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: T: *Sparrman s.n.*, South Africa: Cape Province (LINN-91.22).

Recent Synonyms: *Plagiochloa uniolae* (L. f.) Adamson & Sprague, *Journ. S. Afr. Bot.* 7: 90 (1941).

Illustrations (Books): L.K.A. Chippindall, *Grasses and Pastures of South Africa* (1955) (114, Fig. 84, as *Plagiochloa*), G.E.Gibbs Russell et al, *Grasses of Southern Africa* (1990) (339, Fig. 222), 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*;, F.van Oudtshoorn, *Guide to Grasses of Southern Africa* (1999).

Derivation (Clifford & Bostock 2007): resembling *Uniola*.

Classification. Subfamily Danthonioideae. Tribe: Danthonieae.

Habit, Vegetative Morphology. Perennial, caespitose. Culms erect, 10–60 cm long. Leaves mostly basal. Ligule a fringe of hairs. Leaf-blades involute, 3–20 cm long, 1–3 mm wide, stiff.

Inflorescence. Inflorescence composed of racemes. Racemes 1, single, unilateral, 0.8–7 cm long. Rhachis semiterete, scaberulous on margins. Spikelet packing broadside to rhachis, crowded, regular, 2 -rowed. Spikelets solitary. Fertile spikelets sessile.

Fertile Spikelets. Spikelets comprising 3–14 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 ovate to orbicular, laterally compressed, obtuse, 5–8 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 ovate, 1 length of upper glume, coriaceous, 1-keeled, 5 -veined. Lower glume surface glabrous. Lower glume apex acute. Upper glume ovate, 1 length of adjacent fertile lemma, coriaceous, 1-keeled, 5 -veined. Upper glume surface glabrous. Upper glume apex acute.

Florets. Fertile lemma elliptic, 4–5.5 mm long, coriaceous, much thinner on margins, without keel, 7 -veined, more than 3-veined. Lemma surface pilose, hairy below, with clavate hairs. Lemma margins ciliate. Lemma apex obtuse. Palea 2 -veined. Palea keels winged, narrowly winged, ciliolate. Palea surface pilose, with turgid hairs. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, cuneate, fleshy, ciliate. Caryopsis with tardily free pericarp.

N = 6 (1 ref TROPICOS).

Distribution (TDWG). Continent. Africa, Australasia (*).

Country /Province /State. Southern Africa. Western Cape. **Australia.** Western Australia (*), Victoria (*).

TDWG4. South-West.

Tribolium utriculosum (Nees) S.A. Renvoize. *Kew Bull.*, 40(4): 798 (1985).

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:** *Lasiochloa utriculosa* Nees, *Fl. Afr. Austral. Ill.* 1: 436 (1841). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *Drège s.n.*, South Africa: in saxosis "in der Port" faucium montanarum ante Noagas, alt. 2000 ft (B (fragm., PRE)).

Illustrations (Books): L.K.A. Chippindall, *Grasses and Pastures of South Africa* (1955) (116, Fig. 86 as *Lasiochloa*).

Derivation (Clifford & Bostock 2007): *L. utriculus*, little belly; -osa, abundance. The inflorescence is enclosed in the sheath of the flag-leaf.

Classification. Subfamily Danthonioideae. Tribe: Danthonieae.

Habit, Vegetative Morphology. Annual, caespitose. Culms 5–9 cm long. Ligule a fringe of hairs. Leaf-blades 1–10 cm long, 1–2.5 mm wide. Leaf-blade surface pubescent.

Inflorescence. Inflorescence a panicle, shorter than basal leaves, embraced at base by subtending leaf. Panicle spiciform, oblong, interrupted, 1–2 cm long. Spikelets solitary. Fertile spikelets sessile.

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, 2–3 mm long, 2 mm wide, 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 ovate, 2–3 mm long, 1 length of upper glume, chartaceous, 1-keeled, 5 -veined. Lower glume surface

setose, with tubercle-based hairs. Lower glume apex acuminate. Upper glume ovate, 2–3 mm long, 1 length of adjacent fertile lemma, coriaceous, 1-keeled, 5 -veined. Upper glume lateral veins ribbed. Upper glume surface setose, with tubercle-based hairs. Upper glume apex setaceous acuminate.

Florets. Fertile lemma ovate, 2.5–3 mm long, membranous, without keel, 7 -veined, more than 3-veined. Lemma surface pubescent, hairy below, with marginal hair tufts, bearing 2 hair tufts in all. Lemma apex acute. Palea 2 -veined. Palea surface pubescent, hairy on back. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Caryopsis with tardily free pericarp.

N = 6 (1 ref TROPICOS).

Distribution (TDWG). Continent. Africa.

Country /Province /State. Southern Africa. Northern Cape.

Trichantheicum arctum (Swallen) Zuloaga & Morrone. *Syst. Bot. Monogr.* 94: 16 (2011).

Accepted by: R.J.Soreng et al., *Catalogue of New World 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 arctum* Swallen, *Bull. Torr. Bot. Cl.* 75: 87 (1948). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *B. Maguire 24214*, 3 Aug 1944, Suriname: Tafelberg: Savanna I (US-2209366; IT: F, K, NY, U, US-1914993).

Illustrations (Journals): *Syst. Bot. Monogr.* (94: 17, fig.5 (2011)).

Derivation (Clifford & Bostock 2007): L. close. Distinguished only by careful comparison from a related species.

Classification. Subfamily Panicoideae. Tribe: Paniceae. Subtribe INCERTAE SEDIS.

Habit, Vegetative Morphology. Annual. Culms decumbent, 5–30 cm long. Culm-internodes 4–6 cm long, distally glabrous. Culm-nodes black, glabrous. Lateral branches ample, arising from lower culm or mid culm. Leaf-sheaths mostly shorter than adjacent culm internode, striately veined, glabrous on surface. Ligule an eciliate membrane, 0.6–1 mm long. Leaf-blades 18–40 cm long, 2–3 mm wide. Leaf-blade surface hispid, densely hairy. Leaf-blade margins tuberculate-ciliate, hairy at base. Leaf-blade apex acuminate.

Inflorescence. Inflorescence a panicle. Peduncle 10 cm long, glabrous. Panicle open, ovate, effuse, 3–7 cm long, 2–5 cm wide. 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 obovate, dorsally compressed, 1–1.2 mm long, 0.5–0.6 mm wide, falling entire. Rhachilla internodes elongated between glumes.

Glumes. Glumes shorter than spikelet, thinner than fertile lemma. Lower glume ovate, 0.5–0.6 mm long, 0.5 length of spikelet, membranous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume apex obtuse or acute. Upper glume ovate, 0.9 length of spikelet, membranous, without keels, 5 -veined. Upper glume apex obtuse.

Florets. Basal sterile florets 1, barren, with palea. Lemma of lower sterile floret similar to upper glume, ovate, 1 length of spikelet, membranous, 3–5 -veined, acute. Palea of lower sterile floret 0.6–0.7 mm long. Fertile lemma obovate, dorsally compressed, 1 mm long, indurate, pallid, without keel. Lemma surface smooth. Lemma margins involute. Palea involute, indurate.

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

Country /Province /State. Indo-China. Vietnam. Northern South America, Brazil. French Guiana, Surinam, Venezuela. Brazil North. Roraima.

Trichantheicum auricomum (Nees ex Trin.) Zuloaga & Morrone. *Syst. Bot. Monogr.* 94: 19 (2011).

Accepted by: R.J.Soreng et al., *Catalogue of New World 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 auricomum* Nees ex Trin., *Gram. Panic.* 204 (1826). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *Nees ab Esenb. s.n.*, Brazil (LE-TRIN-0591.01). T: *K.F.P. von Martius 3725*, Dec, Brazil: Amazonas (US-80475).

Illustrations (Journals): *Syst. Bot. Monogr.* (94: 20, fig.7 (2011)).

Derivation (Clifford & Bostock 2007): L. aureus, golden-yellow; coma, a head of hair. Leaf blades golden-yellow.

Classification. Subfamily Panicoideae. Tribe: Paniceae. Subtribe INCERTAE SEDIS.

Habit, Vegetative Morphology. Perennial. Rhizomes short. Culms erect, slender, 45–60 cm long. Lateral branches ample, arising from upper culm. Leaf-sheaths striately veined, glabrous on surface. Ligule an eciliate

membrane, 0.5 mm long. Leaf-blades linear, 4–8 cm long, 1–2 mm wide. Leaf-blade surface glabrous, hairless except near base. Leaf-blade apex acute.

Inflorescence. Inflorescence a panicle, terminal. Panicle open, ovate, effuse, 6–8 cm long. Primary panicle branches ascending, 1-nate. 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 elliptic, dorsally compressed, obtuse, 1 mm long, falling entire.

Glumes. Glumes reaching apex of florets, thinner than fertile lemma. Lower glume elliptic, 0.8–0.9 length of spikelet, membranous, without keels, 3–5 -veined. Upper glume elliptic, 1 length of spikelet, membranous, without keels, 5 -veined. Upper glume apex obtuse.

Florets. Basal sterile florets 1, barren, with palea or without significant palea. Lemma of lower sterile floret similar to upper glume, elliptic, 1 length of spikelet, membranous, 5 -veined, obtuse. Fertile lemma elliptic, dorsally compressed, 1 mm long, indurate, pallid, without keel. Lemma margins involute. Palea involute, indurate.

Distribution (TDWG). Continent. South America.

Country /Province /State. Mesoamerica, Caribbean, Northern South America, Brazil, and Southern South America. Belize, Costa Rica, Guatemala, Honduras, Nicaragua. Brazil North.

Trichantheium brazzavillense (Franch.) Zuloaga & Morrone. *Syst. Bot. Monogr.* 94: 21 (2011).

Basionym or Replaced Name: *Panicum brazzavillense* Franch., *Mem. Soc. Hist. Nat. Autun* 8: 341 (1895).

Illustrations (Journals): *Syst. Bot. Monogr.* (94: 22, fig.8 (2011)).

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

Habit, Vegetative Morphology. Perennial, caespitose. Butt sheaths persistent and investing base of culm, with compacted dead sheaths or fibrous dead sheaths. Culms erect or geniculately ascending, slender, (20–)60–80(–85) cm long. Leaves mostly basal. Ligule a ciliate membrane. Leaf-blades parallel-sided, conduplicate or involute, 10–20(–25) cm long, 1–3 mm wide, stiff. Leaf-blade surface glabrous or pilose. Leaf-blade apex acuminate.

Inflorescence. Inflorescence a panicle. Panicle open, oblong or ovate, 3–15(–20) cm long. 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 or orbicular, dorsally compressed, 1.2–1.7 mm long, falling entire, readily shedding fertile florets.

Glumes. Glumes similar, reaching apex of florets, thinner than fertile lemma. Lower glume ovate, 0.66–0.75 length of spikelet, membranous, without keels, 3 -veined. Lower glume surface glabrous (rarely) or pubescent. Lower glume apex acute. Upper glume ovate, 1 length of spikelet, membranous, without keels, 5 -veined. Upper glume surface glabrous (rarely) or pubescent. 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, glabrous (rarely) or pubescent, acute. Fertile lemma oblong, dorsally compressed, 1.2–1.7 mm long, chartaceous, pallid, without keel, more than 3-veined. Lemma surface tuberculate (verruculose). Lemma margins involute. Lemma apex obtuse. Palea involute, chartaceous. Palea surface tuberculate (verruculose).

Distribution (TDWG). Continent. Africa.

Country /Province /State. West tropical Africa, West-central tropical Africa, East tropical Africa, and South tropical Africa. Burundi, Congo, Gabon, Rwanda, DRC. Tanzania, Uganda. Angola.

Trichantheium caaguazuense (Henrard) Zuloaga & Morrone. *Syst. Bot. Monogr.* 94: 25 (2011).

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

TYPE from Paraguay. **Basionym or Replaced Name:** *Panicum caaguazuense* Henrard, *Meded. Herb. Leid.* No. 47, 2 (1922). T:<Type of Basionym>; *fide* TROPICOS and Kew Synonymy Database: HT: *B. Balansa* 22, 6 Mar 1876, Paraguay: Caaguazú [25.27S 56.01W] (L-908.93–504; IT: BAA, G, L, P, U, US-80542 (fragm. & photo ex L), US-1445588 (fragm. ex P)).

Illustrations (Books): F.O.Zuloaga et al, *Flora del Paraguay* 23 (1994) (220, Fig. 60, as *Panicum*).

Illustrations (Journals): *Syst. Bot. Monogr.* (94: 24, fig.10 (2011)).

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

Classification. Subfamily Panicoideae. Tribe: Paniceae. Subtribe INCERTAE SEDIS.

Habit, Vegetative Morphology. Perennial. Rhizomes short. Culms geniculately ascending, 50–100 cm long, rooting from lower nodes. Culm-internodes thin-walled, 1.5–7.5 cm long, distally glabrous. Culm-nodes brown, glabrous. Leaf-sheaths 2–5.6 cm long, mostly shorter than adjacent culm internode, glabrous on surface. Ligule a ciliate membrane, 0.1–0.3 mm long. Leaf-blade base broadly rounded. Leaf-blades lanceolate, 5–11 cm long, 4–7 mm wide. Leaf-blade midrib indistinct. Leaf-blade surface glabrous.

Inflorescence. Inflorescence a panicle, embraced at base by subtending leaf. Peduncle glabrous. Panicle open, ovate, 2.5–8 cm long. Panicle axis scaberulous. Panicle branches glabrous in axils. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, 10–35 mm long, smooth or scaberulous.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets elliptic, dorsally compressed, 2.7–3 mm long, 0.8–1.3 mm wide, falling entire.

Glumes. Glumes reaching apex of florets, thinner than fertile lemma. Lower glume ovate, 2.2–2.7 mm long, 0.75–0.8 length of spikelet, membranous, without keels, 3 -veined. Lower glume apex acute. Upper glume ovate, 1 length of spikelet, membranous, without keels, 5 -veined. Upper glume apex acute.

Florets. Basal sterile florets 1, barren, with palea. Lemma of lower sterile floret similar to upper glume, ovate, 1 length of spikelet, membranous, 5 -veined, acute. Palea of lower sterile floret 1.9–2.1 mm long. Fertile lemma ovate, dorsally compressed, 1.8–2.1 mm long, indurate, pallid, shiny, without keel. Lemma surface papillose. Lemma margins involute. Lemma apex acute. Palea involute, indurate.

Flower and Fruit. Anthers 1.3 mm long. Caryopsis with adherent pericarp.

Distribution (TDWG). Continent. South America.

Country /Province /State. Brazil, Southern South America. Brazil West Central, Brazil Southeast. Paraguay.

TDWG4. Misiones.

Trichanthecium cyanescens (Nees ex Trin.) Zuloaga & Morrone. *Syst. Bot. Monogr.* 94: 25 (2012).

Accepted by: R.J.Soreng et al., *Catalogue of New World 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 & Guyana. **Basionym or Replaced Name:** *Panicum cyanescens* Nees ex Trin., *Gram. Pan.* :202 (1826). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: ST: *Link s.n.*, Brazil, (B). ST: *J.H.F. Link & C.H. Mertens s.n.*, Brazil (LE-TRIN-0661.07; IST: US-974555 (fragm. ex LE)). ST: *Mertens s.n.*, Guyana (LE; IT: US (fragm. ex LE)).

Illustrations (Books): A.S.Hitchcock, *Manual of the Grasses of the West Indies* (1936) (273, Fig. 241, as *Panicum*), S.A.Renvoize, *Gramineas de Bolivia* (1998) (396, Fig. 84, as *Panicum*), S.A.Renvoize, *The Grasses of Bahia*, 1984 (158, Fig. 57, as *Panicum*), J.A.Steyermark et al, *Flora of the Venezuelan Guayana* Vol. 8 (2004) (194, Fig. 139, as *Panicum*), L.B. Smith, D.C. Wasshausen, R.M. Klein *Flora Illustrada Catarinensis Gramineas* (1981–1982) (703, Fig. 150, as *Panicum*), F.O.Zuloaga et al, *Flora del Paraguay* 23 (1994) (223, Fig. 61, as *Panicum*).

Illustrations (Journals): *Ruizia* (13:321, Fig 39k-l (1993), as *Panicum*).

Derivation (Clifford & Bostock 2007): *L. cyanescens*, become blue. Foliage bluish-green.

Classification. Subfamily Panicoideae. Tribe: Paniceae. Subtribe INCERTAE SEDIS.

Habit, Vegetative Morphology. Perennial, caespitose. Culms decumbent, slender, 30–50 cm long, rooting from lower nodes. Lateral branches ample, arising from mid culm or upper culm. Leaf-sheaths striately veined, glabrous on surface, outer margin glabrous or hairy. Ligule an eciliate membrane or a ciliate membrane, 0.3 mm long. Leaf-blades ascending or spreading or reflexed, lanceolate or oblong, 3–8 cm long, 4–5 mm wide, glaucous. Leaf-blade surface glabrous. Leaf-blade apex acute.

Inflorescence. Inflorescence a panicle, terminal or terminal and axillary. Panicle open, ovate, 3–6 cm long. Primary panicle branches ascending or spreading. Panicle branches flexuous. 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, 1.5 mm long, 0.9 mm wide, falling entire.

Glumes. Glumes dissimilar, shorter than spikelet, thinner than fertile lemma. Lower glume ovate, 0.66–0.75 length of spikelet, membranous, without keels. Lower glume apex obtuse. Upper glume elliptic, 1 length of spikelet, membranous, without keels. Upper glume surface smooth or wrinkled. Upper glume apex obtuse.

Florets. Basal sterile florets 1, barren, with palea or without significant palea. Lemma of lower sterile floret similar to upper glume, elliptic, 1 length of spikelet, membranous, obtuse. Fertile lemma elliptic or orbicular,

dorsally compressed, 1.2 mm long, 0.8 mm wide, indurate, without keel. Lemma margins involute. Lemma apex obtuse, pubescent (obscurely). Palea involute, indurate.

Distribution (TDWG). Continent. North America, South America.

Country /Province /State. Mexico. Southeast Mexico. **Mesoamerica, Caribbean, Northern South America, Western South America, Brazil, Southern South America.** Belize, Nicaragua. Cuba, Trinidad-Tobago. French Guiana, Guyana, Surinam, Venezuela. Bolivia, Colombia. Brazil West Central, Brazil Northeast, Brazil Southeast, Brazil North, Brazil South.

TDWG4. Para, Amapa, Amazonas, Acre, Rondonia, Mato Grosso, Goias, Bahia, Minas Gerais, Rio de Janeiro, Espirito Santo, Sao Paulo Parana, Catarina, Rio Grande do Sul. Chiapas, Tabasco.

Trichantheium dinklagei (Mez) Zuloaga & Morrone. *Syst. Bot. Monogr.* 94: 29 (2011).

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

Basionym or Replaced Name: *Panicum dinklagei* Mez, *Engl. Jahrb.* 62: 190 (1921). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Liberia, *Dinklage* 2282.

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

Derivation (Clifford & Bostock 2007): in honor of Max Julius Dinklage (1864–1935) German factory manager and botanist.

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

Habit, Vegetative Morphology. Perennial. Culms rambling, 60–100 cm long. Ligule a ciliate membrane. Leaf-blade base cordate. Leaf-blades lanceolate, 5–13 cm long, 30–35 mm wide, dark green. Leaf-blade venation with obscure cross veins.

Inflorescence. Inflorescence a panicle. Panicle open, obovate, effuse, 10–16 cm long. Panicle branches capillary. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets elliptic, dorsally compressed, acute, 1.5–2 mm long, falling entire, readily shedding fertile florets.

Glumes. Glumes similar, reaching apex of florets, thinner than fertile lemma. Lower glume ovate, 0.66–0.8 length of spikelet, membranous, without keels, 3 -veined. Lower glume apex acute. Upper glume ovate, 1 length of spikelet, membranous, without keels, 5 -veined. Upper glume apex acute.

Florets. Basal sterile florets 1, barren, with palea. Lemma of lower sterile floret similar to upper glume, ovate, 1 length of spikelet, membranous, 5 -veined, acute. Fertile lemma oblong, dorsally compressed, 1–1.5 mm long, chartaceous, pallid, without keel, more than 3-veined. Lemma surface tuberculate (verruculose). Lemma margins involute. Lemma apex obtuse. Palea involute, chartaceous. Palea surface tuberculate (verruculose).

Distribution (TDWG). Continent. Africa.

Country /Province /State. West tropical Africa. Ghana, Guinea, Liberia, Sierre Leone.

Trichantheium distochophyllum (Sprengel) Zuloaga & Morrone. *Syst. Bot. Monogr.* 94: 29 (2011).

Basionym or Replaced Name: *Aira distichophylla* Sprengel, *Nov.Provent.* 46 (1819).

Illustrations (Journals): *Syst. Bot. Monogr.* (94: 31, fig.12 and 32, fig.13 (2011)).

Trichantheium filifolium (Clayton) Zuloaga & Morrone. *Syst. Bot. Monogr.* 94: 33 (2011).

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

Basionym or Replaced Name: *Panicum filifolium* Clayton, *Kew Bull.* 21: 111 (1967).

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

Derivation (Clifford & Bostock 2007): L. filum, thread; folium, leaf. Leaf-blades very narrow.

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

Habit, Vegetative Morphology. Perennial, caespitose. Culms slender, 18–35 cm long. Ligule a ciliate membrane, 0.5 mm long. Leaf-blades filiform, involute, 4–15 cm long, 0.5 mm wide, stiff or firm.

Inflorescence. Inflorescence a panicle. Panicle open, oblong or ovate, 3–10 cm long. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets ovate, dorsally compressed, acute, 1.3–1.5 mm long, falling entire, readily shedding fertile florets.

Glumes. Glumes similar, reaching apex of florets, thinner than fertile lemma. Lower glume ovate, 0.66–0.75 length of spikelet, membranous, without keels, 3 -veined. Lower glume surface glabrous or pubescent, with tubercle-based hairs. Lower glume apex acute. Upper glume ovate, 1 length of spikelet, membranous, without keels, 5 -veined. Upper glume surface glabrous or pubescent, with tubercle-based hairs. 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, with tubercle-based hairs, obtuse. Palea of lower sterile floret 1 length of lemma. Fertile lemma oblong, dorsally compressed, 0.8–1 mm long, chartaceous, pallid, without keel, more than 3-veined. Lemma surface tuberculate (verruculose). Lemma margins involute. Lemma apex obtuse. Palea involute, chartaceous. Palea surface tuberculate (verruculose).

Flower and Fruit. Anthers 3, 1 mm long.

Distribution (TDWG). Continent. Africa.

Country /Province /State. West tropical Africa, East tropical Africa. Liberia. Tanzania.

Trichanthecium fonticulum (Swallen) Zuloaga & Morrone. *Syst. Bot. Monogr.* 94: 34 (2011).

Accepted by: R.J.Soreng et al., *Catalogue of New World 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. **Basionym or Replaced Name:** *Panicum fonticola* Swallen, *Mem. N. Y. Bot. Gard.* 9: 260 (1957). T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: HT: B. Maguire, R.S. Cowan & J.J. Wurdack 29636, 21 Nov 1950, Venezuela: Amazonas: Río Cunucunuma: Cerro Duida: Culebra Creek (US-2040215).

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

Derivation (Clifford & Bostock 2007): L. fons, spring; -colum, dweller. Growing in the spray of waterfalls.

Classification. Subfamily Panicoideae. Tribe: Paniceae. Subtribe INCERTAE SEDIS.

Habit, Vegetative Morphology. Annual. Culms decumbent, 20–35 cm long. Leaf-sheaths mostly shorter than adjacent culm internode, glabrous on surface or pilose. Ligule an eciliate membrane, 0.4 mm long, truncate. Leaf-blades spreading, lanceolate, 2–3.5 cm long, 2–4 mm wide. Leaf-blade surface glabrous. Leaf-blade apex acuminate.

Inflorescence. Inflorescence a panicle. Panicle open, ovate, 2.5–6 cm long. Primary panicle branches ascending, 1 -nate. Panicle branches straight. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, filiform.

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, acute, 1.3–1.4 mm long, falling entire.

Glumes. Glumes reaching apex of florets, thinner than fertile lemma. Lower glume lanceolate, 0.5–0.66 length of spikelet, membranous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume apex acute. Upper glume elliptic, 1 length of spikelet, membranous, without keels. Upper glume surface pubescent. Upper glume apex acute.

Florets. Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret similar to upper glume, elliptic, 1 length of spikelet, membranous, puberulous, acute. Fertile lemma elliptic, dorsally compressed, 1 mm long, indurate, pallid, without keel. Lemma surface striate. Lemma margins involute. Lemma apex obtuse. Palea involute, indurate.

Distribution (TDWG). Continent. South America.

Country /Province /State. Northern South America. Venezuela.

Trichanthecium glaucocladum (C.E.Hubb.) Zuloaga & Morrone. *Syst. Bot. Monogr.* 94: 34 (2011).

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

TYPE from Sierra Leone. **Basionym or Replaced Name:** *Panicum glaucocladum* C.E.Hubb., *Kew Bull.* 1933, 501. (1933). T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: "Sierra Leone: near Toma, Bonthe Island, common along sandy roads in light shade of oil palms, ...", *Deighton* 2282, Nov. 1931.

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

Derivation (Clifford & Bostock 2007): Gk. glaukos, bluish-green; klados, branch. Lower internodes coated with a whitish wax.

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

Habit, Vegetative Morphology. Annual. Culms decumbent, weak, 6–30 cm long. Ligule a ciliate membrane. Leaf-blades lanceolate, 1–2(–3) cm long, 2–3(–7) mm wide, flaccid.

Inflorescence. Inflorescence a panicle. Panicle open, obovate, effuse, 2–6 cm long. 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 elliptic, dorsally compressed, acute, 1–1.5 mm long, falling entire, readily shedding fertile florets.

Glumes. Glumes similar, reaching apex of florets, thinner than fertile lemma. Lower glume ovate, 0.5 length of spikelet, membranous, without keels, 3 -veined. Lower glume surface glabrous or pubescent. Lower glume apex 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, barren, with palea. Lemma of lower sterile floret similar to upper glume, ovate, 1 length of spikelet, membranous, 5 -veined, glabrous or pubescent, acute. Fertile lemma oblong, dorsally compressed, 0.7–1 mm long, chartaceous, grey, without keel, more than 3-veined. Lemma surface tuberculate (verruculose). Lemma margins involute. Lemma apex obtuse. Palea involute, chartaceous. Palea surface tuberculate (verruculose).

Distribution (TDWG). Continent. Africa.

Country /Province /State. West tropical Africa. Guinea, Liberia, Sierre Leone.

Trichantheium gracilicaule (Nash) Zuloaga & Morrone. *Syst. Bot. Monogr.* 94: 35 (2011).

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:** *Panicum gracilicaule* Nash in *Small, Fl. S.E. U.S.* 98. (1903). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: ST: *Welwitsch 2857*, Angola (K). ST: *Welwitsch 2863c*, Angola (K). ST: *Welwitsch 2687*, Angola (K).

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

Derivation (Clifford & Bostock 2007): *L. gracilis*, slender; *caulis*, stem. Culms slender.

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

Habit, Vegetative Morphology. Annual. Culms slender, 25–70 cm long. Ligule a ciliate membrane. Leaf-blades spreading or reflexed, lanceolate, (2–)4–10(–15) cm long, (2–)4–10 mm wide, light green. Leaf-blade surface glabrous or pilose. Leaf-blade apex acute or acuminate.

Inflorescence. Inflorescence a panicle. Panicle open, oblong or ovate, (3–)5–12(–18) cm long. 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, acute, 1.8–2.2(–2.5) mm long, falling entire, readily shedding fertile florets.

Glumes. Glumes similar, reaching apex of florets, thinner than fertile lemma. Lower glume oblong, 0.66–0.75 length of spikelet, membranous, without keels, 3 -veined. Lower glume apex acute. Upper glume oblong, 1 length of spikelet, membranous, without keels, 5 -veined. 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, obtuse. Fertile lemma oblong, dorsally compressed, 1–1.5 mm long, chartaceous, pallid, without keel, more than 3-veined. Lemma surface tuberculate (verruculose). Lemma margins involute. Lemma apex obtuse. Palea involute, chartaceous. Palea surface tuberculate (verruculose).

Flower and Fruit. Anthers 3, 1.2 mm long.

Distribution (TDWG). Continent. Africa.

Country /Province /State. West tropical Africa, West-central tropical Africa, Northeast tropical Africa, East tropical Africa, South tropical Africa. Gambia, Guinea-Bissau, Guinea, Nigeria, Senegal. Rwanda, DRC. Chad. Tanzania. Angola, Malawi, Mozambique, Zambia, Zimbabwe.

Trichantheium granuliferum (Kunth) Zuloaga & Morrone. *Syst. Bot. Monogr.* 94: 37 (2011).

Accepted by: R.J.Soreng et al., *Catalogue of New World 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. **Basionym or Replaced Name:** *Panicum granuliferum* Kunth, *Nov. Gen. et Sp.* 1: 19 (1815). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *F.W.H.A. von Humboldt & A.J.A. Bonpland s.n.*, Apr, Venezuela: Apure (P; IT: B, LE-TRIN-0731.02 (fragm.), US-974563 (fragm. ex P-BONPL & photo)).

Illustrations (Books): J.A.Steyermark et al, *Flora of the Venezuelan Guayana* Vol. 8 (2004) (as *Panicum*).

Illustrations (Journals): Syst. Bot. Monogr. (94: 38, fig.15 (2011)).

Derivation (Clifford & Bostock 2007): *L. granum*, grain; *-ula*, diminutive; *fero*, carry or bear. Second glume and sterile lemma surfaces granular.

Classification. Subfamily Panicoideae. Tribe: Paniceae. Subtribe INCERTAE SEDIS.

Habit, Vegetative Morphology. Annual. Culms rambling, weak, 30–60 cm long. Ligule a ciliate membrane. Leaf-blades lanceolate, 1–4 cm long, 2–4 mm wide. Leaf-blade apex abruptly acute.

Inflorescence. Inflorescence a panicle. Panicle open, ovate, effuse, 3–6 cm long. 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 elliptic, dorsally compressed, gibbous, 1–1.2 mm long, falling entire.

Glumes. Glumes shorter than spikelet, thinner than fertile lemma. Lower glume ovate, 0.33–0.5 length of spikelet, membranous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume apex obtuse or acute. Upper glume ovate, 0.66–0.9 length of spikelet, membranous, without keels, 3 -veined. Upper glume apex obtuse.

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, obtuse. Fertile lemma elliptic, dorsally compressed, 1–1.2 mm long, cartilaginous, without keel. Lemma margins involute. Palea involute, cartilaginous.

Flower and Fruit. Caryopsis with adherent pericarp.

Distribution (TDWG). Continent. South America.

Country /Province /State. Northern South America, Western South America, Brazil. French Guiana, Guyana, Venezuela. Colombia. Brazil North.

Trichantheicum ichunense (Swallen) Zuloaga & Morrone. *Syst. Bot. Monogr.* 94: 39 (2011).

Accepted by: R.J.Soreng et al., *Catalogue of New World 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. **Basionym or Replaced Name:** *Panicum ichunense* Swallen, *Phytologia*, 14: 77 (1966). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *J.A. Steyermark 90359*, 28 Dec 1961, Venezuela: Bolívar: Sierra Ichún, cercanizo del Salto Mariá Espuma, Salto Ichún (US-2382348).

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

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

Classification. Subfamily Panicoideae. Tribe: Paniceae. Subtribe INCERTAE SEDIS.

Habit, Vegetative Morphology. Annual. Culms decumbent, slender, 10–20 cm long. Culm-internodes distally glabrous. Culm-nodes glabrous or bearded. Lateral branches ample. Leaf-sheaths mostly shorter than adjacent culm internode, pilose, outer margin hairy. Ligule an eciliate membrane, 0.8–1 mm long. Leaf-blades lanceolate or elliptic, 3–4 cm long, 3–10 mm wide. Leaf-blade surface pilose, sparsely hairy.

Inflorescence. Inflorescence a panicle. Panicle open, ovate, 2.5–6 cm long. Primary panicle branches spreading or reflexed, 2–4.5 cm long. 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 linear, dorsally compressed, 2–2.2 mm long, falling entire.

Glumes. Glumes reaching apex of florets, thinner than fertile lemma. Lower glume lanceolate, 0.6–0.8 length of spikelet, membranous, without keels, 3 -veined. Lower glume apex acute. 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, 1.7 mm long, indurate, pallid, without keel. Lemma surface papillose. Lemma margins involute. Lemma apex acute. Palea involute, indurate.

Distribution (TDWG). Continent. South America.

Country /Province /State. Northern South America. Venezuela.

Trichantheicum machrisianum (Swallen) Zuloaga & Morrone. *Syst. Bot. Monogr.* 94: 40 (2011).

Accepted by: R.J.Soreng et al., *Catalogue of New World 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 machrisiana* Swallen, *Contrib. Sci. Los Angeles County Mus.*, No. 22, 10 (1958). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *Dawson 14679*, 25 Apr 1956, Brazil: Goiás: about 14 km south of Veadeiros, region of the Chapada dos Veadeiros (R; IT: US-2207234).

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

Derivation (Clifford & Bostock 2007): In honor of Maurice A. Machris (fl. 1956–1977) United States philanthropist.

Classification. Subfamily Panicoideae. Tribe: Paniceae. Subtribe INCERTAE SEDIS.

Habit, Vegetative Morphology. Annual. Culms geniculately ascending, slender, 9–12 cm long. Culm-internodes distally glabrous. Lateral branches ample. Leaf-sheaths mostly shorter than adjacent culm internode, pilose. Ligule an eciliate membrane, 1 mm long. Leaf-blades 0.5–1.6 cm long, 1–4 mm wide. Leaf-blade surface glabrous. Leaf-blade apex acute.

Inflorescence. Inflorescence a panicle. Panicle open, ovate, 1.2–2.5 cm long, bearing few spikelets. Primary panicle branches reflexed, bearing 1–3 fertile spikelets on each lower branch. Panicle branches capillary. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, filiform.

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, 1.5 mm long, falling entire.

Glumes. Glumes reaching apex of florets, thinner than fertile lemma. Lower glume linear, 0.7 mm long, 0.5 length of spikelet, hyaline, without keels, 0 -veined. Lower glume lateral veins absent. Lower glume apex acute. Upper glume ovate, 1 length of spikelet, membranous, without keels, 5 -veined. Upper glume surface pilose, with tubercle-based hairs. 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, pilose, with tubercle-based hairs, acute. Fertile lemma elliptic, dorsally compressed, 1.5 mm long, indurate, pallid, shiny, without keel. Lemma surface smooth. Lemma margins involute. Lemma apex acute. Palea involute, indurate.

Distribution (TDWG). Continent. South America.

Country /Province /State. Brazil. Brazil West Central, Brazil Southeast.

Trichanthecium margaritiferum (Chiov.) Zuloaga & Morrone. *Syst. Bot. Monogr.* 94: 41 (2012).

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

TYPE from DRC. **Basionym or Replaced Name:** *Isachne margaritifera* Chiov., *Nuovo Giorn. Bot. Ital.*, n.s., 26: 65 (1919). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: ST: *Bovone 66*, [S.E. Congo State, Africa], "Catanga, Haut Marungu ..." basis of *Panicum marunguense* Robyns. ST: *Bovone 81*, [S.E. Congo State, Africa], "... ; plateaux des Bianos ..." Lectosytype of "*Panicum margaritifera*" (Chiov.) Robyns. ST: *Bovone 90*, [S.E. Congo State, Africa], "...; plateaux des Bianos..." Lectosytype of *Panicum margaritifera* Robyns. PT: *Bovone n. 14*, [S.E. Congo State, Africa], "... Ditungula. Leo Moero ..." basis of *Isachne margaritifera* var. *angustifolia* Chiov..

Recent Synonyms: *Panicum margaritifera* (Chiov.) Robyns, *Mem. Inst. Col. Belge, 4to, Sect. Sc. Nat. & Med. i. Fasc.6 reimpr.* p. 36 (1932).

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

Derivation (Clifford & Bostock 2007): *L. margarita*, pearl; fero, carry or bear. The glossy anthoecia resemble pearls.

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

Habit, Vegetative Morphology. Perennial, caespitose. Culms erect, 60–150 cm long. Ligule a ciliate membrane. Leaf-blades 18–30 cm long, 3–10 mm wide. Leaf-blade apex pungent.

Inflorescence. Inflorescence a panicle. Panicle open, ovate, 10–20 cm long. Panicle branches stiff. 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 orbicular, dorsally compressed, 2–3 mm long, falling entire, readily shedding fertile florets.

Glumes. Glumes similar, reaching apex of florets, thinner than fertile lemma. Lower glume ovate, 0.75–1 length of spikelet, membranous, without keels, 5 -veined. Lower glume apex acute. Upper glume ovate, 1 length of spikelet, membranous, without keels, 5 -veined. 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, acute. Fertile lemma oblong, dorsally compressed, 1.5–2.5 mm long, chartaceous, pallid, without keel, more than 3-veined. Lemma surface tuberculate (verruculose). Lemma margins involute. Lemma apex obtuse. Palea involute, chartaceous. Palea surface tuberculate (verruculose).

Distribution (TDWG). Continent. Africa.

Country /Province /State. West-central tropical Africa, South tropical Africa. DRC. Angola, Zambia.

Trichantheicum micranthum (Kunth) Zuloaga & Morrone. *Syst. Bot. Monogr.* 94: 42 (2011).

Accepted by: R.J.Soreng et al., *Catalogue of New World 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. **Basionym or Replaced Name:** *Panicum micranthum* Kunth, *H.B.K., Nov. Gen. Sp.* 1:105 (1816). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *F.W.H.A. von Humboldt & A.J.A. Bonpland s.n.*, Jan, Venezuela: Caracasana: Villa de Cura (P; IT: P, US-974561 (fragm. ex P-BONPL & photo)).

Recent Synonyms: *Panicum supernum* Swallen, *Mem. New York Bot. Gard.* 9 (3): 256 (1957)

Illustrations (Books): J.A.Steyermark et al, *Flora of the Venezuelan Guayana* Vol. 8 (2004) (as *Panicum*).

Illustrations (Journals): *Syst. Bot. Monogr.* (94: 43, fig.16 (2011)).

Derivation (Clifford & Bostock 2007): Gk. mikros, small; anthos, flower. Spikelets small.

Classification. Subfamily Panicoideae. Tribe: Paniceae. Subtribe INCERTAE SEDIS.

Habit, Vegetative Morphology. Annual, caespitose. Culms erect or geniculately ascending, 10–38 cm long. Culm-internodes distally glabrous. Culm-nodes brown, glabrous. Lateral branches ample, arising from lower culm. Leaf-sheaths glabrous on surface or pubescent, outer margin glabrous or hairy. Ligule an eciliate membrane, 0.5 mm long. Leaf-blades flat or conduplicate, 2–10 cm long, 1–3 mm wide. Leaf-blade surface glabrous or pilose, hairy adaxially or on both sides. Leaf-blade apex acuminate.

Inflorescence. Inflorescence a panicle. Peduncle 10 cm long, glabrous. Panicle open, ovate, 2–8 cm long. Panicle branches flexuous, smooth. 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 orbicular, globose, dorsally compressed, 0.9–1.1 mm long, falling entire.

Glumes. Glumes shorter than spikelet, thinner than fertile lemma. Lower glume ovate, 0.4–1 mm long, 0.5–0.9 length of spikelet, membranous, without keels. Lower glume surface glabrous or pubescent. Lower glume apex obtuse. Upper glume ovate, 0.9 length of spikelet, membranous, without keels, 5 -veined. Upper glume surface glabrous or pubescent. Upper glume apex obtuse.

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, glabrous or pubescent, acute. Fertile lemma elliptic, dorsally compressed, 0.8–1 mm long, indurate, pallid or light brown, without keel. Lemma surface smooth. Lemma margins involute. Palea involute, indurate.

Distribution (TDWG). Continent. South America.

Country /Province /State. Northern South America, Western South America, Brazil. French Guiana, Guyana, Surinam, Venezuela. Colombia. Brazil North. Amazonas, Acre, Rondonia.

Trichantheicum mueense (Vanderyst) Zuloaga & Morrone. *Syst. Bot. Monogr.* 94: 44 (2011).

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

TYPE from DRC. **Basionym or Replaced Name:** *Panicum mueense* Vanderyst, *Bull. Agric. Congo Belg.* 10: 248 (1919). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: ST: *Vanderyst 4932*, Zaire: Dumu (BR). ST: *Nélis 3*, Zaire: Bokala (BR).

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

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

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

Habit, Vegetative Morphology. Annual. Culms decumbent, slender, 15–60 cm long, rooting from lower nodes. Ligule a ciliate membrane. Leaf-blades lanceolate, tapering towards sheath, 3–8 cm long, 5–10 mm wide, membranous. Leaf-blade venation without cross veins. Leaf-blade surface scabrous, rough adaxially, glabrous or pilose, hairy abaxially. Leaf-blade apex acute.

Inflorescence. Inflorescence a panicle. Panicle open, oblong or ovate, 3–10 cm long. 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, 1.7–2.3 mm long, falling entire. Rhachilla internodes elongated between glumes.

Glumes. Glumes dissimilar, reaching apex of florets, thinner than fertile lemma. Lower glume ovate, 0.5 length of spikelet, membranous, without keels, 0–1(–3) -veined. Lower glume lateral veins absent or obscure. Lower glume surface pilose. Lower glume apex obtuse or acute. Upper glume ovate, 1 length of spikelet, membranous, without keels, 3(–5) -veined. Upper glume surface pilose. 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, 3(–5) -veined, pilose, acute. Fertile lemma oblong, dorsally compressed, 1.5–2 mm long, indurate, pallid, shiny, without keel, more than 3-veined. Lemma margins involute. Lemma apex obtuse. Palea involute, indurate.

Distribution (TDWG). Continent. Africa.

Country /Province /State. West tropical Africa, West-central tropical Africa, East tropical Africa, South tropical Africa. Nigeria. Cameroon, DRC. Mozambique.

Trichantheceum natalense (Hochst.) Zuloaga & Morrone. *Syst. Bot. Monogr.* 94: 45 (2011).

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:** *Panicum natalense* Hochst., *Flora* 29: 113 (1846). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: ST: *Krauss 188*, Dec, Natal: Ad sylvorum margines prope fl. Umlaas (?; IST: MO). ST: *Krauss 58*, Dec, Natal: Ad sylvorum margines prope fl. Umlaas T: *Krauss s.n.*, Dec, South Africa: Natal: Umlaas (US (fragm.)-01445611).

Illustrations (Books): L.K.A. Chippindall, *Grasses and Pastures of South Africa* (1955) (206, Fig 183 & Plt. 11, as *Panicum*), G.E.Gibbs Russell et al, *Grasses of Southern Africa* (1990) (240, Fig 152, as *Panicum*).

Illustrations (Journals): *Syst. Bot. Monogr.* (94: 46, fig.17 (2011)).

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

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

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

Habit, Vegetative Morphology. Perennial, caespitose. Rhizomes short. Culms erect, 25–120 cm long, wiry. Ligule a ciliate membrane. Leaf-blades 12–28 cm long, 2–3.5 mm wide.

Inflorescence. Inflorescence a panicle. Panicle open, oblong or ovate, 7–15 cm long. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets orbicular, dorsally compressed, 2–2.5 mm long, falling entire, readily shedding fertile florets.

Glumes. Glumes similar, reaching apex of florets, thinner than fertile lemma. Lower glume ovate, 0.66–0.75 length of spikelet, membranous, without keels, 3–5 -veined. Lower glume apex acute. Upper glume ovate, 1 length of spikelet, membranous, without keels, 5 -veined. 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, acute. Fertile lemma oblong, dorsally compressed, 1.5–2 mm long, chartaceous, pallid, without keel, more than 3-veined. Lemma surface tuberculate (verruculose). Lemma margins involute. Lemma apex obtuse. Palea involute, chartaceous. Palea surface tuberculate (verruculose).

Distribution (TDWG). Continent. Africa.

Country /Province /State. West-central tropical Africa, South tropical Africa, Southern Africa. DRC. Angola, Malawi, Mozambique, Zambia, Zimbabwe. Limpopo, North-West, Gauteng, Mpumalanga, Swaziland, Free State, Kwazulu-Natal, Eastern Cape.

Trichantheceum nervatum (Franch.) Zuloaga & Morrone. *Syst. Bot. Monogr.* 94: 47 (2011).

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:** *Isachne nervata* Franch., *Bull. Soc. Hist. Nat. Autun* 8: 340 (1895). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *J. de Brazza & Thollon 390*, no date, Zaire: plaine de Mpila, près de Brazzaville (P; IT: K, US-1445195).

Recent Synonyms: *Panicum nervatum* (Franch.) Stapf, *Prain, Fl. Trop. Afr.* 9: 669 (1920).

Illustrations (Books): W. Robyns (1929 and 1934). *Flora Agrostologique du Congo Belge et du Ruanda-Urundi*, I. Maydees et Andropogonees and II. Panicees. Bruxelles, Goemaere (188, Pl. 35, as *P. fulgens*).

Derivation (Clifford & Bostock 2007): L. nervus, nerve; -ata, possessing. Spikelets with conspicuously nerved lemmas or glumes.

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

Habit, Vegetative Morphology. Perennial. Rootstock evident. Culms decumbent, slender, 30–130 cm long, 1 mm diam. Leaves cauline. Ligule a ciliate membrane. Leaf-blades ascending or spreading, linear or lanceolate, parallel-sided, flat or involute, 5–15(–20) cm long, 1.5–4(–5) mm wide. Leaf-blade surface glabrous or pilose, with tubercle-based hairs. Leaf-blade apex acute or acuminate.

Inflorescence. Inflorescence a panicle. Panicle open, oblong or ovate, 6–18 cm long. 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 or orbicular, dorsally compressed, (1.2–)1.5–2.3(–2.5) mm long, falling entire, readily shedding fertile florets.

Glumes. Glumes similar, reaching apex of florets, thinner than fertile lemma. Lower glume ovate, 0.66–0.75 length of spikelet, membranous, without keels, 3 -veined. Lower glume surface glabrous or pubescent. Lower glume apex acute. Upper glume ovate, 1 length of spikelet, membranous, yellow or purple, without keels, 5 -veined. Upper glume surface glabrous or pubescent. 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, glabrous or pubescent, acute. Fertile lemma oblong, dorsally compressed, 1.2–2.5 mm long, chartaceous, pallid, without keel, more than 3-veined. Lemma surface tuberculate (verruculose). Lemma margins involute. Lemma apex obtuse. Palea involute, chartaceous. Palea surface tuberculate (verruculose).

Distribution (TDWG). Continent. Africa.

Country /Province /State. West tropical Africa, West-central tropical Africa, Northeast tropical Africa, East tropical Africa, South tropical Africa. Ghana, Guinea, Ivory Coast, Liberia, Nigeria, Sierre Leone. Cameroon, Congo, Gabon, DRC. Chad, Ethiopia (inc. Eritrea), Sudan. Tanzania, Uganda. Angola, Malawi, Zambia, Zimbabwe.

Trichanthecium nervosum (Lam.) Zuloaga & Morrone. *Syst. Bot. Monogr.* 94: 49 (2011).

Accepted by: R.J.Soreng et al., *Catalogue of New World 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. **Basionym or Replaced Name:** *Panicum nervosum* Lam., *Encyc.* 4: 747. (1798). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *R.L. Desfontaines s.n.*, no date, French Guiana (FI; IT: B, P, US-974571 (fragm. ex FI & photo)).

Illustrations (Journals): *Syst. Bot. Monogr.* (94:51, fig.20 (2011)).

Derivation (Clifford & Bostock 2007): *L. nervus*, nerve; -osa, abundance. With conspicuous nerves in the glumes or lemmas.

Classification. Subfamily Panicoideae. Tribe: Paniceae. Subtribe INCERTAE SEDIS.

Habit, Vegetative Morphology. Perennial, caespitose. Culms erect, robust, 40–200 cm long. Culm-internodes solid, smooth. Lateral branches lacking. Leaf-sheaths longer than adjacent culm internode, hispid, with tubercle-based hairs, outer margin hairy. Ligule a fringe of hairs, 1.5–2 mm long. Collar glabrous or pubescent. Leaf-blade base amplexicaul. Leaf-blades lanceolate, 11–18 cm long, 8–15 mm wide. Leaf-blade surface glabrous or pubescent, sparsely hairy.

Inflorescence. Inflorescence a panicle. Peduncle 10–20 cm long. Panicle open, ovate, 6–18 cm long. Primary panicle branches ascending or spreading. Panicle branches smooth or scabrous, glabrous. 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 orbicular, globose, dorsally compressed, 1.1–1.7 mm long, falling entire.

Glumes. Glumes shorter than spikelet, thinner than fertile lemma. Lower glume ovate, 0.8–1.4 mm long, 0.75 length of spikelet, membranous, without keels, 3 -veined. Lower glume apex acute. Upper glume ovate, 0.9 length of spikelet, membranous, without keels, 5–7 -veined. Upper glume surface wrinkled. Upper glume apex obtuse.

Florets. Basal sterile florets 1, male, with palea. Lemma of lower sterile floret similar to upper glume, ovate, 1 length of spikelet, membranous, 3–5 -veined, acute. Fertile lemma elliptic or ovate, dorsally compressed, 0.9–1.4 mm long, indurate, pallid, without keel. Lemma surface striate. Lemma margins involute. Lemma apex acute. Palea involute, indurate.

Flower and Fruit. Anthers 0.6 mm long.

Distribution (TDWG). Continent. South America.

Country /Province /State. Northern South America, Western South America, Brazil. French Guiana, Guyana, Surinam, Venezuela. Colombia. Brazil West Central, Brazil Northeast, Brazil North. Para, Amapa.

Trichanthecium noterophilum (S.A. Renvoize) Zuloaga & Morrone. *Syst. Bot. Monogr.* 94: 51 (2011).

Accepted by: R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online.

TYPE from Brazil. **Basionym or Replaced Name:** *Panicum noterophilum* S.A. Renvoize, *Kew Bull.*, 37 (2): 329 (1982). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: R.M. Harley, S.A. Renvoize, C.M. Erskine, C.A. Brighton & B. Pinheiro 15935, 4 Feb 1974, Brazil: Bahia: ca. 3 km S of Mucugé, by Rio Cumbuca, near site of small dam on road to Cascavel, riverside, damp sandy soil, sandstone rocks and partly burnt-over vegetation, alt. 850 m, 13°01'S, 41°21'W, small erect perennial rhizomatous grass (CEPEC; IT: K, MO-3663764, US-2955119).

Illustrations (Books): S.A.Renvoize, *The Grasses of Bahia*, 1984 (160, Fig. 58, as *Panicum*).

Illustrations (Journals): *Syst. Bot. Monogr.* (94:52, fig.21 (2011)).

Derivation (Clifford & Bostock 2007): Gk. *noteros*, damp; *phileo*, love. Grows in damp sandy soil.

Classification. Subfamily Panicoideae. Tribe: Paniceae. Subtribe INCERTAE SEDIS.

Habit, Vegetative Morphology. Perennial. Rhizomes elongated. Culms erect, 12–21 cm long. Lateral branches ample, arising from lower culm. Ligule a ciliate membrane. Leaf-blades lanceolate, flat or involute, 1–2.5 cm long, 1–3 mm wide. Leaf-blade surface glabrous. Leaf-blade apex acute or acuminate.

Inflorescence. Inflorescence a panicle. Panicle open, ovate, 1.5–4 cm long. Primary panicle branches moderately divided. 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 orbicular, dorsally compressed, 1.5 mm long, falling entire.

Glumes. Glumes shorter than spikelet, thinner than fertile lemma. Lower glume ovate, 0.5–0.66 length of spikelet, membranous, without keels, 3 -veined. Lower glume apex obtuse. Upper glume ovate, 0.8–0.9 length of spikelet, membranous, without keels, 5 -veined. Upper glume surface puberulous. 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, puberulous, acute. Fertile lemma elliptic, dorsally compressed, 1.5 mm long, indurate, pallid, shiny, without keel. Lemma surface scaberulous, rough above. Lemma margins involute. Palea involute, indurate.

Flower and Fruit. Caryopsis with adherent pericarp.

Distribution (TDWG). Continent. South America.

Country /Province /State. Brazil. Brazil Northeast.

TDWG4. Bahia.

Trichanthecium nutabundum (Zuloaga & Morrone) Zuloaga & Morrone. *Syst. Bot. Monogr.* 94: 53 (2011).

Accepted by: R.J.Soreng et al., *Catalogue of New World 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 nutabundum* F.O. Zuloaga & O. Morrone, *Novon*, 6 (3): 312 (1996). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Brazil: Pará: Serra do Cachimbo, 425 m, 12 Dec 1956, J.M. Pires, G.A. Black, J.J. Wurdack & Nilo 6153 (HT: UB; IT: US-2463450).

Illustrations (Journals): *Syst. Bot. Monogr.* (94:55, fig.23 (2011)), *Novon* (6: 313 Fig. 2 (1996), as *Panicum*).

Derivation (Clifford & Bostock 2007): L. *nutans*, nodding; *abundum*, abundant. Inflorescence with copious nodding spikelets.

Classification. Subfamily Panicoideae. Tribe: Paniceae. Subtribe INCERTAE SEDIS.

Habit, Vegetative Morphology. Annual. Culms decumbent, 10–20 cm long, rooting from lower nodes. Culm-internodes terete, 0.7–2 cm long, yellow or purple, smooth, distally glabrous. Culm-nodes brown, pubescent. Lateral branches ample, arising from lower culm. Leaf-sheaths mostly shorter than adjacent culm internode, pilose, with tubercle-based hairs, outer margin hairy. Ligule an eciliate membrane, 0.4 mm long, brown. Collar glabrous or pubescent. Leaf-blades ascending, lanceolate, 1–2.5 cm long, 2–4 mm wide. Leaf-blade surface hirsute. Leaf-blade margins smooth, tuberculate-ciliate, hairy at base. Leaf-blade apex acute.

Inflorescence. Inflorescence a panicle. Peduncle 5–10 cm long, glabrous. Panicle open, ovate or globose, effuse, 1.5–2.5 cm long, 1–2 cm wide. Panicle branches glabrous in axils. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, filiform, 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, tilted on the pedicel, dorsally compressed, obtuse or subacute, 1.8–2 mm long, 1 mm wide, falling entire.

Glumes. Glumes dissimilar, reaching apex of florets, thinner than fertile lemma. Lower glume ovate, not clasping, 0.8–1 mm long, 0.5 length of spikelet, membranous, without keels, 1–3 -veined. Lower glume lateral veins absent or distinct. Lower glume apex acute. Upper glume elliptic, 1 length of spikelet, membranous, without keels, 5 -veined. Upper glume apex acute.

Florets. Basal sterile florets 1, male or barren, with palea. Lemma of lower sterile floret similar to upper glume, elliptic, 1 length of spikelet, membranous, 5 -veined, acute. Palea of lower sterile floret 1.2–1.6 mm long. Fertile lemma elliptic, dorsally compressed, 1.5–1.6 mm long, 0.8 mm wide, indurate, without keel, more than 3-veined. Lemma surface papillose. Lemma margins involute. Palea involute, indurate.

Flower and Fruit. Lodicules 2, 0.2 mm long, truncate. Anthers 3, 0.8–1.2 mm long. Caryopsis with adherent pericarp.

Distribution (TDWG). Continent. South America.

Country /Province /State. Brazil. Brazil North.

Trichanthecium orinocanum (Luces) Zuloaga & Morrone. *Syst. Bot. Monogr.* 94: 54 (2011).

Accepted by: R.J.Soreng et al., *Catalogue of New World 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. **Basionym or Replaced Name:** *Panicum orinocanum* Luces, *J. Wash. Acad. Sci.* 32 (6): 164, f. 9 (1942). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *L. Williams 13090*, 23 May 1940, Venezuela: Amazonas: Puerto Ayacucho, Río Cataniapo (VEN; IT: US-1764808).

Illustrations (Books): J.A.Steyermark et al, *Flora of the Venezuelan Guayana* Vol. 8 (2004) (200, Fig. 151, as *Panicum*).

Illustrations (Journals): *Syst. Bot. Monogr.* (94:55, fig.23 (2011)).

Derivation (Clifford & Bostock 2007): L. -anum, indicating location. From Alto Orinoca, Venezuela.

Classification. Subfamily Panicoideae. Tribe: Paniceae. Subtribe INCERTAE SEDIS.

Habit, Vegetative Morphology. Perennial, caespitose. Rootstock evident. Culms erect, slender, 30–40 cm long. Culm-internodes distally glabrous. Lateral branches lacking. Leaf-sheaths mostly shorter than adjacent culm internode, striately veined, glabrous on surface. Ligule an eciliate membrane, 0.3 mm long, ciliate from base of abaxial surface. Leaf-blades flat or involute, 2–10.5 cm long, 1–2 mm wide. Leaf-blade surface glabrous. Leaf-blade apex acuminate.

Inflorescence. Inflorescence a panicle. Panicle open, ovate, 3–5 cm long. Panicle branches capillary, flexuous, glabrous. 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, 1.5–2 mm long, falling entire.

Glumes. Glumes reaching apex of florets, thinner than fertile lemma. Lower glume ovate, 0.5 length of spikelet, membranous, without keels, 3 -veined. Lower glume apex acute. Upper glume ovate, 1 length of spikelet, membranous, without keels, 7 -veined. 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, 7 -veined, acute. Fertile lemma elliptic, dorsally compressed, 1.5 mm long, indurate, pallid, without keel. Lemma surface puberulous. Lemma margins involute. Lemma apex acute. Palea involute, indurate.

Flower and Fruit. Caryopsis with adherent pericarp.

Distribution (TDWG). Continent. South America.

Country /Province /State. Northern South America, Western South America. Venezuela. Colombia.

Trichanthecium pandum (Swallen) Zuloaga & Morrone. *Syst. Bot. Monogr.* 94: 56 (2011).

Accepted by: R.J.Soreng et al., *Catalogue of New World 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. **Basionym or Replaced Name:** *Panicum pandum* Swallen, *Brittonia*, 3: 150 (1939). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *G.H.H. Tate 1287*, Dec 1937-Jan 1938, Venezuela: Bolívar: Mount Auyan-tepui, 2200 m (NY; IT: US-1723624).

Illustrations (Journals): *Syst. Bot. Monogr.* (94:57, fig.24 (2011)).

Derivation (Clifford & Bostock 2007): L. bent. Pedicels flexuose.

Classification. Subfamily Panicoideae. Tribe: Paniceae. Subtribe INCERTAE SEDIS.

Habit, Vegetative Morphology. Annual. Culms 7–17 cm long. Culm-internodes distally glabrous. Culm-nodes bearded. Lateral branches ample, arising from upper culm. Leaf-sheaths mostly shorter than adjacent culm internode, glabrous on surface or pilose, outer margin hairy. Ligule an eciliate membrane, 0.6–1 mm long.

Leaf-blade base cordate. Leaf-blades 13–20 cm long, 3–6 mm wide. Leaf-blade surface glabrous or pilose, sparsely hairy.

Inflorescence. Inflorescence a panicle, terminal and axillary. Axillary inflorescences present in upper axils. Panicle open, ovate, 3–6 cm long. Primary panicle branches ascending, branching divaricately. Panicle branches stiff, glabrous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets elliptic or obovate, dorsally compressed, 1.1–1.4 mm long, falling entire.

Glumes. Glumes reaching apex of florets, thinner than fertile lemma. Lower glume ovate, 0.5–0.8 mm long, 0.5–0.6 length of spikelet, membranous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume apex acute. Upper glume ovate, 1 length of spikelet, membranous, 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 similar to upper glume, ovate, 1 length of spikelet, membranous, 5 -veined, pilose, acute. Fertile lemma elliptic or obovate, dorsally compressed, 0.9–1.3 mm long, indurate, pallid, without keel. Lemma surface smooth. Lemma margins involute. Lemma apex acute. Palea involute, indurate.

Distribution (TDWG). Continent. South America.

Country /Province /State. Northern South America. Guyana, Venezuela.

Trichanthecium parvifolium (Lam.) Zuloaga & Morrone. *Syst. Bot. Monogr.* 94: 59 (2011).

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

TYPE from South America. **Basionym or Replaced Name:** *Panicum parvifolium* Lam., *Illustr.* 1: 173; *Encyc.* 4: 752. (1791). T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: HT: *L.C.M. Richard s.n.*, no date, South America (P-LA; IT: US-80899 (fragm. ex P-LA & photo)).

Recent Synonyms: *Panicum kaitukense* Tutin, *Journ. Bot.* 62: 340. (1934). *Panicum obtusiglume* Hitchc., *Contr. U.S. Natl. Herb.* 24: 464 (1927)

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 (218, Pl. 38), L.K.A. Chippindall, *Grasses and Pastures of South Africa* (1955) (325, Fig 282, as *Panicum*), J.Bosser, *Graminees des Paturage et des Cultures a Madagascar* (1969) (31, Fig 7, as *Panicum*), A.S.Hitchcock, *Manual of the Grasses of the West Indies* (1936) (272, Fig. 240, as *Panicum*), S.A.Renvoize, *Gramineas de Bolivia* (1998) (391, Fig. 83, as *Panicum*), S.A.Renvoize, *The Grasses of Bahia*, 1984 (156, Fig. 56, as *Panicum* & as *P. kaitukense*), L.B. Smith, D.C. Wasshausen, R.M. Klein *Flora Illustrada Catarinensis Gramineas* (1981–1982) (720, Fig. 152 & 725, Fig. 153, as *Panicum*), W.Burger, *Flora Costaricensis* 15, Gramineae: *Fieldiana Botany New Series* 4 (1980) (379, Fig 139, as *Panicum*), F.O.Zuloaga et al, *Flora del Paraguay* 23 (1994) (273, Fig. 77, as *Panicum*), E.Judziewicz, *Flora of the Guianas*, 187. *Poaceae* (1990) (411, Fig 73, as *Panicum*).

Illustrations (Journals): *Syst. Bot. Monogr.* (94:57, fig.24 (2011)), *Ruizia* (13:310, Fig 371-n (1993)).

Derivation (Clifford & Bostock 2007): *L. parvus*, small; *folium*, leaf. Leaf-blades small.

Classification. Subfamily Panicoideae. Tribe: Paniceae. Subtribe INCERTAE SEDIS.

Habit, Vegetative Morphology. Perennial. Culms prostrate, slender, 8–50 cm long, wiry, rooting from lower nodes. Ligule a ciliate membrane. Leaf-blade base cordate. Leaf-blades ascending or reflexed (at maturity), lanceolate to ovate, 1.5–3 cm long, 2–7 mm wide, glaucous. Leaf-blade venation with distinct cross veins. Leaf-blade surface glabrous or pilose. Leaf-blade apex acute.

Inflorescence. Inflorescence a panicle, exerted or embraced at base by subtending leaf. Panicle open, ovate, 1–3 cm long. Primary panicle branches spreading or reflexed. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets oblong or ovate, dorsally compressed, 1–2 mm long, falling entire.

Glumes. Glumes similar, reaching apex of florets, thinner than fertile lemma. Lower glume ovate, 0.5–0.66 length of spikelet, membranous, without keels, 3 -veined. Lower glume apex acuminate. Upper glume ovate, 1 length of spikelet, membranous, without keels, 5 -veined. Upper glume apex acute.

Florets. Basal sterile florets 1, barren, with palea. Lemma of lower sterile floret similar to upper glume, ovate, 1 length of spikelet, membranous, 5 -veined, acute. Fertile lemma oblong, dorsally compressed, 1.5–2 mm long, indurate, pallid, shiny, without keel, more than 3-veined. Lemma margins involute. Lemma apex obtuse. Palea involute, indurate.

Flower and Fruit. $N = 9$ (2 refs TROPICOS). $2n = 36$ (1 ref TROPICOS).

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, Southern Africa, Western Indian ocean. Benin, Ghana, Liberia, Mali, Nigeria, Senegal, Sierre Leone. Gabon, Rwanda, DRC. Chad. Kenya, Tanzania, Uganda. Angola, Malawi, Mozambique, Zambia. Botswana, Kwazulu-Natal, Eastern Cape. Madagascar. **Mesoamerica, Caribbean, Northern South America, Western South America, Brazil, Southern South America.** Belize, Costa Rica, Guatemala, Honduras, Nicaragua, Panama. Cuba, Dominican Republic, Haiti, Jamaica, Puerto Rico, Trinidad-Tobago. French Guiana, Guyana, Surinam, Venezuela. Bolivia, Colombia, Peru. Brazil Northeast, Brazil North. Paraguay.

TDWG4. Bahia. Corrientes, Misiones, Santa Fe.

Trichantheicum petilum (Swallen) Zuloaga & Morrone. *Syst. Bot. Monogr.* 94: 63 (2011).

Accepted by: R.J.Soreng et al., *Catalogue of New World 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. **Basionym or Replaced Name:** *Panicum petilum* Swallen, *Phytologia* 14: 73 (1966). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *C.O. Grassl 10009*, 24 Jul 1943, Colombia: Vaupés: Cerro Canejen (US-1910820).

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

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

Classification. Subfamily Panicoideae. Tribe: Paniceae. Subtribe INCERTAE SEDIS.

Habit, Vegetative Morphology. Perennial. Culms decumbent, slender, 30–40 cm long. Lateral branches ample. Leaf-sheaths subequal to internodes, glabrous on surface. Ligule an eciliate membrane, 0.1 mm long. Leaf-blades involute, 1.5–2.5 cm long, 1–2 mm wide.

Inflorescence. Inflorescence a panicle. Panicle open, ovate, 1.5–3 cm long, bearing few spikelets. Primary panicle branches ascending or spreading or reflexed. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets elliptic, dorsally compressed, 1 mm long, falling entire.

Glumes. Glumes reaching apex of florets, thinner than fertile lemma. Lower glume ovate, 0.5 mm long, 0.5 length of spikelet, membranous, 3 -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 obtuse.

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, obtuse. Fertile lemma ovate, dorsally compressed, 1 mm long, indurate, pallid, without keel. Lemma surface papillose. Lemma margins involute. Palea involute, indurate.

Distribution (TDWG). Continent. South America.

Country /Province /State. Western South America. Colombia.

Trichantheicum petrense (Swallen) Zuloaga & Morrone. *Syst. Bot. Monogr.* 94: 64 (2011).

Accepted by: R.J.Soreng et al., *Catalogue of New World 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. **Basionym or Replaced Name:** *Panicum petrense* Swallen, *Mem. N. Y. Bot. Gard.* 9: 259 (1957). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *B. Maguire 29259*, 17 Oct 1950, Venezuela: Amazonas: abundant in moist sand on exposed rocks, 15 km above San Fernando de Atabapo, Río Atabapo, Río Orinoco (US-2040198).

Illustrations (Journals): *Syst. Bot. Monogr.* (94:64, fig.28 (2011)).

Derivation (Clifford & Bostock 2007): L. petra, rock; -ense, denoting origin. Growing amongst exposed rocks.

Classification. Subfamily Panicoideae. Tribe: Paniceae. Subtribe INCERTAE SEDIS.

Habit, Vegetative Morphology. Annual, caespitose, clumped densely. Culms erect, slender, 25–30 cm long. Lateral branches ample, erect. Leaf-sheaths mostly shorter than adjacent culm internode or subequal to internodes. Ligule an eciliate membrane, 0.3 mm long. Leaf-blades erect or ascending, 1.5–3 cm long, 1.5–3 mm wide, glaucous. Leaf-blade surface glabrous, hairless throughout or except near base.

Inflorescence. Inflorescence a panicle. Panicle open, ovate, 1.5–3 cm long. Primary panicle branches ascending or spreading, 1 -nate. Panicle branches scaberulous. 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, 1.2–1.3 mm long, falling entire.

Glumes. Glumes shorter than spikelet, thinner than fertile lemma. Lower glume ovate, 0.6–0.7 mm long, 0.5 length of spikelet, membranous. Lower glume lateral veins absent. Lower glume apex obtuse or acute. Upper glume ovate, 0.66–0.75 length of spikelet, membranous, without keels. Upper glume surface pubescent.

Florets. Basal sterile florets 1, male, with palea. Lemma of lower sterile floret similar to upper glume, ovate, 1 length of spikelet, membranous, pubescent. Fertile lemma ovate, dorsally compressed, 0.8 mm long, indurate, pallid, without keel. Lemma surface striate. Lemma margins involute. Palea involute, indurate.

Distribution (TDWG). Continent. South America.

Country /Province /State. Northern South America. Venezuela.

Trichantheicum polycomum (Trin.) Zuloaga & Morrone. *Syst. Bot. Monogr.* 94: 65 (2011).

Accepted by: R.J.Soreng et al., *Catalogue of New World 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 polycomum* Trin., *Mem. Acad. Petersb. Ser. VI.* iii. 2: 306. (1835). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: C. Weigwelt s.n., Surinam (LE; IT: US-974553 (fragm. ex LE)).

Recent Synonyms: *Panicum froesii* Swallen, *Phytologia* 14: 70 (1966). *Panicum obovatum* Doell, in Mart., *Fl. Bras.* 2,2:256 (1877).

Panicum siccanum Trin., *Linnaea* 10: 298. (1836).

Illustrations (Books): S.A.Renvoize, *The Grasses of Bahia*, 1984 (156, Fig. 56, as *Panicum*), J.A.Steyermark et al, *Flora of the Venezuelan Guayana* Vol. 8 (2004) (198, Fig. 149, as *Panicum*).

Illustrations (Journals): *Syst. Bot. Monogr.* (94:67, fig.29 (2011)).

Derivation (Clifford & Bostock 2007): Gk. polys, several; kome, head of hair. Spikelets pubescent.

Classification. Subfamily Panicoideae. Tribe: Paniceae. Subtribe INCERTAE SEDIS.

Habit, Vegetative Morphology. Annual. Culms decumbent, 3–15 cm long, rooting from lower nodes. Culm-internodes distally glabrous. Culm-nodes purple, bearded. Lateral branches ample. Leaf-sheaths scaberulous, glabrous on surface or hirsute, outer margin hairy. Ligule an eciliate membrane, 0.1–0.3 mm long. Collar glabrous. Leaf-blades flat or conduplicate, 7–25 cm long, 1–2 mm wide. Leaf-blade surface glabrous or hirsute, hairy adaxially or on both sides. Leaf-blade margins glabrous or tuberculate-ciliate.

Inflorescence. Inflorescence a panicle. Panicle open, ovate, 1.2–2.5 cm long, 1–2 cm wide. Panicle branches smooth. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, filiform, flexuous.

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, 0.9–1.1 mm long, 0.3–0.5 mm wide, falling entire.

Glumes. Glumes reaching apex of florets, thinner than fertile lemma. Lower glume ovate, 0.5 mm long, 0.5 length of spikelet, membranous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume apex acute. Upper glume ovate, 1 length of spikelet, membranous, without keels, 5 -veined. Upper glume surface glabrous or pilose. 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, pilose, acute. Fertile lemma elliptic, dorsally compressed, 0.9–1 mm long, indurate, pallid, without keel. Lemma surface smooth. Lemma margins involute. Palea involute, indurate.

Distribution (TDWG). Continent. South America.

Country /Province /State. Northern South America, Western South America, Brazil. French Guiana, Guyana, Surinam, Venezuela. Colombia. Brazil Northeast, Brazil North.

TDWG4. Roraima, Amazonas, Acre, Rondonia, Bahia.

Trichantheicum praealtum (Afzel. ex Sw.) Zuloaga & Morrone. *Syst. Bot. Monogr.* 94: 68 (2011).

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

TYPE from Sierra Leone. **Basionym or Replaced Name:** *Panicum praealtum* (Afzel. ex Sw.), *Adnot. Bot.* 5. (1829). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *Afzelius s.n.*, Sierra Leone (K).

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

Derivation (Clifford & Bostock 2007): L. prae-, very; altus, tall. Taller than related species.

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

Habit, Vegetative Morphology. Perennial. Culms erect, robust, 60–120 cm long, 2–4 mm diam. Ligule a ciliolate membrane. Leaf-blades 10–30 cm long, 5–10 mm wide.

Inflorescence. Inflorescence a panicle. Panicle open, oblong or ovate, 10–15 cm long, 3–15 cm wide. Primary panicle branches ascending or spreading. Panicle branches capillary. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, filiform, 1–6 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 orbicular, dorsally compressed, obtuse, 1.7–2.5 mm long, falling entire, readily shedding fertile florets.

Glumes. Glumes similar, reaching apex of florets, thinner than fertile lemma, shiny. Lower glume elliptic, 0.66–0.8 length of spikelet, membranous, yellow, without keels, 3 -veined. Lower glume surface glabrous. Lower glume apex obtuse. Upper glume elliptic, 1 length of spikelet, membranous, yellow, without keels, wingless, 5 -veined. Upper glume surface glabrous. Upper glume apex obtuse.

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, obtuse. Fertile lemma oblong, dorsally compressed, 1.5 mm long, chartaceous, pallid, without keel, more than 3-veined. Lemma surface tuberculate (verruculose). Lemma margins involute. Lemma apex obtuse. Palea involute, chartaceous. Palea surface tuberculate (verruculose).

Flower and Fruit. Anthers 3, 1.5 mm long.

Distribution (TDWG). Continent. Africa.

Country /Province /State. West tropical Africa, West-central tropical Africa, Northeast tropical Africa. Ghana, Guinea, Nigeria, Senegal, Sierre Leone. Sudan.

Trichanthecium pseudisachne (Mez) Zuloaga & Morrone. *Syst. Bot. Monogr.* 94: 69 (2011).

Accepted by: R.J.Soreng et al., *Catalogue of New World 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 pseudisachne* Mez, *Notizbl. Bot. Gart. Berlin*, 7: 71 (1917). T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: IT: A.F.M. *Glaziou* 13330, no date, Brazil: Rio de Janeiro (K, US-80935 (fragm. ex B & photo), US-906987 (fragm.)).

Illustrations (Books): S.A.Renvoize, *The Grasses of Bahia*, 1984 (156, Fig. 56, as *Panicum*).

Illustrations (Journals): *Syst. Bot. Monogr.* (94:70, fig.30 (2011)).

Derivation (Clifford & Bostock 2007): Gk *pseudos*, false. Spikelets resembling those of *Isachne*..

Classification. Subfamily Panicoideae. Tribe: Paniceae. Subtribe INCERTAE SEDIS.

Habit, Vegetative Morphology. Perennial. Rhizomes elongated, knotty. Culms erect, 20–70 cm long. Ligule a ciliate membrane. Leaf-blade base cordate. Leaf-blades lanceolate, 4–10 cm long, 3–8 mm wide. Leaf-blade surface glabrous. Leaf-blade apex acute or acuminate.

Inflorescence. Inflorescence a panicle. Panicle open, ovate, 5–10 cm long. Primary panicle branches spreading, profusely divided. 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 ovate or orbicular, dorsally compressed, 1.1–1.9 mm long, falling entire.

Glumes. Glumes shorter than spikelet or reaching apex of florets, thinner than fertile lemma. Lower glume ovate, 0.5–0.66 length of spikelet, membranous, without keels, 3 -veined. Lower glume apex acute. Upper glume ovate, 0.9–1 length of spikelet, membranous, without keels, 5 -veined. Upper glume surface pubescent. 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, pubescent, acute. Fertile lemma elliptic, dorsally compressed, 1.1–1.9 mm long, indurate, pallid, without keel. Lemma surface scabrous, rough above. Lemma margins involute. Palea involute, indurate.

Flower and Fruit. Caryopsis with adherent pericarp.

Distribution (TDWG). Continent. South America.

Country /Province /State. Brazil. Brazil West Central, Brazil Northeast, Brazil Southeast, Brazil South.

TDWG4. Mato Grosso, Goias, Bahia, Maranhao, Piaui, Minas Gerais, Rio de Janeiro, Espirito Santo, Sao Paulo Parana.

Trichanthecium pyrularium (Hitchcock & Chase) Zuloaga & Morrone. *Syst. Bot. Monogr.* 94: 71 (2011).

Accepted by: R.J.Soreng et al., *Catalogue of New World 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:** *Panicum pyrularium* Hitchcock & Chase, *Contrib. US. Nat. Herb.* 42: 508 (1915). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *H. Pittier 5416*, 25–28 Dec 1911, Panama: Chiriquí: between Hato del Jobo and Cerro Vaca, eastern Chiriquí (US-715639; IT: NY).

Recent Synonyms: *Panicum quietameense* Mez, *Notizbl. Bot. Gart. Berlin* 7: 75 (1917).

Illustrations (Books): E.Judziewicz, *Flora of the Guianas*, 187. *Poaceae* (1990) (418, Fig. 74, as *Panicum*).

Illustrations (Journals): *Syst. Bot. Monogr.* (94:72, fig.31 (2011)).

Derivation (Clifford & Bostock 2007): *L. pyrus*, pear; -ulus, diminutive; -arium, pertaining to. Spikelets resemble small pears.

Classification. Subfamily Panicoideae. Tribe: Paniceae. Subtribe INCERTAE SEDIS.

Habit, Vegetative Morphology. Annual. Culms decumbent, 5–30 cm long, rooting from lower nodes. Culm-internodes distally glabrous. Culm-nodes glabrous or bearded. Lateral branches lacking or ample, arising from lower culm. Leaf-sheaths mostly shorter than adjacent culm internode, glabrous on surface or pilose, with tubercle-based hairs, outer margin hairy. Ligule an eciliate membrane, 0.3–0.6 mm long, erose. Leaf-blade base cordate. Leaf-blades lanceolate or elliptic, 25–37 cm long, 4–9 mm wide. Leaf-blade surface glabrous or pilose, sparsely hairy or moderately hairy or densely hairy, with tubercle-based hairs. Leaf-blade apex acuminate.

Inflorescence. Inflorescence a panicle, terminal and axillary. Peduncle 2–12 cm long. Panicle open or contracted, lanceolate or ovate, 2–10 cm long. Panicle branches glabrous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, filiform, 5–14 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 obovate, dorsally compressed, 1.2–1.8 mm long, 0.5 mm wide, falling entire, deciduous from the base or with the pedicel. Rhachilla internodes elongated between glumes. Rhachilla elongation 0.25 mm long.

Glumes. Glumes reaching apex of florets, thinner than fertile lemma. Lower glume lanceolate, 0.7–1.4 mm long, 0.6–0.75 length of spikelet, membranous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume apex 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, barren, without significant palea. Lemma of lower sterile floret similar to upper glume, ovate, 1 length of spikelet, membranous, 3 -veined, glabrous or pubescent, acute. Fertile lemma elliptic, dorsally compressed, 1–1.3 mm long, indurate, pallid, without keel. Lemma surface smooth. Lemma margins involute. Lemma apex acute. Palea involute, indurate.

Flower and Fruit. Anthers 3, 0.6 mm long, purple.

Distribution (TDWG). Continent. South America.

Country /Province /State. Mesoamerica, Northern South America, Western South America, Brazil. Panama. French Guiana, Guyana, Surinam, Venezuela. Bolivia, Colombia. Brazil North. Para, Amapa, Amazonas, Acre, Rondonia.

Trichanthecium rivale (Swallen) Zuloaga & Morrone. *Syst. Bot. Monogr.* 94: 73 (2011).

Accepted by: R.J.Soreng et al., *Catalogue of New World 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 rivale* Swallen, *Bull. Torr. Bot. Cl.* 75: 87 (1948). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *B. Maguire 24732*, 13 Sep 1944, Surinam: Tafelberg, on banks of lower Augustus Creek, 200 m above falls, 525 m (NY; IT: F, MO, U, US-2209369, US-1914996 (fragm.)).

Illustrations (Journals): *Syst. Bot. Monogr.* (94:57, fig.24 (2011)).

Derivation (Clifford & Bostock 2007): *L. user* of the same brook. Growing along river banks.

Classification. Subfamily Panicoideae. Tribe: Paniceae. Subtribe INCERTAE SEDIS.

Habit, Vegetative Morphology. Annual. Culms decumbent, 5–20 cm long, rooting from lower nodes. Culm-internodes distally glabrous. Culm-nodes glabrous or pubescent or bearded. Leaf-sheaths mostly shorter than adjacent culm internode, striately veined, glabrous on surface, outer margin hairy. Ligule an eciliate membrane, 1 mm long. Leaf-blade base cordate. Leaf-blades lanceolate or ovate, 16–28 cm long, 2–4 mm wide. Leaf-blade surface pilose, hairy on both sides, with tubercle-based hairs. Leaf-blade apex acuminate.

Inflorescence. Inflorescence a panicle. Peduncle 2–6 cm long, glabrous. Panicle open, ovate, 3–8 cm long. Primary panicle branches spreading or reflexed, distant. Panicle branches flexuous, eglandular. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, filiform, flexuous.

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, 1.1–1.6 mm long, 0.5–0.6 mm wide, falling entire.

Glumes. Glumes shorter than spikelet or reaching apex of florets, thinner than fertile lemma. Lower glume ovate, 0.7–0.8 mm long, 0.5–0.66 length of spikelet, membranous, without keels, 1–3 -veined. Lower glume lateral veins absent or distinct, transversely connected at apex. Lower glume apex acute. Upper glume ovate, 0.9–1 length of spikelet, membranous, without keels, 5 -veined. Upper glume surface pubescent. Upper glume apex obtuse.

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, puberulous, acute. Fertile lemma elliptic, dorsally compressed, 1–1.2 mm long, indurate, pallid, without keel. Lemma surface smooth. Lemma margins involute. Palea involute, indurate.

Distribution (TDWG). Continent. South America.

Country /Province /State. Northern South America. French Guiana, Guyana, Surinam, Venezuela.

Trichanthecium schwackeanum (Mez) Zuloaga & Morrone. *Syst. Bot. Monogr.* 94: 74 (2011).

Accepted by: R.J.Soreng et al., *Catalogue of New World 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 & French Guiana. **Basionym or Replaced Name:** *Panicum schwackeanum* Mez, *Engl. Jahrb.* 57. 56. Beibl. 125, 1 [May] (1921). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: ST: *A.F.M. Glaziou 16620 A*, no date, Brazil (US-1720162 (fragm. ex B)). ST: *J.B.E. Pohl 1161*, no date, Brazil: Santa Luzia (US-1127098 (fragm. ex W)). ST: *C.W.H. Mosén 4572*, no date, Brazil: Minas Gerais (B, P, US-80977 (fragm. ex B)). ST: *Leprieur s.n.*, French Guiana (B?, US-1127100 (fragm. ex P-Dele)). ST: *Grueger 20*, Trinidad ST: *Spruce Panic. 20*, Brazil: Amazonas ST: *Glaziou 1620*, Brazil: Minas Gerais ST: *Moura 969*, Brazil: Minas Gerais (US-80977 (fragm. ex B)). ST: *Lund s.n.*, Brazil: Minas Gerais ST: *Moura 979*, Brazil: Minas Gerais (US-80977 (fragm. ex B)). ST: *Schwacke 8447*, Brazil: Minas Gerais (US-80977 (fragm. ex B)). ST: *Schwacke 8456*, Brazil: Minas Gerais (B, US-80977 (fragm. ex B)). ST: *Pohl 1161*, Brazil: Minas Gerais ST: *Weddell 1848*, Brazil: Minas Gerais ST: *Lofgren 250*, Brazil: Sao Paulo (B, P, US(fragm.)). ST: *Riedel 365*, Brazil: Sao Paulo ST: *Niederlein s.n.*, Argentina (B, BAA-1972 (fragm. ex B), US-1127099 (fragm. ex B)). ST: *Jelski s.n.*, French Guiana (US (fragm.)). ST: *Leprieur s.n.*, French Guiana (US-1127100 (fragm. ex P)). ST: *Lofgren 250*, Brazil: Sao Paulo ST: *Jelski s.n.*, French Guiana.

Recent Synonyms: *Panicum helobium* Henr., *Meded. Herb. Leid.* No. 40. 52 [June] (1921).

Illustrations (Books): S.A.Renvoize, *Gramineas de Bolivia* (1998) (405, Fig. 86), S.A.Renvoize, *The Grasses of Bahia*, 1984 (158, Fig. 57 as *P. helobium*), L.B. Smith, D.C. Wasshausen, R.M. Klein *Flora Illustrada Catarinensis Gramineas* (1981–1982) (734, Fig 154 as *P. helobium*), A.Burkat, *Flora Illustrada de Entre Rios (Argentina)*, Pt II, Gramineas (1969) (320, Fig. 130 as *P. helobium*), F.O.Zuloaga et al, *Flora del Paraguay* 23 (1994) (298, Fig. 86), B.Rosengurt, *Gramineas Uruguayas I* (1970) (340, Fig. 145 as *P. helobium*).

Illustrations (Journals): *Syst. Bot. Monogr.* (94:76, fig.32 (2011)).

Derivation (Clifford & Bostock 2007): L. -anum, indicating connection. In honor of Carl August Wilhelm Schwacke (1846–1904) German-born Brazilian botanist.

Classification. Subfamily Panicoideae. Tribe: Paniceae. Subtribe INCERTAE SEDIS.

Habit, Vegetative Morphology. Perennial. Culms decumbent, 10–70 cm long, 1 mm diam., rooting from lower nodes. Culm-nodes brown. Lateral branches ample. Leaf-sheaths glabrous on surface. Ligule an eciliate membrane, 0.3–0.7 mm long, brown. Leaf-blade base cordate. Leaf-blades lanceolate, 2–6 cm long, 4–11 mm wide. Leaf-blade surface glabrous. Leaf-blade margins glabrous or ciliate, hairy at base.

Inflorescence. Inflorescence a panicle. Peduncle 5–10 cm long, pubescent above. Panicle open, ovate, 5–10 cm long, 5–9 cm wide. Panicle branches glabrous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, flexuous, 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 or obovate, dorsally compressed, 1.7–2 mm long, falling entire.

Glumes. Glumes dissimilar, reaching apex of florets, thinner than fertile lemma, gaping. Lower glume ovate, 1.2–1.5 mm long, 0.75 length of spikelet, membranous, without keels, 3–4 -veined. Lower glume apex

acute. Upper glume ovate, 1.7–2 mm long, 1 length of spikelet, membranous, without keels, 5 -veined. Upper glume apex acute.

Florets. Basal sterile florets 1, barren, with palea. Lemma of lower sterile floret similar to upper glume, ovate, 1.7–2 mm long, 1 length of spikelet, membranous, 4–5 -veined, without midvein or with evident midvein, acute. Palea of lower sterile floret 1 length of lemma. Fertile lemma elliptic, dorsally compressed, 1.3–1.7 mm long, indurate, shiny, without keel. Lemma margins involute. Palea involute, indurate.

Flower and Fruit. Anthers 3, 1 mm long.

N = 10 (1 ref TROPICOS).

Distribution (TDWG). Continent. South America.

Country /Province /State. Mesoamerica, Northern South America, Western South America, Brazil, Southern South America. Costa Rica. French Guiana, Guyana, Venezuela. Bolivia, Colombia. Brazil West Central, Brazil Northeast, Brazil Southeast, Brazil North, Brazil South. Argentina Northeast, Paraguay, Uruguay.

TDWG4. Amazonas, Acre, Rondonia, Goias, Bahia, Minas Gerais, Rio de Janeiro, Espirito Santo, Sao Paulo Parana, Catarina, Rio Grande do Sul. Buenos Aires, Corrientes, Entre Rios, Misiones.

Trichanthecium strictissimum (Afzel. ex Sw.) Zuloaga & Morrone. *Syst. Bot. Monogr.* 94: 78 (2011).

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

TYPE from Sierra Leone. **Basionym or Replaced Name:** *Panicum strictissimum* Afzel. ex Sw., *Adnot. Bot.* 4. (1829). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: "Hab. ad Sierram Leonam: Prof. Ad. Afzelius", *Ad. Afzelius*

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

Derivation (Clifford & Bostock 2007): *L. strictus*, erect; -issimum, short; Panicle branches appressed to central axis of inflorescence.

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

Habit, Vegetative Morphology. Perennial. Culms erect or geniculately ascending, 60–90 cm long, 1–3 mm diam. Ligule a ciliolate membrane. Leaf-blades 5–20 cm long, 3–10 mm wide.

Inflorescence. Inflorescence a panicle. Panicle open, oblong or obovate, 7–15 cm long. Primary panicle branches spreading. Panicle branches capillary. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, filiform, 1–6 mm long.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets orbicular, dorsally compressed, obtuse, 1.5–1.8 mm long, falling entire, readily shedding fertile florets.

Glumes. Glumes similar, reaching apex of florets, thinner than fertile lemma, dull. Lower glume elliptic, 0.75–1 length of spikelet, membranous, grey, without keels, 3 -veined. Lower glume surface glabrous or pubescent. Lower glume apex obtuse. Upper glume elliptic, 1 length of spikelet, membranous, grey, without keels, winged on margins, winged near apex, 5 -veined. Upper glume surface glabrous or pubescent. Upper glume apex emarginate.

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, obtuse. Fertile lemma oblong, dorsally compressed, 1.3 mm long, chartaceous, pallid, without keel, more than 3-veined. Lemma surface tuberculate (verruculose). Lemma margins involute. Lemma apex obtuse. Palea involute, chartaceous. Palea surface tuberculate (verruculose).

Flower and Fruit. Anthers 3, 0.75 mm long.

Distribution (TDWG). Continent. Africa.

Country /Province /State. West tropical Africa, West-central tropical Africa. Guinea, Sierre Leone. DRC.

Trichanthecium tenellum (Lam.) Zuloaga & Morrone. *Syst. Bot. Monogr.* 94: 79 (2011).

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

TYPE from Sierra Leone. **Basionym or Replaced Name:** *Panicum tenellum* Lam., *Illustr.* i. 173; *Encyc.* 4: 753. (1791). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *H. Smeathman s.n.*, Sierra Leone (P-LAM(fragm., US-1400048); IT: P, B-W-18839.1). IT: *J.L.M. Poirret s.n.*, (L).

Recent Synonyms: *Panicum lindleyanum* Nees ex Steud., *Syn. Pl. Gram.* 91. (1854).

Illustrations (Journals): Syst. Bot. Monogr. (94:80, fig.35 (2011)).

Derivation (Clifford & Bostock 2007): L. slender. Culms or inflorescence branches slender.

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

Habit, Vegetative Morphology. Annual, caespitose. Culms erect, slender, 10–35 cm long. Ligule an eciliate membrane. Leaf-blades filiform or linear, flat or involute, 2.5–9 cm long, 1.5–3 mm wide.

Inflorescence. Inflorescence a panicle. Panicle open, oblong or ovate, 3–11 cm long. 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 oblanceolate or ovate or orbicular, dorsally compressed, 1–1.5 mm long, falling entire, readily shedding fertile florets.

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

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, glabrous or pubescent, obtuse. Fertile lemma oblong, dorsally compressed, 1–1.5 mm long, chartaceous, pallid, without keel, more than 3-veined. Lemma surface tuberculate (verruculose). Lemma margins involute. Lemma apex obtuse. Palea involute, chartaceous. Palea surface tuberculate (verruculose).

Flower and Fruit. Anthers 3, 1 mm long.

Distribution (TDWG). Continent. Africa.

Country /Province /State. Macaronesia, West tropical Africa, West-central tropical Africa, Northeast tropical Africa, South tropical Africa. Ghana, Guinea-Bissau, Ivory Coast, Liberia, Mali, Nigeria, Senegal, Sierra Leone, Togo. Central African Republic, DRC. Sudan. Angola, Mozambique, Zambia.

Trichanthecium tepuiianum (Davidse & Zuloaga) Zuloaga & Morrone. *Syst. Bot. Monogr.* 94: 82 (2011).

Accepted by: R.J.Soreng et al., *Catalogue of New World 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. **Basionym or Replaced Name:** *Panicum tepuiianum* G. Davidse & F. Zuloaga, *Novon*, 1(4): 191 (1991). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *Liesner & Carnevali 22645*, 30 Oct 1987, Venezuela: Amazonas: Río Negro, Cerro Aracamuni, summit, Proa Camp, savanna with small to large patches of forest, especially among streams, in savanna, 01.32°N 65.49°W (MO-3580884).

Illustrations (Journals): *Novon* (1:192, Fig.1 (1991)).

Derivation (Clifford & Bostock 2007): L. -anum, indicating location. From tepui the local name for sandstone mesas in Venezuela.

Classification. Subfamily Panicoideae. Tribe: Paniceae. Subtribe INCERTAE SEDIS.

Habit, Vegetative Morphology. Perennial, caespitose. Culms erect, 90 cm long, 5–19 -noded. Culm-nodes pubescent. Lateral branches lacking. Leaves distichous, without demarcation between sheath and blade. Leaf-sheaths as wide as blade at the collar, outer margin hairy. Ligule an eciliate membrane, 0.3–0.6 mm long. Leaf-blades lanceolate, conduplicate, 18–21 cm long, 6–8.5 mm wide. Leaf-blade surface glabrous. Leaf-blade margins ciliate, hairy at base. Leaf-blade apex acute.

Inflorescence. Inflorescence a panicle. Panicle open, ovate, 16–18 cm long, 10 cm wide. Primary panicle branches spreading, 1 -nate, 5–10 cm long. Panicle branches smooth or scaberulous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, 3–15 mm long, smooth or scaberulous.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets elliptic, dorsally compressed, acute, 1.8–2.4 mm long, falling entire.

Glumes. Glumes dissimilar, shorter than spikelet, thinner than fertile lemma. Lower glume ovate, 1.4–1.9 mm long, 0.8 length of spikelet, membranous, without keels, 3 -veined. Lower glume apex acute. Upper glume ovate, 1.5–2.1 mm long, 0.9 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, ovate, 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 puberulous. Lemma margins involute. Palea involute, indurate.

Flower and Fruit. Anthers 3, 1–1.1 mm long, purple.

Distribution (TDWG). Continent. South America.

Country /Province /State. Northern South America. Venezuela.

Trichanthecium wettsteinii (Hack.) Zuloaga & Morrone. *Syst. Bot. Monogr.* 94: 83 (2011).

Accepted by: 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 wettsteinii* Hack., *Denkschr. Akad. Wien, Math.Nat.* 79: 73 (1908). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *R.R. von Wettstein & V.F. Schiffner s.n.*, Jul 1901, Brazil: São Paulo: São Paulo Mun.: prope S. Bernardo, 800 m (W; IT: US-81286 (fragm ex W)). Also see Akad. Wiss. Wein. Math-Naturwiss Kl. Denkschr..

Illustrations (Books): S.A.Renvoize, *The Grasses of Bahia*, 1984 (171, Fig. 63, as *Panicum*), L.B. Smith, D.C. Wasshausen, R.M. Klein *Flora Illustrada Catarinensis Gramineas* (1981–1982) (720, Fig. 152, as *Panicum*).

Illustrations (Journals): *Syst. Bot. Monogr.* (94:84, fig.37 (2011)).

Derivation (Clifford & Bostock 2007): in honor of Richard Wettstein Westerheim (1863–1931) Austrian botanist.

Classification. Subfamily Panicoideae. Tribe: Paniceae. Subtribe INCERTAE SEDIS.

Habit, Vegetative Morphology. Perennial. Rhizomes elongated. Culms erect, 25–45 cm long. Ligule a ciliate membrane. Leaf-blades linear or lanceolate, 6–11 cm long, 3–6 mm wide. Leaf-blade surface glabrous. Leaf-blade apex pungent.

Inflorescence. Inflorescence a panicle. Panicle open, ovate, 3.5–7 cm long, evenly furnished. Primary panicle branches spreading, moderately divided. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets oblong, dorsally compressed, 2–3 mm long, falling entire.

Glumes. Glumes reaching apex of florets, thinner than fertile lemma. Lower glume ovate, 0.66 length of spikelet, membranous, without keels, 3 -veined. Lower glume apex acute. Upper glume ovate, 1 length of spikelet, membranous, without keels, 5 -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, 1 length of spikelet, membranous, 5 -veined, acute. Fertile lemma elliptic, dorsally compressed, 2.3 mm long, indurate, pallid, shiny, without keel. Lemma margins involute. Palea involute, indurate.

Flower and Fruit. Caryopsis with adherent pericarp.

N = 9 (1 ref TROPICOS).

Distribution (TDWG). Continent. South America.

Country /Province /State. Brazil. Brazil West Central, Brazil Northeast, Brazil Southeast, Brazil South.

TDWG4. Bahia, Minas Gerais, Rio de Janeiro, Espirito Santo, Sao Paulo Parana.

Trichanthecium yavitaense (Swallen) Zuloaga & Morrone. *Syst. Bot. Monogr.* 94: 85 (2011).

Accepted by: R.J.Soreng et al., *Catalogue of New World 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. **Basionym or Replaced Name:** *Panicum yavitaense* Swallen, *Phytologia*, 14: 72 (1966). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *J.J. Wurdack & L.S. Adderley 42910*, 10 Jun 1959, Venezuela: Amazonas: near Yavita, along Yavita-Pimichin trail (US-2307253).

Illustrations (Books): J.A.Steyermark et al, *Flora of the Venezuelan Guayana* Vol. 8 (2004) (198, Fig. 148).

Illustrations (Journals): *Syst. Bot. Monogr.* (94:85, fig.38 (2011)).

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

Classification. Subfamily Panicoideae. Tribe: Paniceae. Subtribe INCERTAE SEDIS.

Habit, Vegetative Morphology. Annual. Culms rambling, weak, 10–30 cm long. Culm-nodes bearded. Lateral branches ample. Leaf-sheaths mostly shorter than adjacent culm internode, pilose. Ligule a ciliate membrane. Leaf-blades lanceolate, 2.5–5 cm long, 2–6 mm wide, flaccid. Leaf-blade surface pilose.

Inflorescence. Inflorescence a panicle. Panicle open, ovate, 7 cm long. Primary panicle branches ascending or spreading. Panicle branches pilose. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, filiform.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets elliptic, dorsally compressed, acute, 1.2 mm long, falling entire.

Glumes. Glumes reaching apex of florets, thinner than fertile lemma. Lower glume lanceolate, 0.5 length of spikelet, membranous, without keels, 3 -veined. Lower glume apex acute. Upper glume ovate, 1 length of spikelet, membranous, without keels, 5 -veined. 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, acute. Fertile lemma elliptic, dorsally compressed, 0.9 mm long, indurate, pallid, shiny, without keel. Lemma margins involute. Palea involute, indurate.

Flower and Fruit. Caryopsis with adherent pericarp.

Distribution (TDWG). Continent. South America.

Country /Province /State. Northern South America. Venezuela.

Trichantheium Genus Zuloaga & Morrone. *Syst. Bot. Monogr.* 94: 13 (2011).

Tricholaena capensis (Licht. ex Roem. & Schult.) Nees. *Cat. Sem. Hort. Vratisl.* 1835 (1836).

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:** *Panicum capense* Licht. ex Roem. & Schult., *Syst. Veg.* 2: 457 (1817). T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: LT: *Lichtenstein 45*, South Africa: Jan Bloms Fontein (B; ILT). LT designated by Zizka, *Biblioth. Bot.* 138: 46, 48 (1988).

Illustrations (Books): L.K.A. Chippindall, *Grasses and Pastures of South Africa* (1955) (435, Fig. 361).

Derivation (Clifford & Bostock 2007): L. -ense, denoting origin. From the Cape of Good Hope, South Africa.

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

Habit, Vegetative Morphology. Perennial, caespitose. Culms decumbent, (20–)30–60 cm long. Culm-internodes distally pubescent. Culm-nodes pubescent. Leaf-sheaths glabrous on surface or pubescent. Ligule a fringe of hairs, 0.6–1.1 mm long. Leaf-blades flat, (1.8–)4–11 cm long, 2–4 mm wide, glaucous. Leaf-blade surface pubescent, hairy adaxially.

Inflorescence. Inflorescence a panicle. Panicle open, lanceolate, (4–)6–12 cm long. 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, 2–3 mm long, with hairs extending 0.1–0.5 mm beyond apex, falling entire, readily shedding fertile florets. Rhachilla internodes elongated between glumes.

Glumes. Glumes dissimilar, reaching apex of florets, thinner than fertile lemma. Lower glume oblate, 0.1–1.6(–2) mm long, 0.05–0.5 length of spikelet, hyaline, without keels, 0–1 -veined. Lower glume lateral veins absent. Lower glume surface glabrous or pilose. Lower glume apex truncate. Upper glume ovate, 1 length of spikelet, membranous, without keels, (3–)5 -veined. Upper glume surface glabrous or pilose. Upper glume apex emarginate or truncate, mucronate.

Florets. Basal sterile florets 1, male, with palea. Lemma of lower sterile floret similar to upper glume, ovate, 1 length of spikelet, membranous, 5(–7) -veined, glabrous or pilose, emarginate or truncate, mucronate. Fertile lemma elliptic, dorsally compressed, 1.5–2.5 mm long, cartilaginous, pallid, shiny, without keel, 3–5 -veined, 0–3 -veined or more than 3-veined. Lemma margins flat. Lemma apex acute. Palea cartilaginous, 2 -veined, without keels.

Flower and Fruit. Anthers 3. Stigmas terminally exerted.

N = 18 (1 ref TROPICOS).

Distribution (TDWG). Continent. Africa.

Country /Province /State. Southern Africa. Namibia.

Tricholaena monachne (Trin.) Stapf & C.E.Hubb. Prain, *Fl. Trop. Afr.* ix. 909 (1930).

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

TYPE from Reunion. **Basionym or Replaced Name:** *Panicum monachne* Trin., *Neue Entdeck. Pflanzenk* 2: 86 (1821). T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: HT: *Jacquin*, Reunion (LE).

Illustrations (Books): R.M.Polhill, F.T.E.A., *Gramineae* (3(1982):503, Fig.123), G.V.Pope et al., *Flora Zambesiaca* 10, L.K.A. Chippindall, *Grasses and Pastures of South Africa* (1955) (434, Fig. 360), M.A.N.Muller, *Grasses of South West Africa/Namibia* (1984), G.E.Gibbs Russell et al, *Grasses of Southern Africa* (1990) (342, Fig. 223), J.Bosser, *Graminees des Paturage et des Cultures a Madagascar* (1969) (29, Fig. 6 & 307, Fig. 113).

Illustrations (Journals): *Hooker's Icones Plantarum* (t.3098 (1922) as *Xylochlaena*).

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

Derivation (Clifford & Bostock 2007): Gk. monos, one; achne, scale. Spikelets with a single glume, due to the reduction or suppression of the lower.

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

Habit, Vegetative Morphology. Perennial, short-lived, caespitose. Culms erect or geniculately ascending, 30–120 cm long. Ligule a fringe of hairs. Leaf-blades flat or involute, 5–20 cm long, 1–6 mm wide, stiff or firm, glaucous.

Inflorescence. Inflorescence a panicle. Panicle open, ovate, 6–20 cm long. Primary panicle branches branching divaricately. Panicle branches capillary. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, filiform.

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, 1.5–2.5 mm long, falling entire, readily shedding fertile florets.

Glumes. Glumes dissimilar, reaching apex of florets, thinner than fertile lemma. Lower glume oblate, 0.1 mm long, 0.05 length of spikelet, hyaline, without keels, 0 -veined. Lower glume lateral veins absent. Lower glume apex truncate. Upper glume ovate, 1 length of spikelet, membranous, without keels, (3–)5 -veined. Upper glume apex emarginate or truncate or obtuse or 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, glabrous, eciliate on margins or ciliolate on margins, emarginate or truncate or obtuse. Fertile lemma elliptic, dorsally compressed, 1.5–2 mm long, cartilaginous, pallid, shiny, without keel, 3–5 -veined, 0–3 -veined or more than 3-veined. Lemma margins flat. Lemma apex acute. Palea cartilaginous, 2 -veined, without keels.

Flower and Fruit. Anthers 3. Stigmas terminally exerted.

$2n = 36$ (2 refs TROPICOS).

Distribution (TDWG). Continent. Europe (*), Africa.

Region. Northern Europe (*).

Country /Province /State. : GB Aliens (Ryves et al). **West tropical Africa, West-central tropical Africa, East tropical Africa, South tropical Africa, Southern Africa, Western Indian ocean.** Ghana. DRC. Kenya, Tanzania. Angola, Malawi, Mozambique, Zambia, Zimbabwe. Namibia, Botswana, Limpopo, North-West, Gauteng, Mpumalanga, Swaziland, Free State, Kwazulu-Natal, Northern Cape. Mauritius, Madagascar.

Tricholaena teneriffae (L. f.) Link. *Handb.* i. 91 (1829).

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), N.L.Bor, *Grasses of Burma, Ceylon, India and Pakistan* (1960), T.G.Tutin et al, *Flora Europaea* 5 (1980).

TYPE from Canary Islands. **Basionym or Replaced Name:** *Saccharum teneriffae* L. f., *Suppl. Pl.* 106 (1781 [1782]). T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: Canary Islands: Teneriffe, *Fr. Masson s.n.* (LT: LINN; ST: K, KUH, RAW).

Illustrations (Books): H.Jacques-Felix, *Les Graminees d'Afrique tropicale* (1962) (252, Fig. 182), N.Feinbrun-Dothan, *Flora Palaestina* 4 (1986) (Pl. 419), L.Boulos, *Flora of Egypt* 4 (2005) (306, Pl. 90), T.A.Cope, in M.Thulin, *Poaceae* (Gramineae). *Flora of Somalia* (1995) (237, Fig. 137), T.A.Cope, *Flora of Pakistan* 143: *Poaceae* (1982) (175, Fig. 18).

Derivation (Clifford & Bostock 2007): growing on Teneriffe, one of the Canary Islands.

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

Habit, Vegetative Morphology. Perennial, caespitose, clumped densely. Rootstock evident. Culms geniculately ascending, 10–90 cm long, wiry. Culm-internodes distally glabrous or pilose. Culm-nodes pubescent. Leaf-sheaths glabrous on surface or pilose. Ligule a fringe of hairs, 0.4–1 mm long. Leaf-blades flat or involute, 2–15 cm long, 1–5 mm wide. Leaf-blade surface glabrous or pubescent, hairy adaxially.

Inflorescence. Inflorescence a panicle. Panicle open, oblong, dense, 3–15 cm long. 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, 2.5–3.5 mm long, with hairs extending (0.9–)1.3–7 mm beyond apex, falling entire, readily shedding fertile florets. Rhachilla internodes elongated between glumes.

Glumes. Glumes dissimilar, reaching apex of florets, thinner than fertile lemma. Lower glume oblate, 0.1–0.75(–1) mm long, 0.05–0.3 length of spikelet, hyaline, without keels, 0–1 -veined. Lower glume lateral veins absent. Lower glume surface pilose. Lower glume apex truncate. Upper glume ovate, 1 length of spikelet,

membranous, without keels, (3–)5 -veined. Upper glume surface pilose, hairy generally or below, with tubercle-based hairs. Upper glume hairs white. Upper glume apex acute, mucronate.

Florets. Basal sterile florets 1, male, with palea. Lemma of lower sterile floret similar to upper glume, ovate, 1 length of spikelet, membranous, 5(–7) -veined, pilose, hairy all along or below, with tubercle-based hairs, bearing white hairs, acute, mucronate. Fertile lemma elliptic, dorsally compressed, 2–3 mm long, cartilaginous, pallid, shiny, without keel, 3–5 -veined, 0–3 -veined or more than 3-veined. Lemma margins flat. Lemma apex acute. Palea cartilaginous, 2 -veined, without keels.

Flower and Fruit. Anthers 3. Stigmas terminally exerted.

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

Region. Southeastern Europe.

Country /Province /State. : Italy, Sicily. **Northern Africa, Macaronesia, Northeast tropical Africa, East tropical Africa.** Algeria, Egypt, Morocco, Tunisia. Azores, Canary Is, Cape Verde, Madeira, Selvagens. Ethiopia (inc. Eritrea), Socotra, Somalia, Sudan. Kenya, Tanzania, Uganda. **Western Asia, Arabian Peninsula.** Iran. Gulf States, Oman. **Indian Subcontinent.** India, Pakistan.

TDWG4. Madhya Pradesh, Punjab.

Tricholaena vestita (Balf.f.) Stapf & C.E.Hubb. Prain, *Fl. Trop. Afr.* ix. 912 (1930).

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

TYPE from South Yemen. **Basionym or Replaced Name:** *Eriochloa vestita* Balf. f., *Proc. Bot. Soc. Edinburgh* 12: 97 (1882). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *Balfour, Cockburn & Scott 574*, South Yemen: Socotra: Galonsir (K).

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

Derivation (Clifford & Bostock 2007): *L. vestio*, clothe. Plant in some respect hairy.

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

Habit, Vegetative Morphology. Perennial. Butt sheaths woolly. Culms decumbent, 14–18 cm long, rooting from lower nodes. Culm-internodes distally woolly. Leaf-sheaths longer than adjacent culm internode, woolly (tomentose). Ligule a fringe of hairs, 0.4 mm long. Leaf-blades spreading or reflexed, involute, 1–3.5 cm long, 2 mm wide, stiff, glaucous. Leaf-blade surface pubescent, sparsely hairy (tomentose). Leaf-blade apex acute, callose.

Inflorescence. Inflorescence a panicle, embraced at base by subtending leaf. Panicle open, linear, 2.5 cm long. Primary panicle branches simple. Panicle branches pubescent. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, filiform, 1–2 mm long, 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, 2.2–2.6 mm long, with hairs extending 0 mm beyond apex, falling entire, readily shedding fertile florets.

Glumes. Glumes dissimilar, reaching apex of florets, thinner than fertile lemma. Lower glume oblate, 0.2 mm long, 0.1 length of spikelet, hyaline, without keels, 0 -veined. Lower glume lateral veins absent. Lower glume surface pilose. Lower glume apex truncate. Upper glume ovate, 1 length of spikelet, membranous, without keels, 5 -veined. Upper glume surface pilose. Upper glume margins ciliate. Upper glume apex truncate or obtuse, mucronate.

Florets. Basal sterile florets 1, male, with palea. Lemma of lower sterile floret similar to upper glume, ovate, 1 length of spikelet, membranous, 5(–7) -veined, pilose, ciliate on margins, truncate or obtuse, mucronate. Palea of lower sterile floret pubescent. Fertile lemma elliptic, dorsally compressed, 1.5 mm long, cartilaginous, pallid, shiny, without keel, 3–5 -veined, 0–3 -veined or more than 3-veined. Lemma margins flat. Lemma apex acute. Palea cartilaginous, 2 -veined, without keels.

Flower and Fruit. Anthers 3, 1 mm long. Stigmas terminally exerted.

Distribution (TDWG). Continent. Africa.

Country /Province /State. Northeast tropical Africa. Socotra.

Trichoneura ciliata (Peter) S.M Phillips. *Kew Bull.*, 29(2):270 (1974).

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:** *Leptochloa ciliata* Peter, *Repert. Spec. Nov. Regni Veg. Beih.* 40(1): 263 (1930 [1931]). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *Peter 52035*, Tanzania: Lake Victoria, Shisaki (B; IT: EA).

Illustrations (Books): R.M.Phill, F.T.E.A., *Gramineae* (2(1974):298, Fig. 82), S.Phillips, *Poaceae* (Gramineae) in I.Hedberg & S.Edwards, *Flora of Ethiopia and Eritrea* (1995) (106, Fig 44).

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

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose. Culms geniculately ascending or decumbent, 30–95 cm long. Ligule an eciliate membrane, 1.5–2 mm long, truncate. Leaf-blades 10–25 cm long, 2.5–4.5 mm wide. Leaf-blade surface scabrous, glabrous or pilose. Leaf-blade apex acuminate.

Inflorescence. Inflorescence composed of racemes. Racemes 8–25, borne along a central axis, spreading or ascending, unilateral, 2–8 cm long. Central inflorescence axis 8–20 cm long. Rhachis angular. Spikelet packing broadside to rhachis. Spikelets appressed, solitary. Fertile spikelets sessile.

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, 6.7–8.5 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes pilose, hairy at tip. Floret callus pilose.

Glumes. Glumes persistent, similar, reaching apex of florets or shorter than spikelet, gaping. Lower glume lanceolate or oblong, 5.3–7.2 mm long, 0.9–1 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 0.1–0.5 mm long. Upper glume elliptic or oblong, 5.5–8.2 mm long, 1.5–2 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 0.1–0.5 mm long.

Florets. Fertile lemma oblong, 3.8–4.4 mm long, membranous, mid-green or purple, keeled, 3 -veined, 0–3 -veined. Lemma surface pilose. Lemma margins ciliate, hairy below. Lemma apex dentate, 2 -fid, obtuse, awned, 1 -awned. Principal lemma awn from a sinus, 0.6–1.3 mm long overall. Palea 1 length of lemma, 2 -veined. Palea surface glabrous or pubescent, hairy on back, with simple hairs. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Anthers 3, 0.6–1.1 mm long. Caryopsis with adherent pericarp, ellipsoid or oblong, dorsally compressed, plano-convex or concavo-convex, 1.6–2.1 mm long.

Distribution (TDWG). Continent. Africa.

Country /Province /State. Northeast tropical Africa, East tropical Africa. Ethiopia (inc. Eritrea). Kenya, Tanzania.

Trichoneura elegans Swallen. *Am. Journ. Bot.* xix. 439. (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 Synonymy Database: HT: *W.A. Silveus* 343, 26 Sep 1931, USA: Texas (US-1501591; IT: US-1501592, US-1536745).

Illustrations (Books): M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 25 *Poaceae*, part 2 (2003), F.W.Gould, *The Grasses of Texas* (1975) (235, Fig. 123).

Derivation (Clifford & Bostock 2007): *L. elegant*. Inflorescence attractive.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Annual, caespitose. Culms geniculately ascending or decumbent, 30–110 cm long, rooting from lower nodes. Leaf-sheaths scaberulous. Ligule an eciliate membrane, 1.5–3 mm long, lacerate, truncate. Leaf-blades deciduous at the ligule, flat or involute, 6–30 cm long, 3–8 mm wide. Leaf-blade surface smooth or scaberulous, glabrous. Leaf-blade apex acuminate.

Inflorescence. Inflorescence composed of racemes. Racemes 5–20, borne along a central axis, unilateral, 1–6 cm long. Central inflorescence axis 5–20 cm long. Rhachis angular. Spikelet packing broadside to rhachis. Spikelets appressed, solitary. Fertile spikelets pedicelled. Pedicels present, oblong, 0.5 mm long.

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, 7–10 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus pubescent.

Glumes. Glumes persistent, similar, reaching apex of florets, gaping. Lower glume lanceolate, 7–10 mm long, 0.8–1 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume lateral veins absent. Lower glume surface asperulous. Lower glume apex attenuate. Upper glume lanceolate, 7–10 mm long, 1.75–2 length of adjacent fertile lemma, membranous, 1-keeled, 1 -veined. Upper glume lateral veins absent. Upper glume surface asperulous. Upper glume apex attenuate.

Florets. Fertile lemma oblong, 4–5 mm long, membranous, keeled, lightly keeled, 3 -veined, 0–3 -veined. Lemma margins ciliate, hairy in the middle. Lemma apex dentate, 2 -fid, mucronate. Palea 1 length of lemma, 2 -veined. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Anthers 3.

Distribution (TDWG). Continent. North America.

Country /Province /State. Southwestern USA, South-central USA, Mexico. Arizona. Texas. Northeast Mexico.
Coahuila.

Trichoneura eleusinoides (Rendle) Ekman. *Arkiv Bot Stockh.* xi. No. 9, 13 (1912).

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:** *Crossotropis eleusinoides* Rendle, *Cat. Afr. Pl.* 2(1): 226 (1899). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: IT: *F.M.J. Welwitsch* 7482, no date, Angola: Luanda (US-865657 (fragm. ex BM)).

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

Derivation (Clifford & Bostock 2007): Gk. -oides, resembling. Similar to *Eleusine* with respect to the inflorescence.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Annual, caespitose. Culms geniculately ascending or decumbent, 11–25 cm long. Leaf-sheaths pilose, with tubercle-based hairs. Ligule an eciliate membrane. Leaf-blades 2–4.5 cm long, 2–3 mm wide. Leaf-blade surface pilose, with tubercle-based hairs. Leaf-blade apex acuminate.

Inflorescence. Inflorescence composed of racemes. Racemes borne along a central axis, unilateral, 2–3 cm long. Central inflorescence axis 5–9 cm long. Rhachis angular. Spikelet packing broadside to rhachis. Spikelets appressed, solitary. Fertile spikelets pedicelled. Pedicels present, oblong, 0.5 mm long.

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

Glumes. Glumes persistent, similar, reaching apex of florets, gaping. Lower glume lanceolate, 4–5 mm long, 0.8–1 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume primary vein scaberulous. Lower glume lateral veins absent. Lower glume apex attenuate. Upper glume lanceolate, 4–5 mm long, 1.6–2 length of adjacent fertile lemma, membranous, 1-keeled, 1 -veined. Upper glume primary vein scaberulous. Upper glume lateral veins absent. Upper glume apex attenuate.

Florets. Fertile lemma oblong, 2–3 mm long, membranous, keeled, lightly keeled, 3 -veined, 0–3 -veined. Lemma margins ciliate. Lemma apex dentate, 2 -fid, awned, 1 -awned. Principal lemma awn from a sinus, 0.5–1 mm long overall. Palea 1 length of lemma, 2 -veined. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Anthers 3.

Distribution (TDWG). Continent. Africa.

Country /Province /State. South tropical Africa, Southern Africa. Angola. Namibia, Limpopo.

Trichoneura grandiglumis (Nees) Ekman. *Arkiv Bot Stockh.* xi. No. 9, 15 (1912).

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:** *Leptochloa grandiglumis* Nees, *Fl. Afr. Austral. Ill.* 252 (1841). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: T: *J.F.Drège*, 1842, South Africa (IT: US-91033 (fragm.)).

Illustrations (Books): H.Jacques-Felix, *Les Graminees d'Afrique tropicale* (1962), G.V.Pope et al., *Flora Zambesiaca* 10 (2(1999):44, t. 20), L.K.A. Chippindall, *Grasses and Pastures of South Africa* (1955) (Pl. 3), G.E.Gibbs Russell et al, *Grasses of Southern Africa* (1990) (343, Fig. 224).

Illustrations (Journals): *Hooker's Icones Plantarum* (t.2609 (1899) as *Crossotropis*).

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

Derivation (Clifford & Bostock 2007): L. grandis, large; gluma, husk. Glumes and/or lemmas large.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose. Culms erect or geniculately ascending, 20–85 cm long. Ligule an eciliate membrane, 1.5–2.5 mm long, truncate. Leaf-blades 3–11 cm long, 3–5.5 mm wide. Leaf-blade surface scabrous, glabrous or pilose. Leaf-blade apex acuminate.

Inflorescence. Inflorescence composed of racemes, deciduous as a whole. Peduncle fracturing. Racemes 8–30, borne along a central axis, spreading, unilateral, 3–19 cm long. Central inflorescence axis 7–32 cm long.

Rhachis angular. Spikelet packing broadside to rhachis, distant. Spikelets appressed, solitary. Fertile spikelets sessile.

Fertile Spikelets. Spikelets comprising 4–9 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets cuneate, laterally compressed, 5.3–14 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes pilose, hairy at tip. Floret callus pubescent.

Glumes. Glumes persistent, similar, exceeding apex of florets or reaching apex of florets, gaping. Lower glume linear or lanceolate, 5.3–13.5 mm long, 1–1.2 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume lateral veins absent. Lower glume surface scabrous. Lower glume apex attenuate, awned, 1 -awned, awn 1–2 mm long. Upper glume lanceolate, 5–11 mm long, 1.7–2.3 length of adjacent fertile lemma, membranous, 1-keeled, 1 -veined. Upper glume lateral veins absent. Upper glume surface scabrous. Upper glume apex attenuate, awned, 1 -awned, awn 1–2 mm long.

Florets. Fertile lemma elliptic or oblong, 3–5 mm long, membranous, purple, without keel or keeled, lightly keeled, 3 -veined, 0–3 -veined. Lemma surface pilose. Lemma margins ciliate. Lemma apex dentate, 2 -fid, obtuse, awned, 1 -awned. Principal lemma awn from a sinus, 0.5–1.25 mm long overall. Palea 1 length of lemma, 2 -veined. Palea surface pubescent, hairy on back, with turgid hairs. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Anthers 3, 0.5–0.7 mm long. Caryopsis with adherent pericarp, ellipsoid or oblong, dorsally compressed, plano-convex or concavo-convex, 1.8–2 mm long.

Distribution (TDWG). Continent. Africa.

Country /Province /State. Northeast tropical Africa, East tropical Africa, South tropical Africa, Southern Africa. Ethiopia (inc. Eritrea). Tanzania. Angola, Mozambique, Zambia, Zimbabwe. Namibia, Botswana, Limpopo, North-West, Gauteng, Mpumalanga, Swaziland, Free State, Kwazulu-Natal, Lesotho, Northern Cape, Eastern Cape.

Trichoneura lindleyana (Kunth) Ekman. *Arkiv Bot Stockh.* xi. No. 9, 9 (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 Ecuador. **Basionym or Replaced Name:** *Leptochloa lindleyana* Kunth, *Enum. Pl.* 1: 525 (1833). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *Macrae s.n.*, Ecuador: Galapagos Islands: Albemarle Island (B; IT: CGE, K). T: *J.Macrae*, 1825, Galapagos Islands (IT:US-91035 (fragm.)).

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

Derivation (Clifford & Bostock 2007): L. -ana, indicating connection. In honor of John Lindley (1799–1865) English botanist.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Annual, caespitose. Culms geniculately ascending or decumbent, 3–60 cm long. Ligule an eciliate membrane, 1.3 mm long, truncate. Leaf-blades 1–10 cm long, 1–2 mm wide. Leaf-blade surface glabrous. Leaf-blade apex attenuate.

Inflorescence. Inflorescence composed of racemes. Racemes borne along a central axis, unilateral, 1–2.5 cm long. Central inflorescence axis 1–9 cm long. Rhachis deciduous from axis, angular. Spikelet packing broadside to rhachis. Spikelets appressed, solitary. Fertile spikelets pedicelled. Pedicels present, oblong, 0.5 mm long.

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, 5–6 mm long, falling entire, deciduous with accessory branch structures, readily shedding fertile florets. Floret callus pubescent.

Glumes. Glumes similar, shorter than spikelet, gaping. Lower glume lanceolate, 3.5–4 mm long, 0.8–1 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume lateral veins absent. Lower glume apex acuminate. Upper glume lanceolate, 4–5 mm long, 1.25–1.75 length of adjacent fertile lemma, membranous, 1-keeled, 1 -veined. Upper glume lateral veins absent. Upper glume apex acuminate.

Florets. Fertile lemma oblong, 2–4 mm long, membranous, keeled, lightly keeled, 3 -veined, 0–3 -veined. Lemma surface puberulous. Lemma margins ciliate. Lemma apex dentate, 2 -fid, awned, 1 -awned. Principal lemma awn from a sinus, 0.5–1 mm long overall. Palea 1 length of lemma, 2 -veined. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Anthers 3, oblong.

Distribution (TDWG). Continent. South America.

Country /Province /State. Western South America. Ecuador, Galapagos.

Trichoneura mollis (Kunth) Ekman. *Arkiv Bot Stockh.* xi. No. 9, 10 (1912).

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

TYPE from Senegal. **Basionym or Replaced Name:** *Leptochloa mollis* Kunth, *Revis. Gramin.* 2: 443, t. 135 (1831). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *Leprieur 17*, Senegal (P).

Recent Synonyms: *Triodia mollis* (Kunth) Th. Dur. & Schinz, *Consp. Fl. Afr.* 5: 877 (1895).

Illustrations (Books): H.Jacques-Felix, *Les Graminees d'Afrique tropicale* (1962) (202, Fig. 126), S.Phillips, *Poaceae* (Gramineae) in I.Hedberg & S.Edwards, *Flora of Ethiopia and Eritrea* (1995) (106, Fig. 44), L.Boulos, *Flora of Egypt* 4 (2005) (249, Pl. 73), T.A.Cope, in M.Thulin, *Poaceae* (Gramineae). *Flora of Somalia* (1995) (175, Fig. 90).

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

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Annual, caespitose. Culms geniculately ascending or decumbent, 12–50 cm long. Ligule an eciliate membrane, 1–2 mm long, truncate. Leaf-blades 3–11 cm long, 3–5.5 mm wide. Leaf-blade surface scabrous, glabrous or pilose. Leaf-blade apex acuminate.

Inflorescence. Inflorescence composed of racemes. Racemes 10–40, borne along a central axis, spreading or ascending, unilateral, 1.5–5 cm long. Central inflorescence axis 4–20 cm long. Rhachis angular. Spikelet packing broadside to rhachis, 0.5 their length apart. Spikelets appressed, solitary. Fertile spikelets sessile.

Fertile Spikelets. Spikelets comprising 5–9 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets cuneate, laterally compressed, 6.2–8 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes pilose, hairy at tip. Floret callus pubescent.

Glumes. Glumes persistent, similar, shorter than spikelet, gaping. Lower glume linear, 4.6–7 mm long, 0.8–1 length of upper glume, membranous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume surface scabrous. Lower glume apex attenuate, awned, 1 -awned, awn 1–2 mm long. Upper glume linear, 5.5–7.2 mm long, 2–2.2 length of adjacent fertile lemma, membranous, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume surface scabrous. Upper glume apex attenuate, awned, 1 -awned, awn 1–2 mm long.

Florets. Fertile lemma oblong, 2.5–3.5 mm long, membranous, mid-green or red, without keel or keeled, lightly keeled, 3 -veined, 0–3 -veined. Lemma surface pilose. Lemma margins ciliate, hairy below. Lemma apex dentate, 2 -fid, obtuse, awned, 1 -awned. Principal lemma awn from a sinus, 0.6–2 mm long overall. Palea 1 length of lemma, 2 -veined. Palea surface glabrous or pubescent, hairy on back, with turgid hairs. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Anthers 3, 0.3–0.5 mm long. Caryopsis with adherent pericarp, linear or lanceolate, dorsally compressed, plano-convex or concavo-convex, 1.6–2.1 mm long.

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

Country /Province /State. Northern Africa, West tropical Africa, Northeast tropical Africa, East tropical Africa. Egypt. Mauritania, Nigeria, Senegal, Niger. Chad, Eritrea, Socotra, Somalia, Sudan. Kenya. **Arabian Peninsula.** Oman, Saudi Arabia.

Trichoneura schlechteri Ekman. *Arkiv Bot Stockh.* xi. No. 9, 13 (1912).

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

TYPE from Mozambique. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: IT: *Schlechter 11981*, 4 Jan 1898, Austro-Africana: Delagoa Bay (MO).

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

Derivation (Clifford & Bostock 2007): in honor of Friedrich Richard Rudolf Schlechter (1872–1925) German-born botanist and traveller.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Annual, caespitose. Basal innovations extravaginal. Culms erect, 40–60 cm long, 4–6 -noded. Ligule an eciliate membrane. Leaf-blades convolute, 10 cm long, 4–5 mm wide, stiff. Leaf-blade surface glabrous. Leaf-blade apex acute.

Inflorescence. Inflorescence composed of racemes. Racemes 8–12, borne along a central axis, appressed, unilateral, 2–5 cm long, bearing 8–9 fertile spikelets on each. Central inflorescence axis 15 cm long, pubescent. Rhachis angular, pubescent on surface. Spikelet packing broadside to rhachis. Spikelets appressed, solitary. Fertile spikelets pedicelled. Pedicels present, oblong, 0.5 mm long.

Fertile Spikelets. Spikelets comprising 4–6 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets cuneate, laterally compressed, 6–8 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus pubescent.

Glumes. Glumes persistent, similar, shorter than spikelet, gaping. Lower glume lanceolate, 5.5 mm long, 0.8–1 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume lateral veins absent. Lower glume surface asperulous. Lower glume apex attenuate. Upper glume lanceolate, 6 mm long, 1.5–2 length of adjacent fertile lemma, membranous, 1-keeled, 1 -veined. Upper glume lateral veins absent. Upper glume surface asperulous. Upper glume apex attenuate.

Florets. Fertile lemma oblong, 3–4 mm long, membranous, keeled, lightly keeled, 3 -veined, 0–3 -veined. Lemma midvein scaberulous. Lemma margins ciliate. Lemma apex dentate, 2 -fid, awned, 1 -awned. Principal lemma awn from a sinus, 0.5–1 mm long overall. Palea 1 length of lemma, 2 -veined. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Anthers 3, linear, 0.8 mm long.

Distribution (TDWG). Continent. Africa.

Country /Province /State. South tropical Africa. Mozambique.

Trichoneura weberbaueri Pilger. *Engl. Jahrb. l. Beibl.* 111, 1 (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 Peru. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Peru, Lima to Oroya: Weberbauer 5345.

Illustrations (Journals): *Ruizia* (13:275, Fig 32i-k (1993)).

Derivation (Clifford & Bostock 2007): in honor of August Weberbauer (1871–1948) German botanist resident in Peru.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Annual. Culms 5–20 cm long. Ligule an eciliate membrane. Leaf-blades flat or involute, 1.5–3 cm long, 1–1.5 mm wide.

Inflorescence. Inflorescence composed of racemes. Racemes borne along a central axis, unilateral, 1.5–2 cm long. Central inflorescence axis 1–2 cm long. Rhachis deciduous from axis, angular. Spikelet packing broadside to rhachis. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 4–6 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets cuneate, laterally compressed, 4.5–6 mm long, falling entire, deciduous with accessory branch structures, readily shedding fertile florets.

Glumes. Glumes similar, shorter than spikelet, gaping. Lower glume lanceolate, 3–3.5 mm long, 0.75 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume lateral veins absent. Lower glume apex setaceously acuminate. Upper glume lanceolate, 4–5 mm long, 1.3–1.6 length of adjacent fertile lemma, membranous, 1-keeled, 1 -veined. Upper glume lateral veins absent. Upper glume apex setaceously acuminate.

Florets. Fertile lemma oblong, 3–3.2 mm long, membranous, keeled, lightly keeled, 3 -veined, 0–3 -veined. Lemma margins ciliate. Lemma hairs 1–1.7 mm long. Lemma apex dentate, 2 -fid, awned, 1 -awned. Principal lemma awn from a sinus, 1–1.5 mm long overall. Palea 1 length of lemma, 2 -veined. Apical sterile florets resembling fertile though underdeveloped.

Distribution (TDWG). Continent. South America.

Country /Province /State. Western South America, Southern South America. Peru. Chile North. Tarapaca.

Trichopteryx dregeana Nees. *Fl. Afr. Austr.* 339. (1836).

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

TYPE from South Africa. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: South Africa, Omtendo to Omsaculo: Drege (K iso).

Illustrations (Books): L.K.A. Chippindall, *Grasses and Pastures of South Africa* (1955) (286, Fig. 257), G.E.Gibbs Russell et al, *Grasses of Southern Africa* (1990) (344, Fig. 225), J.Bosser, *Graminees des Paturage et des Cultures a Madagascar* (1969) (67, Fig. 14).

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

Derivation (Clifford & Bostock 2007): L. -ana, indicating connection. In honor of Johann Franz Drhge (1794–1881) German horticulturalist and plant collector in South Africa.

Classification. Subfamily Panicoideae. Tribe: Tristachyideae.

Habit, Vegetative Morphology. Perennial. Culms prostrate, 30–100 cm long, wiry. Leaf-sheaths longer than adjacent culm internode. Ligule a fringe of hairs. Leaf-blades reflexed, linear, 1–3 cm long, 1–3 mm wide.

Inflorescence. Inflorescence a panicle. Panicle open, obovate, 3–15 cm long. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, ciliate (hairs 0.5–2mm).

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, 4–5 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus pilose, obtuse.

Glumes. Glumes persistent, similar, reaching apex of florets. Lower glume lanceolate, 3 mm long, 0.6–0.75 length of upper glume, chartaceous, dark brown, without keels, 3 -veined. Lower glume surface glabrous or pubescent, hairy above (tip). Lower glume apex acuminate. Upper glume ovate, 4–5 mm long, 1 length of spikelet, chartaceous, dark brown, without keels, 3 -veined. Upper glume surface glabrous or pubescent, hairy above (tip). Upper glume apex acute.

Florets. Basal sterile florets 1, barren, with palea, separately deciduous. Lemma of lower sterile floret similar to upper glume, lanceolate to ovate, 4–5 mm long, 1 length of spikelet, chartaceous, 3 -veined, acute. Fertile lemma oblong, 1.5–2 mm long, chartaceous, without keel, 5 -veined, more than 3-veined. Lemma surface glabrous, with a transverse row of hair tufts, bearing 2 hair tufts in all. Lemma margins involute, interlocking with palea keels. Lemma hairs 2–3 mm long. Lemma apex lobed, 2 -fid, awned, 3 -awned. Principal lemma awn from a sinus, geniculate, 4–6 mm long overall, with twisted column. Lateral lemma awns present, arising on apex of lobes, 1.5–4 mm long, shorter than principal. Palea 2 -veined. Palea keels approximate.

Flower and Fruit. Anthers 2. Caryopsis with adherent pericarp.

Distribution (TDWG). Continent. Africa.

Country /Province /State. West-central tropical Africa, South tropical Africa, Southern Africa, Western Indian ocean. Rwanda, DRC. Angola, Malawi, Zambia, Zimbabwe. Namibia, Limpopo, Mpumalanga, Swaziland, Kwazulu-Natal, Eastern Cape. Madagascar.

Trichopteryx elegantula (Hook.f.) Stapf. Hook, *Icon. pl.* xxiv. t. 2394. (1895).

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

TYPE from Cameroun. **Basionym or Replaced Name:** *Arundinella elegantula* Hook. f., *J. Proc. Linn. Soc., Bot.* 7: 233 (1864)

. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *G. Mann 2092*, Cameroon (K).

Illustrations (Journals): *Hooker's Icones Plantarum* (t.2394 (1895)).

Derivation (Clifford & Bostock 2007): *L. elegans*, elegant; -ulus, diminutive. Of attractive appearance.

Classification. Subfamily Panicoideae. Tribe: Tristachyidae.

Habit, Vegetative Morphology. Annual. Culms erect or geniculately ascending, 4–25 cm long. Leaf-sheaths mostly shorter than adjacent culm internode. Ligule a fringe of hairs. Leaf-blades lanceolate to ovate, 0.5–2.5 cm long, 1–6 mm wide.

Inflorescence. Inflorescence a panicle. Panicle open, obovate, loose or effuse, 0.5–7 cm long. 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 lanceolate, laterally compressed, 2.5–3.5 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus pilose, obtuse.

Glumes. Glumes persistent, similar, reaching apex of florets. Lower glume ovate, 0.5 length of upper glume, chartaceous, dark brown, without keels, 3 -veined. Lower glume surface glabrous or pubescent or setose, with tubercle-based hairs. Lower glume apex acute. Upper glume ovate, 2.5–3.5 mm long, 1 length of spikelet, chartaceous, dark brown, without keels, 3 -veined. Upper glume surface glabrous or pubescent or setose, with tubercle-based hairs. Upper glume apex acute.

Florets. Basal sterile florets 1, barren, with palea, separately deciduous. Lemma of lower sterile floret similar to upper glume, lanceolate to ovate, 2.5–3.5 mm long, 1 length of spikelet, chartaceous, 3 -veined, acute. Fertile lemma oblong, 1.5–2 mm long, chartaceous, without keel, 5 -veined, more than 3-veined. Lemma surface pubescent, with a transverse row of hair tufts, bearing 2 hair tufts in all. Lemma margins involute, interlocking with palea keels. Lemma apex lobed, 2 -fid, awned, 3 -awned. Principal lemma awn from a sinus, geniculate, 8–15 mm long overall, with twisted column. Lateral lemma awns present, arising on apex of lobes, 3–4 mm long, shorter than principal. Palea 2 -veined. Palea keels approximate.

Flower and Fruit. Anthers 2. Caryopsis with adherent pericarp.

Distribution (TDWG). Continent. Africa.

Country /Province /State. West tropical Africa, West-central tropical Africa, East tropical Africa, South tropical Africa. Nigeria, Sierra Leone. Cameroon, Rwanda, DRC. Tanzania, Uganda. Malawi, Zambia.

Trichopteryx fruticulosa Chiov. *Ann. Bot., Roma*, xiii. 50 (1914). (1914).

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

TYPE from DRC. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: Zaire, Bianco Plateau: Bovone 96 (TO holo).

Illustrations (Books): H.Jacques-Felix, *Les Graminees d'Afrique tropicale* (1962) (161, Fig. 86).

Derivation (Clifford & Bostock 2007): *L. frutex*, shrub; -ulus, diminutive; -osa, abundance. Culms rigidly erect and somewhat woody.

Classification. Subfamily Panicoideae. Tribe: Tristachyideae.

Habit, Vegetative Morphology. Perennial. Rhizomes short. Culms erect or geniculately ascending, 30–80 cm long, firm or woody. Leaf-sheaths mostly shorter than adjacent culm internode. Ligule a fringe of hairs. Leaf-blades reflexed, linear or lanceolate, 3–8 cm long, 3–10 mm wide.

Inflorescence. Inflorescence a panicle. Panicle open, lanceolate, 6–30 cm long. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, ciliate (hairs 1–2mm).

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, 3–6 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus pilose, obtuse.

Glumes. Glumes persistent, similar, reaching apex of florets. Lower glume ovate, 2–3 mm long, 0.5–0.66 length of upper glume, chartaceous, dark brown, without keels, 3 -veined. Lower glume surface glabrous or setose, with tubercle-based hairs. Lower glume apex acute. Upper glume ovate, 3–6 mm long, 1 length of spikelet, chartaceous, dark brown, without keels, 3 -veined. Upper glume surface glabrous or setose, with tubercle-based hairs. Upper glume apex acute.

Florets. Basal sterile florets 1, male, with palea, separately deciduous. Lemma of lower sterile floret similar to upper glume, lanceolate to ovate, 3–6 mm long, 1 length of spikelet, chartaceous, 3 -veined, acute. Fertile lemma oblong, 2–3 mm long, chartaceous, without keel, 5 -veined, more than 3-veined. Lemma surface glabrous or pilose, with a transverse row of hair tufts, bearing 2 hair tufts in all. Lemma margins involute, interlocking with palea keels. Lemma hairs 1–2 mm long. Lemma apex lobed, 2 -fid, awned, 3 -awned. Principal lemma awn from a sinus, geniculate, 8–11 mm long overall, with twisted column. Lateral lemma awns present, arising on apex of lobes, 1.5–3 mm long, shorter than principal. Palea 2 -veined. Palea keels approximate.

Flower and Fruit. Anthers 2. Caryopsis with adherent pericarp.

Distribution (TDWG). Continent. Africa.

Country /Province /State. West-central tropical Africa, East tropical Africa, South tropical Africa. Congo, Rwanda, DRC. Tanzania. Angola, Malawi, Zambia.

Trichopteryx marungensis Chiov. *Nuov. Giorn. Bot. Ital.* 1919, n. s. xxvi. 67. (1919).

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

TYPE from DRC. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: HT: *Bovone 62*, Zaire (TO).

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

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

Classification. Subfamily Panicoideae. Tribe: Tristachyideae.

Habit, Vegetative Morphology. Perennial. Culms decumbent or prostrate, 20–60 cm long, wiry. Leaf-sheaths longer than adjacent culm internode. Ligule a fringe of hairs. Leaf-blades reflexed, lanceolate, 1–4 cm long, 2–6 mm wide.

Inflorescence. Inflorescence a panicle. Panicle open, lanceolate or ovate, 5–10 cm long. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, pubescent (hairs 0.5–1mm).

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, 3.5–5 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus pilose, obtuse.

Glumes. Glumes persistent, similar, reaching apex of florets. Lower glume ovate, 2.5–3 mm long, 0.6–0.7 length of upper glume, chartaceous, dark brown, without keels, 3 -veined. Lower glume surface pubescent or setose, with tubercle-based hairs. Lower glume apex acute. Upper glume ovate, 3.5–5 mm long, 1 length of

spikelet, chartaceous, dark brown, without keels, 3 -veined. Upper glume surface pubescent or setose, with tubercle-based hairs. Upper glume apex acute.

Florets. Basal sterile florets 1, barren, with palea, separately deciduous. Lemma of lower sterile floret similar to upper glume, lanceolate to ovate, 3.5–5 mm long, 1 length of spikelet, chartaceous, 3 -veined, acute. Fertile lemma oblong, 2–2.5 mm long, chartaceous, without keel, 5 -veined, more than 3-veined. Lemma surface pubescent, with a transverse row of hair tufts, bearing 2 hair tufts in all. Lemma margins involute, interlocking with palea keels. Lemma hairs 0.4–1 mm long. Lemma apex lobed, 2 -fid, awned, 3 -awned. Principal lemma awn from a sinus, geniculate, 6–12 mm long overall, with twisted column. Lateral lemma awns present, arising on apex of lobes, 1.5–3.5 mm long, shorter than principal. Palea 2 -veined. Palea keels approximate.

Flower and Fruit. Anthers 2. Caryopsis with adherent pericarp.

Distribution (TDWG). Continent. Africa.

Country /Province /State. West tropical Africa, West-central tropical Africa, East tropical Africa, South tropical Africa. Nigeria. Cameroon, Rwanda, DRC. Tanzania, Uganda. Angola, Malawi, Zambia, Zimbabwe.

Trichopteryx stolziana Henrard. *Repert. Sp. Nov. Fedde* 18:242 (1922).

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

TYPE from Mozambique. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: A. Stolz 1269, 15 May 1912, Mozambique: Niassa, Kyimbila, 1600 m (L-918.143–49; IT: US-1126200, WAG).

Illustrations (Books): R.M.Polhill, F.T.E.A., *Gramineae* (2(1974):412, Fig. 412), G.V.Pope et al., *Flora Zambesiaca* 10 (3(1989):215, t. 59).

Derivation (Clifford & Bostock 2007): L. -ana, indicating connection. In honor of Adolph Ferdinand Stolz (1871–1917) German missionary in East Africa.

Classification. Subfamily Panicoideae. Tribe: Tristachyidae.

Habit, Vegetative Morphology. Annual. Culms erect or geniculately ascending, 2–30 cm long, wiry. Leaf-sheaths mostly shorter than adjacent culm internode. Ligule a fringe of hairs. Leaf-blades lanceolate to ovate, 0.5–1.5 cm long, 1–3 mm wide. Leaf-blade margins cartilaginous, crenate.

Inflorescence. Inflorescence a panicle. Panicle open, obovate, dense, 0.5–3 cm long. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, 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 lanceolate, laterally compressed, 3.5–6 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus 0.1 mm long, pilose, truncate.

Glumes. Glumes persistent, similar, subequal in width, reaching apex of florets. Lower glume ovate, 0.5 length of upper glume, chartaceous, dark brown, without keels, 3 -veined. Lower glume surface glabrous or puberulous or setose, with tubercle-based hairs. Lower glume apex acute. Upper glume ovate, 3.5–5.5 mm long, chartaceous, dark brown, without keels, 3 -veined. Upper glume surface glabrous or puberulous or setose, with tubercle-based hairs. Upper glume apex acute.

Florets. Basal sterile florets 1, barren, with palea, separately deciduous. Lemma of lower sterile floret similar to upper glume, lanceolate to ovate, 3.5–6 mm long, chartaceous, 3 -veined, acute. Fertile lemma oblong, 2 mm long, chartaceous, without keel, 5 -veined, more than 3-veined. Lemma surface pubescent, with a transverse row of hair tufts, bearing 2 hair tufts in all. Lemma margins involute, interlocking with palea keels. Lemma apex lobed, 2 -fid, awned, 3 -awned. Principal lemma awn from a sinus, geniculate, 7–15 mm long overall, with twisted column. Column of lemma awn 3–5 mm long. Lateral lemma awns present, arising on apex of lobes, 3–6 mm long, shorter than principal. Palea 2 -veined. Palea keels approximate.

Flower and Fruit. Anthers 2, oblong, 0.5 mm long. Caryopsis with adherent pericarp, fusiform, glabrous. Hilum linear.

Distribution (TDWG). Continent. Africa.

Country /Province /State. West-central tropical Africa, East tropical Africa, South tropical Africa. Burundi, Rwanda, DRC. Tanzania. Angola, Malawi, Mozambique, Zambia, Zimbabwe.

Tridens albescens (Vasey) Woot. & Standl. *Bull. N. Mex. Coll. Agric.* 81:129 (1912).

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:** *Triodia albescens* Vasey, *U.S.D.A. Div. Bot. Bull.* 12(2): t. 33 (1891). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: IT: E. Hall 782; 1872; USA: Texas (US-908505).

Illustrations (Books): M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 25 *Poaceae*, part 2 (2003) (35), F.W.Gould, *The Grasses of Texas* (1975) (210, Fig. 107).

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

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose. Rhizomes short, knotty. Culms erect, 30–90 cm long. Ligule a fringe of hairs, 0.2–0.5 mm long. Leaf-blades 1–4 mm wide. Leaf-blade apex attenuate.

Inflorescence. Inflorescence a panicle. Panicle contracted, lanceolate, 8–25 cm long, 0.6–1.5 cm wide. Primary panicle branches appressed, 2–6 cm long. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 4–10 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets ovate, laterally compressed, 4–10 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 lanceolate, 3–4 mm long, 1 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume lateral veins absent. Lower glume apex acute or acuminate, mucronate. Upper glume lanceolate, 3–4 mm long, 1 length of adjacent fertile lemma, membranous, 1-keeled, 1 -veined. Upper glume apex acute or acuminate.

Florets. Fertile lemma elliptic, 3–4 mm long, chartaceous, without keel, 3 -veined, 0–3 -veined. Lemma midvein eciliate. Lemma lateral veins close to margins, excurrent. Lemma margins eciliate. Lemma apex dentate, 2 -fid, mucronate. Palea bowed outwards, 0.9 length of lemma. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Caryopsis with adherent pericarp.

Distribution (TDWG). Continent. North America.

Country /Province /State. North-central USA, South-central USA, Southwestern USA, Southeastern USA, Mexico. Oklahoma. Arizona. New Mexico, Texas. Northeast Mexico.

Coahuila, Chihuahua, Nuevo Leon, Tamaulipas.

Tridens ambiguus (Ell.) Schult. *Mant.* 2: 333 (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:** *Poa ambigua* Elliott, *Sketch Bot. S. Carolina* 1(2): 165 (1816). T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: ST: *Dr. Macbride s.n.*, Autumn, USA: In mont. Carolinae (CHAS; IST: US-556771 (fragm. ex herb. Elliott, CHARL), US (photo ex CHARL)). ST: *Baldwin s.n.*, USA: Georgia (CHARL).

Recent Synonyms: *Poa ambigua* Ell., *Sketch*, i. 165 (1816).

Illustrations (Books): M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 25 *Poaceae*, part 2 (2003) (38).

Derivation (Clifford & Bostock 2007): *L. uncertain*. Species that may be readily confused with others or do not necessarily belong in the genus in which they have been placed or are intermediate in characters between other genera.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose. Culms erect, 60–125 cm long. Leaf-sheaths without keel or keeled. Ligule a fringe of hairs, 0.5–1 mm long. Leaf-blades 2–5 mm wide.

Inflorescence. Inflorescence a panicle or composed of racemes. Panicle open, lanceolate, 8–20 cm long. Primary panicle branches ascending or spreading, simple, 5–10 cm long. Panicle branches stiff. Racemes borne along a central axis, 5–10 cm long. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, 0.5–1 mm long.

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, 4–6 mm long, 4 mm wide, 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 lanceolate, 2.7–4.2 mm long, 0.9 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume lateral veins absent. Lower glume apex acute, mucronate. Upper glume lanceolate, 3–4 mm long, 1 length of adjacent fertile lemma, membranous, 1-keeled, 1 -veined. Upper glume lateral veins absent. Upper glume apex acute.

Florets. Fertile lemma elliptic, 3–4 mm long, chartaceous, without keel, 3 -veined, 0–3 -veined. Lemma midvein ciliate, hairy below. Lemma lateral veins close to margins, excurrent or extending close to apex. Lemma margins ciliate, hairy below. Lemma apex dentate, 2 -fid, mucronate. Palea bowed outwards, 1 length of lemma. Palea keels ciliolate. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Caryopsis with adherent pericarp.

Distribution (TDWG). Continent. North America.

Country /Province /State. South-central USA, Southeastern USA. Texas. Alabama, Florida, Louisiana, Mississippi, North Carolina, South Carolina.
Minas Gerais, Rio de Janeiro, Espirito Santo.

Tridens brasiliensis (Steud.) Parodi. *Rev. Arg. Agron.* 4:245 (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. **Basionym or Replaced Name:** *Uralepis brasiliensis* Nees ex Steud., *Syn. Pl. Glumac.* 1: 248 (1854). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Brazil: Coll?.

Illustrations (Books): E.G.Nicora, *Los Generos de Gramineas de America Austral* (1987) (386, Fig. 135), A.Burkat, *Flora Ilustrada de Entre Rios (Argentina)*, Pt II, Gramineas (1969) (167, Fig 58), A.L.Cabrera, *Flora de la Provincia de Buenos Aires, IV Pt 2 Gramineas* (1970) (326, Fig. 83), B.Rosengurt, *Gramineas Uruguayas* (1970) (266, Fig. 109).

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

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose. Culms erect, 80–150 cm long, 3 -noded. Leaf-sheaths glabrous on surface. Ligule a fringe of hairs. Leaf-blades 15–30 cm long, 4–6 mm wide. Leaf-blade apex acuminate.

Inflorescence. Inflorescence a panicle. Panicle contracted, linear, interrupted, 12–25 cm long, 1.5–2 cm wide. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 8–10 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets oblong, laterally compressed, 6–7 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, 3 mm long, 1 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume lateral veins absent. Lower glume apex acute. Upper glume oblong, 3 mm long, 1 length of adjacent fertile lemma, membranous, 1-keeled, 1 -veined. Upper glume lateral veins absent. Upper glume apex acute.

Florets. Fertile lemma lanceolate, 3–3.5 mm long, membranous, without keel, 3 -veined, 0–3 -veined. Lemma midvein pubescent, hairy below. Lemma lateral veins excurrent. Lemma margins ciliate, hairy below. Lemma hairs 1 mm long. Lemma apex dentate, 2 -fid, mucronate. Palea lanceolate, bowed outwards. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Anthers 3, 0.5 mm long. Caryopsis with adherent pericarp, ovoid, 1.5 mm long. Embryo not projecting. Hilum punctiform.

Distribution (TDWG). Continent. Europe (*), South America.

Region. Northern Europe (*).

Country /Province /State. : GB Aliens (Ryves et al). **Brazil, Southern South America.** Brazil West Central, Brazil South. Argentina Northwest, Argentina Northeast, Paraguay, Uruguay.

TDWG4. Catarina, Rio Grande do Sul. Salta. Buenos Aires, Chaco, Corrientes, Entre Rios, Formosa, Misiones, Santa Fe.

Tridens buckleyanus (Dewey) Nash. *Small, Fl. S.E. U.S.* 143 (1903).

Accepted by: R.J.Soreng et al., *Catalogue of New World 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:** *Sieglingia buckleyana* Vasey ex L.H. Dewey, *Contr. U.S. Natl. Herb.* 2(3): 540 (1894). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: IT: *Buckley s.n.*, 1883, USA: southern Texas (US-81808).

Illustrations (Books): M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 25 *Poaceae*, part 2 (2003) (32).

Derivation (Clifford & Bostock 2007): L. -ana, indicating connection. In honor of Samuel Botsford Buckley (1809–1884) United States botanist.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose. Culms 40–80 cm long. Culm-internodes distally glabrous. Culm-nodes glabrous or pubescent. Leaf-sheaths without keel, antrorsely scabrous. Ligule a ciliate membrane, 0.4–1 mm long. Collar glabrous. Leaf-blades 1–4 mm wide. Leaf-blade margins scabrous. Leaf-blade apex attenuate.

Inflorescence. Inflorescence a panicle. Panicle open, ovate, 10–28 cm long. Primary panicle branches ascending or spreading, distant, sparsely divided, 4–13 cm long. Panicle axis scabrous. Panicle branches stiff, straight, bearing distant spikelets, scabrous. Spikelets appressed, solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 3–5 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets oblong, laterally compressed, 7–10 mm long, 2–3 mm wide, 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 oblong, 5–6 mm long, 1.2 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume lateral veins absent. Lower glume apex obtuse or acute. Upper glume oblong, 4–5 mm long, 1 length of adjacent fertile lemma, membranous, 1-keeled, 1 -veined. Upper glume lateral veins absent. Upper glume apex obtuse or acute.

Florets. Fertile lemma elliptic, 4–6 mm long, membranous, pallid or purple, without keel, 3 -veined, 0–3 -veined. Lemma midvein pubescent, hairy below. Lemma lateral veins obscure, extending close to apex. Lemma margins pubescent, hairy below. Lemma apex emarginate or obtuse, mucicous or mucronate. Palea bowed outwards, 3–5 mm long. Palea keels pubescent, adorned below. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Caryopsis with adherent pericarp, oblong, 2.5 mm long, reticulate. Embryo not projecting.

$2n = 40$ (1 ref TROPICOS).

Distribution (TDWG). Continent. North America.

Country /Province /State. South-central USA. Texas.

Tridens carolinianus (Steud.) Henrard. *Blumea*, iii. 424 (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 USA. **Basionym or Replaced Name:** *Festuca caroliniana* Steud., *Syn. Pl. Glumac.* 1: 312 (1854). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *Bosc s.n.*, USA: Carolina (herb. Caen).

Illustrations (Books): M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 25 *Poaceae*, part 2 (2003) (35).

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

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial. Rhizomes elongated, scaly. Butt sheaths pubescent. Culms erect, 80–120 cm long. Ligule a fringe of hairs, 0.5–1 mm long. Leaf-blades 15–35 cm long, 2–7 mm wide. Leaf-blade glabrous. Leaf-blade margins glandular.

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

Fertile Spikelets. Spikelets comprising 3–5 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets oblong, laterally compressed, 7–10 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 oblong, 4–5 mm long, 1 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume lateral veins absent. Lower glume apex emarginate, mucronate. Upper glume oblong, 4–5 mm long, 1 length of adjacent fertile lemma, membranous, 1-keeled, 1 -veined. Upper glume lateral veins absent. Upper glume apex emarginate, mucronate.

Florets. Fertile lemma ovate, 4–5 mm long, membranous, without keel, 3 -veined, 0–3 -veined. Lemma midvein pubescent, hairy below. Lemma lateral veins excurrent. Lemma margins pubescent, hairy below. Lemma apex dentate, 2 -fid, mucronate. Palea bowed outwards, 4–5 mm long. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Anthers 3. Caryopsis with adherent pericarp, ellipsoid, 2–2.5 mm long. Embryo not projecting. Hilum punctiform.

Distribution (TDWG). Continent. North America.

Country /Province /State. Southeastern USA. Alabama, Florida, Georgia, Louisiana, Mississippi, North Carolina, South Carolina.

Tridens chapmanii (Small) Chase. Hitchcock, *Man. Grasses United States*, ed. 2 : 213, 971 (1951).

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

TYPE from USA. **Basionym or Replaced Name:** *Sieglingia chapmanii* Small, *Bull. Torrey Bot. Club* 22(8): 365 (1895). T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: T: *Chapman*, Florida.

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

Derivation (Clifford & Bostock 2007): in honor of Alvan Wentworth Chapman (1809–99) United States botanist.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose. Culms slender, 60–160 cm long. Leaves mostly basal. Leaf-sheaths keeled, glabrous on surface. Leaf-sheath oral hairs ciliate. Ligule a fringe of hairs. Leaf-blades flat or convolute, 10–50 cm long, 3–7 mm wide. Leaf-blade apex attenuate.

Inflorescence. Inflorescence a panicle. Panicle open, pyramidal, equilateral, 15–25 cm long. Primary panicle branches spreading. Panicle branches stiff, viscid, bearded in axils, with prominent pulvini. Spikelets spreading, solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 4–6 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets oblong, laterally compressed, 7–10 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, similar, shorter than spikelet, thinner than fertile lemma. Lower glume ovate, 0.75 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume lateral veins absent. Lower glume apex acute. Upper glume ovate, 0.75 length of adjacent fertile lemma, membranous, 1-keeled, 1 -veined. Upper glume lateral veins absent. Upper glume apex acute.

Florets. Fertile lemma elliptic, 1.5–2 mm long, chartaceous, without keel, 3 -veined, 0–3 -veined. Lemma midvein pubescent. Lemma lateral veins close to margins, excurrent. Lemma margins pubescent. Lemma apex dentate, 2 -fid, mucronate. Palea bowed outwards, 0.9 length of lemma. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Caryopsis with adherent pericarp.

Distribution (TDWG). Continent. North America.

Country /Province /State. North-central USA, Northeast USA, South-central USA, Southeastern USA. Missouri. West Virginia. Alabama, Florida, Georgia, North Carolina, South Carolina, Virginia.

Tridens congestus (Dewey) Nash. Small, *Fl. S.E. U.S.* 143 (1903).

Accepted by: R.J.Soreng et al., *Catalogue of New World 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:** *Sieglingia congesta* L.H. Dewey, *Contr. U.S. Natl. Herb.* 2(3): 538 (1894). T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: IT: *G.C. Nealley 24*, May 1891, USA: Texas, Nueces Co. (US-81809).

Illustrations (Books): M.E.Barkworth et al, *Flora of North America north of Mexico Vol 25 Poaceae*, part 2 (2003) (35), F.W.Gould, *The Grasses of Texas* (1975) (211, Fig. 108).

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose. Rhizomes elongated. Culms 30–75 cm long. Lateral branches lacking. Leaf-sheaths without keel. Ligule a ciliate membrane, 0.2–0.5 mm long. Leaf-blades 1.5–5 mm wide. Leaf-blade apex attenuate.

Inflorescence. Inflorescence a panicle. Panicle contracted, linear or oblong, 5–8(–10) cm long, 1.2–2.5 cm wide. Primary panicle branches appressed, 0.5–3 cm long. Panicle axis glabrous. Panicle branches glabrous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 5–11 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets oblong, laterally compressed, 5–10 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, 2.5–3 mm long, 0.75 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume lateral veins absent. Lower glume apex obtuse or acute. Upper glume oblong, 3–4 mm long, 1 length of adjacent fertile lemma, membranous, 1-keeled, 1 -veined. Upper glume lateral veins absent. Upper glume apex obtuse or acute.

Florets. Fertile lemma elliptic, 3–4 mm long, membranous, without keel, 3 -veined, 0–3 -veined. Lemma midvein pubescent, hairy below (0.33–0.5 of length). Lemma lateral veins extending close to apex. Lemma margins pubescent, hairy below. Lemma apex emarginate, mucronate. Palea bowed outwards, 2.5–3 mm long,

0.75–0.85 length of lemma. Palea keels scabrous. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Caryopsis with adherent pericarp, oblong. Embryo not projecting.

Distribution (TDWG). Continent. North America.

Country /Province /State. South-central USA. Texas.

Tridens (Gossweillerochloa) delicatulus (Renv.) FORSAN. (1998).

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

TYPE from Angola. **Basionym or Replaced Name:** *Gossweillerochloa delicatula* S.A. Renvoize, *Kew Bull.*, 33(3): 525 (1979). T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: Angola, Cuanza Sul, Capir: Gossweiler 9858 (K holo).

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

Derivation (Clifford & Bostock 2007): *L. delicatus*, dainty; -ula, diminutive. Small and dainty as of habit.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose. Butt sheaths persistent and investing base of culm. Culms 45–90 cm long. Leaf-sheaths without keel. Ligule a fringe of hairs, 0.5 mm long. Leaf-blades flat or convolute, 20–40 cm long, 2–6 mm wide.

Inflorescence. Inflorescence a panicle. Panicle open, oblong, effuse, 30–40 cm long. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 4–6 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets oblong, 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 ovate, 1.5–2 mm long, 0.66–0.75 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume lateral veins absent. Lower glume apex obtuse or acute. Upper glume ovate, 2.25–2.5 mm long, 1.1–1.2 length of adjacent fertile lemma, membranous, 1-keeled, 1 -veined. Upper glume lateral veins absent. Upper glume apex obtuse or acute.

Florets. Fertile lemma oblong or ovate, 2 mm long, membranous, without keel, 3 -veined, 0–3 -veined. Lemma midvein pubescent, hairy below. Lemma lateral veins extending close to apex. Lemma margins pubescent, hairy below. Lemma apex emarginate or obtuse, awned, 1 -awned. Principal lemma awn 0.5–1 mm long overall. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Anthers 0.75 mm long. Caryopsis with adherent pericarp, oblong. Embryo not projecting.

Distribution (TDWG). Continent. Africa.

Country /Province /State. South tropical Africa. Angola.

Tridens eragrostoides (Vasey & Scribn.) Nash. Small, *Fl. Southeast. US* :142 (1903).

Accepted by: R.J.Soreng et al., *Catalogue of New World 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:** *Triodia eragrostoides* Vasey & Scribn., *Contr. U.S. Natl. Herb.* 1(2): 58–59 (1890). T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: IT: *G.C. Nealley* 822, 1889, USA: Texas (US-81811).

HT: *Nealley s.n.*, USA: Texas (US).

Illustrations (Books): M.E.Barkworth et al, *Flora of North America north of Mexico Vol 25 Poaceae*, part 2 (2003) (32), F.W.Gould, *The Grasses of Texas* (1975) (208, Fig. 106), A.S.Hitchcock, *Manual of the Grasses of the West Indies* (1936) (55, Fig. 29 as *Triodia*).

Derivation (Clifford & Bostock 2007): Gk. -oides, resembling. Similar to *Eragrostis* with respect to spikelet structure.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose. Culms erect, 50–100 cm long. Ligule an eciliate membrane, 1.2–3 mm long. Leaf-blades 1.5–5 mm wide. Leaf-blade surface scabrous. Leaf-blade apex attenuate.

Inflorescence. Inflorescence a panicle. Panicle open, elliptic, 10–30 cm long. Primary panicle branches spreading or drooping, simple or moderately divided, 6–12 cm long. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, 1.5–2 mm long.

Fertile Spikelets. Spikelets comprising 5–12 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile.

Spikelets ovate, laterally compressed, 3–7 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 lanceolate, 1.7–2.7 mm long, 0.9 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume lateral veins absent. Lower glume apex acute or acuminate, mucronate. 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 or acuminate.

Florets. Fertile lemma elliptic, 2–3.2 mm long, chartaceous, without keel, 3 -veined, 0–3 -veined. Lemma midvein pubescent, hairy below. Lemma lateral veins close to margins, excurrent. Lemma margins pubescent, hairy below. Lemma apex entire or dentate, 2 -fid, emarginate or obtuse, mucronate. Palea straight, 0.9 length of lemma. Palea keels smooth or scaberulous. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Caryopsis with adherent pericarp, 1–1.3 mm long.

Distribution (TDWG). Continent. North America, South America.

Country /Province /State. Southwestern USA, South-central USA, Southeastern USA, Mexico. Arizona. New Mexico, Texas. Alabama, Florida. Northeast Mexico, Southwest Mexico, Southeast Mexico. Mesoamerica, Caribbean. Cuba.

Coahuila, Neuvo Leon, Tamaulipas. Oaxaca. Yucatan.

Tridens flaccidus (Doell.) L. Parodi. *Rev. Argent. Agron.* iv. 249 (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. **Basionym or Replaced Name:** *Uralespis flaccida* Doell, *Mart. Fl. Bras.* 2: III. 95 (1878). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Brazil, Porto Imperial: Burchell 8477 (K iso, P).

Illustrations (Books): J.A.Steyermark et al, *Flora of the Venezuelan Guayana* Vol. 8 (2004) (292, Fig. 235), E.Judziwicz, *Flora of the Guianas*, 187. *Poaceae* (1990) (644, Fig. 112).

Derivation (Clifford & Bostock 2007): L. unable to support its own weight. Inflorescence branches long and thin and so droop.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose. Culms 60–90 cm long. Ligule a fringe of hairs. Leaf-blades 10–20 cm long, 4–7 mm wide. Leaf-blade apex attenuate, filiform.

Inflorescence. Inflorescence a panicle. Panicle open, lanceolate or elliptic, 8–20 cm long. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 4–6 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets oblong, laterally compressed, 5–7 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, 1.5–2.5 mm long, 0.25–0.66 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume lateral veins absent. Lower glume apex emarginate or acute, mucronate. Upper glume oblong, 2.5–3.5 mm long, 0.75–1 length of adjacent fertile lemma, membranous, 1-keeled, 1 -veined. Upper glume lateral veins absent. Upper glume apex obtuse.

Florets. Fertile lemma oblong, 3.5 mm long, membranous, without keel, 3 -veined, 0–3 -veined. Lemma midvein pubescent, hairy below. Lemma lateral veins excurrent. Lemma margins pubescent, hairy below. Lemma apex dentate, 2 -fid, mucronate. Palea bowed outwards, 3.3 mm long. Palea keels smooth. Palea apex dentate, 2 -fid. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Anthers 3. Caryopsis with adherent pericarp. Embryo not projecting. Hilum punctiform.

Distribution (TDWG). Continent. South America.

Country /Province /State. Northern South America, Western South America, Brazil. Guyana, Venezuela. Colombia. Brazil West Central, Brazil Northeast, Brazil Southeast, Brazil North.

TDWG4. Roraima, Mato Grosso, Maranhao, Piaui, Minas Gerais, Rio de Janeiro, Espirito Santo, Sao Paulo Parana.

Tridens flavus (L.) Hitchcock. *Rhodora*, viii. 210 (1906).

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

TYPE from USA. **Basionym or Replaced Name:** *Poa flava* L., *Sp. Pl.* 68 (1753). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: USA, Virginia: Clayton 273 (BM holo).

Illustrations (Books): M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 25 *Poaceae*, part 2 (2003) (40 as var. *flavus* & var. *chapmanii*), F.W.Gould, *The Grasses of Texas* (1975) (208, Fig. 106 as var. *flavus*).

Images: R.Darke, *Ornamental Grasses* (2004);, R.Darke, *The Encyclopaedia of Grasses for Liveable Landscapes* (2007);.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose. Rhizomes short, knotty. Culms 60–180 cm long. Leaf-sheaths keeled. Ligule a fringe of hairs. Collar pubescent. Leaf-blades 10–50 cm long, 3–10 mm wide. Leaf-blade surface glabrous or hispid. Leaf-blade apex attenuate.

Inflorescence. Inflorescence a panicle. Panicle open, ovate, 15–35 cm long. Primary panicle branches ascending or drooping, 10–25 cm long. Panicle branches straight or flexuous, viscid, pubescent in axils. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 4–8 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets oblong, laterally compressed, 5–9 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, shiny. Lower glume ovate, 0.75 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume lateral veins absent. Lower glume apex obtuse or acute, mucronate. Upper glume ovate, 0.75 length of adjacent fertile lemma, membranous, 1-keeled, 1 -veined. Upper glume lateral veins absent. Upper glume apex obtuse or acute, mucronate.

Florets. Fertile lemma elliptic, 3–5 mm long, chartaceous, without keel, 3 -veined, 0–3 -veined. Lemma midvein pubescent, hairy below. Lemma lateral veins close to margins, excurrent. Lemma margins pubescent, hairy below. Lemma apex dentate, 2 -fid, mucronate. Palea bowed outwards, 0.9 length of lemma. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Caryopsis with adherent pericarp, oblong, dorsally compressed, concavo-convex, dark brown. Embryo 0.4 length of caryopsis, not projecting.

Distribution (TDWG). Continent. North America.

Country /Province /State. Hawaii (*). **Eastern Canada, North-central USA, Northeast USA, South-central USA, Southeastern USA, Mexico.** Ontario. Illinois, Iowa, Kansas, Minnesota, Missouri, North Dakota, Nebraska, Oklahoma, South Dakota, Wisconsin. New Mexico, Texas. Alabama, Arkansas, Delaware, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, North Carolina, South Carolina, Tennessee, Virginia, District of Columbia. Northeast Mexico.

Neuvo Leon.

Tridens hackelii (Arech.) L. Parodi. *Rev. Argent. Agron.* iv. 247. (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 Uruguay. **Basionym or Replaced Name:** *Triodia hackelii* Arechav., *Anales Mus. Nac. Montevideo* 1: 410 (1896). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *M.B. Berro s.n.*, Uruguay: Depart. Vera: Mercedes (MVM; IT:US-908629).

Illustrations (Books): A.Burkat, *Flora Ilustrada de Entre Rios (Argentina)*, Pt II, Gramineae (1969) (167, Fig 58), B.Rosengurtt, *Gramineae Uruguayas I* (1970).

Derivation (Clifford & Bostock 2007): in honor of Eduard Hackel (1850–1926) Bohemian-born Austrian botanist with special interest in the grasses.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose. Butt sheaths thickened and forming a bulb, glossy. Culms 30–45 cm long, 1 -noded. Leaf-sheaths glabrous on surface. Ligule a fringe of hairs. Leaf-blades conduplicate or convolute, 10–15 cm long, 1–2 mm wide. Leaf-blade surface glabrous. Leaf-blade apex acuminate.

Inflorescence. Inflorescence a panicle, comprising 25–35 fertile spikelets. Panicle contracted, linear, 10–12 cm long. Primary panicle branches 2–3 cm long. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 6–8 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets oblong, laterally compressed, 10 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 oblong, 4 mm long, 0.75 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume lateral veins absent. Lower glume apex acute. Upper glume oblong, 5 mm long, 1 length of adjacent fertile lemma, membranous, 1-keeled, 1 -veined. Upper glume lateral veins absent. Upper glume apex acute.

Florets. Fertile lemma lanceolate, 5–5.5 mm long, membranous, without keel, 3 -veined, 0–3 -veined. Lemma midvein pubescent, hairy below. Lemma lateral veins excurrent. Lemma margins ciliate, hairy below. Lemma hairs 1 mm long. Lemma apex dentate, 3 -fid, mucronate. Palea lanceolate, bowed outwards. Palea keels scabrous. Palea apex dentate, 2 -fid. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Anthers 3, 0.75 mm long, retained within floret. Caryopsis with adherent pericarp, lanceolate or ellipsoid, plano-convex, 1.5–2 mm long. Embryo not projecting. Hilum punctiform.

Distribution (TDWG). Continent. South America.

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

TDWG4. Catarina, Rio Grande do Sul. Corrientes, Entre Rios.

Tridens muticus (Torr.) Nash. Small, *Fl. S.E. U.S.* 143 (1903).

Accepted by: R.J.Soreng et al., *Catalogue of New World 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:** *Tricuspis mutica* Torr., *Pacif. Railr. Rep.* 4(5): 156 (1857). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *J.M. Bigelow s.n.*, 22 Sep 1853, USA: New Mexico: San Miguel Co : Fort Smith to the Rio Grande, Laguna Colorado (NY; IT: US (fragm. ex Torrey herb., NY)).

Illustrations (Books): M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 25 *Poaceae*, part 2 (2003) (37 as var. *elongatus* and var. *muticus*), F.W.Gould, *The Grasses of Texas* (1975) (214, Fig. 110 as var. *muticus*).

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

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose. Culms erect, 20–80 cm long. Ligule a ciliate membrane, 0.5–1 mm long. Leaf-blades 6–25 cm long, 1–4 mm wide. Leaf-blade apex attenuate.

Inflorescence. Inflorescence a panicle. Panicle contracted, linear, 7–20(–25) cm long, 0.3–0.8 cm wide. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 5–11 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets oblong, laterally compressed, 8–13 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 lanceolate, 3–5.5 mm long, 0.9–1 length of upper glume, membranous, 1-keeled, 1–7 -veined. Lower glume apex acute, mucronate. Upper glume lanceolate, 3.5–5.5 mm long, 1 length of adjacent fertile lemma, membranous, 1-keeled, 1–7 -veined. Upper glume apex acute.

Florets. Fertile lemma elliptic, 3.5–5.5 mm long, chartaceous, without keel, 3 -veined, 0–3 -veined. Lemma midvein ciliate, hairy below. Lemma lateral veins close to margins, extending close to apex. Lemma margins ciliate, hairy below. Lemma apex entire or dentate, 2 -fid, emarginate or obtuse, mucinous. Palea straight, 0.66–0.75 length of lemma. Palea surface pubescent, hairy on flanks. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Caryopsis with adherent pericarp, oblong, dorsally compressed, 2–2.3 mm long, reticulate.

Distribution (TDWG). Continent. North America.

Country /Province /State. Northwest USA, North-central USA, Southwestern USA, South-central USA, Southeastern USA, Mexico. Colorado. Kansas, Missouri, Oklahoma. Arizona, California, Nevada, Utah. New Mexico, Texas. Arkansas, Louisiana. Northeast Mexico, Northwest Mexico.

Coahuila, Chihuahua, Durango, Neuvo Leon, Queretaro, San Luis Potosi, Tamaulipas, Zacatecas. Baja California, Sonora.

Tridens nicorae A.M.Anton. *Kurtziana*, 10: 51 (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 Argentina. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Argentina, Los Tapiales: Anderson 2428 (CORD holo).

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

Derivation (Clifford & Bostock 2007): in honor of Elisa Gernaela Nicora de Panza (1912-) Argentinian botanist.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose. Culms erect, 30–40 cm long, 1–2 -noded. Leaf-sheaths keeled. Ligule a fringe of hairs, 0.7 mm long. Leaf-blades involute, 6–13 cm long, 1.5–4 mm wide. Leaf-blade surface scabrous, rough adaxially, pilose, sparsely hairy, hairy abaxially, with tubercle-based hairs.

Inflorescence. Inflorescence a panicle, comprising 3–14 fertile spikelets. Panicle open, linear, 7.5–8 cm long, bearing few spikelets. Primary panicle branches indistinct the panicle almost racemose. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, 0.2–0.7 mm long.

Fertile Spikelets. Spikelets comprising (8–)11–12(–15) fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets elliptic or orbicular, laterally compressed, (9–)10–11(–15) mm long, 7–11 mm wide, 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 lanceolate, 5–7 mm long, 1 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume lateral veins absent. Lower glume apex acute, mucronate. Upper glume lanceolate, 5–7 mm long, 1.1–1.5 length of adjacent fertile lemma, membranous, 1-keeled, 1 -veined. Upper glume lateral veins absent. Upper glume apex acute.

Florets. Fertile lemma elliptic, 4.5–4.7 mm long, chartaceous, without keel, 3 -veined, 0–3 -veined. Lemma midvein ciliate, hairy below. Lemma lateral veins close to margins, excurrent. Lemma margins ciliate, hairy below. Lemma hairs 1–2.5 mm long. Lemma apex dentate, 2 -fid, mucronate. Palea bowed outwards, 0.6–0.7 length of lemma. Palea keels tuberculate. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Caryopsis with adherent pericarp, ellipsoid, dorsally compressed, 2.2 mm long, dark brown. Embryo 0.4–0.5 length of caryopsis. Hilum elliptic.

Distribution (TDWG). Continent. South America.

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

TDWG4. San Luis.

Tridens oklahomensis (Featherly) Featherly. Hitchcock, *Man. Grasses United States*, ed. 2: 213, 973 (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.

TYPE from USA. **Basionym or Replaced Name:** *Triodia oklahomensis* Featherly, *Rhodora*, 40: 243 (1938). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: USA, Oklahoma, Stillwater: Wade (US holotype).

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

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose, clumped densely. Culms erect, robust, 120–150 cm long. Ligule a fringe of hairs. Leaf-blades 30–60 cm long, 6–12 mm wide. Leaf-blade surface glabrous, hairless throughout or except near base.

Inflorescence. Inflorescence a panicle, terminal and axillary. Panicle open, oblong, 20–25 cm long, contracted about primary branches. Primary panicle branches ascending, bearing spikelets almost to the base. Panicle branches stiff, straight, viscid. Spikelets appressed or ascending, solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 7–9 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets oblong, laterally compressed, 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 ovate, 4 mm long, 1 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume lateral veins absent. Lower glume apex acute. Upper glume ovate, 4 mm long, 1 length of adjacent fertile lemma, membranous, 1-keeled, 1 -veined. Upper glume lateral veins absent. Upper glume apex acute.

Florets. Fertile lemma elliptic, 4 mm long, chartaceous, without keel, 3 -veined, 0–3 -veined. Lemma midvein pubescent. Lemma lateral veins close to margins, excurrent. Lemma margins pubescent. Lemma apex dentate, 2 -fid, mucronate. Palea bowed outwards, 0.9 length of lemma. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Caryopsis with adherent pericarp.

Distribution (TDWG). Continent. North America.

Country /Province /State. North-central USA. Illinois, Kansas, Missouri, Oklahoma.

Tridens riograndensis Acedo & Llamas. *Syst. Bot.* 28(2): 313 . (2003).

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 Synonymy Database: Brazil, Sao Miguel de Missioes: Acedo & Bochi 51 (LEB holo).

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

Derivation (Clifford & Bostock 2007): L. -ensis, denoting origin. From Rio Grande de Sul, Brazil.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose. Rhizomes short. Basal innovations intravaginal. Culms erect, 50–60 cm long. Culm-nodes glabrous. Lateral branches lacking. Leaves mostly basal. Ligule a fringe of hairs, 1 mm long. Leaf-blades flat or convolute, 9–30 cm long, 4–6 mm wide. Leaf-blade apex acuminate.

Inflorescence. Inflorescence a panicle. Panicle spiciform, linear, continuous or interrupted, 6–8 cm long. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 6–7 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets oblong, laterally compressed, 5–6 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus glabrous, obtuse.

Glumes. Glumes persistent, similar, shorter than spikelet, similar to fertile lemma in texture. Lower glume oblong, 2.5 mm long, 0.75 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume lateral veins absent. Lower glume apex obtuse, mucronate. Upper glume oblong, 3 mm long, 0.75–0.85 length of adjacent fertile lemma, membranous, 1-keeled, 1 -veined. Upper glume lateral veins absent. Upper glume apex obtuse, mucronate.

Florets. Fertile lemma lanceolate, 3.5–4 mm long, membranous, without keel, 3 -veined, 0–3 -veined. Lemma midvein ciliate. Lemma lateral veins excurrent. Lemma margins ciliate. Lemma apex dentate, 2 -fid, awned, 3 -awned. Principal lemma awn from a sinus, 1.2–1.8 mm long overall. Lateral lemma awns present, arising on outer edge of lobes, 0.3–1 mm long. Palea with flaps as wide as body, 2.6–3 mm long, 2 -veined, 2-keeled. Palea apex emarginate. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, cuneate, fleshy, glabrous. Anthers 3, 0.5–0.6 mm long. Caryopsis with adherent pericarp, ellipsoid, 1–1.2 mm long, light brown.

Distribution (TDWG). Continent. South America.

Country /Province /State. Brazil. Brazil South.

Tridens strictus (Nutt.) Nash. *Small, Fl. S.E. U.S.* 143 (1903).

Accepted by: R.J.Soreng et al., *Catalogue of New World 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:** *Windsoria stricta* Nutt., *Trans. Am. Phil. Soc.* 5: 147 (1837). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: USA, Arkansas: Nuttall (K iso) ; USA, Arkansas: Wright 778 (PH syn).

Illustrations (Books): F.W.Gould, *The Grasses of Texas* (1975) (213, Fig. 109).

Derivation (Clifford & Bostock 2007): L. erect. Inflorescence branches erect.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose. Culms erect, 50–170 cm long. Leaf-sheaths without keel. Ligule a fringe of hairs, 0.5 mm long. Leaf-blades 2–8 mm wide. Leaf-blade apex attenuate.

Inflorescence. Inflorescence a panicle. Panicle contracted, lanceolate, 10–36 cm long, 1–2 cm wide. Primary panicle branches appressed, 2–6 cm long. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 5–11 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets cuneate, laterally compressed, 4–7 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus pubescent.

Glumes. Glumes persistent, similar, reaching apex of florets, thinner than fertile lemma. Lower glume lanceolate, 4–7 mm long, 1 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume lateral veins absent. Lower glume apex acuminate, mucronate. Upper glume lanceolate, 4–7 mm long, 2 length of adjacent fertile lemma, membranous, 1-keeled, 1 -veined. Upper glume lateral veins absent. Upper glume apex acuminate.

Florets. Fertile lemma elliptic, 2–3 mm long, chartaceous, without keel, 3 -veined, 0–3 -veined. Lemma midvein pubescent, hairy below. Lemma lateral veins close to margins, excurrent or extending close to apex.

Lemma margins pubescent, hairy below. Lemma apex dentate, 2 -fid, mucronate. Palea straight, 1 length of lemma. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Caryopsis with adherent pericarp, obovoid, dorsally compressed, 1 mm long.

Distribution (TDWG). Continent. North America.

Country /Province /State. North-central USA, South-central USA, Southeastern USA. Illinois, Kansas, Missouri, Oklahoma. Texas. Alabama, Arkansas, Florida, Louisiana, Mississippi, North Carolina, Virginia.

Tridens texanus (Wats.) Nash. Small, *Fl. Southeast. US* :142 (1903).

Accepted by: R.J.Soreng et al., *Catalogue of New World 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:** *Triodia texana* S. Wats., *Proc. Am. Acad.* 18: 180 (1883). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: USA, Texas: Wright 2055 (US iso).

Illustrations (Books): M.E.Barkworth et al, *Flora of North America north of Mexico Vol 25 Poaceae*, part 2 (2003) (40).

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

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose. Culms erect, 20–75 cm long. Culm-internodes distally glabrous or pilose. Culm-nodes glabrous. Leaf-sheaths without keel, glabrous on surface or pilose, outer margin hairy. Ligule a ciliate membrane, 0.2–0.5 mm long. Collar pubescent. Leaf-blades 7–20 cm long, 1–5 mm wide. Leaf-blade surface hispid. Leaf-blade apex attenuate.

Inflorescence. Inflorescence a panicle. Panicle open, ovate, 5–16 cm long. Primary panicle branches drooping, sparsely divided. Panicle axis hispid. Panicle branches flexible, flexuous, hispid. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 6–12 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets oblong, laterally compressed, 6–13 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, 2–3 mm long, 1 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume lateral veins absent. Lower glume apex obtuse or acute. Upper glume oblong, 2–3 mm long, 0.5–0.66 length of adjacent fertile lemma, membranous, 1-keeled, 1 -veined. Upper glume lateral veins absent. Upper glume apex obtuse or acute.

Florets. Fertile lemma elliptic, 4–5 mm long, membranous, purple, without keel, 3 -veined, 0–3 -veined. Lemma midvein pubescent, hairy below. Lemma lateral veins excurrent. Lemma margins pubescent, hairy below. Lemma apex dentate, 2 -fid, obtuse, mucronate. Palea bowed outwards. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Caryopsis with adherent pericarp, oblong. Embryo not projecting.

Distribution (TDWG). Continent. North America.

Country /Province /State. South-central USA, Mexico. Texas. Northwest Mexico. Coahuila, Chihuahua, Neuvo Leon, San Luis Potosi, Tamaulipas.

Trigonochloa rupestris (C. E. Hubbard) P.M.Peterson & N.Snow. *Ann. Bot.* 109: 1328 (2012).

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

TYPE from Somalia. **Basionym or Replaced Name:** *Leptochloa rupestris* C. E. Hubbard, *Kew Bull.* 1941, 195 (1941). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Somalia, Mt. Wobleh: Gillett 4981 (K holotype).

Illustrations (Books): S.Phillips, *Poaceae* (Gramineae) in I.Hedberg & S.Edwards, *Flora of Ethiopia and Eritrea* (1995) (103, Fig 43).

Derivation (Clifford & Bostock 2007): L. rupes, rock; -estre, place of growth; Growing amongst rocks.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose. Stolons present, with alternating elongated and bunched internodes. Culms decumbent, 30–90 cm long. Ligule an eciliate membrane. Leaf-blades spreading or reflexed, lanceolate, 3–10.5 cm long, 2–5 mm wide. Leaf-blade surface smooth. Leaf-blade apex attenuate.

Inflorescence. Inflorescence composed of racemes. Racemes numerous, borne along a central axis, straight or arcuate, unilateral, 2–5 cm long. Central inflorescence axis 6–25 cm long. Rhachis semiterete. Spikelet packing broadside to rhachis, regular, 2 -rowed. 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 oblong, laterally compressed, 1.6–2.4 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, similar, exceeding apex of florets or reaching apex of florets or shorter than spikelet. Lower glume lanceolate, 1.6–2.3 mm long, 1 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume lateral veins absent. Lower glume apex acute. Upper glume elliptic, 1.6–2.3 mm long, 0.9–1.1 length of adjacent fertile lemma, membranous, 1-keeled, 1 -veined. Upper glume lateral veins absent. Upper glume apex acute.

Florets. Fertile lemma oblong or ovate, 1.7–2.1 mm long, membranous, keeled, 3 -veined, 0–3 -veined. Lemma midvein pubescent. Lemma lateral veins close to margins. Lemma surface glabrous. Lemma margins pubescent. Lemma apex entire, acute. Palea 2 -veined. Palea keels ciliolate.

Flower and Fruit. Caryopsis with adherent pericarp.

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

Country /Province /State. **Northeast tropical Africa, East tropical Africa.** Eritrea, Ethiopia (inc. Eritrea), Somalia. Kenya, Uganda. **Arabian Peninsula.** Yemen.

Trigonochloa uniflora (Hochst. ex A. Rich.) P.M.Peterson & N.Snow. *Ann. Bot.* 109: 1328 (2012).

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 Ethiopia. **Basionym or Replaced Name:** *Leptochloa uniflora* Hochst. ex A. Rich., *Tent. Fl. Abyss.* 2: 409. (1850). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *Schimper 1707*, 15 Aug 1840, Ethiopia: in valle fluvii Tacaze sub arborum umbra (P; IT: K, MO).

Illustrations (Books): L.K.A. Chippindall, *Grasses and Pastures of South Africa* (1955) (205, Fig 182 as *Craspedorhachis*), K.M.Matthew, *Flora Palni Hills* (1996) (845, Pl 845).

Derivation (Clifford & Bostock 2007): L. unus, one; flos, flower. Spikelets with one fertile floret.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Annual or perennial, short-lived, caespitose. Culms erect or decumbent, 50–150 cm long. Ligule an eciliate membrane. Leaf-blades lanceolate or oblong, 4–12 cm long, 6–18 mm wide, flaccid. Leaf-blade surface smooth. Leaf-blade apex acute.

Inflorescence. Inflorescence composed of racemes. Racemes numerous, borne along a central axis, straight or arcuate, unilateral, 2.5–9 cm long. Central inflorescence axis 15–45 cm long. Rhachis semiterete. Spikelet packing broadside to rhachis, regular, 2 -rowed. 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 oblong, laterally compressed, 1.9–2.8 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, similar, exceeding apex of florets. Lower glume lanceolate, 1.7–2.3 mm long, 0.9–1 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume lateral veins absent. Lower glume apex acuminate. Upper glume elliptic, 1.8–2.4 mm long, 1.2–1.4 length of adjacent fertile lemma, membranous, 1-keeled, 1 -veined. Upper glume lateral veins absent. Upper glume apex acuminate.

Florets. Fertile lemma oblong, 1.5–1.7 mm long, membranous, keeled, 3 -veined, 0–3 -veined. Lemma midvein pubescent. Lemma lateral veins close to margins. Lemma surface glabrous. Lemma margins pubescent. Lemma apex entire, acute. Palea 2 -veined. Palea keels ciliolate.

Flower and Fruit. Caryopsis with adherent pericarp, ellipsoid, isodiametric, trigonous, sulcate on hilar side, 1–1.2 mm long, dark brown or red.

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

Country /Province /State. **West tropical Africa, West-central tropical Africa, Northeast tropical Africa, East tropical Africa, South tropical Africa, Southern Africa.** Ghana, Nigeria. Congo, DRC. Ethiopia (inc. Eritrea). Kenya, Tanzania, Uganda. Angola, Malawi, Mozambique, Zambia, Zimbabwe. Namibia, Botswana, Limpopo, Kwazulu-Natal. **Arabian Peninsula.** Yemen. **Indian Subcontinent.** Sri Lanka.

Trigonochloa Genus

Trikeria hookeri (Stapf) Bor. *Kew Bull.* 1954, 555 (1955).

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 China. **Basionym or Replaced Name:** *Stipa hookeri* Stapf, *Kew Bull.* 5(3): 319 (1950). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: IT: *Thorold s.n.*, s.d., [China: Tibet] (LE (fragm.)).

Illustrations (Books): N.L.Bor, *The grasses of Burma, Ceylon, India and Pakistan* (1960) (648, Fig. 79), S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 256 as var *hookeri* & var. *ramosa*).

Derivation (Clifford & Bostock 2007): in honor of Joseph Dalton Hooker (1817–1911), English botanist, traveller and Garden's Director.

Classification. Subfamily Pooideae. Tribe: Eragrostideae.

Habit, Vegetative Morphology. Perennial. Cataphylls evident. Rhizomes short. Butt sheaths coriaceous, persistent and investing base of culm, with compacted dead sheaths. Culms 30–70 cm long. Ligule an eciliate membrane, 2 mm long, erose, truncate. Leaf-blades involute, 10–35 cm long, 5 mm wide. Leaf-blade apex attenuate.

Inflorescence. Inflorescence a panicle. Panicle open or contracted, lanceolate, 10–20 cm long. Panicle branches scaberulous. 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, compressed slightly, 8 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus obtuse, disarticulating obliquely.

Glumes. Glumes persistent, similar, exceeding apex of florets, similar to fertile lemma in texture, gaping. Lower glume lanceolate, 1 length of upper glume, membranous, 1-keeled, keeled above, 3 -veined. Lower glume primary vein scaberulous. Lower glume surface asperulous. Lower glume apex acute. Upper glume lanceolate, membranous, 1-keeled, keeled above, 3 -veined. Upper glume surface asperulous. Upper glume apex acute.

Florets. Fertile lemma elliptic, dorsally compressed, 4.5–5.5 mm long, membranous, without keel, 5–7 -veined, more than 3-veined. Lemma surface pilose. Lemma hairs 1–2 mm long. Lemma apex lobed, 2 -fid, awned, 3 -awned. Principal lemma awn from a sinus, 14–15 mm long overall, limb scabrous. Lateral lemma awns present, arising on apex of lobes, ascending, 3–4 mm long, shorter than principal. Palea lanceolate, 1 length of lemma, 2 -veined, without keels. Palea surface pilose.

Flower and Fruit. Lodicules 3, oblong, 1.5 mm long, membranous, acute. Anthers 3, linear, 4–4.5 mm long. Stigmas 2.

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

Country /Province /State. **Western Asia, China.** Iran. Qinghai, Tibet. **Indian Subcontinent.** Pakistan, West Himalaya.

TDWG4. Jammu Kashmir.

Trikeria oreophila T.A. Cope. *Kew Bull.*, 42(2): 350 (1987).

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 Bhutan. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Bhutan, Jangthang: Dunbar 18 (K holo).

Illustrations (Books): H.J.Noltie, *The Grasses of Bhutan* (2000) (516, Fig. 9).

Derivation (Clifford & Bostock 2007): Gk. oros, mountain; phileo, love. Mountain species.

Classification. Subfamily Pooideae. Tribe: Eragrostideae.

Habit, Vegetative Morphology. Perennial, caespitose. Culms erect, 7.5–20 cm long. Ligule an eciliate membrane, 0.4 mm long. Leaf-blades involute, 3–7 cm long, 1–1.3 mm wide.

Inflorescence. Inflorescence a panicle. Panicle contracted, linear, 2.5–5 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, subterete, 8–11 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus obtuse, disarticulating obliquely.

Glumes. Glumes persistent, similar, exceeding apex of florets, similar to fertile lemma in texture, gaping. Lower glume lanceolate, 8–11 mm long, 1 length of upper glume, membranous, 1-keeled, keeled above, 5 -veined. Lower glume apex acuminate. Upper glume lanceolate, 8–11 mm long, 1.1 length of adjacent fertile lemma, membranous, 1-keeled, keeled above, 5 -veined. Upper glume apex acuminate.

Florets. Fertile lemma elliptic, subterete, 7–10 mm long, membranous, without keel, 5–7 -veined, more than 3-veined. Lemma surface villous. Lemma hairs 2 mm long. Lemma apex lobed, 2 -fid, incised 0.66 of lemma length, awned, 1 -awned. Principal lemma awn from a sinus, geniculate, 8–10 mm long overall, with twisted column. Palea 1 length of lemma, 2 -veined, without keels.

Flower and Fruit. Lodicules 3, membranous. Anthers 3, 1–1.5 mm long. Stigmas 2.

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

Country /Province /State. China. Tibet, Xinjiang. **Indian Subcontinent.** Eastern Himalaya, Nepal.

TDWG4. Bhutan, Sikkim.

Trikeria pappiformis (Keng) P.C. Kuo & S.L. Lu. *Fl. Reipubl. Popul. Sin.*, 9(3): 317 (1987).

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:** *Stipa pappiformis* Keng, *Sunyatsenia*, 6: 71 (1941). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: China, Labrang: Yao 570.

Illustrations (Books): S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 256).

Derivation (Clifford & Bostock 2007): Gk. pappos, grandfather; forme, appearance. Upper part of the lemma hairy.

Classification. Subfamily Pooideae. Tribe: Stipeae.

Habit, Vegetative Morphology. Perennial, culms solitary. Rhizomes elongated. Culms 150 cm long, 5 mm diam. Culm-internodes 40 cm long. Leaf-sheaths smooth. Ligule an eciliate membrane, 1 mm long, obtuse. Leaf-blades flat or convolute, 45 cm long, 4 mm wide. Leaf-blade surface ribbed, scaberulous. Leaf-blade apex filiform.

Inflorescence. Inflorescence a panicle. Panicle open, elliptic, 25 cm long. Primary panicle branches 2–4 -nate, 5–10 cm long. Panicle branches capillary. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, 2 mm long, puberulous, 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, subterete, 8–10 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus brief, 0.5 mm long, pilose, obtuse. Floret callus hairs 0.5–1 mm long.

Glumes. Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 1 length of upper glume, membranous, light brown, without keels, 3 -veined. Lower glume apex acuminate. Upper glume lanceolate, 8–10 mm long, membranous, light brown, without keels, 3 -veined. Upper glume apex acuminate.

Florets. Fertile lemma lanceolate, subterete, 6–7 mm long, chartaceous, without keel, 3 -veined, 0–3 -veined. Lemma surface pilose, hairy below, with conspicuous apical hairs. Lemma margins convolute, covering most of palea. Lemma hairs 5 mm long. Lemma apex dentate, 2 -fid, with lobes 1–1.5 mm long, awned, 1 -awned. Principal lemma awn from a sinus, geniculate, 5–6 mm long overall, with a straight or slightly twisted column. Palea 2 -veined, without keels. Palea surface pilose.

Flower and Fruit. Anthers 3, 3.5 mm long, anther tip smooth. Stigmas 2. Ovary glabrous. Caryopsis with adherent pericarp, fusiform, 3.5 mm long. Hilum linear.

Distribution (TDWG). Continent. Temperate Asia.

Country /Province /State. China. China South Central, China North-Central, Qinghai, Tibet.

TDWG4. Gansu, Sichuan, Yunnan.

Trikeria tianshanica S.L. Lu, X.F. Lu. *Acta Phytotax. Sin.* 39(3): 275 (2001).

Regarded by K as a synonym (*T. oreophila*).

TYPE from China. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: China, Xinjiang, Daxigou valley: Peng, Chen et al. PLCZ-T175 (HNWP holo).

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

Derivation (Clifford & Bostock 2007): L. -ica, belonging to. From Tianshan, eastern Kazakhstan, former Soviet Union.

Classification. Subfamily Pooideae. Tribe: Stipeae.

Distribution (TDWG). Continent. Temperate Asia.

Country /Province /State. China. Xinjiang.

Trilobachne cookei (Stapf) Schenck ex Henrard. *Meded. Herb. Leid.* No. 67, 4 (1931).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), N.L.Bor, *Grasses of Burma, Ceylon, India and Pakistan* (1960).

TYPE from India. **Basionym or Replaced Name:** *Polytoca cookei* Stapf, *Hook. Icon. pl.* 24 t. 2333. (1894). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: India, Concan: Hooker & Thomson (K lecto).

Illustrations (Books): N.L.Bor, *The grasses of Burma, Ceylon, India and Pakistan* (1960) (269, Fig. 31), S.W.L.Jacobs & J.Everett (2000) (378, Fig. 8).

Illustrations (Journals): *Blumea* (47:573(2002)).

Derivation (Clifford & Bostock 2007): in honor of Theodore Cooke (1816–1910) English-born Indian botanist.

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

Habit, Vegetative Morphology. Annual. Culms 100–250 cm long. Culm-nodes pubescent. Ligule an eciliate membrane. Leaf-blades lanceolate, 20–50 cm long, 20–60 mm wide. Leaf-blade surface pilose, with tubercle-based hairs. Leaf-blade margins scabrous. Monoecious, with male and female spikelets in the same inflorescence or with male and female spikelets in different inflorescences.

Inflorescence. Inflorescence composed of racemes, axillary, subtended by a spatheole, embraced at base by subtending leaf. Spatheole lanceolate, herbaceous. Racemes 1, single, 2–3 cm long, bearing few fertile spikelets, bearing 1–4 fertile spikelets on each (and 4–6 male spikelets). Rhachis fragile at the nodes, subterete, pilose on surface. Rhachis internodes oblong, bearing a sterile companion laterally. Rhachis internode tip cupuliform. Sexes segregated, on bisexual branches, with male above. Spikelets embracing internode, in pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Male spikelets sessile and pedicelled, 2 in a cluster. Pedicels present, fused to internode, united wholly.

Sterile Spikelets. Companion sterile spikelets well-developed, comprising 2 unequal glumes without lemmas, lanceolate, 4–6 mm long, as long as fertile, separately deciduous.

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, 6–7 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 elliptic, 1 length of spikelet, indurate, much thinner above, pallid, without keels, winged on margins, winged above. Lower glume surface not waisted, pubescent. Lower glume apex lobed, 3-fid, obtuse. Upper glume elliptic, coriaceous. Upper glume apex acuminate.

Florets. Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret oblong, cartilaginous, acute. Fertile florets female. Fertile lemma oblong, hyaline, without keel. Lemma apex acute. Palea hyaline, without keels.

Flower and Fruit. Caryopsis with adherent pericarp. Hilum linear.

Male inflorescence of subdigitate racemes. Male spikelets distinct from female, with free pedicels, 4 mm long. Male spikelet glumes 2.

$N = 10$ (1 ref TROPICOS). $2n = 20$ (2 refs TROPICOS).

Distribution (TDWG). Continent. Tropical Asia.

Country /Province /State. Indian Subcontinent. India.

TDWG4. Gujarat. Maharashtra.

Triniochloa andina Luces. *Bol. Soc. Venez. Cienc. Nat.* xv. 15 (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 Synonymy Database: Venezuela, Piedra de Bartolo: Luces 295 (VEN holo).

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

Derivation (Clifford & Bostock 2007): L. -inus, belonging to. From the Andes.

Classification. Subfamily Pooideae. Tribe: Meliceae.

Habit, Vegetative Morphology. Perennial, caespitose. Culms erect, slender, 50–80 cm long. Culm-internodes distally glabrous. Leaf-sheaths tubular for much of their length, striately veined, glabrous on surface or puberulous. Leaf-sheath oral hairs ciliate. Ligule an eciliate membrane, 15 mm long. Leaf-blades filiform, 10–20 cm long, 1 mm wide. Leaf-blade surface scabrous, rough abaxially, pilose, hairy adaxially.

Inflorescence. Inflorescence a panicle. Panicle open, elliptic, 10–11 cm long. Primary panicle branches ascending, distant, 1–2-nate. Panicle axis glabrous. 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, dorsally compressed, compressed slightly, 11–12 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus bearded. Floret callus hairs 2–3 mm long, 0.25 length of lemma.

Glumes. Glumes persistent, similar, shorter than spikelet, thinner than fertile lemma. Lower glume ovate, 7–8 mm long, 0.75 length of upper glume, membranous, much thinner on margins, mid-green or purple, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume apex acuminate. Upper glume ovate, 10–11 mm long, 0.9 length of adjacent fertile lemma, membranous, with hyaline margins, mid-green or purple, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume apex acuminate.

Florets. Fertile lemma ovate, subterete, 11–12 mm long, coriaceous, without keel, 7–9 -veined, more than 3-veined. Lemma surface smooth or asperulous, rough above. Lemma apex lobed, 2 -fid, awned, 1 -awned. Principal lemma awn dorsal, arising 0.66 way up back of lemma, geniculate, 15–20 mm long overall, with twisted column. Palea 1 length of lemma, coriaceous. Palea keels contiguous above a sulcus. Palea apex dentate, 2 -fid.

Flower and Fruit. Lodicules 2, united, fleshy, truncate. Anthers 3.

Distribution (TDWG). Continent. South America.

Country /Province /State. Northern South America, Western South America. Venezuela. Colombia.

Trinichloa gracilis M. Gomez-Sanchez & M. Gonzalez-Ledesma. *Novon*, 8(2): 144 (1998).

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

TYPE from Mexico. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Mexico: Guerrero: Mun. Heliodoro Castillo: 62 km de Filo de Caballo por terracería a Puerto del Gallo (7 km al oeste de El Jilguero), alt. 2790 m, 4 dic. 1993, M. González-Ledesma & C. Catalán H. 553 (HT: CHAPA; IT: CAS, ENCB, IEB, MEXU, MICH, MO, QMEX, TEX, US, XAL).

Illustrations (Journals): *Novon* (8:145 Fig.1 (1998)).

Derivation (Clifford & Bostock 2007): L. slender. Culms or inflorescences slender.

Classification. Subfamily Pooideae. Tribe: Meliceae.

Habit, Vegetative Morphology. Perennial, caespitose. Basal innovations extravaginal. Culms erect or geniculately ascending, 30–60 cm long, 0.5–0.8 mm diam. Leaf-sheaths tubular for much of their length, with 1 of their length closed, mostly shorter than adjacent culm internode, smooth or retrorsely scabrous. Ligule an eciliate membrane, 2.5 mm long. Leaf-blades flat or conduplicate or involute, 10–15 cm long, 1.3–1.7 mm wide. Leaf-blade surface pilose, hairy adaxially. Leaf-blade apex acuminate.

Inflorescence. Inflorescence a panicle, comprising 7–38 fertile spikelets. Panicle contracted, linear, 5–15 cm long, 0.3–0.5 cm wide. Primary panicle branches appressed, simple. Panicle branches smooth or with occasional prickles. Spikelets appressed, 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 linear, subterete, 9–12 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus bearded.

Glumes. Glumes persistent, similar, reaching apex of florets, thinner than fertile lemma. Lower glume lanceolate, 1.8–3 mm long, 1 length of upper glume, hyaline, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume apex acute. Upper glume lanceolate, 1.8–3 mm long, 0.25–0.33 length of adjacent fertile lemma, hyaline, without keels, 3 -veined. Upper glume apex acute.

Florets. Fertile lemma ovate, 9–12 mm long, coriaceous, without keel, 7 -veined, more than 3-veined. Lemma margins involute, interlocking with palea keels. Lemma apex dentate, 2 -fid, awned, 1 -awned. Principal lemma awn dorsal, arising 0.66–0.75 way up back of lemma, geniculate, 12–16 mm long overall, with twisted column.

Flower and Fruit. Lodicules 2, united, fleshy, truncate. Anthers 3, 1.5–2.7 mm long. Caryopsis with adherent pericarp, 4.8–6 mm long. Hilum linear, 1 length of caryopsis.

Distribution (TDWG). Continent. North America.

Country /Province /State. Mexico. Southwest Mexico. Guerrero, Oaxaca.

Trinichloa laxa Hitchcock. *Contrib. U. S. Nat. Herb.* xvii. 304 (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 Synonymy Database: HT: A.S. Hitchcock 7687; 12 Oct 1910; Mexico: Chihuahua, rocky side of ravine, 8000' (US-691223, IT: NY-73997).

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

Derivation (Clifford & Bostock 2007): L. loose. Inflorescence much branched either as a single panicle or from branching of the culms.

Classification. Subfamily Pooideae. Tribe: Meliceae.

Habit, Vegetative Morphology. Perennial, caespitose, clumped densely. Rhizomes elongated. Culms decumbent, 30–40 cm long. Leaf-sheaths tubular for much of their length, with 1 of their length closed, glabrous on surface. Ligule an eciliate membrane, 1–3 mm long. Leaf-blades 15–30 cm long, 3–4 mm wide, glaucous or mid-green, discolorous with last colour beneath. Leaf-blade surface scabrous, rough adaxially. Leaf-blade apex acuminate.

Inflorescence. Inflorescence a panicle. Panicle open, linear, 5–10 cm long, bearing few spikelets. Primary panicle branches appressed, simple, bearing 1–3 fertile spikelets on each lower branch. Spikelets appressed, 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 linear, subterete, 15 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus bearded. Floret callus hairs 3–5 mm long, 0.2–0.33 length of lemma.

Glumes. Glumes persistent, similar, reaching apex of florets, thinner than fertile lemma. Lower glume lanceolate, 12 mm long, 0.75 length of upper glume, hyaline, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume apex acute. Upper glume lanceolate, 15 mm long, 1 length of adjacent fertile lemma, hyaline, without keels, 3 -veined. Upper glume apex acute.

Florets. Fertile lemma ovate, 14 mm long, coriaceous, mid-green or purple, mottled with last colour, without keel, 5 -veined, more than 3-veined. Lemma margins involute, interlocking with palea keels. Lemma apex dentate, 2 -fid, awned, 1 -awned. Principal lemma awn dorsal, arising 0.5 way up back of lemma, geniculate, 15 mm long overall, with twisted column. Palea 1 length of lemma, coriaceous. Palea keels contiguous above a sulcus.

Flower and Fruit. Lodicules 2, united, fleshy, truncate. Anthers 3.

Distribution (TDWG). Continent. North America.

Country /Province /State. Mexico. Northeast Mexico. Chihuahua.

Triniochloa micrantha (Scribn.) Hitchcock. *Contrib. U. S. Nat. Herb.* xvii. 304 (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:** *Avena micrantha* Scribn., *Circ. Div. Agrostol. U.S.D.A.* 19: 3–4, f. 1 (1900). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: C.G. Pringle 8018, 5 Feb 1899, Mexico: Morelos, cool, mossy cliffs, Sierra de Tepoxtlán near Cuernavaca, 7500' (US-747361; IT: CM, L, LL, SI, US-354504, US-820871).

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

Derivation (Clifford & Bostock 2007): Gk. mikros, small; anthos, flower. Spikelets small.

Classification. Subfamily Pooideae. Tribe: Meliceae.

Habit, Vegetative Morphology. Perennial, caespitose. Culms 30–40 cm long. Leaf-sheaths tubular for much of their length, with 1 of their length closed. Ligule an eciliate membrane, 2–10 mm long. Leaf-blades filiform, convolute, 0.5–1 mm wide.

Inflorescence. Inflorescence a panicle. Panicle open, elliptic, effuse, 5–10 cm long. Primary panicle branches simple. Panicle branches capillary. Spikelets appressed, 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 linear, subterete, 9–10 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus bearded. Floret callus hairs 2–3 mm long, 0.25–0.33 length of lemma.

Glumes. Glumes persistent, similar, reaching apex of florets, thinner than fertile lemma. Lower glume lanceolate, 6–7 mm long, 0.75 length of upper glume, hyaline, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume apex acuminate. Upper glume lanceolate, 9–10 mm long, 1 length of adjacent fertile lemma, hyaline, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume apex acuminate.

Florets. Fertile lemma ovate, 9–10 mm long, coriaceous, without keel, 5 -veined, more than 3-veined. Lemma margins involute, interlocking with palea keels. Lemma apex dentate, 2 -fid, with linear lobes, with lobes 1 mm long, incised 0.1 of lemma length, awned, 1 -awned. Principal lemma awn dorsal, arising 0.75 way

up back of lemma, geniculate, 15–20 mm long overall, with twisted column. Palea 1 length of lemma, coriaceous. Palea keels contiguous above a sulcus.

Flower and Fruit. Lodicules 2, united, fleshy, truncate. Anthers 3.

Distribution (TDWG). Continent. North America.

Country /Province /State. Mexico. Central Mexico.
Mexico State, Morelos.

Triniochloa stipoides (Kunth) Hitchcock. *Contrib. U. S. Nat. Herb.* xvii. 303 (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 Ecuador. **Basionym or Replaced Name:** *Podosemum stipoides* H. B. & K., *Nov. Gen. et Sp.* 1: 131 (1815). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: Humboldt & Bonpland s.n.; Apr; Ecuador: Chillo Quitensuim (P; IT: US-3153135 (fragm. ex P [Willd.], P [Bonpl.])).

Illustrations (Books): R.McVaugh, *Flora Nova-Galiciana* Vol.14 *Gramineae* (1983), S.A.Renvoize, *Gramineas de Bolivia* (1998) (153, Fig. 36), W.Burger, *Flora Costaricensis* 15, *Gramineae: Fieldiana Botany New Series* 4 (1980) (571, Fig. 214).

Illustrations (Journals): *Ruizia* (13:150, Fig16a-b (1993)).

Derivation (Clifford & Bostock 2007): Gk. -oides, resembling. With spikelets resembling those of *Stipa*.

Classification. Subfamily Pooideae. Tribe: Meliceae.

Habit, Vegetative Morphology. Perennial, caespitose. Culms 50–135 cm long, 1 mm diam. Culm-internodes thin-walled. Culm-nodes glabrous. Leaf-sheaths tubular for much of their length, with 1 of their length closed, ribbed, antrorsely scabrous. Ligule an eciliate membrane, 5–10 mm long, lacerate. Leaf-blades flat or conduplicate, 10–25 cm long, 2–3 mm wide. Leaf-blade surface scabrous, rough abaxially, pilose, sparsely hairy, hairy adaxially.

Inflorescence. Inflorescence a panicle. Peduncle pubescent above. Panicle open, pyramidal, effuse, 15–25 cm long. Primary panicle branches whorled at most nodes. Spikelets appressed, 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, dorsally compressed, compressed slightly, 11–13 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, shorter than spikelet, thinner than fertile lemma. Lower glume ovate, 3.5–4.5 mm long, 0.9 length of upper glume, membranous, without keels, 1 -veined. Lower glume primary vein scabrous. Lower glume lateral veins absent. Lower glume apex acuminate. Upper glume ovate, 4–5 mm long, 0.4 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 ovate, 11–13 mm long, coriaceous, without keel, 7–9 -veined, more than 3-veined. Lemma surface scabrous. Lemma apex lobed, 2 -fid, with linear lobes, incised 0.25 of lemma length, awned, 1 -awned. Principal lemma awn dorsal, arising 0.75 way up back of lemma, geniculate, 15–20 mm long overall, with twisted column. Palea 1 length of lemma, coriaceous. Palea keels contiguous above a sulcus, scabrous. Palea apex dentate, 2 -fid.

Flower and Fruit. Lodicules 2, united, fleshy, truncate. Anthers 3, 4 mm long.

$2n = 32$ (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, Guatemala, Honduras. Venezuela. Bolivia, Colombia, Ecuador, Peru.

TDWG4. Distrito Federal, Mexico State, Morelos, Puebla. Guanajuato, Hidalgo, Queretaro, San Luis Potosi. Veracruz. Guerrero, Jalisco, Michoacan, Oaxaca. Chiapas.

Triniochloa talpensis M. Gonzalez-Ledesma & M. Gomez-Sanchez. *Novon*, 5(1): 36 (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.

TYPE from Mexico. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Mexico, Talpa de Allende: Gonzales-Ledesma & Rosa 496 (CHAPA holo, IBUG, MEXU, MICH, MO, US, XAL).

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

Derivation (Clifford & Bostock 2007): *L. -ensis*, denoting origin. From Municipio de Talpa de Allende, Mexico.

Classification. Subfamily Pooideae. Tribe: Meliceae.

Habit, Vegetative Morphology. Perennial. Rhizomes elongated. Culms decumbent, robust, 60–110 cm long, 1.5–2 mm diam. Leaf-sheaths tubular for much of their length, with 1 of their length closed, mostly shorter than adjacent culm internode, pubescent. Leaf-sheath oral hairs ciliate. Ligule an eciliate membrane, 1.5–2.5 mm long. Leaf-blades deciduous at the ligule, 22–27 cm long, 3–5 mm wide. Leaf-blade surface ribbed, scabrous, glabrous or pubescent, hairy adaxially. Leaf-blade apex acuminate.

Inflorescence. Inflorescence a panicle, comprising 30–90 fertile spikelets. Panicle contracted, linear, 16–35 cm long, 1–2.5 cm wide. Primary panicle branches appressed or ascending, 1–2 -nate, simple. Panicle branches scabrous. Spikelets appressed, 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 linear, subterete, 11–16.8 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus 0.5 mm long, bearded. Floret callus hairs 3–5 mm long.

Glumes. Glumes persistent, similar, reaching apex of florets, thinner than fertile lemma. Lower glume lanceolate, 7.5–13.6 mm long, 0.66–0.8 length of upper glume, hyaline, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume apex acute. Upper glume lanceolate, 11–16.5 mm long, 1 length of adjacent fertile lemma, hyaline, without keels, 3 -veined. Upper glume apex acute.

Florets. Fertile lemma ovate, 11–14.5 mm long, coriaceous, without keel, 7 -veined, more than 3-veined. Lemma surface smooth or scabrous, rough above. Lemma margins involute, interlocking with palea keels. Lemma apex dentate, 2 -fid, awned, 1 -awned. Principal lemma awn from a sinus, geniculate, 13–23 mm long overall, with twisted column.

Flower and Fruit. Lodicules 2, united, fleshy, truncate. Anthers 3, 4.8–7 mm long.

Distribution (TDWG). Continent. North America.

Country /Province /State. Mexico. Southwest Mexico.

Jalisco.

Triodia acutispicula M. Lazarides, nom nov. *Austral. Syst. Bot.*, 10(3): 400 (1997).

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

TYPE from Australia. **Basionym or Replaced Name:** *Plectrachne caroliniana* S.W.L. Jacobs, *Nuytsia* 8(2): 221 (1992). T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: Western Australia: Northern Province: Drysdale River, 50 miles (80 km) NNW of Gibb River homestead, 30.viii.1954., *M. Lazarides* 4916 (HT: NSW; IT: AD, BRI, CANB, DNA, K, MEL, PERTH, US).

Illustrations (Books): K.O.Mallett (ed.), *Flora of Australia*, Vol 44B. *Poaceae* (2004) (215, Fig. 34), D.Sharp & B.K.Simon, *AusGrass*. Grasses of Australia. CD-Rom Version 1.0. (2002).

Illustrations (Journals): *Austr. Syst. Bot.* (10: 402, Fig.10 (1997)).

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

Derivation (Clifford & Bostock 2007): *L. acutus*, sharp; *spica*, a point; hence, in particular, an ear or spike of grain. Spikelets terete with long pungent calluses.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose. Culms 130–160 cm long. Culm-internodes terete, smooth or scaberulous. Leaf-sheaths mostly shorter than adjacent culm internode, without exudate or resinous, glabrous on surface, outer margin glabrous or hairy. Leaf-sheath oral hairs ciliate, erect, 4 mm long. Ligule a fringe of hairs, 0.5–2.3 mm long. Collar ciliate. Leaf-blades curved or flexuous, 20–40 cm long, 7–10 mm wide, without exudate or resinous.

Inflorescence. Inflorescence a panicle. Panicle open, lanceolate, dense or loose, 12–25 cm long, 1.5–4 cm wide. Primary panicle branches 3–7 cm long. Panicle branches glabrous in axils or bearded in axils. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, filiform, 1.5–12 mm long.

Fertile Spikelets. Spikelets comprising 2–4 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 8–18 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes terete, 2.5 mm long. Floret callus elongated, curved, 1–2 mm long, pilose, pungent.

Glumes. Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 9–18 mm long, 1 length of upper glume, scarious, without keels, 3–5 -veined. Lower glume surface smooth or asperulous, rough above. Lower glume apex acuminate, awned, 1 -awned, awn 1–3 mm long. Upper

glume lanceolate, 9–18 mm long, scarios, without keels, 3–5 -veined. Upper glume surface smooth or asperulous, rough above. Upper glume apex acuminate, awned, 1 -awned, awn 1–3 mm long.

Florets. Fertile lemma oblong, 5–9 mm long, coriaceous, firmer above (a transverse line), without keel, 9 -veined, more than 3-veined. Lemma apex lobed, 3 -fid, awned, 3 -awned. Principal lemma awn curved, 9–12 mm long overall. Lateral lemma awns present, arising on apex of lobes, 5–7 mm long, shorter than principal. Palea 5–5.5 mm long, cartilaginous, thinner above. Palea keels ciliate, adorned all along or above. Palea surface smooth or scaberulous (on margins). Palea apex dentate, 2 -fid. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, 0.5–1 mm long, fleshy. Anthers 3, 2.5–3.8 mm long. Caryopsis with adherent pericarp, 2 mm long.

Distribution (TDWG). Continent. Australasia.

Country /Province /State. Australia. Western Australia.

TDWG4. Kimberley, Eremean.

Triodia aerea M. Lazarides. *Austral. Syst. Bot.*, 10(3): 401 (1997).

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

TYPE from Australia. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Western Australia: Northern Province; Mt. House, Lat 17:05' S. Long. 125:46' E, 5.v.1983., *P.A. Fryxell & L.A. Craven* 3962 (HT: CANB; IT: CANB, PERTH).

Illustrations (Books): K.O.Mallett (ed.), *Flora of Australia*, Vol 44B. *Poaceae* (2004) (235, Fig. 36), D.Sharp & B.K.Simon, *AusGrass*. Grasses of Australia. CD-Rom Version 1.0. (2002).

Illustrations (Journals): *Austr. Syst. Bot.* (10: 406, Fig.12 (1997)).

Derivation (Clifford & Bostock 2007): *L. aera*, atmosphere. Aerial roots grow from the culms and stolons.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose. Stolons present. Culms erect, 45–50 cm long, 1–2 -noded, rooting from lower nodes. Culm-internodes ridged, scaberulous. Lateral branches fastigiate. Leaf-sheaths ribbed, smooth, glabrous on surface, outer margin hairy. Leaf-sheath oral hairs ciliate, 0.7–2 mm long. Ligule a fringe of hairs, 0.7–1 mm long. Collar glabrous. Leaf-blades spreading or reflexed, filiform, conduplicate, 2–7 cm long, 0.7 mm wide, without exudate.

Inflorescence. Inflorescence a panicle. Panicle open, linear, 7–15 cm long, 0.5–1 cm wide. Primary panicle branches appressed, 0.5–1 cm long. Panicle axis terete or angular or flat. Panicle branches terete or angular or flat. Spikelets appressed, solitary. Fertile spikelets pedicelled. Pedicels present, 0.5–8 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 or subterete, 9 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes elongated between glumes. Rhachilla elongation 0.6 mm long. Rhachilla internodes terete, 1.3 mm long. Floret callus 0.6 mm long, bearded.

Glumes. Glumes persistent, similar, reaching apex of florets or exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 7–9 mm long, 1 length of upper glume, scarios or cartilaginous, without keels, 3 -veined. Lower glume surface smooth or scabrous. Lower glume apex acuminate. Upper glume lanceolate, 7–9 mm long, scarios or cartilaginous, without keels, 3 -veined. Upper glume surface smooth or scabrous. Upper glume apex acuminate.

Florets. Fertile lemma oblong, 4 mm long, indurate, without keel, 3 -veined, 0–3 -veined. Lemma midvein ciliate, hairy all along. Lemma surface scaberulous, rough above. Lemma margins ciliate, hairy all along. Lemma apex lobed, 3 -fid, awned, 3 -awned. Principal lemma awn recurved at base of limb or briefly coiled at base of limb, 5–8 mm long overall. Lateral lemma awns present, arising on apex of lobes, 2–4 mm long, shorter than principal. Palea oblong, 4.5 mm long, cartilaginous or indurate. Palea keels thickened, scaberulous, adorned above, with 0.33–0.5 of their length adorned. Palea apex scaberulous. Apical sterile florets resembling fertile though underdeveloped.

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

Distribution (TDWG). Continent. Australasia.

Country /Province /State. Australia. Western Australia.

TDWG4. Kimberley.

Triodia angusta N. T. Burbidge. *Journ. Roy. Soc. W. Austral.* . 26 (1946).

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

TYPE from Australia. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Australia: Coongan Station, *Anderson (Burbidge 452)*.

Illustrations (Books): C.A.Gardner, *Flora of Western Australia*, Vol 1, Part 1, *Gramineae* (1952) (71, Pl. 21).

Derivation (Clifford & Bostock 2007): *L. narrow*. Narrow, with respect to leaf-blades or spicate panicles.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose, clumped densely. Stolons present. Culms 50–70 cm long. Culm-internodes distally glabrous. Leaf-sheaths without keel, indistinctly veined or striately veined. Leaf-sheath oral hairs pubescent. Ligule a fringe of hairs. Leaf-blades aciculate, conduplicate, stiff, glaucous. Leaf-blade venation without layer of subepidermal sclerenchyma masking vein striation. Leaf-blade margins scabrous. Leaf-blade apex pungent.

Inflorescence. Inflorescence composed of racemes. Racemes borne along a central axis, appressed, unilateral, 2–3 cm long. Central inflorescence axis 15–20 cm long. Spikelets solitary. Fertile spikelets sessile.

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 cuneate, laterally compressed, 6–7 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus glabrous.

Glumes. Glumes persistent, similar, shorter than spikelet, thinner than fertile lemma. Lower glume lanceolate, 3–4 mm long, 1 length of upper glume, membranous or scarious, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume apex acuminate. Upper glume lanceolate, 3–4 mm long, 1.2–1.3 length of adjacent fertile lemma, hyaline or scarious, without keels, 1–3 -veined. Upper glume lateral veins absent or obscure. Upper glume apex acuminate.

Florets. Fertile lemma lanceolate or ovate, 2.5–3 mm long, membranous or scarious, without keel, 3 -veined, 0–3 -veined. Lemma surface glabrous. Lemma margins eciliate or ciliolate. Lemma apex dentate, 3 -fid, incised 0.15 of lemma length. Palea elliptic or oblong, membranous or scarious. Palea keels wingless, ciliolate. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Anthers 3.

Distribution (TDWG), Continent. Australasia.

Country /Province /State. Australia. Western Australia.

TDWG4. Eremean.

Triodia aristiglumis (Lazarides) M. Lazarides. *Austral. Syst. Bot.*, 10(3): 405: (1997).

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

TYPE from Australia. **Basionym or Replaced Name:** *Plectrachne aristiglumis* Lazarides, *Nuytsia* 5(2): 278 (1984) [1985]. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Australia: Northern Territory: Darwin & Gulf District; Magela Creek, 12.40'S, 133.03'E; 25 Feb 1973, *Dunlop 3371* (HT: CANB; IT: BRI, DNA, K, NT, PERTH).

Illustrations (Books): K.O.Mallett (ed.), *Flora of Australia*, Vol 44B. *Poaceae* (2004) (215, Fig. 34), D.Sharp & B.K.Simon, *AusGrass*. Grasses of Australia. CD-Rom Version 1.0. (2002).

Illustrations (Journals): *Austr. Syst. Bot.* (10: 402, Fig.10 (1997)).

Derivation (Clifford & Bostock 2007): *L. arista*, bristle; *gluma*, husk. With awned subtending glumes or lemmas.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose, clumped densely. Culms erect, 60 cm long, 3–4 -noded. Culm-internodes smooth or scaberulous, distally glabrous or pilose. Leaf-sheaths without exudate, pilose or hirsute. Ligule a fringe of hairs, 0.8 mm long. Leaf-blades flexuous, conduplicate, 10–25 cm long, 2–3 mm wide, stiff, without exudate. Leaf-blade surface scabrous, rough on both sides, glabrous, hairless except near base. Leaf-blade apex pungent.

Inflorescence. Inflorescence a panicle. Panicle open, lanceolate, 11–13 cm long, 3–4 cm wide. Primary panicle branches sparsely divided, 3 cm long. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, 1–1.5 mm long.

Fertile Spikelets. Spikelets comprising 5–6 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, laterally compressed, 11–13 mm long, 2–3.3 mm wide, breaking up at maturity, disarticulating below each fertile floret. Floret callus glabrous, obtuse.

Glumes. Glumes persistent, similar, shorter than spikelet. Lower glume lanceolate, 7–8 mm long, 1 length of upper glume, membranous, without keels, 3 -veined. Lower glume surface asperulous, glabrous or pilose. Lower glume margins ciliate (above). Lower glume apex lobed, 2 -fid, awned, 3 -awned, awn 6–7 mm long

(laterals 2–3mm). Upper glume lanceolate, 3–8 mm long, 1.2–1.3 length of adjacent fertile lemma, membranous, without keels, 3 -veined. Upper glume surface asperulous, glabrous or pilose. Upper glume margins ciliate (above). Upper glume apex lobed, 2 -fid, awned, 3 -awned, awn 8–9 mm long (laterals 3–4mm).

Florets. Fertile lemma oblong, 6 mm long, cartilaginous, without keel, 3 -veined, 0–3 -veined. Lemma surface scaberulous, pilose, hairy below, hairy in lines. Lemma margins ciliate. Lemma apex lobed, 2 -fid, awned, 3 -awned. Principal lemma awn from a sinus, 12 mm long overall. Lateral lemma awns present, arising on apex of lobes, 7 mm long, shorter than principal. Palea 5 mm long, membranous, 2 -veined. Palea keels scaberulous. Apical sterile florets 2–3 in number, barren, rudimentary. Apical sterile lemmas awned, 3 -awned.

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

Distribution (TDWG). Continent. Australasia.

Country /Province /State. Australia. Northern Territory.

TDWG4. Darwin & Gulf.

Triodia aurita M. Lazarides. *Austral. Syst. Bot.*, 10(3): 405 (1997).

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

TYPE from Australia. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Northern Territory: Darwin and Gulf District; Lat 13:33' S, Long. 132:17' E, 7.xii.79., *C.R. Dunlop 4214* (HT: CANB; IT: BRI, DNA, MEL).

Illustrations (Books): K.O.Mallett (ed.), *Flora of Australia*, Vol 44B. *Poaceae* (2004) (240, Fig. 37), D.Sharp & B.K.Simon, *AusGrass*. Grasses of Australia. CD-Rom Version 1.0. (2002).

Illustrations (Journals): *Austr. Syst. Bot.* (10: 407, Fig.13 (1997)).

Derivation (Clifford & Bostock 2007): *L. auritus*, eared. Leaf-sheaths auricled.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose. Culm-internodes brown. Leaf-sheaths smooth, glabrous on surface, outer margin glabrous or hairy. Leaf-sheath oral hairs ciliate, 2 mm long. Leaf-sheath auricles erect, 5 mm long. Ligule a fringe of hairs, 1–1.3 mm long. Leaf-blade base with a brief petiole-like connection to sheath, petiole 0.5 cm long. Leaf-blades filiform, conduplicate, 12–25 cm long, 1.2 mm wide, stiff, without exudate. Leaf-blade apex pungent.

Inflorescence. Inflorescence a panicle. Panicle open, elliptic, effuse, 2.5 cm long. Primary panicle branches 5–10.5 cm long. Panicle axis angular. Panicle branches capillary, with prominent pulvini. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, filiform, 2–12 mm long.

Fertile Spikelets. Spikelets comprising 7–9 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 9–13 mm long, 2 mm wide, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes terete, 1–2 mm long. Floret callus 0.3 mm long, bearded. Floret callus hairs 2 mm long, 0.33 length of lemma.

Glumes. Glumes persistent, similar, shorter than spikelet, thinner than fertile lemma. Lower glume elliptic or oblong, clasping, 4–5 mm long, 1 length of upper glume, cartilaginous, without keels or 1-keeled, keeled above, 1–3 -veined. Lower glume lateral veins absent or obscure. Lower glume surface asperulous. Lower glume apex obtuse. Upper glume elliptic or oblong, 4–5 mm long, cartilaginous, without keels or 1-keeled, keeled above, 1–3 -veined. Upper glume lateral veins absent or obscure. Upper glume surface asperulous. Upper glume apex emarginate, mucronate.

Florets. Fertile lemma elliptic or obovate, 5–6 mm long, indurate, much thinner above, much thinner on margins, without keel, 5 -veined, more than 3-veined. Lemma midvein with contiguous subsidiary veins, ciliate, hairy below. Lemma surface scaberulous, rough above. Lemma margins ciliate, hairy below. Lemma apex dentate, 2 -fid, with lobes 0.5 mm long, mucronate. Principal lemma awn from a sinus, 1.2 mm long overall. Palea lanceolate, 4.5 mm long, hyaline. Palea keels scaberulous. Palea apex emarginate. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, 0.5 mm long, fleshy. Anthers 3, 3.2 mm long. Caryopsis with adherent pericarp.

Distribution (TDWG). Continent. Australasia.

Country /Province /State. Australia. Northern Territory.

TDWG4. Darwin & Gulf.

Triodia barbata R.L.Barrett & M.D.Barrett. *Telopea* 13 (1–2): 58 (2011).

TYPE from Australia. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Western Australia: E. of Pompeys Pillar, southern Ragged Ra, east Kimberley, 4 Feb 2010, *R.L.Barrett 6607* (holo: PERTH 08239711; iso: BRI, CANB, DNA, K, MEL, NSW).

Images: *Telopea* 13 (1–2): 60–61, Figs.1 & 2 (2010).

Habit, Vegetative Morphology. Perennial, caespitose, clumped densely. Culms 80–120 cm long. Culm-internodes scaberulous. Leaf-sheaths without exudate, smooth or antrorsely scabrous, pilose. Leaf-sheath oral hairs ciliate, 2.5 mm long. Leaf-sheath auricles absent. Ligule a fringe of hairs. Leaf-blade base with a false petiole, petiole 1.2–1.8 cm long. Leaf-blades aciculate, conduplicate, 25–60 cm long, 0.7–1.1 mm wide, stiff, without exudate. Leaf-blade surface glabrous.

Inflorescence. Inflorescence composed of racemes. Racemes borne along a central axis, unilateral, 10–13 cm long. Central inflorescence axis 27–55 cm long. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, 0.8–5.5 mm long.

Fertile Spikelets. Spikelets comprising 4–6 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets elliptic, laterally compressed, 3.5–4.5 mm long, 2.5–4 mm wide, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes 0.25 mm long. Floret callus evident, 0.2 mm long, pilose. Floret callus hairs 1–1.3 mm long.

Glumes. Glumes persistent, similar, shorter than spikelet, thinner than fertile lemma. Lower glume ovate, 2.7–3.5 mm long, 1 length of upper glume, scarious or cartilaginous, without keels, 3 -veined. Lower glume surface asperulous. Lower glume apex obtuse, mucronate. Upper glume ovate, 2.7–3.5 mm long, 0.75 length of adjacent fertile lemma, scarious or cartilaginous, without keels, 3 -veined. Upper glume surface asperulous. Upper glume apex obtuse, mucronate.

Florets. Fertile lemma ovate, 3.2–4 mm long, cartilaginous or coriaceous, without keel, 9 -veined, more than 3-veined. Lemma lateral veins in close groups (of 3). Lemma surface hirsute, hairy below. Lemma apex lobed, 3 -fid, with lobes 0.9–1.2 mm long, incised 0.25 of lemma length. Palea lanceolate, 3 mm long, 2-keeled. Palea keels thickened, wingless, ciliolate. Palea surface puberulous, hairy above. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Anthers 3, 1.7 mm long.

Distribution (TDWG). Continent. Australasia.

Country /Province /State. Australia. Western Australia. Kimberley.

Triodia basedowii E.Pritz. Fedde, *Repert.* xv. 356 (1918).

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

TYPE from Australia. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: ST: *H. Basedow 315*, 1903, Northern Territory; Central Australia; Elder Exploring Expedition, Arkaringa Creek. ST: *H. Basedow 425*, 1903, Northern Territory; Central Australia; Elder Exploring Expedition, Arkaringa Creek. (K, NSW).

Illustrations (Books): J.P.Jessop, G.R.M. Dashorst & F.M.James, *Grasses of South Australia* (2006) (411, Fig. 339), C.A.Gardner, *Flora of Western Australia*, Vol 1, Part 1, *Gramineae* (1952) (69, Pl. 19), S.W.L.Jacobs, R.D.B.Whalley & D.J.B.Wheeler., *Grasses of New South Wales*, 4th edn (2008) (387), 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): in honor of Herbert Basedow (1881–1933) South Australian geologist.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose, clumped densely. Culms 40–100 cm long. Leaf-sheaths without keel, woolly. Leaf-sheath oral hairs woolly. Ligule a fringe of hairs. Leaf-blades aciculate, conduplicate, 5–10 cm long, stiff. Leaf-blade venation without layer of subepidermal sclerenchyma masking vein striation. Leaf-blade apex pungent.

Inflorescence. Inflorescence a panicle. Panicle contracted, linear, 6–8 cm long, 1–1.5 cm wide. Primary panicle branches appressed. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 5–6 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets oblong, laterally compressed, 8–9 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, 6–8 mm long, 1 length of upper glume, scarios, without keels, 9–13 -veined. Lower glume apex obtuse or acute. Upper glume oblong, 6–8 mm long, 1 length of adjacent fertile lemma, scarios, without keels, 9–13 -veined. Upper glume apex obtuse or acute.

Florets. Fertile lemma oblong, 6–8 mm long, coriaceous, without keel, 9–15 -veined, more than 3-veined. Lemma lateral veins evenly spaced. Lemma surface pubescent, hairy below. Lemma margins ciliolate. Lemma apex lobed, 3 -fid, with ovate lobes, incised 0.66 of lemma length, obtuse or acute. Palea oblong or obovate. Palea keels scabrous. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Anthers 3.

Distribution (TDWG). Continent. Australasia.

Country /Province /State. Australia. Western Australia, Northern Territory, South Australia, Queensland, New South Wales.

TDWG4. Ereman. Victoria R & Barkly Tableland, Central Australia. NW & Lake Eyre, Southern. Inland. Western Plains.

Triodia biflora M. Lazarides. *Austral. Syst. Bot.*, 10(3): 412 (1997).

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

TYPE from Australia. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Western Australia: Northern Province, Hamersley Range, Knox Gorge, Karijini National Park, Lat. 22:23' S, Long. 11 18' E, 22.vii.1992., *B.Rice 4445* (HT: CANB).

Illustrations (Books): K.O.Mallett (ed.), *Flora of Australia*, Vol 44B. *Poaceae* (2004) (250, Fig. 38), D.Sharp & B.K.Simon, *AusGrass*. Grasses of Australia. CD-Rom Version 1.0. (2002).

Illustrations (Journals): *Austr. Syst. Bot.* (10: 409, Fig.14 (1997)).

Derivation (Clifford & Bostock 2007): L. bis, twice; flos, flower. Florets two per spikelet.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose. Culm-internodes striate. Leaf-sheaths longer than adjacent culm internode, resinous, glabrous on surface. Leaf-sheath oral hairs bearded, 5 mm long. Ligule a fringe of hairs, 1.5–2 mm long. Leaf-blades involute, 25–30 cm long, 0.5–1.2 mm wide, coriaceous, stiff, resinous. Leaf-blade surface grooved on either side of midline, grooved abaxially. Leaf-blade margins scabrous. Leaf-blade apex pungent.

Inflorescence. Inflorescence a panicle. Panicle open, elliptic, 20–25 cm long, 5–7 cm wide. Primary panicle branches simple or sparsely divided, 8–10 cm long. Panicle axis angular. Panicle branches angular, bearded in axils. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, linear, angular, 1.5–2(–5) 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 elliptic, laterally compressed, 3.3–4 mm long, 2.3 mm wide, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes suppressed between florets. Floret callus obtuse.

Glumes. Glumes persistent, similar, shorter than spikelet, thinner than fertile lemma. Lower glume elliptic or oblong, 2.5–3.5 mm long, 1 length of upper glume, scarios, light brown, without keels, 3 -veined. Lower glume surface asperulous. Lower glume apex truncate or obtuse. Upper glume elliptic or oblong, 2.5–3.5 mm long, scarios, light brown, without keels, 3 -veined. Upper glume surface asperulous. Upper glume apex truncate or obtuse.

Florets. Fertile lemma oblong, 3–3.8 mm long, coriaceous, much thinner above, without keel, 3 -veined, 0–3 -veined. Lemma surface scaberulous, rough above. Lemma apex entire (or minutely 3-dentate), acute, muticous. Palea elliptic, cartilaginous or coriaceous. Palea keels winged, narrowly winged, scaberulous, adorned above, with 0.5 of their length adorned. Palea surface scaberulous. Palea apex entire or dentate, 2 -fid, obtuse. Rhachilla extension 1.3–2 mm long. Apical sterile florets 1 in number, orbicular.

Flower and Fruit. Lodicules 2, oblong, 0.3 mm long, fleshy, truncate. Anthers 3, 2 mm long. Caryopsis with adherent pericarp.

Distribution (TDWG). Continent. Australasia.

Country /Province /State. Australia. Western Australia.

TDWG4. Ereman.

Triodia bitextura M. Lazarides, nom nov. *Austral. Syst. Bot.*, 10(3): 412 (1997).

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

TYPE from Australia. **Basionym or Replaced Name:** *Triraphis pungens* R. Br., *Prodr.* 1: 185 (1810). T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: Queensland: Burke District; Islands of Gulf of Carpentaria, *R. Brown* [6247] (HT: BM; IT: K, PERTH, E, B).

Recent Synonyms: *Plectrachne pungens* (R. Br.) C.E.Hubb. in Hook. Ic. Pl. 34: t. 3385 (1939).

Illustrations (Books): C.A.Gardner, *Flora of Western Australia*, Vol 1, Part 1, *Gramineae* (1952) (84, Pl. 23 as *Plectrachne pungens*), J.R.Wheeler et al, *Flora of the Kimberley Region* (1992) (1205, Fig. 341 as *Plectrachne pungens*), J.C.Tothill, & J.B.Hacker. *The grasses of southern Queensland* (1983) (350 as *Plectrachne pungens*), K.O.Mallett (ed.), *Flora of Australia*, Vol 44B. *Poaceae* (2004) (228, Fig. 35 & 235, Fig. 36), D.Sharp & B.K.Simon, *AusGrass*. Grasses of Australia. CD-Rom Version 1.0. (2002).

Illustrations (Journals): *Hooker's Icones Plantarum* (t.3385 (1939) as *Plectrachne pungens*), *Austr. Syst. Bot.* (10: 411, Fig.15 (1997)).

Derivation (Clifford & Bostock 2007): *L. bi-*, two; *textus*, tissue. The surfaces of the upper and lower portions of the palea and lemma differ in texture.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose. Culms erect or geniculately ascending, 50–80 cm long, 2–4 -noded. Leaf-sheaths resinous. Ligule a fringe of hairs. Leaf-blades deciduous at the ligule, involute, 10–25 cm long, stiff, resinous. Leaf-blade apex pungent.

Inflorescence. Inflorescence a panicle. Panicle contracted, lanceolate, 10–18 cm long. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

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, 8–10 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus evident, pubescent, acute.

Glumes. Glumes persistent, similar, reaching apex of florets, thinner than fertile lemma. Lower glume lanceolate, 8–12 mm long, 1 length of upper glume, membranous, without keels, 3 -veined. Lower glume apex acute, mucronate. Upper glume lanceolate, 8–12 mm long, 1.1 length of adjacent fertile lemma, membranous, without keels, 3 -veined. Upper glume apex acute, mucronate.

Florets. Fertile lemma oblong, 7–10 mm long, coriaceous, without keel, 9 -veined, more than 3-veined. Lemma lateral veins in close groups (of 3). Lemma surface pubescent, hairy below. Lemma apex lobed, 3 -fid, with linear lobes, incised 0.5–0.66 of lemma length, acuminate, awned, 3 -awned. Principal lemma awn curved, spreading, 7–15 mm long overall, deciduous. Lateral lemma awns present, arising on apex of lobes, deciduous with the principal, 5–10 mm long, shorter than principal. Palea oblong, 1 length of lemma, coriaceous, thinner above, 2 -veined. Palea surface pubescent, hairy in a transverse fringe. Palea apex dentate, 2 -fid. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Anthers 3, 2–3.5 mm long. Caryopsis with adherent pericarp.

Distribution (TDWG). Continent. Australasia.

Country /Province /State. Australia. Western Australia, Northern Territory, Queensland.

TDWG4. Kimberley, Eremean. Darwin & Gulf, Victoria R & Barkly Tableland, Central Australia. North, Central, Inland.

Triodia brizoides N. T. Burbidge. *Journ. Roy. Soc. W. Austral.* . 24 (1946).

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

TYPE from Australia. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: Australia: Gorge Range, between Shaw and Coogan Rivers, *N.T. Burbidge* 792 (HT: CAN; IT: BRI, PERTH).

Illustrations (Books): C.A.Gardner, *Flora of Western Australia*, Vol 1, Part 1, *Gramineae* (1952) (70, Pl. 20), 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. Inflorescences or spikelets resemble those of *Briza*.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose, clumped densely. Culms 50–70 cm long. Culm-internodes distally glabrous. Leaf-sheaths without keel, glabrous on surface. Leaf-sheath oral hairs woolly. Ligule a fringe of hairs. Leaf-blades aciculate, conduplicate, stiff, glaucous. Leaf-blade venation without layer of subepidermal sclerenchyma masking vein striation. Leaf-blade apex pungent.

Inflorescence. Inflorescence a panicle. Panicle open, linear or elliptic, effuse, 8–10 cm long. Primary panicle branches simple. Panicle axis scabrous. Panicle branches bearded in axils. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, filiform, 10–20 mm long, scabrous.

Fertile Spikelets. Spikelets comprising 7–10 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets oblong, laterally compressed, 10–20 mm long, 6–8 mm wide, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, similar, shorter than spikelet, thinner than fertile lemma. Lower glume oblong, 6–6.5 mm long, 1 length of upper glume, scarious, without keels, 3–5 -veined. Lower glume apex obtuse or acute, mucronate. Upper glume oblong, 6–6.5 mm long, 0.9–1.2 length of adjacent fertile lemma, scarious, without keels, 3–5 -veined. Upper glume apex obtuse or acute, mucronate.

Florets. Fertile lemma lanceolate or ovate, 6–7 mm long, coriaceous, without keel, 9 -veined, more than 3-veined. Lemma midvein ciliolate, hairy below. Lemma lateral veins in close groups (of 3). Lemma surface pubescent, hairy at base. Lemma margins ciliate, hairy below. Lemma apex dentate, 3 -fid, incised 0.15 of lemma length, acute or acuminate. Palea linear or elliptic. Palea keels winged, narrowly winged, ciliolate. Palea surface pubescent, hairy below. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Anthers 3.

Distribution (TDWG). Continent. Australasia.

Country /Province /State. Australia. Western Australia, Northern Territory, Queensland.

TDWG4. Kimberley, Eremean. Central Australia. North, Inland.

Triodia bromoides (F. Muell.) M. Lazarides. *Austral. Syst. Bot.*, 10(3): 417: (1997).

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

TYPE from Australia. **Basionym or Replaced Name:** *Triraphis bromoides* F. Muell., *Fragm.* 8: 108 (1873). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Western Australia: South-West Province; Geopraphe Bay, A. *Oldfield s.n.* (HT: MEL, IT: K, PERTH).

Recent Synonyms: *Plectrachne bromoides* (F. Muell.) C.E.Hubb., *Hook. Ic. Pl.* 34: sub t. 3385, p. 2 (1939).

Illustrations (Books): K.O.Mallett (ed.), *Flora of Australia*, Vol 44B. *Poaceae* (2004) (213, Fig. 33), D.Sharp & B.K.Simon, *AusGrass*. Grasses of Australia. CD-Rom Version 1.0. (2002).

Illustrations (Journals): *Austr. Syst. Bot.* (10: 415, Fig.17 (1997)).

Derivation (Clifford & Bostock 2007): Gk. *-oides*, resembling. Resembling *Bromus*, usually with respect to the inflorescence.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose. Culms erect, 60–130 cm long. Culm-internodes distally glabrous. Culm-nodes glabrous. Lateral branches lacking. Leaf-sheaths glabrous on surface. Leaf-sheath oral hairs bearded. Ligule a fringe of hairs. Leaf-blades aciculate, conduplicate, 30–60 cm long, 2 mm wide, coriaceous, stiff. Leaf-blade surface glabrous. Leaf-blade apex pungent.

Inflorescence. Inflorescence a panicle. Panicle open, lanceolate, 15–30 cm long. Panicle axis scaberulous. Panicle branches scaberulous. 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 elliptic, laterally compressed, 20 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus 2 mm long, bearded.

Glumes. Glumes persistent, similar, shorter than spikelet. Lower glume linear, 10 mm long, 0.33–0.4 length of upper glume, scarious, without keels. Lower glume apex acuminate, awned, 1 -awned. Upper glume linear, 25–30 mm long, 4–5 length of adjacent fertile lemma, scarious, without keels. Upper glume apex dentate, 3 -fid.

Florets. Fertile lemma oblong, 6 mm long, coriaceous, without keel, 8–15 -veined, more than 3-veined. Lemma surface pubescent. Lemma margins ciliate. Lemma apex lobed, 3 -fid, awned, 3 -awned. Principal lemma awn 20–35 mm long overall. Lateral lemma awns present, arising on apex of lobes, shorter than principal. Palea 2 -veined. Palea surface glabrous. Apical sterile florets resembling fertile though underdeveloped, 4–6 in number.

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

Distribution (TDWG). Continent. Australasia.

Country /Province /State. Australia. Western Australia.

TDWG4. South-West.

Triodia bunglensis (S.W.L. Jacobs) M. Lazarides. *Austral. Syst. Bot.*, 10(3): 418: (1997).

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

TYPE from Australia. **Basionym or Replaced Name:** *Plectrachne bunglensis* S.W.L. Jacobs, *Nuytsia* 8(2): 222 (1992). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Western Australia: Northern Province; Bungle Bungle Range, Lat. 17:27' S, Long. 128:25' E, 4.vi.1985., *M.I. Blackwell BB60* (HT: PERTH).

Illustrations (Books): K.O.Mallett (ed.), *Flora of Australia*, Vol 44B. *Poaceae* (2004) (213, Fig. 33), D.Sharp & B.K.Simon, *AusGrass*. Grasses of Australia. CD-Rom Version 1.0. (2002).

Illustrations (Journals): *Austr. Syst. Bot.* (10: 415, Fig.17 (1997)).

Derivation (Clifford & Bostock 2007): L. *-ensis*, denoting origin. From the Bungle Bungle Range, Western Australia.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose, clumped loosely. Butt sheaths coriaceous, distinctly ribbed. Culms 150 cm long. Leaf-sheaths smooth or scaberulous, glabrous on surface or pilose. Leaf-sheath oral hairs lacking to pubescent. Ligule a fringe of hairs, 3 mm long. Collar pubescent. Leaf-blades straight or curved or flexuous, filiform, conduplicate, 12–30 cm long, 0.8 mm wide, coriaceous, stiff, resinous. Leaf-blade surface grooved on either side of midline, grooved abaxially, scabrous, rough adaxially. Leaf-blade margins scabrous. Leaf-blade apex pungent.

Inflorescence. Inflorescence a panicle. Panicle spiciform, linear, 9.5–20 cm long, 1.5–2 cm wide. Primary panicle branches simple or sparsely divided, 3–5.5 cm long. Panicle axis angular. Spikelets solitary or in pairs. Fertile spikelets pedicelled. Pedicels present, 2–7 mm long.

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, 5–6 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes flattened, 1.5 mm long, scaberulous.

Glumes. Glumes persistent, similar, reaching apex of florets, thinner than fertile lemma. Lower glume linear or lanceolate, 5–7 mm long, 0.75–0.9 length of upper glume, scarious, 1-keeled, 1–3 -veined. Lower glume primary vein smooth or scaberulous. Lower glume lateral veins absent or obscure. Lower glume apex entire or dentate, 2 -fid, acuminate, muticous or awned, 1 -awned, awn 1–2 mm long. Upper glume linear or lanceolate, 4–6 mm long, scarious, 1-keeled, 1 -veined. Upper glume primary vein smooth or scaberulous. Upper glume lateral veins absent. Upper glume apex entire or dentate, 2 -fid, acuminate, muticous or awned, 1 -awned, awn 1–2 mm long.

Florets. Fertile lemma ovate, 2–3 mm long, membranous or scarious, without keel, 3 -veined, 0–3 -veined. Lemma midvein ciliate. Lemma surface scaberulous, rough above, glabrous or pubescent. Lemma margins ciliate. Lemma apex lobed, 3 -fid, awned, 3 -awned. Principal lemma awn 10–20 mm long overall. Lateral lemma awns present, arising on apex of lobes, 0.8–7.5 mm long, shorter than principal. Palea linear or oblanceolate, 3 mm long, membranous or scarious, of uniform consistency. Palea keels scaberulous. Palea surface puberulous, hairy below. Palea apex entire or dentate, 2 -fid, ciliate. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, fleshy. Anthers 3, 1.5 mm long. Caryopsis with adherent pericarp, fusiform or ellipsoid, 1.6–2 mm long, obtuse.

Distribution (TDWG). Continent. Australasia.

Country /Province /State. Australia. Western Australia.

TDWG4. Kimberley.

Triodia bunicola (S.W.L. Jacobs) M. Lazarides. *Austral. Syst. Bot.*, 10(3): 419: (1997).

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

TYPE from Australia. **Basionym or Replaced Name:** *Triodia scariosa* subsp. *bunicola* S.W.L. Jacobs, *Telopea* 4(4): 654 (1992). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: South Australia: Flinders Range District; Flinders Ranges north of Hawker, 19.viii.1966., *S.W.L. Jacobs s.n.* (HT: SYD).

Illustrations (Books): J.P.Jessop, G.R.M. Dashorst & F.M.James, *Grasses of South Australia* (2006) (411, Fig. 340), K.O.Mallett (ed.), *Flora of Australia*, Vol 44B. *Poaceae* (2004) (215, Fig. 34), D.Sharp & B.K.Simon, *AusGrass*. Grasses of Australia. CD-Rom Version 1.0. (2002).

Illustrations (Journals): *Austr. Syst. Bot.* (10: 402, Fig.10 (1997)).

Derivation (Clifford & Bostock 2007): Gk *bounos*, hill; L. *-cola*, dweller. From the Flinders Ranges, Australia.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose. Culms 50–100 cm long. Culm-internodes scaberulous. Leaf-sheaths scaberulous, glabrous on surface. Leaf-sheath oral hairs ciliate. Ligule a fringe of hairs, 0.8 mm long. Leaf-blades filiform, conduplicate, 11–30 cm long, 0.7–1 mm wide, without exudate. Leaf-blade surface glabrous.

Inflorescence. Inflorescence a panicle. Panicle open, linear, dense, 15–18 cm long, 1–2 cm wide. Primary panicle branches 1–2 cm long. Panicle branches flat, eglandular or glandular. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, 3–20 mm long.

Fertile Spikelets. Spikelets comprising 5–8 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets elliptic or oblong, laterally compressed, 13–20 mm long, 4–10 mm wide, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes 1.8–2 mm long, scaberulous. Floret callus bearded, truncate. Floret callus hairs 2–3 mm long.

Glumes. Glumes persistent, similar, shorter than spikelet, thinner than fertile lemma. Lower glume oblong, 8.5–14 mm long, 1 length of upper glume, cartilaginous, 1-keeled, 5–9 -veined. Lower glume surface scabrous. Lower glume apex acuminate, mucicous or mucronate. Upper glume oblong, 8.5–14 mm long, scarious, 1-keeled, keeled above, 3–9 -veined. Upper glume surface scabrous. Upper glume margins pubescent. Upper glume apex acuminate, mucicous or mucronate.

Florets. Fertile lemma lanceolate, 9–10 mm long, cartilaginous, much thinner on margins, without keel, 9 -veined, more than 3-veined. Lemma midvein ciliate, hairy below. Lemma lateral veins in close groups. Lemma surface scabrous, rough above, glabrous or hirsute, hairy at base. Lemma margins scabrous, ciliate, hairy below. Lemma apex dentate, 2 -fid, with lobes 0.2–0.3 mm long, mucicous or mucronate. Palea linear or lanceolate, cartilaginous. Palea keels thickened, scabrous, adorned above. Palea surface hirsute, hairy below. Palea apex dentate, 2 -fid. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, 1 mm long, fleshy. Anthers 3, 4 mm long. Caryopsis with adherent pericarp.

Distribution (TDWG). Continent. Australasia.

Country /Province /State. Australia. South Australia, Victoria.

TDWG4. Southern.

Triodia burbridgeana S.W.L. Jacobs. *Nuytsia*, 8(2): 219 (1992).

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

TYPE from Australia. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Western Australia: Northern Province; Mitchell Plateau, Lat. 14:49' S, Long. 125:42' E, 31.v.1988., *S.W.L. Jacobs 5812 & P.G. Wilson* (HT: NSW).

Illustrations (Books): K.O.Mallett (ed.), *Flora of Australia*, Vol 44B. *Poaceae* (2004) (228, Fig. 35), D.Sharp & B.K.Simon, *AusGrass*. Grasses of Australia. CD-Rom Version 1.0. (2002).

Illustrations (Journals): *Austr. Syst. Bot.* (10: 411, Fig.15 (1997)).

Derivation (Clifford & Bostock 2007): L. -ana, indicating connection. In honor of Nancy Tyson Burbidge (1912–1977) Australian botanist.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose, clumped loosely. Culms 60–150 cm long. Leaf-sheaths resinous, smooth, glabrous on surface. Leaf-sheath oral hairs ciliate, 4–8 mm long. Ligule a fringe of hairs, 2 mm long. Leaf-blades appressed or reflexed, 30–60 cm long, 1.3 mm wide, coriaceous, stiff, resinous, aromatic. Leaf-blade surface grooved on either side of midline, grooved abaxially. Leaf-blade margins smooth or spinulose.

Inflorescence. Inflorescence a panicle. Panicle open, linear, 14–53 cm long, 3–5 cm wide. Primary panicle branches simple or sparsely divided, 10–17 cm long, naked below. Panicle axis angular. Panicle branches angular or flat, bearing approximate spikelets or distant spikelets. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, 2–11 mm long.

Fertile Spikelets. Spikelets comprising 4–8 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, laterally compressed or subterete, 4–8 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes 0.8 mm long. Floret callus glabrous, truncate.

Glumes. Glumes persistent, similar, shorter than spikelet, thinner than fertile lemma. Lower glume ovate, 3.5–5 mm long, 1 length of upper glume, scarious or cartilaginous, without keels or 1-keeled, keeled above, 3–5 -veined. Lower glume surface smooth or asperulous. Lower glume apex emarginate or obtuse or acute. Upper glume ovate, 3.5–5 mm long, scarious or cartilaginous, without keels or 1-keeled, keeled above, 3 -veined. Upper glume surface smooth or asperulous. Upper glume apex emarginate or obtuse or acute.

Florets. Fertile lemma ovate or orbicular, 3–4 mm long, cartilaginous or coriaceous, much thinner on margins, without keel, 9 -veined, more than 3-veined. Lemma lateral veins in close groups. Lemma margins scaberulous, eciliate or ciliolate. Lemma apex lobed, 3 -fid, with simple equal lobes (but midlobe narrower), with triangular lobes, with lobes 0.6 mm long, acuminate. Palea elliptic, cartilaginous. Palea keels winged, narrowly winged, scaberulous. Palea apex entire. Apical sterile florets resembling fertile though underdeveloped.

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

Distribution (TDWG). Continent. Australasia.

Country /Province /State. Australia. Western Australia, Northern Territory.

TDWG4. Kimberley, Darwin & Gulf.

Triodia bynoei (C.E. Hubb.) M. Lazarides. *Austral. Syst. Bot.*, 10(3): 422: (1997).

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

TYPE from Australia. **Basionym or Replaced Name:** *Plectrachne bynoei* C.E. Hubb., *Bull. Misc. Inform. Kew* 1941: 30 (1941). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *Bynoe s.n.*, Australia: Western Australia: Northern Province: (K(fragm. PERTH)). North-west coast.

Illustrations (Books): K.O.Mallett (ed.), *Flora of Australia*, Vol 44B. *Poaceae* (2004) (240, Fig. 37), D.Sharp & B.K.Simon, *AusGrass*. Grasses of Australia. CD-Rom Version 1.0. (2002).

Illustrations (Journals): *Austr. Syst. Bot.* (10: 407, Fig.13 (1997)).

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 Benjamin Bynoe (c. 1803–65) English Naval Surgeon who collected in Australia.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose. Culms erect or geniculately ascending, 90–165 cm long, 3–4 -noded. Leaf-sheaths resinous, outer margin hairy. Leaf-sheath oral hairs bearded. Ligule a fringe of hairs. Leaf-blades curled, conduplicate, 30–45 cm long, stiff, resinous, aromatic. Leaf-blade surface puberulous. Leaf-blade apex pungent.

Inflorescence. Inflorescence composed of racemes. Racemes numerous, borne along a central axis, unilateral, 5–11 cm long. Central inflorescence axis 30–50 cm long. Rhachis angular, scabrous on margins. Spikelet packing broadside to rhachis, 2 -rowed. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, 0.9–2 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, 4.4–9.5 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes 0.8–1.5 mm long. Floret callus pubescent.

Glumes. Glumes persistent, similar, shorter than spikelet. Lower glume lanceolate, 4.4–9.5 mm long, 1.3 length of upper glume, membranous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume apex entire or dentate, 2 -fid, acuminate, mucronate. Upper glume lanceolate, 3.3–7 mm long, 2–3 length of adjacent fertile lemma, membranous, without keels, 3 -veined. Upper glume apex entire or dentate, 2 -fid, acuminate, mucronate.

Florets. Fertile lemma oblong, 1.6–2.3 mm long, membranous, without keel, 3–5 -veined, 0–3 -veined or more than 3-veined. Lemma surface scaberulous, rough above, pubescent, hairy below. Lemma apex lobed, 3 -fid, with linear lobes, incised 0.2 of lemma length, awned, 1 -awned or 3 -awned. Principal lemma awn 3.5–6 mm long overall. Lateral lemma awns absent or present, arising on apex of lobes, 0–3 mm long, shorter than principal. Palea oblong, membranous, 2 -veined. Palea keels scaberulous, adorned above. Palea surface pubescent, hairy on back. Palea apex dentate, 2 -fid. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, fleshy. Anthers 3, 1–1.7 mm long. Caryopsis with adherent pericarp.

Distribution (TDWG). Continent. Australasia.

Country /Province /State. Australia. Western Australia, Northern Territory.

TDWG4. Kimberley, Eremean, Darwin & Gulf, Victoria R & Barkly Tableland.

Triodia caelestialis G.Armstr. *Journal of the Royal Society of Western Australia* 91: 314–317, Figs 2–3 (2008).

TYPE from Australia. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: Mornington Wildlife Sanctuary Research Centre, central Kimberley, W.A. 17 30.627'S 126 6.530'E, 21st January 2008, G.Armstrong holo: PERTH 07842791; iso: CANB, NT.

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

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose, clumped densely. Stolons absent. Basal innovations intravaginal. Culms 160–200 cm long, 4–5 mm diam., 3–5 -noded. Culm-internodes terete, smooth. Leaf-sheaths mostly shorter than adjacent culm internode, without exudate, smooth, glabrous on surface. Leaf-sheath oral hairs ciliate, erect, 4 mm long. Ligule a ciliate membrane, 1 mm long. Leaf-blades flexuous or tortuous, 15–30 cm long, 2 mm wide, without exudate. Leaf-blade apex pungent.

Inflorescence. Inflorescence a panicle. Panicle open, lanceolate, 18–40 cm long. Primary panicle branches 11–26 in number, 6–19 cm long, bearing 14 fertile spikelets on each lower branch. Panicle branches scaberulous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, filiform, 2–5 mm long, scabrous.

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 linear, dorsally compressed, 15–24 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus elongated, straight or curved, 1–2 mm long, pilose, pungent.

Glumes. Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume linear or lanceolate, 15–24 mm long, 1 length of upper glume, scarious, without keels, 6–16 -veined. Lower glume surface asperulous, rough above. Lower glume apex acuminate. Upper glume linear or lanceolate, 15–24 mm long, 3 length of adjacent fertile lemma, scarious, without keels, 6–16 -veined. Upper glume surface asperulous, rough above. Upper glume apex acuminate.

Florets. Fertile lemma oblong, 5–7 mm long, coriaceous, much thinner above, without keel, 3 -veined, 0–3 -veined. Lemma midvein ciliolate (2 lines flanking midrib). Lemma apex lobed, 3 -fid, awned, 3 -awned. Principal lemma awn curved, reflexed, 10–12 mm long overall. Lateral lemma awns present, arising on apex of lobes, 6–11 mm long, shorter than principal. Palea oblong, 6 mm long, cartilaginous, thinner above. Palea keels ciliate. Palea apex emarginate. Apical sterile florets distinct from fertile, 5–7 in number, in a clump, lanceolate. Apical sterile lemmas lobed, 3 -fid.

Flower and Fruit. Caryopsis with adherent pericarp, obovoid, sulcate on hilar side, 3 mm long.

Distribution (TDWG). Continent. Australasia.

Country /Province /State. Australia. Western Australia. Kimberley.

Triodia claytonii Lazarides. *Fl. Austral.* 43:375 (2002).

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

TYPE from Australia. **Basionym or Replaced Name:** *Plectrachne mollis* Lazarides, *Nuytsia* 5(2): 279 (1984) [1985]. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: Australia: Northern Province: 19 km N of Mitchell Plateau mining camp on track to Port Warrender; 14.42'S;125.47'E; 7 Dec 1982, *Kenneally* 8656 (HT:CANB; IT:PERTH).

Recent Synonyms: *Triodia mollis* Lazarides non (Kunth) Th. Dur. & Schinz.

Illustrations (Books): K.O.Mallett (ed.), *Flora of Australia*, Vol 44B. *Poaceae* (2004) (250, Fig. 38), D.Sharp & B.K.Simon, *AusGrass*. Grasses of Australia. CD-Rom Version 1.0. (2002).

Illustrations (Journals): *Austr. Syst. Bot.* (10: 409, Fig.14 (1997) as *T. mollis*).

Derivation (Clifford & Bostock 2007): in honor of William Derek Clayton (1926-) English agrostologist.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose, clumped densely. Culms erect, 60–75(–90) cm long, 2–3 -noded. Culm-internodes smooth. Lateral branches ample, arising from lower culm. Leaf-sheaths loose, without exudate. Leaf-sheath oral hairs ciliate. Ligule a fringe of hairs, 0.2 mm long. Leaf-blades filiform, conduplicate, 10–25 cm long, 1–2 mm wide, stiff, without exudate. Leaf-blade surface scabrous, rough adaxially. Leaf-blade margins scabrous. Leaf-blade apex pungent.

Inflorescence. Inflorescence a panicle. Panicle contracted, linear, 9–14 cm long, 1–1.5 cm wide. Primary panicle branches 1–2.8 cm long. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, 0.8–4 mm long.

Fertile Spikelets. Spikelets comprising 1 fertile florets, with diminished florets at the apex. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both

fertile or the upper sterile. Spikelets elliptic, laterally compressed, 6–7.5 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus glabrous, obtuse.

Glumes. Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 6–7.5 mm long, 1.1–1.3 length of upper glume, membranous, without keels, 3 -veined. Lower glume surface asperulous, rough above. Lower glume apex acuminate. Upper glume lanceolate, 4.5–6.5 mm long, 2–2.5 length of adjacent fertile lemma, membranous, without keels, 3 -veined. Upper glume surface asperulous, rough above. Upper glume apex acuminate.

Florets. Fertile lemma oblong, 2.3–2.5 mm long, coriaceous, without keel, 3 -veined, 0–3 -veined. Lemma lateral veins obscure. Lemma surface pubescent. Lemma apex lobed, 3 -fid, awned, 3 -awned. Principal lemma awn 6–9 mm long overall. Lateral lemma awns present, arising on apex of lobes, 5–7 mm long, shorter than principal. Palea 2.2–2.5 mm long, coriaceous, thinner above, 2 -veined. Palea keels scaberulous, adorned above. Palea surface pubescent, hairy on back, hairy below. Palea apex with excurrent keel veins. Apical sterile florets 3 in number, barren, in a clump, rudimentary. Apical sterile lemmas awned, 3 -awned. Apical sterile lemma awns 3–7 mm long.

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

Distribution (TDWG). Continent. Australasia.

Country /Province /State. Australia. Western Australia, Queensland.

TDWG4. Kimberley. North.

Triodia compacta (N.T. Burbidge) S.W.L. Jacobs. *Telopea*, 4(4): 653: (1992).

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

TYPE from Australia. **Basionym or Replaced Name:** *Triodia irritans* var. *compacta* N.T. Burb., *Austral. J. Bot.* 1(1): 169, f. 15a (1953). T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: LT: *J.H. Willis s.n.*, 26 Aug 1947, South Australia: Eyre Peninsula District; Elliston Beach, Grimwade Expedition 1947 (CANB; ILT: MEL). LT designated by Lazarides, *Aust. Syst. Bot.* 10(3): 424 (1997).

Illustrations (Books): J.P.Jessop, G.R.M. Dashorst & F.M.James, *Grasses of South Australia* (2006) (412, Fig. 341), K.O.Mallett (ed.), *Flora of Australia*, Vol 44B. *Poaceae* (2004) (250, Fig. 38), D.Sharp & B.K.Simon, *AusGrass*. Grasses of Australia. CD-Rom Version 1.0. (2002).

Illustrations (Journals): *Austr. Syst. Bot.* (10: 409, Fig.14 (1997)).

Images: D.Sharp & B.K.Simon, *AusGrass*. Grasses of Australia. CD-Rom Version 1.0. (2002);.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose. Butt sheaths coriaceous or indurate, distinctly ribbed. Culms 50–120 cm long. Culm-internodes smooth. Leaf-sheaths longer than adjacent culm internode, scaberulous, glabrous on surface, outer margin glabrous or hairy. Leaf-sheath oral hairs pubescent. Ligule a fringe of hairs, 0.2–0.3 mm long. Leaf-blades filiform, conduplicate, 3.5–13 cm long, 0.8–1.3 mm wide, coriaceous, stiff, without exudate. Leaf-blade surface scabrous, rough adaxially. Leaf-blade apex pungent.

Inflorescence. Inflorescence a panicle, exerted or embraced at base by subtending leaf. Panicle open, linear or oblong, dense, 3.9–26 cm long, 1–2 cm wide. Primary panicle branches indistinct the panicle almost racemose or simple. Panicle branches terete or angular or flat, smooth or scaberulous. Spikelets solitary or in pairs. Fertile spikelets pedicelled. Pedicels present, 3–15 mm long.

Fertile Spikelets. Spikelets comprising 6–13 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate or elliptic or oblong or ovate, laterally compressed, 11–24 mm long, 3–9 mm wide, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes thickened, 1–1.3 mm long, smooth or scaberulous. Floret callus straight or curved, glabrous or pubescent, obtuse.

Glumes. Glumes persistent, similar, shorter than spikelet, thinner than fertile lemma. Lower glume linear or ovate, 8.5–13 mm long, 1 length of upper glume, coriaceous, 1-keeled, 3–5 -veined. Lower glume lateral veins obscure. Lower glume surface asperulous, rough above. Lower glume apex acute or acuminate. Upper glume linear or ovate, 8.5–13 mm long, coriaceous, 1-keeled, keeled all along or above, 3–5 -veined. Upper glume lateral veins obscure. Upper glume surface asperulous, rough above. Upper glume apex acute or acuminate.

Florets. Fertile lemma elliptic or obovate, 7–11 mm long, coriaceous, much thinner on margins, keeled, keeled all along or above, 9 -veined, more than 3-veined. Lemma midvein pubescent. Lemma lateral veins in close groups. Lemma surface scaberulous, rough above, glabrous or pubescent, hairy below, inner surface pubescent. Lemma margins pubescent. Lemma apex dentate, 2 -fid, obtuse, muticous or mucronate. Palea lanceolate or elliptic, 0.5–0.9 length of lemma, scarios or coriaceous. Palea keels thickened, scabrous. Palea surface glabrous or pubescent, hairy below. Palea apex emarginate or obtuse. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, 0.5 mm long, fleshy. Anthers 3, 2–4 mm long. Caryopsis with adherent pericarp, sulcate on hilar side, 3 mm long.

Distribution (TDWG). Continent. Australasia.

Country /Province /State. Australia. South Australia.

TDWG4. Southern.

Triodia concinna N. T. Burbidge. *Austral. Journ. Bot.* viii. 387 (1960).

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

TYPE from Australia. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: IT: *N.H. Speck 1482*, 18 Sep 1958, Australia: Western Australia, Eremean Prov., S. of Railway Line & 30 mi W of Wiluna (US-3286052). IT: *N.H. Speck s.n.*, 18 Sep 1958, Australia: Western Australia (L).

Illustrations (Journals): *Austr. Syst. Bot.* (10: 409, Fig.14 (1997)).

Images: D.Sharp & B.K.Simon, *AusGrass*. Grasses of Australia. CD-Rom Version 1.0. (2002);

Derivation (Clifford & Bostock 2007): L. elegant. Panicles or habit attractive.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose, clumped densely. Culms 40–60 cm long. Culm-internodes distally glabrous. Leaf-sheaths without keel, striately veined, outer margin hairy. Leaf-sheath oral hairs woolly. Ligule a fringe of hairs. Leaf-blades aciculate, conduplicate, 3–7 cm long, 2–3 mm wide, stiff. Leaf-blade venation without layer of subepidermal sclerenchyma masking vein striation. Leaf-blade apex pungent.

Inflorescence. Inflorescence a panicle. Panicle open, oblong, 4–8 cm long. Panicle axis smooth. Panicle branches smooth. Spikelets solitary or in pairs. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 5–7 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets ovate, laterally compressed, 8–12 mm long, 5–6 mm wide, breaking up at maturity, disarticulating below each fertile floret. Floret callus glabrous, disarticulating obliquely.

Glumes. Glumes persistent, similar, shorter than spikelet, thinner than fertile lemma. Lower glume lanceolate or ovate, 4.5–5 mm long, 1 length of upper glume, scarious, without keels, 5 -veined. Lower glume lateral veins prominent. Lower glume apex obtuse. Upper glume lanceolate or ovate, 4.5–5 mm long, 1 length of adjacent fertile lemma, scarious, without keels, 5 -veined. Upper glume lateral veins prominent. Upper glume apex obtuse.

Florets. Fertile lemma ovate, 5 mm long, coriaceous, purple, without keel, 3 -veined, 0–3 -veined. Lemma surface pubescent, hairy below. Lemma apex dentate, 3 -fid, incised 0.1 of lemma length, acute. Palea lanceolate or elliptic. Palea keels winged, conspicuously winged, ciliolate. Palea surface glabrous or pubescent, hairy below. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Anthers 3, 2.5 mm long.

Distribution (TDWG). Continent. Australasia.

Country /Province /State. Australia. Western Australia.

TDWG4. Eremean.

Triodia contorta (Lazarides) M. Lazarides. *Austral. Syst. Bot.*, 10(3): 426: (1997).

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

TYPE from Australia. **Basionym or Replaced Name:** *Plectrachne contorta* Lazarides, *Nuytsia* 5(2): 278 (1984) [1985]. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Australia: Northern Territory: Darwin & Gulf District: c. 7.5 miles SE of Mt. Gilruth, 13.07'S,133.09'E; 28 Feb 1973, *Lazarides 7924* (HT:CANB; IT:BRI, DNA, K, L, MO, PERTH, US).

Illustrations (Books): K.O.Mallett (ed.), *Flora of Australia*, Vol 44B. *Poaceae* (2004) (215, Fig. 34), D.Sharp & B.K.Simon, *AusGrass*. Grasses of Australia. CD-Rom Version 1.0. (2002).

Illustrations (Journals): *Austr. Syst. Bot.* (10: 402, Fig.10 (1997)).

Derivation (Clifford & Bostock 2007): L. twisted. Awns hygroscopic and so twisted when dry.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose, clumped densely. Culms erect, 70–100 cm long, 2–3 -noded. Culm-internodes smooth or scaberulous. Leaf-sheaths without exudate, glabrous on surface or pilose, with simple hairs or tubercle-based hairs, outer margin hairy. Leaf-sheath oral hairs bearded. Ligule a fringe of hairs, 0.8–1 mm long. Leaf-blades conduplicate, 5–15 cm long, 2–3 mm wide, stiff, without exudate. Leaf-blade surface scabrous, pilose. Leaf-blade apex pungent.

Inflorescence. Inflorescence a panicle. Panicle open, linear, 14–21 cm long, 3 cm wide. Primary panicle branches 3–6 cm long. Panicle branches angular, scabrous, glabrous or pilose. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 6–7 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets elliptic, laterally compressed, 8 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes 1 mm long. Floret callus glabrous, obtuse.

Glumes. Glumes persistent, dissimilar, shorter than spikelet. Lower glume lanceolate, 5–8 mm long, 1 length of upper glume, membranous, 1-keeled, 3 -veined. Lower glume surface asperulous. Lower glume margins ciliate. Lower glume apex acuminate, awned, 1 -awned, awn 2–5 mm long. Upper glume lanceolate, 5–6 mm long, 0.6–0.75 length of adjacent fertile lemma, membranous, 1-keeled, 3 -veined. Upper glume surface asperulous. Upper glume margins ciliate. Upper glume apex lobed, 2 -fid, awned, 1 -awned, awn 3.5–4.5 mm long.

Florets. Fertile lemma oblong, 5.2 mm long, membranous, without keel, 5 -veined, more than 3-veined. Lemma surface scaberulous, villous, hairy below. Lemma margins ciliate. Lemma apex lobed, 2 -fid, awned, 1 -awned. Principal lemma awn from a sinus, curved, 8–12 mm long overall. Lateral lemma awns absent. Palea membranous, 2 -veined. Palea keels scaberulous, ciliate, adorned above. Palea surface pilose, hairy on back. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, 0.8 mm long, fleshy. Anthers 3. Caryopsis with adherent pericarp.

Distribution (TDWG). Continent. Australasia.

Country /Province /State. Australia. Northern Territory.

TDWG4. Darwin & Gulf.

Triodia cremnophila R.L.Barrett & M.D.Barrett. *Telopea* 13 (1–2): 62 (2011).

TYPE from Australia. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Western Australia, E. of Pompeys Pillar, southern Ragged Ra, east Kimberley, 4 Feb 2010, *R.L.Barrett 6600* (holo:PERTH 08239770; iso BRI, CANB, DNA, K, MEL, NSW).

Images: *Telopea* 13 (1–2): 64, Fig.3 (2010).

Habit, Vegetative Morphology. Perennial, caespitose, clumped densely. Stolons present. Culms erect or geniculately ascending, 60–110 cm long, without nodal roots or rooting from lower nodes. Culm-internodes scaberulous. Leaf-sheaths without exudate, hirsute. Leaf-sheath oral hairs ciliate. Leaf-sheath auricles erect. Ligule a fringe of hairs. Leaf-blade base with a false petiole, petiole 1.1–1.4 cm long. Leaf-blades conduplicate, 22–37 cm long, 0.8–1.1 mm wide, stiff, without exudate. Leaf-blade surface glabrous.

Inflorescence. Inflorescence composed of racemes. Racemes borne along a central axis, unilateral, 5–10.5 cm long. Central inflorescence axis 27–38 cm long. Spikelet packing broadside to rhachis. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, 1.5–7 mm long.

Fertile Spikelets. Spikelets comprising 4–5(–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, 4–6.1 mm long, 2.2–4.3 mm wide, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes elongated between glumes. Rhachilla elongation 0.4 mm long. Rhachilla internodes 0.8–0.9 mm long. Floret callus pilose. Floret callus hairs 0.5–1 mm long.

Glumes. Glumes persistent, similar, reaching apex of florets. Lower glume lanceolate, 3.4–5.1 mm long, 0.8 length of upper glume, cartilaginous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume surface asperulous. Lower glume apex acuminate, mucronate. Upper glume lanceolate, 4–6 mm long, 1–1.5 length of adjacent fertile lemma, membranous, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume mucronate.

Florets. Fertile lemma oblong, 3.6–3.9 mm long, coriaceous, keeled, lightly keeled, 3 -veined, 0–3 -veined. Lemma surface pilose, hairy below. Lemma apex lobed, 3 -fid, with outer lobes shorter, with lobes 1.1–1.5 mm long, incised 0.25 of lemma length, awned, 3 -awned. Principal lemma awn 1.6–3 mm long overall. Lateral lemma awns present, arising on apex of lobes, shorter than principal. Palea lanceolate, 3 mm long, 2 -veined, 2-keeled. Palea keels thickened, wingless, adorned above. Palea surface pubescent, hairy on back, hairy below. Apical sterile florets resembling fertile though underdeveloped.

Distribution (TDWG). Continent. Australasia.

Country /Province /State. Australia. Western Australia.

TDWG4. Kimberley.

Triodia cunninghamii Benth. *Fl. Austral.* vii. 606. (1878).

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

TYPE from Australia. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: LT: A. *Cunningham 510*, Sep 1819, Western Australia: East Gardner Region; Cambridge Gulf, North West coast (K (5 sheets, one label different)). LT designated by Lazarides, *Aust. Syst. Bot.* 10(3): 426 (1997).

Illustrations (Books): C.A.Gardner, *Flora of Western Australia*, Vol 1, Part 1, *Gramineae* (1952), J.R.Wheeler et al, *Flora of the Kimberley Region* (1992) (1232, Fig. 348).

Derivation (Clifford & Bostock 2007): in honor of Allan Cunningham (1791–1839), English-born Australian and New Zealand botanist.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose, clumped densely. Culms 50–70 cm long. Leaf-sheaths resinous, medianly thickened. Leaf-sheath oral hairs ciliate. Ligule a fringe of hairs. Leaf-blades aciculate, conduplicate, stiff. Leaf-blade venation with continuous uniform subepidermal sclerenchyma layer on the underside (except median line). Leaf-blade apex pungent.

Inflorescence. Inflorescence a panicle. Panicle open, 15–30 cm long, contracted about primary branches. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 5–6 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets oblong, laterally compressed, 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 elliptic, 5.5 mm long, 1.2 length of upper glume, scarious, without keels, 3–5 -veined. Lower glume surface asperulous. Lower glume apex obtuse or acute. Upper glume elliptic, 4.5 mm long, 1.5–1.8 length of adjacent fertile lemma, scarious, without keels, 3 -veined. Upper glume surface asperulous. Upper glume apex obtuse or acute.

Florets. Fertile lemma oblong, 2.5–3 mm long, coriaceous, without keel, 9 -veined, more than 3-veined. Lemma lateral veins in close groups (of 3). Lemma apex lobed, 3 -fid, with simple equal lobes, with linear lobes, incised 0.5 of lemma length, acute. Palea 0.5 length of lemma. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Anthers 3.

Distribution (TDWG). Continent. Australasia.

Country /Province /State. Australia. Western Australia.

TDWG4. Kimberley.

Triodia danthonioides (F. Muell.) M. Lazarides. *Austral. Syst. Bot.*, 10(3): 427: (1997).

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

TYPE from Australia. **Basionym or Replaced Name:** *Triraphis danthonioides* F. Muell., *Fragm.* 8: 125 (1873). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Western Australia: South-West Province; Swan River, *J. Drummond 345* (HT: MEL, 3 sheets; IT: K, Perth(photo)).

Recent Synonyms: *Plectrachne danthonioides* (F. Muell.) C.E.Hubb. in *Hook. Ic. Pl.* 34: sub t. 3385, p. 2 (1939).

Illustrations (Books): K.O.Mallett (ed.), *Flora of Australia*, Vol 44B. *Poaceae* (2004) (250, Fig. 38), D.Sharp & B.K.Simon, *AusGrass*. Grasses of Australia. CD-Rom Version 1.0. (2002).

Illustrations (Journals): *Austr. Syst. Bot.* (10: 409, Fig.14 (1997)).

Derivation (Clifford & Bostock 2007): Gk. - oides, resembling. Resembling *Danthonia* with respect to spikelets.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose, clumped densely. Culms erect, 100–175 cm long. Culm-internodes distally woolly. Lateral branches lacking. Leaf-sheaths woolly, outer margin hairy. Ligule a fringe of hairs. Leaf-blades reflexed, aciculate, conduplicate, 25–50 cm long, 2 mm wide, coriaceous, stiff. Leaf-blade surface woolly, hairy adaxially. Leaf-blade apex pungent.

Inflorescence. Inflorescence a panicle. Panicle open, 20–60 cm long. Primary panicle branches ascending. Panicle axis scaberulous. Panicle branches capillary, scaberulous. 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 elliptic, laterally compressed, 9–20 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus pubescent.

Glumes. Glumes persistent, similar, shorter than spikelet. Lower glume lanceolate, 13 mm long, 0.8 length of upper glume, scarios, without keels. Lower glume apex acute. Upper glume lanceolate, 16 mm long, 2–3 length of adjacent fertile lemma, scarios, without keels. Upper glume apex acute.

Florets. Fertile lemma oblong, 8–9 mm long, coriaceous, without keel, 8–15 -veined, more than 3-veined. Lemma surface pubescent, hairy in lines. Lemma apex lobed, 3 -fid, awned, 3 -awned. Principal lemma awn 15 mm long overall. Lateral lemma awns present, arising on apex of lobes, 10 mm long, shorter than principal. Palea 6–9 mm long, 2 -veined. Palea surface glabrous. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, fleshy. Anthers 3, 3.5–6 mm long. Caryopsis with adherent pericarp.

Distribution (TDWG). Continent. Australasia.

Country /Province /State. Australia. Western Australia.

TDWG4. Ereman, South-West.

Triodia desertorum (C.E. Hubb.) M. Lazarides. *Austral. Syst. Bot.*, 10(3): 429: (1997).

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

TYPE from Australia. **Basionym or Replaced Name:** *Plectrachne desertorum* C.E. Hubb., *Bull. Misc. Inform. Kew* 1941: 28 (1941). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Australia: Western Australia: Victoria Desert, 16 Sep 1891, *Helms s.n.* (HT: K; IT: PERTH(photo), MEL, NSW (2 sheets), BRI (fragm. & photo)).

Illustrations (Books): K.O.Mallett (ed.), *Flora of Australia*, Vol 44B. *Poaceae* (2004) (213, Fig. 33), D.Sharp & B.K.Simon, *AusGrass*. Grasses of Australia. CD-Rom Version 1.0. (2002).

Illustrations (Journals): *Austr. Syst. Bot.* (10: 415, Fig.17 (1997)).

Derivation (Clifford & Bostock 2007): *L. desertum*, desert. Of deserts, that is, from arid places.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose. Culms erect, slender, 40–50 cm long. Culm-internodes distally glabrous. Lateral branches lacking. Leaf-sheaths glabrous on surface or hirsute. Ligule a fringe of hairs. Leaf-blades spreading, aciculate, conduplicate, 4–10 cm long, 2 mm wide, coriaceous, stiff. Leaf-blade surface glabrous. Leaf-blade apex pungent.

Inflorescence. Inflorescence a panicle. Panicle open, lanceolate, 10–15 cm long. Primary panicle branches bearing 1 fertile spikelets on each lower branch. Panicle axis scaberulous. Panicle branches scaberulous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 3–5 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets elliptic, laterally compressed, 15–18 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus 1.5–1.7 mm long, pubescent, acute.

Glumes. Glumes persistent, similar, shorter than spikelet. Lower glume lanceolate or elliptic, 10–13 mm long, 0.9 length of upper glume, chartaceous, without keels, 9–13 -veined. Lower glume apex entire or dentate, 3 -fid, acute. Upper glume lanceolate or elliptic, 11–15 mm long, 2–3 length of adjacent fertile lemma, chartaceous, without keels, 8–9 -veined. Upper glume apex entire or dentate, 3 -fid, acute.

Florets. Fertile lemma oblong, 4–7 mm long, coriaceous, without keel, 11–13 -veined, more than 3-veined. Lemma midvein pubescent. Lemma margins pubescent. Lemma apex lobed, 3 -fid, awned, 3 -awned. Principal lemma awn 11–16 mm long overall. Lateral lemma awns present, arising on apex of lobes, shorter than principal. Palea 5–8 mm long, 2 -veined. Palea surface pubescent, hairy on back. Apical sterile florets resembling fertile though underdeveloped.

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

Distribution (TDWG). Continent. Australasia.

Country /Province /State. Australia. Western Australia.

TDWG4. Ereman.

Triodia dielsii (C.E. Hubb.) M. Lazarides. *Austral. Syst. Bot.*, 10(3): 431: (1997).

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

TYPE from Australia. **Basionym or Replaced Name:** *Plectrachne dielsii* C.E. Hubb., *Bull. Misc. Inform. Kew*, 1941: 27 (1941). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Australia: Western Australia: Avon District: Tammin, in dry open sandy thickets, 250 m, 25 Oct 1901, *Diels 5085* (HT: B; IT: K).

Illustrations (Books): K.O.Mallett (ed.), *Flora of Australia*, Vol 44B. *Poaceae* (2004) (213, Fig. 33), D.Sharp & B.K.Simon, *AusGrass*. Grasses of Australia. CD-Rom Version 1.0. (2002).

Illustrations (Journals): *Austr. Syst. Bot.* (10: 415, Fig.17 (1997)).

Derivation (Clifford & Bostock 2007): in honor of Friedrich Ludwig Emil Diels (1874–1945), German botanist.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose, clumped densely. Culms erect, 100–150 cm long. Lateral branches lacking. Leaf-sheaths glabrous on surface, outer margin hairy. Leaf-sheath oral hairs bearded. Ligule a fringe of hairs. Leaf-blades aciculate, conduplicate, 15–30 cm long, 2 mm wide, coriaceous, stiff. Leaf-blade surface glabrous, hairless throughout or except near base. Leaf-blade apex pungent.

Inflorescence. Inflorescence a panicle. Panicle open, 25–30 cm long. Panicle axis scaberulous. Panicle branches capillary, scaberulous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, flexuous, scaberulous.

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 elliptic, laterally compressed, 10–15 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus pubescent, acute.

Glumes. Glumes persistent, similar, shorter than spikelet. Lower glume elliptic, 6–8 mm long, 1 length of upper glume, chartaceous, without keels, 5–9 -veined. Lower glume surface asperulous. Lower glume apex obtuse or acute. Upper glume elliptic, 6–8 mm long, 1.3 length of adjacent fertile lemma, chartaceous, without keels, 5–9 -veined. Upper glume surface asperulous. Upper glume apex obtuse or acute.

Florets. Fertile lemma oblong, 5–6 mm long, coriaceous, without keel, 11 -veined, more than 3-veined. Lemma surface pubescent. Lemma apex lobed, 3 -fid, awned, 3 -awned. Principal lemma awn 8–10 mm long overall. Lateral lemma awns present, arising on apex of lobes, shorter than principal. Palea 6–9 mm long, 2 -veined. Palea surface glabrous. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, fleshy. Anthers 3, 3.5–6 mm long. Caryopsis with adherent pericarp.

Distribution (TDWG). Continent. Australasia.

Country /Province /State. Australia. Western Australia.

TDWG4. South-West.

Triodia epactia S.W.L. Jacobs. *Nuytsia*, 8(2): 220 (1992).

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

TYPE from Australia. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Western Australia: Northern Province; southern end of 80 mile beach, 3.viii.1970., *R.C. Carolin 7581* (HT: NSW; IT: SYD).

Illustrations (Books): K.O.Mallett (ed.), *Flora of Australia*, Vol 44B. *Poaceae* (2004) (228, Fig 35), D.Sharp & B.K.Simon, *AusGrass*. Grasses of Australia. CD-Rom Version 1.0. (2002).

Illustrations (Journals): *Austr. Syst. Bot.* (10: 411, Fig.15 (1997)).

Images: D.Sharp & B.K.Simon, *AusGrass*. Grasses of Australia. CD-Rom Version 1.0. (2002);.

Derivation (Clifford & Bostock 2007): *Gk epaktios*, coastal. Latinized form of Greek word for the usual habitat of the species.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose, clumped loosely. Stolons absent or present, with alternating elongated and bunched internodes. Culms 60–200 cm long, with prop roots. Culm-internodes striate. Leaf-sheaths resinous, smooth, glabrous on surface, outer margin hairy. Leaf-sheath oral hairs pubescent to bearded, 1–5 mm long. Ligule a fringe of hairs, 0.5–1.3 mm long. Leaf-blades straight or curved or curled or flexuous, conduplicate, 15–35 cm long, 0.7–1.7 mm wide, coriaceous, stiff, resinous. Leaf-blade surface grooved on either side of midline, grooved abaxially, smooth. Leaf-blade margins glabrous or tuberculate.

Inflorescence. Inflorescence a panicle. Panicle open, linear, dense, 10–51 cm long, 1.5–3.5 cm wide. Primary panicle branches simple or sparsely divided, 4–9 cm long. Panicle axis angular. Panicle branches angular, pubescent in axils. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, angular, 1–11 mm long, pubescent.

Fertile Spikelets. Spikelets comprising 5–9 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, laterally compressed, 9–12 mm long, 3–5 mm wide, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes 1 mm long. Floret callus pilose, disarticulating obliquely. Floret callus hairs 1–2.5 mm long.

Glumes. Glumes persistent, similar, shorter than spikelet, thinner than fertile lemma. Lower glume lanceolate or oblong, 4.5–11 mm long, 1 length of upper glume, scarious or cartilaginous, 1-keeled, 3–5 -veined. Lower glume surface asperulous. Lower glume margins eciliate or ciliate. Lower glume apex acute or acuminate, muticous or mucronate. Upper glume lanceolate or oblong, 4.5–11 mm long, scarious or cartilaginous, 1-keeled, 3–5 -veined. Upper glume surface asperulous. Upper glume margins eciliate or ciliate. Upper glume apex acute or acuminate, muticous or mucronate.

Florets. Fertile lemma oblong, 4–10 mm long, indurate, yellow, without keel, 9 -veined, more than 3-veined. Lemma midvein ciliate. Lemma lateral veins in close groups. Lemma surface hirsute, hairy at base. Lemma margins ciliate. Lemma apex lobed, 3 -fid, with linear lobes or outer lobes winged, with lobes 1.5–5 mm long, incised 0.5 of lemma length, muticous. Palea lanceolate or elliptic or oblong, 3–6 mm long, cartilaginous or indurate, thinner above. Palea surface pilose, hairy on margins. Palea apex acuminate. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, cuneate, 0.7 mm long, fleshy. Anthers 3. Caryopsis with adherent pericarp.

Distribution (TDWG). Continent. Australasia.

Country /Province /State. Australia. Western Australia, Northern Territory.

TDWG4. Kimberley, Ereman. Victoria R & Barkly Tableland, Central Australia.

Triodia fissura R.L.Barrett, G.B.Wells & K.W.Dixon. *Flora of Australia* 44B:459 (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 Synonymy Database: Australia: Western Australia: on E side, Great Northern Hwy., 71 km N from Argyle Diamond Mine turnoff and 46 km S from Wyndham-Kununurra Junction, 16:13'36"S, 128:21'04"E, 17 Jan 2003, R.L. Barrett & M.D. Barrett 2550 (HT: PERTH; IT: AD, BRI, CANB, DNA, K, KPBG, NT, PERTH).

Illustrations (Books): K.O.Mallett (ed.), *Flora of Australia*, Vol 44B. *Poaceae* (2004) (208, Fig. 32).

Derivation (Clifford & Bostock 2007): L. a cleft made by splitting. Growing in rock fissures.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose, clumped densely. Culms 50–70 cm long. Leaf-sheaths smooth, glabrous on surface, outer margin hairy. Leaf-sheath oral hairs bearded, 2–4 mm long. Ligule a fringe of hairs, 0.2–0.3 mm long. Leaf-blade base with a brief petiole-like connection to sheath, petiole 0.4–0.6 cm long. Leaf-blades spreading or reflexed, acuminate, conduplicate, 4.5–7 cm long, 1–1.5 mm wide, indurate, stiff, resinous. Leaf-blade surface glabrous. Leaf-blade apex pungent.

Inflorescence. Inflorescence composed of racemes. Racemes 1, single, unilateral, 15–20 cm long, 5–10 mm wide. Spikelet packing broadside to rachis, 0.4–0.6 their length apart, regular, 2 -rowed. Spikelets solitary. Fertile spikelets sessile.

Fertile Spikelets. Spikelets comprising 8–16 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate or oblong, laterally compressed, 12–17 mm long, 4–4.6 mm wide, breaking up at maturity, disarticulating below each fertile floret. Floret callus brief, 0.3 mm long, bearded, obtuse. Floret callus hairs 2–3 mm long.

Glumes. Glumes persistent, similar, shorter than spikelet. Lower glume ovate, 3.5–4 mm long, 1 length of upper glume, scarious or cartilaginous or coriaceous, without keels, 3 -veined. Lower glume surface glabrous. Lower glume apex obtuse or acute, mucronate. Upper glume ovate, 3.5–4 mm long, 0.8 length of adjacent fertile lemma, chartaceous or cartilaginous or coriaceous, without keels, 3 -veined. Upper glume surface glabrous. Upper glume apex obtuse or acute, mucronate.

Florets. Fertile lemma lanceolate or ovate, 4.5–5 mm long, cartilaginous or coriaceous, much thinner on margins, without keel, 9 -veined, more than 3-veined. Lemma midvein eciliate. Lemma lateral veins with distinct primaries but obscure intermediates. Lemma apex acuminate, mucronate. Palea lanceolate, 0.8–1 length of lemma, 3 -veined. Palea keels wingless, eciliate. Palea apex emarginate or acute. Apical sterile florets resembling fertile though underdeveloped.

Distribution (TDWG). Continent. Australasia.

Country /Province /State. Australia. Western Australia.

Triodia fitzgeraldii C.A.Gardner ex N.T.Burbidge. *Journ. Roy. Soc. W. Austral.* . 25 (1946).

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

TYPE from Australia. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Australia: Dillon Springs, East Kimberly, Oct 1903, W.V. Fitzgeralds 1643 (HT: PERTH; IT: NSW (3 sheets)).

Illustrations (Books): C.A.Gardner, *Flora of Western Australia*, Vol 1, Part 1, *Gramineae* (1952) (71, Pl. 21), J.R.Wheeler et al, *Flora of the Kimberley Region* (1992) (1232, Fig. 348).

Images: D.Sharp & B.K.Simon, *AusGrass*. Grasses of Australia. CD-Rom Version 1.0. (2002);.

Derivation (Clifford & Bostock 2007): in honor of William Vincent Fitzgerald (1867-1929) Western Australian forest botanist.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose, clumped densely. Culms 60 cm long. Culm-internodes distally glabrous. Leaf-sheaths without keel, puberulous, outer margin hairy. Leaf-sheath oral hairs ciliate. Ligule a fringe of hairs. Leaf-blades aciculate, conduplicate, stiff. Leaf-blade venation without layer of subepidermal sclerenchyma masking vein striation. Leaf-blade surface glabrous. Leaf-blade apex pungent.

Inflorescence. Inflorescence composed of racemes. Racemes borne along a central axis, appressed, unilateral, 3–6 cm long. Central inflorescence axis 20–30 cm long. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 4–6 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets linear, laterally compressed, 4–6 mm long, 3 mm wide, 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 lanceolate or oblong, 2.5–3.5 mm long, 1 length of upper glume, membranous or scarious, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume margins ciliolate. Lower glume apex obtuse or acuminate. Upper glume lanceolate or oblong, 2.5–3.5 mm long, 1 length of adjacent fertile lemma, membranous or scarious, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume margins ciliolate. Upper glume apex obtuse or acute.

Florets. Fertile lemma lanceolate, 2.5–3.5 mm long, scarious, without keel, 3 -veined, 0–3 -veined. Lemma midvein ciliolate, hairy below. Lemma surface pilose, hairy below. Lemma margins ciliolate. Lemma apex dentate, 3 -fid, incised 0.2 of lemma length. Palea 2 mm long. Palea keels winged, narrowly winged. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Anthers 3.

Distribution (TDWG). Continent. Australasia.

Country /Province /State. Australia. Western Australia.

TDWG4. Kimberley.

Triodia helmsii (C.E. Hubb.) M. Lazarides. *Austral. Syst. Bot.*, 10(3): 434: (1997).

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

TYPE from Australia. **Basionym or Replaced Name:** *Plectrachne helmsii* C.E. Hubb., *Bull. Misc. Inform. Kew* 1941: 29 (1941). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Australia: South Australia: Everard Range, 8 Jun 1891, *Helms s.n.* (HT: K; IT: AD, BRI (fragm. & photo), MEL, NSW (2 sheets), PERTH (& photo of HT)).

Illustrations (Books): J.P.Jessop, G.R.M. Dashorst & F.M.James, *Grasses of South Australia* (2006) (413, Fig. 342), K.O.Mallett (ed.), *Flora of Australia*, Vol 44B. *Poaceae* (2004) (228, Fig. 35), D.Sharp & B.K.Simon, *AusGrass*. Grasses of Australia. CD-Rom Version 1.0. (2002).

Illustrations (Journals): *Austr. Syst. Bot.* (10: 411, Fig.15 (1997)).

Derivation (Clifford & Bostock 2007): in honor of Richard Helms (1842–1914) German born New Zealand and Australian botanist.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose. Culms erect, 80 cm long, 2 -noded. Lateral branches lacking. Leaf-sheath oral hairs ciliate, 2 mm long. Ligule a fringe of hairs. Leaf-blades aciculate, conduplicate, 7–14 cm long, 2 mm wide, coriaceous, stiff. Leaf-blade surface pubescent, hairy adaxially. Leaf-blade margins unthickened. Leaf-blade apex pungent.

Inflorescence. Inflorescence a panicle. Panicle contracted, oblong, 10–14 cm long, 1.5–2 cm wide. Primary panicle branches 1 -nate. Panicle axis scaberulous. Panicle branches scaberulous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, 1–2 mm long, scaberulous.

Fertile Spikelets. Spikelets comprising 3–4 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets oblong, laterally compressed, 12–15 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes 2–3 mm long, pubescent. Floret callus 1 mm long, pubescent, acute.

Glumes. Glumes persistent, similar, reaching apex of florets. Lower glume lanceolate, 12–15 mm long, 1 length of upper glume, chartaceous, much thinner on margins, without keels, 5–7 -veined. Lower glume surface

asperulous. Lower glume apex acuminate. Upper glume lanceolate, 12–15 mm long, 3 length of adjacent fertile lemma, chartaceous, with membranous margins, without keels, 5 -veined. Upper glume surface asperulous. Upper glume apex acuminate.

Florets. Fertile lemma oblong, 4.5–5 mm long, coriaceous, without keel, 3 -veined, 0–3 -veined. Lemma surface pubescent. Lemma apex lobed, 3 -fid, awned, 3 -awned. Principal lemma awn curved, pseudo-articulate across body of lemma, 8–12 mm long overall. Lateral lemma awns present, arising on apex of lobes, 6–8 mm long, shorter than principal. Palea oblong, 5–5.5 mm long, 2 -veined. Palea keels winged, narrowly winged, ciliolate. Palea surface glabrous. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, fleshy. Anthers 3, 2–2.3 mm long. Caryopsis with adherent pericarp.

Distribution (TDWG). Continent. Australasia.

Country /Province /State. Australia. Western Australia, Northern Territory, South Australia.

TDWG4. Ereman. Central Australia. NW & Lake Eyre.

Triodia hubbardii N. T. Burbidge. *Austral. Journ. Bot.* viii. 381 (1960).

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

TYPE from Australia. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Northern Territory: Central Australia; Standley Chasm, MacDonnell Range, 18.xi.1955., *N.T. Burbidge & M. Gray 4153* (HT: CANB; IT: K, L, NSW, NT).

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

Images: D.Sharp & B.K.Simon, *AusGrass*. Grasses of Australia. CD-Rom Version 1.0. (2002);

Derivation (Clifford & Bostock 2007): in honor of Charles Edward Hubbard (1900–1980) English agrostologist.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose, clumped densely. Culms 60–100 cm long. Leaf-sheaths resinous, medianly thickened. Leaf-sheath oral hairs ciliate. Ligule a fringe of hairs. Leaf-blades acuminate, conduplicate, 15–45 cm long, 2–3 mm wide, stiff, resinous. Leaf-blade venation with continuous uniform subepidermal sclerenchyma layer on the underside. Leaf-blade apex pungent.

Inflorescence. Inflorescence a panicle. Panicle open, elliptic, 30–60 cm long, contracted about primary branches. Panicle axis scabrous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, filiform, 2–5 mm long.

Fertile Spikelets. Spikelets comprising 5–11 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets linear, laterally compressed, 8–14 mm long, 3–4.5 mm wide, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes 0.75–1 mm long. Floret callus evident, curved, 0.5 mm long, pilose, hairy on the margins, disarticulating obliquely.

Glumes. Glumes persistent, similar, shorter than spikelet, thinner than fertile lemma. Lower glume lanceolate, 7 mm long, 1.2–1.3 length of upper glume, scarios, 1-keeled, 3 -veined. Lower glume surface scabrous, rough above. Lower glume apex obtuse, mucronate. Upper glume lanceolate, 5.5 mm long, 1.1 length of adjacent fertile lemma, scarios, 1-keeled, 3 -veined. Upper glume surface scabrous, rough above. Upper glume apex with a unilateral tooth or dentate, 1 -fid or 3 -fid, acute, mucronate.

Florets. Fertile florets divergent. Fertile lemma oblong, 5 mm long, coriaceous, without keel, 9 -veined, more than 3-veined. Lemma midvein ciliolate, hairy below. Lemma lateral veins in close groups (of 3). Lemma margins ciliate, hairy below. Lemma apex lobed, 3 -fid, with simple equal lobes or with outer lobes shorter, incised 0.25 of lemma length, acuminate. Palea embraced by lemma or reflexed at apex, elliptic, 4 mm long, cartilaginous, thinner above. Palea keels winged, narrowly winged, ciliolate, adorned above. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, cuneate. Anthers 3, 2.75 mm long.

Distribution (TDWG). Continent. Australasia.

Country /Province /State. Australia. Northern Territory.

TDWG4. Central Australia.

Triodia inaequiloba N. T. Burbidge. *Austral. Journ. Bot.* viii. 391 (1960).

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

TYPE from Australia. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Western Australia: Northern Province; 1 mile east of Mt. Amherst homestead, 15.vii.1959, *M. Lazarides 6343* (HT: CANB, IT: AD, BRI, DNA, MEL, NSW, PERTH, K, US).

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

Derivation (Clifford & Bostock 2007): *L. in-*, not; *aequus*, equal; *lobus*, lobe. Median lobe of lemma longer than the laterals.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose, clumped densely. Culms 50–90 cm long. Leaf-sheaths without keel, glabrous on surface or woolly. Leaf-sheath oral hairs woolly, 5 mm long. Ligule a fringe of hairs. Leaf-blades aciculate, conduplicate, stiff, light green. Leaf-blade venation without layer of subepidermal sclerenchyma masking vein striation. Leaf-blade apex pungent.

Inflorescence. Inflorescence a panicle. Panicle open, lanceolate or ovate, 10–15 cm long. Panicle branches pubescent in axils. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 4–6 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets ovate, laterally compressed, 7–9 mm long, 4–5 mm wide, 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, 5–6 mm long, 1 length of upper glume, chartaceous or scarious, without keels, 3 -veined. Lower glume surface asperulous. Lower glume apex acute, mucronate. Upper glume ovate, 5–6 mm long, 0.8–0.9 length of adjacent fertile lemma, chartaceous or scarious, without keels, 3 -veined. Upper glume surface asperulous. Upper glume apex acute, mucronate.

Florets. Fertile lemma ovate, 6–6.5 mm long, chartaceous, without keel, 9 -veined, more than 3-veined. Lemma lateral veins in close groups (of 3). Lemma surface pubescent, hairy below. Lemma margins ciliate, hairy below. Lemma apex lobed, 3 -fid, with outer lobes shorter, with linear lobes, incised 0.25 of lemma length, acute. Palea elliptic, 5–5.5 mm long. Palea keels winged, narrowly winged, ciliolate, adorned above. Palea surface smooth or scaberulous. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Anthers 3.

Distribution (TDWG). Continent. Australasia.

Country /Province /State. Australia. Western Australia.

TDWG4. Kimberley.

Triodia integra M. Lazarides. *Austral. Syst. Bot.*, 10(3): 436 (1997).

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

TYPE from Australia. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Northern Territory: Central Australia South; Valley of Eagles, MacDonnell Ranges, 23:36' S, 134:20' E, 2.vi.1974, A.C. Beaglehole 44942 (HT: BRI; IT: DNA).

Illustrations (Books): K.O.Mallett (ed.), *Flora of Australia*, Vol 44B. *Poaceae* (2004) (235, Fig. 36), D.Sharp & B.K.Simon, *AusGrass*. Grasses of Australia. CD-Rom Version 1.0. (2002).

Illustrations (Journals): *Austr. Syst. Bot.* (10: 406, Fig.12 (1997)).

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose. Leaf-sheaths smooth or scaberulous, glabrous on surface, outer margin hairy. Leaf-sheath oral hairs pubescent or ciliate, erect or curly, 3–5.5 mm long. Ligule a fringe of hairs, 1–1.3 mm long. Leaf-blades filiform or linear, flat or conduplicate, 9–15 cm long, 1–2 mm wide, without exudate. Leaf-blade surface hirsute.

Inflorescence. Inflorescence a panicle. Panicle open, linear, dense, 14–19 cm long, 1–1.5 cm wide. Primary panicle branches 1–2 cm long. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, 2–15 mm long.

Fertile Spikelets. Spikelets comprising 11–18 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, laterally compressed, acuminate, 17–25 mm long, 3.5–5 mm wide, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes thickened, 0.5 mm long. Floret callus bearded.

Glumes. Glumes persistent, similar, shorter than spikelet, thinner than fertile lemma. Lower glume lanceolate, 7–8 mm long, 1 length of upper glume, cartilaginous, 1-keeled, 5 -veined. Lower glume lateral veins obscure. Lower glume surface smooth or asperulous. Lower glume apex acuminate. Upper glume orbicular to oblate, 7–9 mm long, scarious, 1-keeled, 5 -veined. Upper glume lateral veins obscure. Upper glume surface smooth or asperulous. Upper glume margins scaberulous, pubescent. Upper glume apex acuminate.

Florets. Fertile lemma lanceolate, 7–8 mm long, cartilaginous or indurate, much thinner on margins, shiny, without keel, 9 -veined, more than 3-veined. Lemma midvein ciliate, hairy below. Lemma lateral veins in close groups. Lemma surface smooth. Lemma margins scaberulous. Lemma apex dentate, 2 -fid, acuminate, mucronate. Principal lemma awn from a sinus, 1 mm long overall. Palea lanceolate or elliptic, 0.5–0.66 length

of lemma, hyaline. Palea keels winged, conspicuously winged, ciliate. Palea surface pubescent, hairy below. Palea apex dentate, 2-fid, ciliate. Apical sterile florets resembling fertile though underdeveloped.

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

Distribution (TDWG). Continent. Australasia.

Country /Province /State. Australia. Northern Territory.

TDWG4. Central Australia.

Triodia intermedia Cheel. *Svensk. Vet.-Akad. Handl.* n. s. lii. No. 10, 4 (1919).

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

TYPE from Australia. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Australia: Noonkanbah, West Kimberley, Dec 1910, *Mjoberg's Swedish Sci. Exped. 18* (HT: S; IT: PERTH).

Illustrations (Books): C.A.Gardner, *Flora of Western Australia*, Vol 1, Part 1, *Gramineae* (1952) (70, Pl. 20), J.R.Wheeler et al, *Flora of the Kimberley Region* (1992) (1232, Fig. 348), 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. intermedia*. Having affinities with but distinct from other species.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose, clumped densely. Culms 40–60 cm long. Culm-internodes distally glabrous. Leaf-sheaths without keel, outer margin hairy. Leaf-sheath oral hairs bearded, 3–4 mm long. Ligule a fringe of hairs. Leaf-blades aciculate, conduplicate, 8–20 cm long, stiff, glandular. Leaf-blade venation without layer of subepidermal sclerenchyma masking vein striation. Leaf-blade apex pungent.

Inflorescence. Inflorescence a panicle. Panicle open, linear, 8–10 cm long. Panicle axis scabrous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 5–10 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets oblong or cuneate, laterally compressed, 8–10 mm long, 4–6 mm wide, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, similar, shorter than spikelet, thinner than fertile lemma, dull or shiny. Lower glume lanceolate or oblong, 4–6 mm long, 1 length of upper glume, scarious, 1-keeled, 3-veined. Lower glume apex acute, mucronate. Upper glume lanceolate or oblong, 4–6 mm long, 1.3 length of adjacent fertile lemma, scarious, 1-keeled, 3-veined. Upper glume apex acute, mucronate.

Florets. Fertile lemma ovate, 3–5 mm long, coriaceous, purple, without keel, 9-veined, more than 3-veined. Lemma midvein pubescent, hairy below. Lemma lateral veins in close groups (of 3). Lemma surface pilose, hairy at base. Lemma margins pubescent, hairy below. Lemma apex dentate, 3-fid, incised 0.1 of lemma length, acute. Palea 1 length of lemma. Palea keels winged, conspicuously winged. Palea apex obtuse. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Anthers 3.

Distribution (TDWG). Continent. Australasia.

Country /Province /State. Australia. Western Australia, Northern Territory.

TDWG4. Kimberley. Victoria R & Barkly Tableland, Central Australia.

Triodia inutilis N. T. Burbidge. *Austral. Journ. Bot.* i. 163 (1953).

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

TYPE from Australia. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Australia: Northern Territory: 13 mi SW of Wave Hill Station, 21 Jun 1949, *R.A. Perry 2199* (HT: CANB; IT: BRI, CANB, DNA, K, MEL, NSW, US).

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

Images: D.Sharp & B.K.Simon, *AusGrass*. Grasses of Australia. CD-Rom Version 1.0. (2002);.

Derivation (Clifford & Bostock 2007): *L. in-*, not; *utilis*, useful. Not useful for domestic grazing animals.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose, clumped densely. Culms 40–60 cm long. Culm-nodes pubescent. Leaf-sheaths without keel, indistinctly veined or striately veined. Leaf-sheath oral hairs woolly. Ligule a fringe of hairs. Leaf-blades aciculate, conduplicate, 10–15 cm long, 2 mm wide, stiff. Leaf-blade venation without layer of subepidermal sclerenchyma masking vein striation. Leaf-blade apex pungent.

Inflorescence. Inflorescence a panicle. Panicle open, elliptic, 10–15 cm long. Panicle branches scaberulous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, scaberulous.

Fertile Spikelets. Spikelets comprising 7–9 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets oblong or ovate, laterally compressed, obtuse, 7–9 mm long, 3.5–5 mm wide, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, similar, shorter than spikelet, thinner than fertile lemma. Lower glume lanceolate or oblong, 4–5 mm long, 1 length of upper glume, scarious, without keels, 3 -veined. Lower glume primary vein scabrous. Lower glume apex acute. Upper glume lanceolate or oblong, 4–5 mm long, 1 length of adjacent fertile lemma, scarious, without keels, 3 -veined. Upper glume primary vein scabrous. Upper glume apex acute.

Florets. Fertile lemma oblong, 5 mm long, coriaceous, without keel, 9 -veined, more than 3-veined. Lemma midvein pubescent. Lemma lateral veins in close groups (of 3). Lemma margins pubescent, hairy below. Lemma apex lobed, 3 -fid, with triangular lobes, incised 0.5 of lemma length, acuminate. Palea elliptic, 4–4.5 mm long. Palea keels winged, conspicuously winged. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Anthers 3.

Distribution (TDWG). Continent. Australasia.

Country /Province /State. Australia. Western Australia, Northern Territory.

TDWG4. Kimberley. Victoria R & Barkly Tableland.

Triodia irritans R. Br. *Prod.* 182. (1810).

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

TYPE from Australia. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: HT: *Robert Brown 6258*, 7 Feb 1802, Australia: South Coast Id. 4, St Peter's Isle, off Denial Bay (BM).

Illustrations (Books): J.P.Jessop, G.R.M. Dashorst & F.M.James, *Grasses of South Australia* (2006) (413, Fig. 343 & Pl. 15), C.A.Gardner, *Flora of Western Australia*, Vol 1, Part 1, *Gramineae* (1952) (71, Pl. 21).

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

Derivation (Clifford & Bostock 2007): *L. irrita*, irritate. Leaf-blades rigid, pungent.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose, clumped densely. Culms 30–100 cm long. Culm-internodes terete. Leaves distichous. Leaf-sheaths longer than adjacent culm internode, without exudate, without keel, indistinctly veined. Ligule a fringe of hairs. Collar glabrous. Leaf-blades aciculate, conduplicate, 8–20 cm long, 1–2 mm wide, coriaceous, stiff, resinous. Leaf-blade apex pungent.

Inflorescence. Inflorescence a panicle, exerted or embraced at base by subtending leaf. Panicle contracted, linear, 6–15 cm long. Primary panicle branches appressed, simple. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, filiform, 5–15 mm long.

Fertile Spikelets. Spikelets comprising 5–10 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets cuneate, laterally compressed, 15–20 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes pubescent. Floret callus pubescent.

Glumes. Glumes persistent, similar, reaching apex of florets or shorter than spikelet, thinner than fertile lemma, gaping. Lower glume lanceolate, 10–20 mm long, 1 length of upper glume, scarious, 1-keeled (slightly), 5 -veined. Lower glume apex acute. Upper glume lanceolate, 10–20 mm long, 1.5–1.7 length of adjacent fertile lemma, scarious, 1-keeled (slightly), 5 -veined. Upper glume apex acute.

Florets. Fertile lemma oblong, 6–12 mm long, coriaceous, without keel, 3(–9) -veined, 0–3 -veined. Lemma midvein ciliate. Lemma lateral veins with distinct primaries but obscure intermediates. Lemma surface scaberulous, pubescent, hairy below. Lemma apex dentate, 2 -fid, obtuse or acute, awned, 1 -awned. Principal lemma awn from a sinus, 0.5–3 mm long overall. Palea keels ciliate, adorned above. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, fleshy. Anthers 3, 3–4 mm long.

Distribution (TDWG). Continent. Australasia.

Country /Province /State. Australia. Western Australia, Northern Territory, South Australia.

TDWG4. South-West. Central Australia. NW & Lake Eyre, Southern.

Triodia lanata J. M. Black. *Trans. Roy. Soc. S. Austral.* xl. 57. (1916).

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

TYPE from Australia. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: Australia: Eyre Peninsula; in scrub at Minnipa, 11 Nov 1915, *J.M. Black s.n.* (HT: AD; IT: AD, MEL).

Illustrations (Books): J.P.Jessop, G.R.M. Dashorst & F.M.James, *Grasses of South Australia* (2006) (414, Fig. 344).

Images: D.Sharp & B.K.Simon, *AusGrass*. Grasses of Australia. CD-Rom Version 1.0. (2002);.

Derivation (Clifford & Bostock 2007): *L. lana*, wool; -ata, possessing. Leaf-blades densely pubescent.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose, clumped densely. Culms 50–60 cm long. Leaf-sheaths 2–3 cm long, without keel, woolly. Leaf-sheath oral hairs woolly. Ligule a fringe of hairs. Leaf-blades aciculate, conduplicate, 5–12 cm long, 2 mm wide, stiff. Leaf-blade venation without layer of subepidermal sclerenchyma masking vein striation. Leaf-blade apex pungent.

Inflorescence. Inflorescence a panicle. Panicle open, ovate, 8–10 cm long. Panicle axis scaberulous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, 5–10 mm long.

Fertile Spikelets. Spikelets comprising 5–7 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate or ovate, laterally compressed, 8–13 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 lanceolate, 7–10 mm long, 1 length of upper glume, scarious, light brown or purple, without keels, 1–3 -veined. Lower glume lateral veins absent or distinct. Lower glume surface pubescent or pilose. Lower glume apex acute or acuminate. Upper glume lanceolate, 7–10 mm long, 1.1–1.3 length of adjacent fertile lemma, scarious, light brown or purple, without keels, 3 -veined. Upper glume surface pubescent or pilose. Upper glume apex acute or acuminate.

Florets. Fertile lemma oblong, 6–8 mm long, membranous or scarious, without keel, 9 -veined, more than 3-veined. Lemma lateral veins in close groups (of 3). Lemma surface pilose, hairy below. Lemma hairs 1–2 mm long. Lemma apex emarginate, mucronate. Palea elliptic or oblong, 5–6.5 mm long. Palea keels wingless, ciliolate. Palea surface pubescent, hairy on back, hairy below. Palea apex dentate, 2 -fid. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Anthers 3, 2 mm long.

Distribution (TDWG). Continent. Australasia.

Country /Province /State. Australia. South Australia.

TDWG4. NW & Lake Eyre, Southern.

Triodia lanigera Domin. *Journ. Linn. Soc., Bot.* xli. 278 (1912).

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

TYPE from Australia. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: Western Australia: Eremaean Province; between the Ashburton and Yule rivers, *Dr E. Clement s.n.* (HT: K; IT: K, Perth (photos)).

Illustrations (Books): C.A.Gardner, *Flora of Western Australia*, Vol 1, Part 1, *Gramineae* (1952) (69, Pl. 19), J.R.Wheeler et al, *Flora of the Kimberley Region* (1992) (1232, Fig. 348), 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. lana*, wool; gero, bear. Leaf-blades or leaf-sheaths woolly.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose, clumped densely. Culms 40–60 cm long. Culm-nodes pubescent. Leaf-sheaths without keel, woolly. Leaf-sheath oral hairs woolly. Ligule a fringe of hairs. Leaf-blades aciculate, conduplicate, stiff. Leaf-blade venation without layer of subepidermal sclerenchyma masking vein striation. Leaf-blade apex pungent.

Inflorescence. Inflorescence a panicle. Panicle open, 6–8 cm long. Primary panicle branches bearing 4–6 fertile spikelets on each lower branch. Panicle axis scabrous. Panicle branches pubescent in axils. 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, 14–18 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, 8–12 mm long, 1 length of upper glume, scarios, without keels, 9–13 -veined. Lower glume margins ciliolate. Lower glume apex acute or setaceously acuminate. Upper glume lanceolate or oblong, 8–12 mm long, 1 length of adjacent fertile lemma, scarios, without keels, 9–13 -veined. Upper glume margins ciliolate. Upper glume apex acute or setaceously acuminate.

Florets. Fertile lemma oblong, 9–13 mm long, coriaceous, without keel, 9–15 -veined, more than 3-veined. Lemma lateral veins evenly spaced. Lemma surface pubescent, hairy all along. Lemma margins ciliolate. Lemma apex lobed, 3 -fid, with outer lobes shorter, with lanceolate lobes, incised 0.75 of lemma length, acuminate. Palea oblong or obovate, 3–4 mm long, thinner above. Palea keels ciliate. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Anthers 3.

Distribution (TDWG). Continent. Australasia.

Country /Province /State. Australia. Western Australia.

TDWG4. Kimberley, Eremean.

Triodia latzii M. Lazarides. *Austral. Syst. Bot.*, 10(3): 444 (1997).

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

TYPE from Australia. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Northern Territory: Victoria River District; Lat. 19:22' S, Long. 129:01' E, Jellbra Rockhole, 3.iv.81, *P.K. Latz 8629* (HT: NT).

Illustrations (Books): K.O.Mallett (ed.), *Flora of Australia*, Vol 44B. *Poaceae* (2004) (235, Fig. 36), D.Sharp & B.K.Simon, *AusGrass*. Grasses of Australia. CD-Rom Version 1.0. (2002).

Illustrations (Journals): *Austr. Syst. Bot.* (10: 406, Fig.12 (1997)).

Derivation (Clifford & Bostock 2007): in honor of Peter Kenneth Latz (1941-) Australian plant ecologist.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, mat forming. Culms 130 cm long, with prop roots. Leaf-sheaths resinous, smooth, glabrous on surface. Leaf-sheath oral hairs ciliate, 5–10 mm long. Ligule a fringe of hairs, 1.5 mm long. Leaf-blades flexuous, flat or conduplicate, 30–40 cm long, 1.3–3.3 mm wide, coriaceous, stiff, resinous. Leaf-blade surface grooved on either side of midline. Leaf-blade margins scabrous.

Inflorescence. Inflorescence a panicle. Panicle open, linear, dense, 30–40 cm long, 2–5 cm wide. Primary panicle branches appressed, simple, 5–9 cm long. Panicle axis angular. Panicle branches angular or flat. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, 3.5–10 mm long.

Fertile Spikelets. Spikelets comprising 9 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets linear, laterally compressed or subterete, compressed slightly, 10–13 mm long, 1.5–2 mm wide, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes elongated between glumes. Rhachilla elongation 0.5 mm long. Rhachilla internodes 1.3 mm long. Floret callus 0.4 mm long, pilose, truncate or obtuse.

Glumes. Glumes persistent, similar, shorter than spikelet, thinner than fertile lemma. Lower glume lanceolate, 4–5 mm long, 1 length of upper glume, cartilaginous, much thinner on margins, 1-keeled, 3 -veined. Lower glume lateral veins obscure. Lower glume surface smooth or asperulous, rough above. Lower glume apex acuminate. Upper glume lanceolate, 4–5 mm long, cartilaginous, with scarios margins, 1-keeled, keeled all along or above, 3 -veined. Upper glume lateral veins obscure. Upper glume surface smooth or asperulous, rough above. Upper glume apex acute or acuminate.

Florets. Fertile lemma oblong, 5–6.5 mm long, coriaceous, without keel, 3 -veined, 0–3 -veined. Lemma lateral veins obscure. Lemma surface glabrous or pubescent, hairy below. Lemma margins pubescent, hairy below. Lemma apex lobed, 3 -fid, with triangular lobes, with lobes 1–2 mm long, acuminate. Palea oblanceolate, coriaceous, thinner above. Palea keels scaberulous. Palea surface smooth, glabrous. Palea apex entire, acute. Apical sterile florets resembling fertile though underdeveloped.

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

Distribution (TDWG). Continent. Australasia.

Country /Province /State. Australia. Northern Territory.

TDWG4. Darwin & Gulf, Victoria R & Barkly Tableland.

Triodia longiceps J. M. Black. *Trans. & Proc. Roy. Soc. S. Austral.* liv. 59. (1930).

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

TYPE from Australia. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Australia: 17 Aug 1929, Finke Gorge, Hermannsberg, Central Australia, J.B. Cleland (HT: MEL).

Illustrations (Books): J.P.Jessop, G.R.M. Dashorst & F.M.James, *Grasses of South Australia* (2006) (414, Fig. 345), C.A.Gardner, *Flora of Western Australia*, Vol 1, Part 1, *Gramineae* (1952) (70, Pl. 20), 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. longus*, long; -ceps, pertaining to a head. With more spikelets than its nearest relative.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose, clumped densely. Culms 100–250 cm long. Leaf-sheaths without keel, glabrous on surface or puberulous. Leaf-sheath oral hairs pubescent, 0.5–1 mm long. Ligule a fringe of hairs. Leaf-blades aciculate, conduplicate, stiff, glaucous. Leaf-blade venation without layer of subepidermal sclerenchyma masking vein striation. Leaf-blade apex pungent.

Inflorescence. Inflorescence a panicle. Panicle open, linear or lanceolate, 24–30 cm long, evenly furnished or contracted about primary branches. Primary panicle branches simple. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 6–21 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets linear, laterally compressed, 8–20 mm long, 2–3 mm wide, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, similar, shorter than spikelet, thinner than fertile lemma. Lower glume lanceolate or ovate, 4 mm long, 1 length of upper glume, scarios, 1-keeled, 1 -veined. Lower glume lateral veins absent. Lower glume apex acute. Upper glume lanceolate or ovate, 4 mm long, 1 length of adjacent fertile lemma, scarios, 1-keeled, 1 -veined. Upper glume lateral veins absent. Upper glume apex acute.

Florets. Fertile lemma lanceolate, 4–4.5 mm long, coriaceous, without keel, 3 -veined, 0–3 -veined. Lemma midvein pubescent, hairy below. Lemma surface pubescent, hairy at base. Lemma margins ciliate or pubescent. Lemma apex dentate, 3 -fid, incised 0.05 of lemma length, obtuse or acute. Palea keels winged, conspicuously winged. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Anthers 3.

Distribution (TDWG). Continent. Australasia.

Country /Province /State. Australia. Western Australia, Northern Territory, South Australia, Queensland.

TDWG4. Eremean. Victoria R & Barkly Tableland, Central Australia. NW & Lake Eyre. North, Central, Inland.

Triodia longiloba M. Lazarides. *Austral. Syst. Bot.*, 10(3): 446 (1997).

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

TYPE from Australia. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Northern Territory: Darwin and Gulf District; near Mt. Eliza, Lat. 15:07' S, Long. 134:29' E, 17 Jan 1989, P.K. Latz 11165 (HT: CANB; IT: DNA, NT).

Illustrations (Books): K.O.Mallett (ed.), *Flora of Australia*, Vol 44B. *Poaceae* (2004) (235, Fig. 36), D.Sharp & B.K.Simon, *AusGrass*. Grasses of Australia. CD-Rom Version 1.0. (2002).

Illustrations (Journals): *Austr. Syst. Bot.* (10: 406, Fig.12 (1997)).

Derivation (Clifford & Bostock 2007): *L. longus*, long; *Gk lobus*, lobe. Lemma deeply lobed.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose, clumped densely. Culms 200 cm long. Leaf-sheaths resinous, scaberulous, glabrous on surface. Leaf-sheath oral hairs ciliate, 5–10 mm long. Ligule a fringe of hairs, 2 mm long. Leaf-blade base with a false petiole, petiole 1 cm long, petiole pubescent. Leaf-blades curved or curled or flexuous, 21–45 cm long, 0.8–1.5 mm wide, coriaceous, stiff, resinous, aromatic. Leaf-blade surface scabrous, rough adaxially. Leaf-blade margins scabrous.

Inflorescence. Inflorescence composed of racemes. Racemes 1, single, 20–50 cm long, 15–25 mm wide, with branchlets at base of longer racemes. Rhachis smooth on margins or scaberulous on margins. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, 1–5(–15) mm long.

Fertile Spikelets. Spikelets comprising 5–13 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 linear, subterete, (10–)14–18 mm long, 3.5–5(–12) mm wide, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes elongated between glumes. Rhachilla elongation 0.3–0.7 mm long. Rhachilla internodes 0.7 mm long. Floret callus pilose, obtuse.

Glumes. Glumes persistent, similar, shorter than spikelet, thinner than fertile lemma. Lower glume elliptic or oblong, 5–6 mm long, 1 length of upper glume, cartilaginous, much thinner above, much thinner on margins, without keels, 5(–9) -veined. Lower glume apex entire or dentate, 2 -fid, truncate or obtuse. Upper glume elliptic or oblong, 5–6 mm long, cartilaginous, much thinner above, with hyaline margins, without keels, 5(–9) -veined. Upper glume apex entire or dentate, 2 -fid, truncate or obtuse.

Florets. Fertile lemma oblong, 6–8.5 mm long, coriaceous, much thinner on margins, viscid, without keel, 9 -veined, more than 3-veined. Lemma midvein ciliate. Lemma lateral veins in close groups. Lemma surface smooth or scaberulous, pilose, hairy below. Lemma apex lobed, 3 -fid, with outer lobes shorter, with triangular lobes, with lobes 2.5–5.5 mm long, acuminate. Palea lanceolate or oblong, 4–5 mm long, cartilaginous. Palea keels winged, scaberulous, adorned above, with 0.5 of their length adorned. Palea surface scaberulous. Palea apex dentate, 2 -fid. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, cuneate, 0.5–1 mm long, fleshy. Anthers 3. Caryopsis with adherent pericarp.

Distribution (TDWG). Continent. Australasia.

Country /Province /State. Australia. Western Australia, Northern Territory.

TDWG4. Kimberley. Darwin & Gulf.

Triodia longipalea M. Lazarides, nom nov. *Austral. Syst. Bot.*, 10(3): 448, (1997).

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

TYPE from Australia. **Basionym or Replaced Name:** *Plectrachne drummondii* C.E. Hubb., *Bull. Misc. Inform. Kew* 1941: 26 (1941). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Australia: Western Australia: South-Western Province; Swan River, without precise locality, *Drummond 128* (HT: K).

Illustrations (Books): K.O.Mallett (ed.), *Flora of Australia*, Vol 44B. *Poaceae* (2004) (240, Fig. 37), D.Sharp & B.K.Simon, *AusGrass*. Grasses of Australia. CD-Rom Version 1.0. (2002).

Illustrations (Journals): *Austr. Syst. Bot.* (10: 407, Fig.13 (1997)).

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

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

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose. Culms erect, 100–150 cm long. Lateral branches lacking. Leaf-sheaths smooth, glabrous on surface. Ligule a fringe of hairs. Leaf-blades acuminate, conduplicate, 25–50 cm long, 2 mm wide, coriaceous, stiff. Leaf-blade surface glabrous. Leaf-blade apex pungent.

Inflorescence. Inflorescence a panicle. Panicle open, lanceolate, 40–50 cm long. Primary panicle branches simple. Panicle axis scaberulous. Panicle branches scaberulous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, scaberulous.

Fertile Spikelets. Spikelets comprising 4–7 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets elliptic, laterally compressed, 18–20 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus pubescent.

Glumes. Glumes persistent, similar, shorter than spikelet. Lower glume lanceolate, 11–16 mm long, 1 length of upper glume, scarious, without keels, 5–9 -veined. Lower glume apex acute. Upper glume lanceolate, 11–16 mm long, 2 length of adjacent fertile lemma, scarious, without keels, 5–9 -veined. Upper glume apex acute.

Florets. Fertile lemma oblong, 6–7 mm long, coriaceous, without keel, 8–15 -veined, more than 3-veined. Lemma surface pubescent, hairy below. Lemma apex lobed, 3 -fid, awned, 3 -awned. Principal lemma awn 11–13 mm long overall. Lateral lemma awns present, arising on apex of lobes, shorter than principal. Palea 6–9 mm long, 2 -veined. Palea surface glabrous. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, fleshy. Anthers 3, 3.5–6 mm long. Caryopsis with adherent pericarp.

Distribution (TDWG). Continent. Australasia.

Country /Province /State. Australia. Western Australia.

TDWG4. South-West.

Triodia marginata N. T. Burbidge. *Austral. Journ. Bot.* i. 151 (1953).

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

TYPE from Australia. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Australia: Queensland: southwest Queensland, Cunnamulla, 18 Oct 1949, K.C. Baker 865 (HT: CANB).

Illustrations (Books): T.D.Stanley & E.Ross, *Flora of South East Queensland, Gramineae* (1989) (179, Fig. 27).

Illustrations (Journals): *Austr. Syst. Bot.* (10: 409, Fig.14 (1997)).

Images: D.Sharp & B.K.Simon, *AusGrass*. Grasses of Australia. CD-Rom Version 1.0. (2002);.

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

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose, clumped densely. Culms 100–150 cm long. Culm-internodes distally glabrous. Leaf-sheaths resinous, medianly thickened, glabrous on surface. Leaf-sheath oral hairs ciliate. Ligule a fringe of hairs. Leaf-blades aciculate, conduplicate, stiff. Leaf-blade venation with continuous uniform subepidermal sclerenchyma layer on the underside (except median line). Leaf-blade margins scabrous. Leaf-blade apex pungent.

Inflorescence. Inflorescence a panicle. Panicle open, ovate, 8–15 cm long. Primary panicle branches bearing 3–6 fertile spikelets on each lower branch. Panicle axis scabrous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 5–11 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate or ovate, laterally compressed, 10–16 mm long, 6–7 mm wide, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, similar, shorter than spikelet, thinner than fertile lemma. Lower glume oblong, 4.5–7 mm long, 1 length of upper glume, scarious, without keels, 3(–5) -veined. Lower glume apex acute. Upper glume oblong, 4.5–7 mm long, 1 length of adjacent fertile lemma, scarious, without keels, 3(–5) -veined. Upper glume apex acute.

Florets. Fertile lemma ovate, 4.5–7 mm long, coriaceous, much thinner on margins, pallid, without keel, 9 -veined, more than 3-veined. Lemma lateral veins in close groups (of 3). Lemma surface pubescent, hairy below. Lemma apex lobed, 3 -fid, incised 0.25 of lemma length, acute. Palea reflexed at apex, 1 length of lemma. Palea keels winged, narrowly winged, ciliolate. Palea apex pubescent. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Anthers 3.

Distribution (TDWG). Continent. Australasia.

Country /Province /State. Australia. Queensland, New South Wales.

TDWG4. Central, South East, Inland. Western Slopes, Western Plains.

Triodia melvillei (C.E.Hubb.)Lazarides. *Austral. Syst. Bot.* 10:451 (1997).

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

TYPE from Australia. **Basionym or Replaced Name:** *Plectrachne melvillei* C.E. Hubb., *Bull. Misc. Inform. Kew* 1941: 28 (1941). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: LT: *Melville s.n.*, Jul 1937, Australia: Western Australia: Wiluna Distr.: Eremaean Province, mostly associated with Mulga (CANB; ILT: K (4 sheets), PERT (2 sheets)). LT designated by Lazarides, *Fl. Austral.* 44B: 459 (2005).

Illustrations (Books): J.P.Jessop, G.R.M. Dashorst & F.M.James, *Grasses of South Australia* (2006) (415, Fig. 346), K.O.Mallett (ed.), *Flora of Australia*, Vol 44B. *Poaceae* (2004) (250, Fig. 38), D.Sharp & B.K.Simon, *AusGrass*. Grasses of Australia. CD-Rom Version 1.0. (2002).

Illustrations (Journals): *Austr. Syst. Bot.* (10: 409, Fig.14 (1997)).

Images: D.Sharp & B.K.Simon, *AusGrass*. Grasses of Australia. CD-Rom Version 1.0. (2002);.

Derivation (Clifford & Bostock 2007): in honor of Melville (fl. 1937) who collected in Western Australia.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose, clumped densely. Butt sheaths coriaceous, yellow, villous. Culms erect, 50–80 cm long. Lateral branches lacking. Leaf-sheaths resinous, glabrous on surface, outer margin hairy. Leaf-sheath oral hairs bearded. Ligule a fringe of hairs. Leaf-blades aciculate, conduplicate, 15–30 cm long, 2 mm wide, coriaceous, stiff. Leaf-blade surface puberulous, densely hairy, hairy adaxially. Leaf-blade apex pungent.

Inflorescence. Inflorescence a panicle. Panicle contracted, linear, 10–30 cm long. Primary panicle branches simple. Panicle axis smooth. Panicle branches capillary, smooth. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 4–8 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile.

Spikelets elliptic, laterally compressed, 10–20 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus bearded, obtuse.

Glumes. Glumes persistent, similar, shorter than spikelet. Lower glume lanceolate or elliptic, 6–11 mm long, 1 length of upper glume, scarious, without keels, 3–5 -veined. Lower glume apex acute to setaceously acuminate. Upper glume lanceolate or elliptic, 6–11 mm long, 2–3 length of adjacent fertile lemma, scarious, without keels, 3–5 -veined. Upper glume apex acute to setaceously acuminate.

Florets. Fertile lemma oblong, 5–6 mm long, coriaceous, without keel, 9 -veined, more than 3-veined. Lemma surface pubescent. Lemma apex lobed, 3 -fid, awned, 3 -awned. Principal lemma awn 7–9 mm long overall. Lateral lemma awns present, arising on apex of lobes, shorter than principal. Palea 4.5–5 mm long, 2 -veined. Palea surface glabrous. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, fleshy. Anthers 3, 2–2.5 mm long. Caryopsis with adherent pericarp.

Distribution (TDWG). Continent. Australasia.

Country /Province /State. Australia. Western Australia, Northern Territory, South Australia.

TDWG4. Ereman. Darwin & Gulf, Victoria R & Barkly Tableland, Central Australia. NW & Lake Eyre.

Triodia microstachya R. Br. *Prod.* 182. (1810).

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

TYPE from Australia. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Northern Territory: Darwin & Gulf District; North Coast, Cotton Is. (The English Company's Islands), 20 Feb 1803, R. Brown [6255] (HT: BM; IT: CANB, E, PERTH (photo BM)).

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

Images: D.Sharp & B.K.Simon, *AusGrass*. Grasses of Australia. CD-Rom Version 1.0. (2002);.

Derivation (Clifford & Bostock 2007): Gk. mikros, small; stachys, ear of corn. Inflorescences or spikelets small.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose, clumped densely. Culms 60–100 cm long. Leaf-sheaths resinous, medianly thickened, glabrous on surface. Leaf-sheath oral hairs ciliate. Ligule a fringe of hairs. Leaf-blades aciculate, conduplicate, stiff, resinous. Leaf-blade venation with continuous uniform subepidermal sclerenchyma layer on the underside (except median line). Leaf-blade margins scabrous.

Inflorescence. Inflorescence a panicle. Panicle open, 30–50 cm long, contracted about primary branches. Primary panicle branches 4–8 cm long. Panicle axis scabrous. Panicle branches scabrous. 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 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 oblong, 3–3.5 mm long, 1.2 length of upper glume, scarious, without keels, 3 -veined. Lower glume primary vein scabrous. Lower glume surface scabrous, rough on veins. Lower glume apex acute. Upper glume oblong, 2.5–3 mm long, 1 length of adjacent fertile lemma, scarious, without keels, 1–3 -veined. Upper glume lateral veins absent or distinct. Upper glume surface smooth. Upper glume apex acute.

Florets. Fertile lemma oblong, 2.5–3 mm long, coriaceous, without keel, 3 -veined, 0–3 -veined. Lemma margins pubescent, hairy below. Lemma apex dentate, 3 -fid, with simple equal lobes, with triangular lobes, acute. Palea keels ciliolate. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Anthers 3.

Distribution (TDWG). Continent. Australasia.

Country /Province /State. Australia. Western Australia, Northern Territory, Queensland.

TDWG4. Kimberley. Darwin & Gulf, Victoria R & Barkly Tableland. North, Central.

Triodia mitchellii Benth. *Fl. Austral.* vii. 606. (1878).

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

TYPE from Australia. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: ST: *Leichhardt s.n.*, Australia: Queensland: on the Maranoa (MEL). ST: *Mitchell s.n.*, Australia: near Mt. Pluto.

Illustrations (Books): S.W.L.Jacobs, R.D.B.Whalley & D.J.B.Wheeler., *Grasses of New South Wales*, 4th edn (2008) (388 as var. *pubivagina* & var. *breviloba*), J.C.Tothill, & J.B.Hacker. *The grasses of southern*

Queensland (1983) (412), 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*;, K.Domin, *Bibliotheca Botanica* 85 (1915) (386, Fig.91 as *T.hostilis*).

Derivation (Clifford & Bostock 2007): in honor of Thomas Livingstone Mitchell (1792–1855) Scots- born Australian surveyor and explorer.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose, clumped densely. Butt sheaths persistent and investing base of culm, with compacted dead sheaths. Culms 50–100 cm long. Leaves cauline, distichous. Leaf-sheaths longer than adjacent culm internode, resinous. Leaf-sheath oral hairs ciliate. Ligule a fringe of hairs. Leaf-blades curled, conduplicate or involute, 30 cm long, 2 mm wide, coriaceous, stiff, resinous. Leaf-blade margins scabrous. Leaf-blade apex attenuate, hardened.

Inflorescence. Inflorescence a panicle. Panicle open, lanceolate or elliptic or ovate, dense or loose, 10–20 cm long. Primary panicle branches appressed or ascending. 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 elliptic, laterally compressed, 8–12 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, similar, shorter than spikelet, thinner than fertile lemma. Lower glume elliptic, 5–8 mm long, 1 length of upper glume, scarious, without keels, 3 -veined. Lower glume surface smooth or asperulous, rough on veins. Lower glume apex entire or dentate, 2 -fid, acute. Upper glume elliptic, 5–8 mm long, 1.2–1.6 length of adjacent fertile lemma, scarious, without keels, 3 -veined. Upper glume surface smooth or asperulous, rough on veins. Upper glume apex entire or dentate, 2 -fid, acute.

Florets. Fertile lemma oblong, 4–5 mm long, coriaceous, without keel, 3(–9) -veined, 0–3 -veined. Lemma lateral veins with distinct primaries but obscure intermediates, absent or obscure below. Lemma surface pubescent, hairy below. Lemma apex lobed, 3 -fid, incised 0.33 of lemma length, acute. Palea 1 length of lemma. Palea keels ciliolate. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Anthers 3.

Distribution (TDWG). Continent. Australasia.

Country /Province /State. Australia. Northern Territory, Queensland, New South Wales.

TDWG4. Darwin & Gulf. North, Central, South East, Inland. Tablelands, Western Slopes, Western Plains.

Triodia molesta N. T. Burbidge. *Austral. Journ. Bot.* i. 164 (1953).

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

TYPE from Australia. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: IT: *S.T. Blake 6400*, 26 Jun 1934, Australia: Queensland: Gregory North Distric, Selwyn (US-2545316).

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

Images: D.Sharp & B.K.Simon, *AusGrass*. Grasses of Australia. CD-Rom Version 1.0. (2002);.

Derivation (Clifford & Bostock 2007): L. troublesome. The leaf-blades are rigid and spiny.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose, clumped densely. Culms 60–80 cm long. Culm-internodes distally pubescent. Culm-nodes bearded. Leaf-sheaths without keel, pubescent. Leaf-sheath oral hairs woolly. Ligule a fringe of hairs. Leaf-blades aciculate, conduplicate, stiff, glaucous. Leaf-blade venation without layer of subepidermal sclerenchyma masking vein striation. Leaf-blade surface glabrous. Leaf-blade apex pungent.

Inflorescence. Inflorescence a panicle. Panicle open, linear, 10–30 cm long, evenly furnished or contracted about primary branches. Panicle axis scabrous. Panicle branches scabrous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, 1.5 mm long.

Fertile Spikelets. Spikelets comprising 7–9 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, laterally compressed, compressed slightly, 10–14 mm long, 3–4.5 mm wide, 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, 4.5–6 mm long, 1 length of upper glume, coriaceous, without keels, 5–7 -veined. Lower glume apex acute, mucicous or mucronate. Upper glume lanceolate or oblong, 4.5–6 mm long, 1 length of

adjacent fertile lemma, coriaceous, without keels, 5–7 -veined. Upper glume primary vein conspicuous. Upper glume apex acute, mucicous or mucronate.

Florets. Fertile lemma lanceolate or ovate, 5.5–6 mm long, coriaceous, without keel, 9 -veined, more than 3-veined. Lemma midvein ciliate. Lemma lateral veins in close groups (of 3). Lemma surface pubescent, hairy below. Lemma margins ciliate, hairy above. Lemma apex dentate, 3 -fid, with linear lobes, incised 0.2 of lemma length, acute. Palea elliptic, 4 mm long. Palea keels winged, narrowly winged. Palea apex pubescent. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Anthers 3.

Distribution (TDWG). Continent. Australasia.

Country /Province /State. Australia. Queensland.

TDWG4. North, Inland.

Triodia pascoeana B.K.Simon. *Nuytsia*, 8(2): 241 (1992).

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

TYPE from Australia. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Australia: Western Australia: Dampier Dist.: NE slope of Napier Range 3 km N of the Gibb River road on track that passes Napier Downs homestead near Yammera Gap, 17.51S 124.48E, 13 Apr 1988, B. K. Simon 3909 (HT: BRI; IT: BRI, CANB, DNA, K, NSW, PERTH).

Illustrations (Books): D.Sharp & B.K.Simon, *AusGrass*. Grasses of Australia. CD-Rom Version 1.0. (2002).

Derivation (Clifford & Bostock 2007): L. *-ana*, indicating connection. In honor of Davis Pascoe (? -1989).

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose. Stolons present. Culms robust, 100–300 cm long. Culm-internodes yellow or brown. Leaf-sheaths smooth or scaberulous, woolly, outer margin glabrous or hairy. Leaf-sheath oral hairs pubescent or ciliate, 0.5–5 mm long. Ligule a fringe of hairs, 0.2–1 mm long. Leaf-blade base with a brief petiole-like connection to sheath, petiole 0.5–1 cm long. Leaf-blades straight or curved, filiform, conduplicate, 6–30 cm long, 0.8–1.5 mm wide, stiff or firm, eglandular or glandular, without exudate. Leaf-blade surface smooth or scaberulous, rough abaxially, glabrous. Leaf-blade margins scabrous.

Inflorescence. Inflorescence a panicle. Panicle open, linear, dense, 30–40 cm long, 0.5–1.5 cm wide. Primary panicle branches appressed or ascending, simple, 4–7 cm long. Panicle axis angular, scabrous. Panicle branches scabrous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, 0.8–1.3 mm long.

Fertile Spikelets. Spikelets comprising 3–11 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets oblong, laterally compressed, 3–7.5 mm long, 1–2 mm wide, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes elongated between glumes. Rhachilla elongation 0.3 mm long. Rhachilla internodes terete or compressed, 0.5 mm long, scaberulous. Floret callus glabrous or sparsely hairy, truncate or obtuse.

Glumes. Glumes persistent, similar, shorter than spikelet or reaching apex of florets, thinner than fertile lemma. Lower glume linear or ovate, 1.8–3 mm long, 0.9 length of upper glume, scarious, 1-keeled, 1 -veined. Lower glume primary vein scabrous. Lower glume lateral veins absent. Lower glume surface asperulous. Lower glume apex acuminate. Upper glume linear or ovate, 2–3.5 mm long, scarious, 1-keeled, 1 -veined. Upper glume primary vein scabrous. Upper glume lateral veins absent. Upper glume surface asperulous. Upper glume apex emarginate, awned, 1 -awned, awn 0.5–0.8 mm long.

Florets. Fertile lemma oblong, 2–3 mm long, cartilaginous, without keel, 3 -veined, 0–3 -veined. Lemma margins scaberulous, eciliate or ciliate, hairy below. Lemma apex lobed, 3 -fid, with lobes 0.3–1 mm long, obtuse or acute, mucicous. Palea oblong, 1 length of lemma, cartilaginous. Palea keels thickened, scaberulous, adorned above. Palea surface smooth, glabrous. Palea apex dentate, 2 -fid. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, 0.3 mm long, fleshy. Anthers 3, 1–1.5 mm long. Caryopsis with adherent pericarp.

Distribution (TDWG). Continent. Australasia.

Country /Province /State. Australia. Western Australia.

TDWG4. Kimberley, Eremean.

Triodia plectrachnoides N. T. Burbidge. *Austral. Journ. Bot.* i. 155 (1953).

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

TYPE from Australia. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Australia: Cannon Hill, about 12.24S 132.55E, on exposed rocky slopes, greenish, branched tussocks, cocks up to 3 m 2 Sep 1946, S.T. Blake 17132 (HT: CANB, BRI).

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

Images: D.Sharp & B.K.Simon, *AusGrass*. Grasses of Australia. CD-Rom Version 1.0. (2002);.

Derivation (Clifford & Bostock 2007): Gk. -oides, resembling. Resembling *Plectrachne* with respect to spikelets.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose, clumped densely. Culms 200–300 cm long. Culm-internodes distally glabrous. Leaf-sheaths without keel, glabrous on surface. Leaf-sheath oral hairs ciliate, 1 mm long. Ligule a fringe of hairs. Leaf-blades aciculate, conduplicate, stiff. Leaf-blade venation without layer of subepidermal sclerenchyma masking vein striation. Leaf-blade surface glabrous. Leaf-blade apex pungent.

Inflorescence. Inflorescence a panicle. Panicle open, elliptic, 15–20 cm long. Panicle branches smooth or scaberulous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, filiform, 10–25 mm long.

Fertile Spikelets. Spikelets comprising 2–4 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets oblong, laterally compressed, 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 oblong, 5 mm long, 1 length of upper glume, scarious, without keels, 3 -veined. Lower glume primary vein scabrous. Lower glume apex emarginate or obtuse or acute, mucronate, awn 0.1 mm long. Upper glume oblong, 5 mm long, 1 length of adjacent fertile lemma, scarious, without keels, 3 -veined. Upper glume primary vein scabrous. Upper glume apex emarginate or obtuse or acute, mucronate, awn 0.1 mm long.

Florets. Fertile lemma oblong, 5–7 mm long, coriaceous, without keel, 3 -veined, 0–3 -veined. Lemma surface pubescent, hairy below. Lemma margins pubescent. Lemma apex dentate, 3 -fid, with outer lobes shorter, incised 0.2 of lemma length, acute. Palea 2 mm long. Palea keels ciliolate. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Anthers 3.

Distribution (TDWG), Continent. Australasia.

Country /Province /State. Australia. Northern Territory.

TDWG4. Darwin & Gulf.

Triodia plurinervata N. T. Burbidge. *Austral. Journ. Bot.* viii. 390 (1960).

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

TYPE from Australia. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Western Australia: Eremaean Province; Dorre Island, Shark Bay, 15 July 1959, R.D. Royce 5884 (HT: CANB; IT: PERTH).

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

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

Derivation (Clifford & Bostock 2007): L. plus, several; nervus, nerve; -ata, possessing. With more nerves in the glumes than for related species.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose, clumped densely. Culms 20–40 cm long. Culm-internodes distally glabrous. Leaf-sheaths without keel, glabrous on surface. Leaf-sheath oral hairs pubescent. Ligule a fringe of hairs. Leaf-blades aciculate, conduplicate, stiff. Leaf-blade venation without layer of subepidermal sclerenchyma masking vein striation. Leaf-blade apex pungent.

Inflorescence. Inflorescence composed of racemes. Racemes 1, single, bilateral, 3–10 cm long. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, oblong, 1 mm long.

Fertile Spikelets. Spikelets comprising 6–8 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets linear or lanceolate, laterally compressed, 12–15 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 lanceolate, 4–5 mm long, 1 length of upper glume, scarious, without keels, 5–9 -veined. Lower glume lateral veins prominent. Lower glume apex obtuse or acute. Upper glume lanceolate, 4–5 mm long, 0.75–0.8 length of adjacent fertile lemma, scarious, without keels, 5–9 -veined. Upper glume lateral veins prominent. Upper glume apex obtuse or acute.

Florets. Fertile lemma oblong or ovate, 5–6 mm long, coriaceous, without keel, 11–13 -veined, more than 3-veined. Lemma lateral veins evenly spaced. Lemma surface pubescent, hairy below. Lemma apex dentate, 3 -fid, incised 0.1 of lemma length, acute. Palea keels winged, narrowly winged, ciliolate. Palea surface glabrous or pubescent, hairy below. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Anthers 3.

Distribution (TDWG). Continent. Australasia.

Country /Province /State. Australia. Western Australia.

TDWG4. Eremean, South-West.

Triodia procera R. Br. *Prod.* 182. (1810).

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

TYPE from Australia. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: LT: *R. Brown [6256]*, Northern Territory: Darwin and Gulf District; Gulf of Carpentaria, North Coast (BM, E?; ILT: BRI, MEL). LT designated by Lazarides, *Aust. Syst. Bot.* 10(3): 462 (1997).

Illustrations (Books): C.A.Gardner, *Flora of Western Australia*, Vol 1, Part 1, *Gramineae* (1952) (72, Pl. 22), J.R.Wheeler et al, *Flora of the Kimberley Region* (1992) (1232, Fig. 348), K.O.Mallett (ed.), *Flora of Australia*, Vol 44B. *Poaceae* (2004) (228, Fig. 35), D.Sharp & B.K.Simon, *AusGrass*. Grasses of Australia. CD-Rom Version 1.0. (2002).

Illustrations (Journals): *Austr. Syst. Bot.* (10: 411, Fig.15 (1997)).

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

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose, clumped densely. Culms 150–200 cm long. Leaves distichous. Leaf-sheaths inflated (1–2cm wide), 4–7 cm long, keeled, glabrous on surface. Leaf-sheath oral hairs ciliate. Ligule a fringe of hairs. Leaf-blades ascending, linear, flat or involute, 35–70 cm long, 4–6 mm wide, stiff. Leaf-blade margins scabrous.

Inflorescence. Inflorescence a panicle. Panicle open, 40–60 cm long, contracted about primary branches. Primary panicle branches 9–18 cm long. Panicle axis scabrous. 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 oblong, laterally compressed, 4–6 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, similar, shorter than spikelet, thinner than fertile lemma. Lower glume oblong, 3–4 mm long, 1 length of upper glume, scarious, without keels, 3 -veined. Lower glume primary vein scabrous. Lower glume surface scabrous, rough on veins. Lower glume apex acute. Upper glume oblong, 3–4 mm long, 1 length of adjacent fertile lemma, scarious, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume apex acute.

Florets. Fertile lemma lanceolate, 3.5 mm long, cartilaginous, without keel, 3 -veined, 0–3 -veined. Lemma lateral veins close to margins. Lemma margins pubescent. Lemma apex dentate, 3 -fid, acute. Palea keels winged, narrowly winged. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Anthers 3.

Distribution (TDWG). Continent. Australasia.

Country /Province /State. Australia. Northern Territory.

TDWG4. Darwin & Gulf, Victoria R & Barkly Tableland.

Triodia prona M. Lazarides. *Austral. Syst. Bot.*, 10(3): 463 (1997).

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

TYPE from Australia. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Western Australia: Northern Province; near Thompson's Springs, Carr Boyd Range, 40 miles (64.5 km) south-east of Kununurra, 3 Mar 1963, *Lazarides 6715* (HT: CANB; IT: CANB, DNA, K, PERTH).

Illustrations (Books): K.O.Mallett (ed.), *Flora of Australia*, Vol 44B. *Poaceae* (2004) (235, Fig. 36), D.Sharp & B.K.Simon, *AusGrass*. Grasses of Australia. CD-Rom Version 1.0. (2002).

Illustrations (Journals): *Austr. Syst. Bot.* (10: 406, Fig.12 (1997)).

Derivation (Clifford & Bostock 2007): L. inclined forward. Flowering culms procumbent.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose. Culms decumbent, 100–130 cm long. Culm-internodes brown. Leaf-sheaths scaberulous, glabrous on surface, outer margin hairy. Leaf-sheath oral hairs bearded, 2–2.5 mm long. Ligule a fringe of hairs, 0.3 mm long. Collar pubescent. Leaf-blade base with a brief petiole-like connection to sheath, petiole 0.3–0.6 cm long. Leaf-blades flexuous, filiform, conduplicate, 15–30 cm long, 0.6–0.7 mm wide, without exudate. Leaf-blade margins scabrous.

Inflorescence. Inflorescence a panicle. Panicle open, linear, loose, 20–30 cm long, 1–1.5 cm wide. Primary panicle branches 3–7.5 cm long. Panicle axis angular or flat. Panicle branches angular or flat. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, angular or flattened, 2.5–6 mm long.

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, 7–10 mm long, 2.5–4 mm wide, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes compressed, 1.3 mm long. Floret callus 0.3 mm long, bearded.

Glumes. Glumes persistent, similar, reaching apex of florets, thinner than fertile lemma. Lower glume lanceolate, 7–9 mm long, 1 length of upper glume, cartilaginous, much thinner on margins, without keels, 1–5 -veined. Lower glume primary vein scabrous. Lower glume lateral veins absent or obscure. Lower glume surface asperulous. Lower glume apex setaceously acuminate. Upper glume lanceolate, 7–9 mm long, cartilaginous, with membranous margins, without keels, 1–5 -veined. Upper glume primary vein scabrous. Upper glume lateral veins absent or obscure. Upper glume surface asperulous. Upper glume apex setaceously acuminate.

Florets. Fertile lemma oblong, 3.5–4 mm long, cartilaginous or indurate, much thinner on margins, without keel, 3 -veined, 0–3 -veined. Lemma surface scaberulous, rough above, pilose, hairy below. Lemma margins scaberulous. Lemma apex lobed, 3 -fid, awned, 3 -awned. Principal lemma awn recurved at base of limb, 5–6 mm long overall. Lateral lemma awns present, arising on apex of lobes, 3.5–5 mm long, shorter than principal. Palea elliptic, 4 mm long, cartilaginous, of uniform consistency. Palea keels winged, narrowly winged. Palea surface scaberulous, pubescent, hairy below. Palea apex emarginate, scaberulous. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, 0.5 mm long, fleshy, emarginate. Anthers 3, 2.3 mm long. Caryopsis with adherent pericarp.

Distribution (TDWG). Continent. Australasia.

Country /Province /State. Australia. Western Australia.

TDWG4. Kimberley.

Triodia pungens R. Br. *Prod.* 182. (1810).

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

TYPE from Australia. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Northern Territory: Darwin and Gulf District; Carpentaria, North Coast, *R. Brown [6257]* (HT: BM; IT: E, K, PERTH (photos), MEL, NSW (2 sheets)).

Illustrations (Books): J.P.Jessop, G.R.M. Dashorst & F.M.James, *Grasses of South Australia* (2006) (416, Fig. 347), C.A.Gardner, *Flora of Western Australia*, Vol 1, Part 1, *Gramineae* (1952) (65, Pl. 17 & 39, Pl 19), J.R.Wheeler et al, *Flora of the Kimberley Region* (1992) (1232, Fig. 348), D.Sharp & B.K.Simon, *AusGrass*. Grasses of Australia. CD-Rom Version 1.0. (2002).

Illustrations (Journals): *Hooker's Icones Plantarum* (t.3336 (1937)).

Images: D.Sharp & B.K.Simon, *AusGrass*. Grasses of Australia. CD-Rom Version 1.0. (2002);, K.Domin, *Bibliotheca Botanica* 85 (1915) (385, Fig.90).

Derivation (Clifford & Bostock 2007): *L. pungo*, prick. Leaf-blades sharp-pointed.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose, clumped densely. Culms 40–70 cm long. Leaf-sheaths resinous, medianly thickened. Leaf-sheath oral hairs ciliate. Ligule a fringe of hairs. Leaf-blades acuminate, conduplicate, stiff. Leaf-blade venation with continuous uniform subepidermal sclerenchyma layer on the underside (except median line). Leaf-blade apex pungent.

Inflorescence. Inflorescence a panicle. Panicle open, pyramidal, 15–30 cm long, contracted about primary branches. Panicle branches with prominent pulvini. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 5–6 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, laterally compressed, 8–9 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 mm long, 1 length of upper glume, scarious, without keels, 5–7 -veined. Lower glume apex obtuse or acute.

Upper glume oblong, 3 mm long, 0.4–0.6 length of adjacent fertile lemma, scarious, without keels, 5 -veined. Upper glume apex obtuse or acute.

Florets. Fertile lemma oblong, 5–8 mm long, coriaceous, without keel, 9 -veined, more than 3-veined. Lemma midvein eciliate or ciliolate, hairy below. Lemma lateral veins in close groups (of 3). Lemma surface puberulous, hairy at base. Lemma margins eciliate or ciliolate, hairy below. Lemma apex lobed, 3 -fid, incised 0.25–0.5 of lemma length, acute. Palea 0.5–0.75 length of lemma. Palea keels winged, narrowly winged. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Anthers 3.

Distribution (TDWG). Continent. Australasia.

Country /Province /State. Australia. Western Australia, Northern Territory, South Australia, Queensland.

TDWG4. Kimberley, Eremean. Darwin & Gulf, Victoria R & Barkly Tableland, Central Australia. NW & Lake Eyre. North, Central, Inland.

Triodia racemigera C.A.Gardner. *Fl. W. Austral.* i. 77 (1952).

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

TYPE from Australia. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Australia: Western Australia: Ord River, Kimberley Div., Apr–May 1945, *K.M. Durack s.n.* (HT: PERTH; IT: CANB).

Illustrations (Books): C.A.Gardner, *Flora of Western Australia*, Vol 1, Part 1, *Gramineae* (1952) (68 & 72, Pl. 18 & 22), J.R.Wheeler et al, *Flora of the Kimberley Region* (1992) (1235, Fig. 349), 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. racemus*, stalk of a cluster of grapes; *gero*, carry or bear. Inflorescence composed of racemes.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose, clumped densely. Culms 100–120 cm long. Culm-internodes distally glabrous. Leaf-sheaths without keel, pubescent or pilose. Leaf-sheath oral hairs ciliate. Ligule a fringe of hairs. Leaf-blades aciculate, conduplicate, stiff. Leaf-blade venation without layer of subepidermal sclerenchyma masking vein striation. Leaf-blade apex pungent.

Inflorescence. Inflorescence composed of racemes. Racemes borne along a central axis, appressed, unilateral, 2–5 cm long. Central inflorescence axis 40–50 cm long. Spikelet packing regular, 2 -rowed. Spikelets solitary. Fertile spikelets pedicelled.

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 oblong, laterally compressed, 4.5–6 mm long, 2–3 mm wide, 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, 4.5–5 mm long, 0.9 length of upper glume, coriaceous, 1-keeled, 1–3 -veined. Lower glume lateral veins absent or obscure. Lower glume apex acute, mucronate. Upper glume lanceolate or oblong, 5–5.5 mm long, 1 length of adjacent fertile lemma, coriaceous, 1-keeled, 3 -veined. Upper glume apex acute, mucronate.

Florets. Fertile lemma lanceolate, 5–5.5 mm long, coriaceous, without keel, 3 -veined, 0–3 -veined. Lemma margins ciliate, hairy above. Lemma apex lobed, 3 -fid, with lanceolate lobes, incised 0.33 of lemma length. Palea lanceolate or elliptic, 2.5–4 mm long. Palea keels winged, narrowly winged, ciliolate. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Anthers 3.

Distribution (TDWG). Continent. Australasia.

Country /Province /State. Australia. Western Australia, Northern Territory.

TDWG4. Kimberley. Victoria R & Barkly Tableland.

Triodia radonensis S.W.L. Jacobs. *Telopea*, 4(4): 658 (1992).

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

TYPE from Australia. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Northern Territory: Darwin and Gulf District; Radon Creek, Brockman Range, 12:45' S, 132:54' E, 10 Jun 78, *P.K. Latz 7676* (HT: NSW; IT: BRI, CANB, DNA, K, NT, PERTH).

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

Derivation (Clifford & Bostock 2007): *L. -ensis*, denoting origin. From Radon Creek, Northern Territory, Australia.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose. Butt sheaths indurate. Culms rambling, 150–250 cm long, 5–10 mm diam. Culm-internodes terete or elliptical in section. Leaf-sheaths loose, longer than adjacent culm internode, resinous, smooth, glabrous on surface, outer margin glabrous or hairy. Leaf-sheath oral hairs bearded, 3.5 mm long. Ligule a fringe of hairs, 1 mm long. Leaf-blades conduplicate or convolute, 30–60 cm long, 2–5 mm wide, coriaceous, stiff, resinous. Leaf-blade surface grooved on either side of midline, grooved abaxially, scaberulous, rough adaxially, glabrous. Leaf-blade margins cartilaginous, spinulose. Leaf-blade apex pungent.

Inflorescence. Inflorescence a panicle. Panicle open, elliptic, 14–25 cm long, 7–15 cm wide. Primary panicle branches 1–3-nate, 3–7 cm long. Panicle axis angular, smooth or scaberulous. Panicle branches scabrous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, filiform, 3–25 mm long, scabrous.

Fertile Spikelets. Spikelets comprising 5–7 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets oblong, laterally compressed, 5–8 mm long, 4–5 mm wide, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes flattened, curved, 0.5–0.8 mm long, smooth or scaberulous. Floret callus glabrous, truncate.

Glumes. Glumes persistent, similar, shorter than spikelet, thinner than fertile lemma. Lower glume oblong, 2–2.5 mm long, 1 length of upper glume, membranous, without keels, 3 -veined. Lower glume primary vein scabrous. Lower glume surface convex or flat. Lower glume margins ciliolate. Lower glume apex dentate, 2 -fid, obtuse. Upper glume oblong, 2–2.5 mm long, membranous, without keels, 3 -veined. Upper glume primary vein scabrous. Upper glume margins ciliolate. Upper glume apex dentate, 2 -fid, obtuse.

Florets. Fertile florets divergent. Fertile lemma obovate, 2–3 mm long, coriaceous, much thinner on margins, shiny, without keel, 3 -veined, 0–3 -veined. Lemma surface scaberulous, rough above. Lemma margins scaberulous. Lemma apex lobed, 2 -fid, mucronate. Principal lemma awn from a sinus. Palea obovate, 1 length of lemma, coriaceous, thinner above. Palea keels thickened, scaberulous. Palea apex erose, obtuse, ciliate. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, fleshy. Anthers 3, 1.3–2 mm long. Caryopsis with adherent pericarp.

Distribution (TDWG). Continent. Australasia.

Country /Province /State. Australia. Northern Territory.

TDWG4. Darwin & Gulf.

Triodia rigidissima (Pilg.) M. Lazarides. *Austral. Syst. Bot.*, 10(3): 468: (1997).

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

TYPE from Australia. **Basionym or Replaced Name:** *Triraphis rigidissima* Pilg., *Engl. Jahrb.* 35: 72. (1904). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Western Australia: Eremaean Province; 25 km from Menzies, 28 Oct 1901, *L. Diels 5175* (HT: B; IT: K).

Recent Synonyms: *Plectrachne rigidissima* (Pilger) C.E.Hubb.in *Hook. Ic. Pl.* 34: sub t. 3385, p. 2 (1939).

Illustrations (Books): K.O.Mallett (ed.), *Flora of Australia*, Vol 44B. *Poaceae* (2004) (240, Fig. 37), D.Sharp & B.K.Simon, *AusGrass*. Grasses of Australia. CD-Rom Version 1.0. (2002).

Illustrations (Journals): *Austr. Syst. Bot.* (10: 407, Fig.13 (1997)).

Images: D.Sharp & B.K.Simon, *AusGrass*. Grasses of Australia. CD-Rom Version 1.0. (2002);

Derivation (Clifford & Bostock 2007): *L. rigidus*, stiff; *-issimus*, most. Leaf-blades rolled, rigid.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose. Rhizomes absent or elongated. Culms erect, 20–30 cm long. Culm-internodes distally glabrous. Lateral branches ample. Leaf-sheaths glabrous on surface. Ligule a fringe of hairs. Leaf-blades aciculate, conduplicate, 2–5 cm long, 2 mm wide, coriaceous, stiff. Leaf-blade surface glabrous. Leaf-blade apex pungent.

Inflorescence. Inflorescence a panicle. Panicle open, lanceolate, 7–9 cm long, bearing few spikelets. Primary panicle branches appressed, bearing 1–2 fertile spikelets on each lower branch. Panicle axis scaberulous. Panicle branches scaberulous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 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 elliptic, laterally compressed, 9–13 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus pubescent.

Glumes. Glumes persistent, similar, shorter than spikelet. Lower glume lanceolate, 10 mm long, 1 length of upper glume, scarios, without keels, 5 -veined. Lower glume apex acuminate. Upper glume lanceolate, 10 mm long, 2–3 length of adjacent fertile lemma, scarios, without keels, 5 -veined. Upper glume apex acuminate.

Florets. Fertile lemma oblong, 4–5 mm long, chartaceous, without keel, more than 3-veined. Lemma midvein pubescent. Lemma margins pubescent. Lemma apex lobed, 3 -fid, awned, 3 -awned. Principal lemma awn 11–17 mm long overall. Lateral lemma awns present, arising on apex of lobes, shorter than principal. Palea 4–4.5 mm long, 2 -veined. Palea surface pubescent, hairy on back. Apical sterile florets resembling fertile though underdeveloped.

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

Distribution (TDWG). Continent. Australasia.

Country /Province /State. Australia. Western Australia.

TDWG4. Ereman.

Triodia roscida N. T. Burbidge. *Austral. Journ. Bot.* i. 176 (1953).

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

TYPE from Australia. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: Australia: Western Australia: 1 mi SE of Turner Station, Kimberley district, 9 Jul 1949, *R.A. Perry 2404* (HT: CANB; IT: AD, BRI, CANB, K, MEL, NSW, NT, PERTH, US).

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

Images: D.Sharp & B.K.Simon, *AusGrass*. Grasses of Australia. CD-Rom Version 1.0. (2002);

Derivation (Clifford & Bostock 2007): L. covered with a dew-like exudation. Stems and leaves covered with resin.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose, clumped densely. Culms 100–120 cm long. Culm-internodes distally glabrous. Culm-nodes glabrous. Leaf-sheaths longer than adjacent culm internode, without keel, pilose. Leaf-sheath oral hairs ciliate, 2–3 mm long. Ligule a fringe of hairs. Leaf-blades aciculate, conduplicate, stiff, resinous. Leaf-blade venation without layer of subepidermal sclerenchyma masking vein striation. Leaf-blade margins ciliate. Leaf-blade apex pungent.

Inflorescence. Inflorescence composed of racemes. Racemes borne along a central axis, appressed, unilateral, 4–7 cm long. Central inflorescence axis 15–25 cm long. 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 oblong or cuneate, laterally compressed, 6–9 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, 4.5–7 mm long, 1 length of upper glume, coriaceous, without keels, 5–7 -veined. Lower glume primary vein smooth or scaberulous. Lower glume apex acute, mucronate. Upper glume lanceolate or oblong, 4.5–7 mm long, 0.75–0.85 length of adjacent fertile lemma, coriaceous, without keels, 5–7 -veined. Upper glume primary vein conspicuous. Upper glume apex acute, mucronate.

Florets. Fertile lemma oblong, 6–8 mm long, coriaceous, without keel, 9 -veined, more than 3-veined. Lemma lateral veins in close groups (of 3). Lemma surface pubescent, hairy below. Lemma apex lobed, 3 -fid, with linear lobes, incised 0.25 of lemma length. Palea elliptic, 5–6 mm long. Palea keels winged, narrowly winged, ciliolate. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Anthers 3.

Distribution (TDWG). Continent. Australasia.

Country /Province /State. Australia. Western Australia, Northern Territory.

TDWG4. Kimberley. Victoria R & Barkly Tableland.

Triodia salina M. Lazarides. *Austral. Syst. Bot.*, 10(3): 471 (1997).

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

TYPE from Australia. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: Northern Territory: Northern Central Australia; Lake Bennett, Lat. 22:45' S, Long. 131:01' E, 18 Jan 72, *P.K. Latz 2108* (HT: CANB; IT: BRI, NT, PERTH).

Illustrations (Books): K.O.Mallett (ed.), *Flora of Australia*, Vol 44B. *Poaceae* (2004) (215, Fig. 34).

Illustrations (Journals): *Austr. Syst. Bot.* (10: 402, Fig.10 (1997)).

Images: D.Sharp & B.K.Simon, *AusGrass*. Grasses of Australia. CD-Rom Version 1.0. (2002);

Derivation (Clifford & Bostock 2007): Growing in saline soils.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose, clumped loosely. Stolons present. Culms 115–160 cm long. Lateral branches fastigiate. Leaf-sheaths smooth, glabrous on surface. Leaf-sheath oral hairs lacking to ciliate. Ligule a fringe of hairs, 0.5–0.8 mm long. Collar glabrous or ciliate. Leaf-blades filiform, conduplicate, 9–27 cm long, 0.8–1.2 mm wide, coriaceous, stiff, resinous, aromatic. Leaf-blade surface grooved on either side of midline, grooved abaxially. Leaf-blade margins scabrous.

Inflorescence. Inflorescence a panicle. Panicle open, linear, dense or loose, 17–40 cm long, 1–2.5 cm wide. Primary panicle branches 5–11 cm long. Panicle axis angular. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, 5–10 mm long.

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 cuneate, laterally compressed or subterete, 10–12 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes 1.3–1.8 mm long, scaberulous. Floret callus 0.5 mm long, disarticulating obliquely.

Glumes. Glumes persistent, similar, reaching apex of florets, thinner than fertile lemma. Lower glume lanceolate, 8–17 mm long, 1 length of upper glume, scarious, much thinner on margins, 1-keeled, 1–7 -veined. Lower glume lateral veins absent or distinct. Lower glume surface smooth or asperulous. Lower glume apex acuminate, muticous or mucronate or awned, 1 -awned, awn 0.5–1 mm long. Upper glume lanceolate, 8–17 mm long, scarious, with membranous margins, 1-keeled, 1–7 -veined. Upper glume lateral veins absent or distinct. Upper glume surface smooth or asperulous. Upper glume apex acuminate, muticous or mucronate or awned, 1 -awned, awn 0.5–1 mm long.

Florets. Fertile lemma oblong, 3–4 mm long, indurate, of similar consistency above, much thinner on margins, yellow, without keel. Lemma midvein ciliate. Lemma surface glabrous or pilose. Lemma margins ciliate. Lemma apex lobed, 3 -fid, awned, 3 -awned. Principal lemma awn straight or curved, 5–10 mm long overall. Lateral lemma awns present, arising on apex of lobes, 5–10 mm long, subequal to principal. Palea oblanceolate, 4 mm long, indurate, thinner above. Palea keels winged, narrowly winged, scaberulous. Palea surface glabrous or pubescent, hairy at base. Palea apex emarginate or obtuse, ciliate. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, 0.5 mm long, fleshy. Anthers 3, 2 mm long. Caryopsis with adherent pericarp, ellipsoid or obovoid, 2 mm long, red, obtuse. Embryo 0.33 length of caryopsis.

Distribution (TDWG). Continent. Australasia.

Country /Province /State. Australia. Western Australia, Northern Territory.

TDWG4. Kimberley. Victoria R & Barkly Tableland, Central Australia.

Triodia scariosa N. T. Burbidge. *Austral. Journ. Bot.* i. 173 (1953).

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

TYPE from Australia. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Australia: Western Australia: Southern Hills, Fraser Range, Cowan, *N.T. Burbidge 2675* (HT: CANB).

Illustrations (Books): J.P.Jessop, G.R.M. Dashorst & F.M.James, *Grasses of South Australia* (2006) (417, Fig. 348), N.Walsh & T.Entwistle, *Flora of Victoria* Vol 2 (1994) (556, Fig. 111), S.W.L.Jacobs, R.D.B.Whalley & D.J.B.Wheeler., *Grasses of New South Wales*, 4th edn (2008) (388 as subsp. *yelarbonensis* & subsp. *scariosa*), K.O.Mallett (ed.), *Flora of Australia*, Vol 44B. *Poaceae* (2004) (213, Fig. 33), D.Sharp & B.K.Simon, *AusGrass*. Grasses of Australia. CD-Rom Version 1.0. (2002).

Illustrations (Journals): *Austr. Syst. Bot.* (10: 415, Fig.17 (1997)).

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

Derivation (Clifford & Bostock 2007): L. of thin and membranous texture, but not green. In general of glumes or lemmas.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose, clumped densely. Culms 30–80 cm long. Culm-internodes terete. Leaves distichous. Leaf-sheaths longer than adjacent culm internode, without exudate, without keel, striately veined. Ligule a fringe of hairs. Leaf-blades aciculate, conduplicate, 8–20 cm long, 1–2 mm wide, coriaceous, stiff, resinous. Leaf-blade apex pungent.

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

Fertile Spikelets. Spikelets comprising 4–9 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets linear or lanceolate, laterally compressed, 9–16 mm long, 3–6 mm wide, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes pubescent, hairy at tip. Floret callus pilose.

Glumes. Glumes persistent, similar, shorter than spikelet. Lower glume lanceolate, 5–8 mm long, 1 length of upper glume, scarious, without keels, 3–5 -veined. Lower glume apex acute or acuminate. Upper glume lanceolate, 5–8 mm long, 1 length of adjacent fertile lemma, scarious, without keels, 3–5 -veined. Upper glume apex acute or acuminate.

Florets. Fertile lemma oblong, 5–8 mm long, scarious, without keel, 9 -veined, more than 3-veined. Lemma midvein ciliate, hairy below. Lemma lateral veins in close groups (of 3). Lemma surface pilose, hairy below. Lemma margins ciliate, hairy above or below. Lemma apex erose or dentate, 2 -fid, acute, mucicous or mucronate. Palea keels ciliolate. Palea surface villous, hairy on back (below). Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, fleshy. Anthers 3, 2.75–3 mm long.

Distribution (TDWG). Continent. Australasia.

Country /Province /State. Australia. Western Australia, South Australia, Queensland, New South Wales, Victoria.

TDWG4. Eremean, South-West. NW & Lake Eyre, Southern. Central, South East. Coast, Tablelands, Western Slopes, Western Plains.

Triodia schinzii (Henrard) M. Lazarides. *Austral. Syst. Bot.*, 10(3): 474: (1997).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, D.Sharp, D. & B.K.Simon, *AusGrass* (2002).

TYPE from Australia. **Basionym or Replaced Name:** *Plectrachne schinzii* Henrard, *Vierteljahrsschr. Naturf. Ges. Zurich* 74: 134 (1929). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *G.F. Hill 344*, 14 Jun 1911, Australia: Northern Territory (Z; IT: US-1061245).

Illustrations (Books): J.P.Jessop, G.R.M. Dashorst & F.M.James, *Grasses of South Australia* (2006) (418, Fig. 349), K.O.Mallett (ed.), *Flora of Australia*, Vol 44B. *Poaceae* (2004) (240, Fig. 37), D.Sharp & B.K.Simon, *AusGrass*. Grasses of Australia. CD-Rom Version 1.0. (2002).

Illustrations (Journals): *Austr. Syst. Bot.* (10: 407, Fig.13 (1997)).

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 Hans Schinz (1858–1941) Swiss traveller and botanist.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose, clumped densely. Culms erect, 120–150 cm long, 2–6 -noded. Culm-internodes smooth, distally glabrous. Culm-nodes glabrous. Lateral branches ample, arising from lower culm. Leaf-sheaths resinous. Leaf-sheath oral hairs ciliate. Ligule a fringe of hairs. Leaf-blades aciculate, conduplicate, 10–25 cm long, 2 mm wide, coriaceous, stiff, resinous, aromatic. Leaf-blade surface glabrous. Leaf-blade apex pungent.

Inflorescence. Inflorescence a panicle, exserted or embraced at base by subtending leaf. Panicle contracted, lanceolate, 10–15 cm long, 2.5–3 cm wide. Primary panicle branches 1–2 -nate, 2–6.5 cm long, bearing 1–4 fertile spikelets on each lower branch. Panicle branches scabrous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, filiform, terete, 2 mm long, scabrous.

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 linear or lanceolate, laterally compressed, 20–25 mm long, 4–5 mm wide, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes 2 mm long, pubescent. Floret callus elongated, 1 mm long, pubescent, pungent.

Glumes. Glumes persistent, similar, shorter than spikelet, shiny, gaping. Lower glume linear or lanceolate, 15–20 mm long, 1 length of upper glume, membranous, 1-keeled, keeled all along or above, 7–11 -veined. Lower glume apex acuminate. Upper glume linear or lanceolate, 15–20 mm long, 2–2.5 length of adjacent fertile lemma, membranous, 1-keeled, keeled all along or above, 7–11 -veined. Upper glume apex acuminate.

Florets. Fertile lemma oblong, 7–8.5 mm long, coriaceous, dark brown or yellow, tipped with last colour, without keel, 3 -veined, 0–3 -veined. Lemma surface pubescent, hairy below. Lemma apex lobed, 3 -fid, with linear lobes, with lobes 2 mm long, awned, 3 -awned. Principal lemma awn flat below, 20–25 mm long overall. Lateral lemma awns present, arising on apex of lobes, 12–20 mm long, shorter than principal. Palea lanceolate or oblong, 3 mm long, membranous, 2 -veined. Palea keels ciliolate. Apical sterile florets resembling fertile though underdeveloped.

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

Distribution (TDWG). Continent. Australasia.

Country /Province /State. Australia. Western Australia, Northern Territory, South Australia, Queensland.

TDWG4. Kimberley, Eremaean. Victoria R & Barkly Tableland, Central Australia. NW & Lake Eyre. Inland.

Triodia secunda N. T. Burbidee. *Journ. Roy. Soc. W. Austral.* . 27 (1946).

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

TYPE from Australia. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: Western Australia: Northern Province; Coongan Station, Lat. 20:41' S, Long. 119:40' E, 17 May 1937, *A.J. Anderson s.n.* (*Burbidge 640*) (IT: PERTH) incorrectly cited as 640 by Burbidge (1953: 180).

Illustrations (Books): C.A.Gardner, *Flora of Western Australia*, Vol 1, Part 1, *Gramineae* (1952) (71, Pl. 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. bent to one side. Branches restricted to one side of inflorescence.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose, clumped densely. Stolons present. Culms 60–90 cm long. Culm-internodes distally glabrous. Leaf-sheaths without keel, striately veined, glabrous on surface. Leaf-sheath oral hairs ciliate. Ligule a fringe of hairs. Leaf-blades aciculate, conduplicate, 6–12 cm long, stiff, dark green. Leaf-blade venation without layer of subepidermal sclerenchyma masking vein striation. Leaf-blade surface glabrous. Leaf-blade apex pungent.

Inflorescence. Inflorescence composed of racemes. Racemes borne along a central axis, appressed, unilateral, 2–3 cm long. Central inflorescence axis 10–15 cm long. Spikelets solitary. Fertile spikelets sessile.

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 cuneate, laterally compressed, 6–8 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 linear or lanceolate, 3–4 mm long, 0.75 length of upper glume, scarios, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume surface scabrous, rough on veins. Lower glume apex acute, mucronate. Upper glume linear or lanceolate, 4–5 mm long, 1.1–1.4 length of adjacent fertile lemma, scarios, without keels, 1–3 -veined. Upper glume lateral veins absent or obscure. Upper glume surface scabrous, rough on veins. Upper glume apex obtuse or acute, mucronate.

Florets. Fertile lemma lanceolate, 3.5 mm long, membranous or scarios, without keel, 3 -veined, 0–3 -veined. Lemma midvein pubescent. Lemma margins pubescent. Lemma apex dentate, 3 -fid, incised 0.1 of lemma length. Palea linear or elliptic, 3–3.5 mm long. Palea keels wingless, scabrous. Palea surface pubescent, hairy below. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Anthers 3.

Distribution (TDWG). Continent. Australasia.

Country /Province /State. Australia. Western Australia.

TDWG4. Eremaean.

Triodia spicata N. T. Burbidge. *Austral. Journ. Bot.* i. 182 (1953).

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

TYPE from Australia. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: Australia: Northern Territory: Napperby, about 100 mi NW of Alice Springs, 24 Jan 1950, *S.L. Everist 4188* (HT: BRI, CANB).

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

Images: D.Sharp & B.K.Simon, *AusGrass*. Grasses of Australia. CD-Rom Version 1.0. (2002);.

Derivation (Clifford & Bostock 2007): L. spica, thorn; -ata, possessing; Inflorescence a spike or spicate panicle.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose, clumped densely. Culms 50–80 cm long. Culm-internodes terete. Leaves distichous. Leaf-sheaths longer than adjacent culm internode, without exudate, without keel, outer margin hairy. Leaf-sheath oral hairs bearded, 2–4 mm long. Ligule a fringe of hairs. Leaf-blades aciculate, conduplicate, 7–12 cm long, 1–2 mm wide, coriaceous, stiff, resinous. Leaf-blade apex pungent.

Inflorescence. Inflorescence composed of racemes. Racemes 1, single, unilateral, 6–9 cm long. Spikelet packing broadside to rachis, regular, 2 -rowed. Spikelets solitary. Fertile spikelets sessile.

Fertile Spikelets. Spikelets comprising 5–7 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate or elliptic, laterally compressed, 9–13 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, similar, shorter than spikelet. Lower glume lanceolate or ovate, 4–5 mm long, 1 length of upper glume, coriaceous, without keels, 3–5 -veined. Lower glume apex obtuse or acute. Upper glume lanceolate or ovate, 4–5 mm long, 0.8 length of adjacent fertile lemma, coriaceous, without keels, 5–7 -veined. Upper glume apex obtuse or acute.

Florets. Fertile lemma oblong, 5–6 mm long, coriaceous, without keel, 3(–9) -veined, 0–3 -veined. Lemma midvein ciliate, hairy below. Lemma lateral veins with distinct primaries but obscure intermediates. Lemma apex entire, acuminate. Palea keels winged, narrowly winged, eciliate. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, fleshy. Anthers 3.

Distribution (TDWG). Continent. Australasia.

Country /Province /State. Australia. Western Australia, Northern Territory.

TDWG4. Kimberley, Ereman. Victoria R & Barkly Tableland, Central Australia.

Triodia stenostachya Domin. *Biblioth. Bot.* 1 v. 387 (1915).

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

TYPE from Australia. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: Queensland: North Kennedy District; in colle Castle Hill prope opp. Townsville, Feb 1910, *K. Domin s.n.* (HT: PR; IT: K (2 sheets), PERTH (photos)).

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

Images: D.Sharp & B.K.Simon, *AusGrass*. Grasses of Australia. CD-Rom Version 1.0. (2002);.

Derivation (Clifford & Bostock 2007): Gk. *stenos*, narrow; *stachys*, ear of corn. Inflorescence a narrow spike or spike-like panicle.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose, clumped densely. Culms 100–150 cm long, 1–1.3 mm diam. Culm-internodes distally glabrous or pubescent. Lateral branches ample. Leaf-sheaths resinous, medianly thickened, striately veined, outer margin hairy. Leaf-sheath oral hairs ciliate. Ligule a fringe of hairs. Leaf-blades aciculate, conduplicate, stiff. Leaf-blade venation with continuous uniform subepidermal sclerenchyma layer on the underside (except median line). Leaf-blade margins smooth. Leaf-blade apex pungent.

Inflorescence. Inflorescence a panicle. Panicle open, 20–40 cm long, contracted about primary branches. Primary panicle branches spreading, 7–10 cm long. Panicle axis scabrous. Panicle branches scabrous. 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 oblong, laterally compressed, 4.5–5 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus glabrous.

Glumes. Glumes persistent, similar, shorter than spikelet, thinner than fertile lemma. Lower glume lanceolate, 3.5–4.5 mm long, 1 length of upper glume, scarios, 1-keeled, 3 -veined. Lower glume primary vein scabrous. Lower glume surface scabrous, rough on veins. Lower glume apex setaceously acuminate. Upper glume lanceolate, 3.5–4.5 mm long, 1.2–1.3 length of adjacent fertile lemma, scarios, 1-keeled, 1 -veined. Upper glume lateral veins absent. Upper glume surface scabrous. Upper glume apex setaceously acuminate.

Florets. Fertile lemma oblong, 3–3.5 mm long, scarios, without keel, 9 -veined, more than 3-veined. Lemma lateral veins in close groups (of 3). Lemma surface puberulous, hairy below, hairy between veins. Lemma apex dentate, 3 -fid, with outer lobes shorter, with linear lobes, acute. Palea linear or elliptic, 2.5–3 mm long. Palea keels ciliate. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Anthers 3, 1.5–1.75 mm long.

Distribution (TDWG). Continent. Australasia.

Country /Province /State. Australia. Western Australia, Northern Territory, Queensland.

TDWG4. Kimberley. Darwin & Gulf, Victoria R & Barkly Tableland. North.

Triodia tomentosa S.W.L. Jacobs. *Telopea*, 4(4): 655 (1992).

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

TYPE from Australia. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Western Australia: Eremaean Province; Great Northern Highway, 29:18' S, 117:36' E, 24 Oct 1984, *M.G. Corrick 9324* (HT: NSW; IT: MEL).

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

Images: D.Sharp & B.K.Simon, *AusGrass*. Grasses of Australia. CD-Rom Version 1.0. (2002);.

Derivation (Clifford & Bostock 2007): *L. tomentum*, stuffing material of a pillow; -osa, abundance. Plant invested in part or totally with short hairs.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose. Culms 45–90 cm long. Leaf-sheaths smooth or scaberulous, glabrous on surface or hirsute or woolly. Leaf-sheath oral hairs ciliate or woolly, 1–2 mm long. Ligule a fringe of hairs, 1–1.5 mm long. Leaf-blades filiform, conduplicate, 8–28 cm long, 0.7–1 mm wide, without exudate. Leaf-blade surface scabrous, rough adaxially, glabrous, hairless throughout or except near base.

Inflorescence. Inflorescence a panicle. Panicle open, ovate, 9–15 cm long, 2.5–4 cm wide. Primary panicle branches 1–3 cm long. Panicle axis angular or flat. Panicle branches angular or flat. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, 3–15 mm long.

Fertile Spikelets. Spikelets comprising 4–7 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets linear or lanceolate or cuneate, laterally compressed, 8–14 mm long, 3.5–5 mm wide, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes elongated between glumes. Rhachilla elongation 0.8 mm long. Rhachilla internodes 1.5–2 mm long, scaberulous. Floret callus 0.7 mm long, acute.

Glumes. Glumes persistent, similar, shorter than spikelet or reaching apex of florets, thinner than fertile lemma. Lower glume lanceolate, 7–13 mm long, 1 length of upper glume, scarious, 1-keeled, 1–3 -veined. Lower glume lateral veins absent or obscure. Lower glume surface smooth or asperulous. Lower glume apex acuminate, muticous or mucronate. Upper glume lanceolate, 7–13 mm long, scarious, 1-keeled, 1–3 -veined. Upper glume lateral veins absent or obscure. Upper glume surface smooth or asperulous. Upper glume apex acuminate, muticous or mucronate.

Florets. Fertile lemma lanceolate or oblong, 7.5–10 mm long, scarious or cartilaginous, without keel, 3 -veined or 9 -veined, 0–3 -veined or more than 3-veined. Lemma lateral veins evenly spaced or in close groups. Lemma surface smooth or scaberulous, rough above, hirsute, hairy below. Lemma hairs white or tawny. Lemma apex dentate, 2 -fid, with lobes 0.3 mm long, muticous or mucronate. Palea linear or lanceolate, membranous or cartilaginous. Palea keels scabrous, adorned above. Palea surface glabrous or pubescent, hairy at base. Palea apex obtuse or acuminate. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, fleshy. Anthers 3, 2.5–5 mm long. Caryopsis with adherent pericarp, obovoid, 2.5 mm long, obtuse. Embryo 0.33 length of caryopsis. Hilum elliptic.

Distribution (TDWG). Continent. Australasia.

Country /Province /State. Australia. Western Australia.

TDWG4. Eremaean, South-West.

Triodia triaristata M. Lazarides. *Austral. Syst. Bot.*, 10(3): 480 (1997).

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

TYPE from Australia. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Northern Territory: Central Australia; Central Mt. Stuart, 21:57', 133:27', 2 Jul 1974, *P.K. Latz 5582* (HT: NT; IT: BRI).

Illustrations (Books): K.O.Mallett (ed.), *Flora of Australia*, Vol 44B. *Poaceae* (2004) (235, Fig. 36), D.Sharp & B.K.Simon, *AusGrass*. Grasses of Australia. CD-Rom Version 1.0. (2002).

Illustrations (Journals): *Austr. Syst. Bot.* (10: 406, Fig.12 (1997)).

Images: D.Sharp & B.K.Simon, *AusGrass*. Grasses of Australia. CD-Rom Version 1.0. (2002);.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose, clumped loosely. Butt sheaths distinctly ribbed. Culms 100 cm long. Culm-internodes scaberulous. Leaf-sheaths pubescent, outer margin hairy. Leaf-sheath oral hairs lacking to bearded. Ligule a fringe of hairs, 0.8 mm long. Collar glabrous or pubescent. Leaf-blades straight or curved or flexuous, filiform, conduplicate, 20–45 cm long, 0.8–1.2 mm wide, coriaceous, stiff, resinous. Leaf-blade surface grooved on either side of midline, grooved abaxially.

Inflorescence. Inflorescence a panicle. Panicle open, oblong, 16–30 cm long, 2.5–5 cm wide. Primary panicle branches simple or sparsely divided, 6–12 cm long. Panicle axis angular. Panicle branches capillary, without exudate or resinous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, filiform, 3–30 mm long.

Fertile Spikelets. Spikelets comprising 7–17 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets linear or lanceolate, laterally compressed or subterete, 14–27 mm long, 2–4 mm wide, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes elongated between glumes. Rhachilla elongation 0.5–0.8 mm long. Rhachilla internodes 1–1.5 mm long. Floret callus 0.2 mm long, glabrous, truncate.

Glumes. Glumes persistent, similar, shorter than spikelet, thinner than fertile lemma. Lower glume oblong, 5–13 mm long, 1 length of upper glume, scarious or cartilaginous, without exudate or resinous, 1-keeled, keeled above, 3 -veined. Lower glume surface smooth or asperulous. Lower glume apex acuminate, awned, 1 -awned, awn 1–2 mm long. Upper glume oblong, 5–13 mm long, scarious or cartilaginous, without exudate or resinous, 1-keeled, keeled above, 3 -veined. Upper glume surface smooth or asperulous. Upper glume apex acuminate, awned, 1 -awned, awn 1–2 mm long.

Florets. Fertile lemma ovate, 4.5–5 mm long, indurate, much thinner on margins, yellow, without keel, 9 -veined, more than 3-veined. Lemma lateral veins in close groups. Lemma surface smooth, hirsute, hairy below. Lemma hairs white. Lemma apex lobed, 3 -fid, awned, 3 -awned. Principal lemma awn 3.5–5 mm long overall, limb ciliate, glabrescent towards tip. Lateral lemma awns present, arising on apex of lobes, 1–3 mm long, shorter than principal, ciliate. Palea oblong or oblanceolate, 5 mm long, cartilaginous or indurate, thinner above. Palea keels thickened (at base), winged, narrowly winged, scaberulous. Palea surface scaberulous, pubescent, hairy below. Palea apex dentate, 2 -fid, ciliate. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, cuneate, 0.8 mm long, fleshy. Anthers 3, 2.5–3 mm long. Caryopsis with adherent pericarp.

Distribution (TDWG). Continent. Australasia.

Country /Province /State. Australia. Northern Territory, Queensland.

TDWG4. Central Australia. North.

Triodia triticoides C.A.Gardner. *Fl. W. Austral.* i. 78 (1952).

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

TYPE from Australia. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: Australia: Western Australia: Kimberley Research Station, Ord River, 28 Jan 1949, *E.C.B. Langfield 32* (HT: PERTH, CANB).

Illustrations (Books): C.A.Gardner, *Flora of Western Australia*, Vol 1, Part 1, *Gramineae* (1952) (68 & 72, Pl. 18 & 22), J.R.Wheeler et al, *Flora of the Kimberley Region* (1992) (1235, Fig. 349).

Images: D.Sharp & B.K.Simon, *AusGrass*. Grasses of Australia. CD-Rom Version 1.0. (2002);.

Derivation (Clifford & Bostock 2007): Gk. -oides, resembling. Resembling *Triticum* usually with reference to the inflorescence.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose, clumped densely. Culms 60–90 cm long. Culm-internodes distally pubescent. Leaf-sheaths without keel, indistinctly veined or striately veined, puberulous. Leaf-sheath oral hairs ciliate. Ligule a fringe of hairs. Leaf-blades aciculate, conduplicate, 5–10 cm long, stiff, light green. Leaf-blade venation without layer of subepidermal sclerenchyma masking vein striation. Leaf-blade surface glabrous. Leaf-blade apex pungent.

Inflorescence. Inflorescence composed of racemes. Racemes borne along a central axis, appressed, unilateral, 4–7 cm long, bearing 14–18 fertile spikelets on each. Central inflorescence axis 20–40 cm long. Spikelet packing regular, 2 -rowed. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 7–10 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate or ovate, laterally compressed, compressed slightly, 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 oblong, symmetrical or asymmetrical, 4–4.5 mm long, 1 length of upper glume, coriaceous, without keels, 3–5 -veined. Lower glume lateral veins obscure. Lower glume apex acute, mucronate. Upper glume oblong, 4–4.5 mm long, 1 length of adjacent fertile lemma, coriaceous, without keels, 3–5 -veined. Upper glume primary vein conspicuous. Upper glume lateral veins obscure. Upper glume apex acute, mucronate.

Florets. Fertile lemma lanceolate or ovate, 4–5 mm long, coriaceous, without keel, 3 -veined, 0–3 -veined. Lemma midvein pubescent, hairy below. Lemma margins pubescent, hairy below. Lemma apex lobed, 3 -fid,

with outer lobes longer, incised 0.25 of lemma length. Palea elliptic, 1 length of lemma. Palea keels winged, narrowly winged. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Anthers 3.

Distribution (TDWG). Continent. Australasia.

Country /Province /State. Australia. Western Australia.

TDWG4. Kimberley.

Triodia uniaristata (Lazarides) M. Lazarides. *Austral. Syst. Bot.*, 10(3): 482: (1997).

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

TYPE from Australia. **Basionym or Replaced Name:** *Plectrachne uniaristata* Lazarides, *Nuytsia* 5(2): 280 (1984) [1985]. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: IT: *Lazarides 7764*, 17 Feb 1973, Australia (L, MO-3820764). IT: *M. Lazarides 7764*, 17 Feb 1973, Australia: Northern Territory: ca. 28 mi SE of Oenpelli Mission (US-3260706).

Illustrations (Books): K.O.Mallett (ed.), *Flora of Australia*, Vol 44B. *Poaceae* (2004) (215, Fig 34), D.Sharp & B.K.Simon, *AusGrass*. Grasses of Australia. CD-Rom Version 1.0. (2002).

Illustrations (Journals): *Austr. Syst. Bot.* (10: 402, Fig.10 (1997)).

Derivation (Clifford & Bostock 2007): *L. unus*, one; *arista*, bristle; *-ata*, possessing. Lemma one-awned.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose, clumped densely. Culms erect, 90–120 cm long, 4-noded. Culm-internodes scaberulous. Lateral branches ample, arising from lower culm. Leaf-sheaths without exudate, scaberulous. Leaf-sheath auricles erect. Ligule a fringe of hairs, 1 mm long. Leaf-blades filiform, conduplicate, 20–40 cm long, 1–2 mm wide, stiff, without exudate. Leaf-blade surface scabrous, rough adaxially. Leaf-blade apex pungent.

Inflorescence. Inflorescence a panicle. Panicle open, linear, 15–30 cm long, 2–5 cm wide. Primary panicle branches 11 cm long. Panicle axis scabrous. Panicle branches scabrous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, 3 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 lanceolate, laterally compressed, 4.5–5.5 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes 1 mm long. Floret callus glabrous, obtuse, disarticulating obliquely.

Glumes. Glumes persistent, similar, exceeding apex of florets. Lower glume lanceolate, 4.5–5 mm long, 1 length of upper glume, membranous or cartilaginous, without keels, 3–5 -veined. Lower glume surface asperulous. Lower glume apex lobed, 2 -fid, awned, 1 -awned, awn 0.6–0.8 mm long. Upper glume lanceolate, 4.5–5 mm long, 1.1 length of adjacent fertile lemma, membranous or cartilaginous, without keels, 3–5 -veined. Upper glume surface asperulous, rough above. Upper glume apex lobed, 2 -fid, awned, 1 -awned, awn 1.5 mm long.

Florets. Fertile lemma oblong, 4 mm long, membranous, without keel, 3 -veined, 0–3 -veined. Lemma midvein ciliate, hairy below. Lemma surface scaberulous, rough above. Lemma margins ciliate, hairy below. Lemma apex lobed, 2 -fid, with lobes 1 mm long, awned, 1 -awned. Principal lemma awn from a sinus, curved, flat below, 13 mm long overall. Lateral lemma awns absent. Palea membranous, 2 -veined. Palea keels winged, narrowly winged, scaberulous. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, fleshy. Anthers 3, 1.8 mm long, purple. Caryopsis with adherent pericarp.

Distribution (TDWG). Continent. Australasia.

Country /Province /State. Australia. Northern Territory.

TDWG4. Darwin & Gulf.

Triodia vella M. Lazarides. *Austral. Syst. Bot.*, 10(3): 483 (1997).

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

TYPE from Australia. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Queensland: Darling Downs District; Lat 28:11' S, Long. 151:02' E, 26 Sep 92, *P.I. Forster 11661* (HT: BRI; IT: BRI, CANB, DNA, K, MEL, NSW, PRE).

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

Illustrations (Journals): *Austr. Syst. Bot.* (10: 411, Fig.15 (1997)).

Images: D.Sharp & B.K.Simon, *AusGrass*. Grasses of Australia. CD-Rom Version 1.0. (2002);.

Derivation (Clifford & Bostock 2007): *L. vellus*, wool. Lemma and palea white-woolly.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose. Culms 100 cm long. Leaf-sheaths glabrous on surface. Leaf-sheath oral hairs pubescent. Ligule a fringe of hairs, 0.5–0.8 mm long. Leaf-blade base with a brief petiole-like connection to sheath, petiole 0.4–0.5 cm long. Leaf-blades filiform, conduplicate, 16–20 cm long, 0.8 mm wide, without exudate. Leaf-blade surface glabrous.

Inflorescence. Inflorescence a panicle. Panicle open, linear, dense, 7.5–16 cm long, 0.5–1 cm wide. Primary panicle branches appressed, indistinct the panicle almost racemose or simple, 1–2 cm long. Panicle branches angular or flat. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, 1.5–7 mm long.

Fertile Spikelets. Spikelets comprising 3–6 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets oblong, laterally compressed, 6–10 mm long, 2–5 mm wide, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes elongated between glumes. Rhachilla elongation 0.3–0.5 mm long. Rhachilla internodes 1 mm long. Floret callus woolly, obtuse.

Glumes. Glumes persistent, similar, shorter than spikelet, thinner than fertile lemma. Lower glume linear or oblong, 4–5 mm long, 1 length of upper glume, scarios, 1-keeled, keeled obtusely, 3 -veined. Lower glume surface asperulous. Lower glume apex obtuse. Upper glume linear or oblong, 4–5 mm long, scarios, 1-keeled, 3 -veined. Upper glume surface asperulous. Upper glume apex obtuse.

Florets. Fertile lemma lanceolate, 5 mm long, scarios, much thinner on margins, purple, without keel, 3 -veined, 0–3 -veined. Lemma surface woolly, hairy below. Lemma apex entire, emarginate, muticous. Palea lanceolate, 1 length of lemma, scarios. Palea keels scaberulous, adorned above. Palea surface woolly, hairy on back or on flanks, hairy below. Palea apex obtuse. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, fleshy. Anthers 3, 2.8–3.3 mm long. Caryopsis with adherent pericarp.

Distribution (TDWG). Continent. Australasia.

Country /Province /State. Australia. Queensland.

TDWG4. South East, Inland.

Triodia wiseana C.A.Gardner. *Journ. Roy. Soc. W. Austral.* xxvii. 166 (1942).

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

TYPE from Australia. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: Australia: Mount Margaret Pass, Hamersley Range, C.A. Gardner 3129 (HT: PERTH; IT: CANB).

Illustrations (Books): J.P.Jessop, G.R.M. Dashorst & F.M.James, *Grasses of South Australia* (2006), C.A.Gardner, *Flora of Western Australia*, Vol 1, Part 1, *Gramineae* (1952) (70, Pl. 20), J.R.Wheeler et al, *Flora of the Kimberley Region* (1992) (1232, Fig. 348).

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

Derivation (Clifford & Bostock 2007): L. -ana, indicating connection. In honor of Frank Joseph Scott Wise (1897–1986) Australian politician.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose, clumped densely. Culms 50–100 cm long. Culm-internodes distally glabrous. Leaf-sheaths without keel, glabrous on surface or hirsute. Leaf-sheath oral hairs bearded, 3–5 mm long. Ligule a fringe of hairs. Leaf-blades aciculate, conduplicate, stiff, glandular. Leaf-blade venation without layer of subepidermal sclerenchyma masking vein striation. Leaf-blade apex pungent.

Inflorescence. Inflorescence a panicle. Panicle open, linear or oblong, 6–20 cm long. Panicle axis scabrous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 5–9 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate or oblong, laterally compressed, 8–12 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus glabrous.

Glumes. Glumes persistent, similar, shorter than spikelet, thinner than fertile lemma. Lower glume lanceolate or oblong, 4.5–5 mm long, 1 length of upper glume, scarios, 1-keeled, 3–5 -veined. Lower glume lateral veins obscure. Lower glume surface smooth or asperulous. Lower glume apex obtuse to acuminate, muticous or mucronate. Upper glume lanceolate or oblong, 4.5–5 mm long, 1 length of adjacent fertile lemma, scarios, 1-keeled, 3–5 -veined. Upper glume lateral veins obscure. Upper glume surface smooth or asperulous. Upper glume apex obtuse to acuminate, muticous or mucronate.

Florets. Fertile lemma lanceolate or ovate, 4–6 mm long, coriaceous, without keel, 9 -veined, more than 3-veined. Lemma midvein ciliolate, hairy below. Lemma lateral veins in close groups (of 3). Lemma surface pubescent, hairy at base. Lemma margins ciliate, hairy below. Lemma apex lobed, 3 -fid, incised 0.25–0.33 of

lemma length, acute. Palea 0.8 length of lemma. Palea keels winged, narrowly winged, eciliate. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Anthers 3.

Distribution (TDWG). Continent. Australasia.

Country /Province /State. Australia. Western Australia, Northern Territory.

TDWG4. Kimberley, Ereman. Victoria R & Barkly Tableland.

Triplachne nitens (Guss.) Link. *Hort. Berol.* ii. 241 (1833).

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. **Basionym or Replaced Name:** *Agrostis nitens* Guss., *Fl. Sic. Prodr.* 1: 59 (1827)

. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: ; ; Italy: Sicily: Benghasi, Palermo, Primavera 1921 (FFI; IT: US-76293 (fragm. ex FI)).

Illustrations (Books): N.Feinbrun-Dothan, *Flora Palaestina* 4 (1986) (Pl. 277), L.Boulos, *Flora of Egypt* 4 (2005) (173, Pl. 48).

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

Classification. Subfamily Pooideae. Tribe: Poaeae.

Habit, Vegetative Morphology. Annual. Culms erect or decumbent, 4–25 cm long, 4 -noded. Ligule an eciliate membrane, 1–3 mm long, obtuse. Leaf-blades 1–7 cm long, 1–3.5 mm wide. Leaf-blade surface scabrous. Leaf-blade apex acute.

Inflorescence. Inflorescence a panicle. Panicle spiciform, linear or oblong or ovate, 1–5 cm long, 0.5–1.3 cm wide. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, 0.8–3.5 mm long, scaberulous.

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, 3.5–4 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus pubescent.

Glumes. Glumes persistent, similar, exceeding apex of florets, firmer than fertile lemma, shiny. Lower glume lanceolate, 3.1–3.5 mm long, 0.8–0.9 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume primary vein scabrous. Lower glume lateral veins absent. Lower glume apex acute. Upper glume lanceolate, 3.5–4 mm long, 2–2.5 length of adjacent fertile lemma, membranous, 1-keeled, 1 -veined. Upper glume primary vein scabrous. Upper glume lateral veins absent. Upper glume apex acute.

Florets. Fertile lemma ovate, gibbous, ovate in profile, 1.2–1.5 mm long, hyaline, without keel, 5 -veined, more than 3-veined. Lemma surface villous. Lemma apex dentate, 2 -fid, awned, 3 -awned. Principal lemma awn dorsal, arising 0.6–0.7 way up back of lemma, geniculate, 3.3–4 mm long overall, with twisted column. Lateral lemma awns present, arising on apex of lobes, 1–1.5 mm long, shorter than principal. Palea 0.9 length of lemma, hyaline.

Flower and Fruit. Anthers 3, 0.5–0.7 mm long. Ovary glabrous. Caryopsis with adherent pericarp, ellipsoid.

$N = 7$ (1 ref TROPICOS).

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

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

Country /Province /State. : *. : Balears, Portugal, Spain. : Greece, Crete, Sicily. **Northern Africa, Macaronesia.** Algeria, Egypt, Libya, Morocco, Tunisia. Canary Is, Madeira. **Western Asia.** Cyprus, Turkey.

Triplasis americana Beauv. *Agrost.* 81. t. 16. f. 10. (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).

TYPE from USA. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: USA: Delile.

Illustrations (Books): M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 25 *Poaceae*, part 2 (2003) (43).

Derivation (Clifford & Bostock 2007): *L. -ana*, indicating location. From North or South America.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose. Culms erect, 30–60 cm long, disarticulating at the nodes. Ligule a fringe of hairs. Leaf-blades flat or involute, 15–18 cm long, 2–4 mm wide.

Inflorescence. Inflorescence a panicle. Panicle open, ovate, 2–5 cm long, bearing few spikelets. Primary panicle branches simple, bearing 1–2 fertile spikelets on each lower branch. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 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 linear, laterally compressed, 10 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes eventually visible between lemmas, pubescent. Floret callus pubescent.

Glumes. Glumes persistent, similar, shorter than spikelet. Lower glume linear, 0.75 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume lateral veins absent. Lower glume apex acute. Upper glume lanceolate, 0.75 length of adjacent fertile lemma, membranous, 1-keeled, 1 -veined. Upper glume lateral veins absent. Upper glume apex acute.

Florets. Fertile lemma oblong, 5–6 mm long, membranous, keeled, 3 -veined, 0–3 -veined. Lemma midvein pubescent. Lemma lateral veins close to margins. Lemma margins pubescent. Lemma apex lobed, 2 -fid, incised 0.5 of lemma length, awned, 1 -awned. Principal lemma awn from a sinus, 5–8 mm long overall, limb pubescent, glabrescent towards tip. Palea 0.75 length of lemma. Palea keels pubescent or with a crest of hairs. Rhachilla extension 0.5 length of fertile floret.

Flower and Fruit. Anthers 3. Caryopsis with adherent pericarp, ellipsoid, laterally compressed, plano-convex, dark brown. Embryo projecting below grain.

Cleistogenes present, in lower sheaths.

Distribution (TDWG). Continent. North America.

Country /Province /State. Southeastern USA. Alabama, Florida, Georgia, Louisiana, Mississippi, North Carolina, South Carolina.

Triplasis purpurea (Walt.) Chapm. *Fl. S. U. St.* 560. (1860).

Accepted by: R.J.Soreng et al., *Catalogue of New World 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:** *Aira purpurea* Walt., *Fl. Carol.* 78b (1788). T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: USA, Carolina: Coll?.

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) (216, Fig. 111), W.Burger, *Flora Costaricensis* 15, Gramineae: *Fieldiana Botany New Series* 4 (1980) (573, Fig. 215 var. *caribensis*).

Derivation (Clifford & Bostock 2007): L. purple to reddish. Usually of purple spikelets.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Annual, caespitose. Culms geniculately ascending, 60–75 cm long, disarticulating at the nodes. Leaves cauline. Leaf-sheaths longer than adjacent culm internode. Ligule a fringe of hairs, 0.5–1 mm long. Leaf-blades 10–15 cm long, 2–4 mm wide. Leaf-blade midrib indistinct. Leaf-blade surface scabrous.

Inflorescence. Inflorescence a panicle, comprising 4–15 fertile spikelets. Panicle open, ovate, 2–7 cm long, bearing few spikelets. Primary panicle branches simple, 1–2 cm long, bearing 1–4 fertile spikelets on each lower branch. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 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 linear, laterally compressed, 6–8 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes 1.5 mm long, eventually visible between lemmas. Floret callus pubescent.

Glumes. Glumes persistent, similar, shorter than spikelet, similar to fertile lemma in texture. Lower glume linear, 2 mm long, 0.75 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume lateral veins absent. Lower glume apex dentate, 2 -fid. Upper glume lanceolate, 2.5–3 mm long, 0.75 length of adjacent fertile lemma, membranous, 1-keeled, 1 -veined. Upper glume lateral veins absent. Upper glume apex dentate, 2 -fid.

Florets. Fertile lemma oblong, 3.6 mm long, membranous, keeled, 3 -veined, 0–3 -veined. Lemma midvein pubescent. Lemma lateral veins close to margins. Lemma margins pubescent. Lemma apex dentate, 2 -fid, mucronate or awned, 1 -awned. Principal lemma awn from a sinus, 0.5 mm long overall, limb pubescent, glabrescent towards tip. Palea bowed outwards, 0.75 length of lemma. Palea keels pubescent or with a crest of hairs. Rhachilla extension 0.5 length of fertile floret.

Flower and Fruit. Anthers 3, 2 mm long. Caryopsis with adherent pericarp, ellipsoid, laterally compressed, plano-convex, dark brown. Embryo projecting below grain.

Cleistogenes present, in lower sheaths.

Distribution (TDWG). Continent. North America, South America.

Country /Province /State. Eastern Canada, Northwest USA, North-central USA, Northeast USA, South-central USA, Southeastern USA, Mexico. Ontario. Colorado. Kansas, Minnesota, Missouri, North Dakota, Nebraska, Oklahoma. New Mexico, Texas. Alabama, Arkansas, Delaware, Florida, Georgia, Louisiana,

Maryland, Mississippi, North Carolina, South Carolina, Tennessee, Virginia. Southeast Mexico. **Mesoamerica.**
Costa Rica, Honduras.
Tabasco.

Triplopogon ramosissimus (Hack.) Bor. *Kew Bull.* 501 (1954).

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:** *Ischaemum ramosissimum* Hack., *DC. Monog. Phan.* 6: 249 (1889). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: India: Hugel 1977 (W holo).

Recent Synonyms: *Triplopogon spathiflorus* (Hook.f.) Bor, *Kew Bull.* 54 (1954).

Illustrations (Books): N.L.Bor, *The grasses of Burma, Ceylon, India and Pakistan* (1960) (256, Fig. 28 & 257, Fig. 29), R.Pilger, *Die Natürlichen Pflanzenfamilien* 14e (1940) (202, Fig. 5 as *T. spathiflorus*), S.W.L.Jacobs & J.Everett (2000) (379, Fig. 9).

Derivation (Clifford & Bostock 2007): L. ramus, branch; -osa, abundance; -issima, most. Inflorescence an open, much branched panicle.

Classification. Subfamily Panicoideae. Tribe: Andropogoneae. Subtribe ISCHAEMINAE.

Habit, Vegetative Morphology. Annual. Culms erect, 100–180 cm long, with prop roots. Ligule an eciliate membrane, 1.5 mm long. Leaf-blade base with a false petiole. Leaf-blades lanceolate, 30–60 cm long, 15–35 mm wide, flaccid. Leaf-blade surface pubescent, hairy on both sides. Leaf-blade margins scaberulous.

Inflorescence. Synflorescence compound, fastigiate.

Inflorescence composed of racemes, terminal and axillary, subtended by a spatheole. Spatheole linear, 6–8 cm long, herbaceous. Racemes 1, single, 4–5 cm long. Rhachis fragile at the nodes, flattened, ciliate on margins. Rhachis internodes linear. Rhachis internode tip transverse. Spikelets in pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, linear, flattened, 5 mm long, ciliate.

Sterile Spikelets. Basal sterile spikelets rudimentary, 2 in number.

Companion sterile spikelets well-developed, containing empty lemmas, lanceolate, as long as fertile, separately deciduous. Companion sterile spikelet glumes coriaceous, distinctly veined, pilose, entire or dentate (bisetose), acuminate. Companion sterile spikelet lemmas enclosed by glumes.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets oblong, laterally compressed, 8–10 mm long, falling entire, deciduous with accessory branch structures. Spikelet callus pubescent, base truncate, 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. Lower glume surface with a longitudinal median groove, pubescent, with marginal tufts of hair. Lower glume apex obtuse. Upper glume oblong, coriaceous, without keels, keel-less except near apex, 9 -veined. Upper glume surface pubescent, with a dorsal tuft of hair. Upper glume apex obtuse, mucronate.

Florets. Basal sterile florets 1, male, with palea. Lemma of lower sterile floret elliptic, 6 mm long, hyaline, 3 -veined. Fertile lemma oblong, 5 mm long, hyaline, without keel, 3 -veined, 0–3 -veined. Lemma apex lobed, 2 -fid, incised 0.5 of lemma length, awned. Principal lemma awn from a sinus, geniculate, 40–50 mm long overall, with twisted column. Column of lemma awn pubescent, hairy on the spiral. Palea hyaline, 2 -veined.

Flower and Fruit. Lodicules 2, cuneate, membranous. Anthers 3. Caryopsis with adherent pericarp, oblong, laterally compressed, sulcate on hilar side, 3.5 mm long. Embryo 0.5 length of caryopsis. Hilum punctiform.

Distribution (TDWG). Continent. Tropical Asia.

Country /Province /State. Indian Subcontinent. India.

TDWG4. Maharashtra.

Tripogon africanus (Cosson & Durieu) H. Scholz & P. König. *Willdenowia*, 14(2): 376 (1985).

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

TYPE from Algeria. **Basionym or Replaced Name:** *Kralikia africana* Coss.& Dur., *Bull. Soc. Bot. Fr.* 14 :90 (1867). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Algeria, Bou-Saada: Reboud.

Illustrations (Books): H.Jacques-Felix, *Les Graminees d'Afrique tropicale* (1962) (219, Fig. 143 as *Kralikella*), R.Pilger, *Die Natürlichen Pflanzenfamilien* 14d (1956) (as *Oropetium*).

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

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose. Culms erect, 4–20 cm long. Ligule a ciliolate membrane, 0.5 mm long. Leaf-blades filiform, conduplicate or convolute, 5–10 cm long, 0.5–1 mm wide.

Inflorescence. Inflorescence composed of racemes, exerted or embraced at base by subtending leaf. Racemes 1, single, flexuous, unilateral, 2–12 cm long. Rhachis subcylindrical and excavated. Spikelet packing broadside to rhachis, regular, 2 -rowed. Spikelets sunken, solitary. 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 lanceolate, laterally compressed, 3–5 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus bearded. Floret callus hairs 0.33 length of lemma.

Glumes. Glumes persistent, dissimilar, shorter than spikelet, firmer than fertile lemma, recurved at apex (upper glume). Lower glume lanceolate, 1 mm long, 0.25–0.33 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume lateral veins absent. Lower glume apex acuminate. Upper glume lanceolate, 2.8–4 mm long, 1.1–1.2 length of adjacent fertile lemma, coriaceous, with membranous margins, 1-keeled, 1 -veined. Upper glume lateral veins absent. Upper glume apex acuminate.

Florets. Fertile lemma oblong, 2.3–3.5 mm long, membranous, keeled, 3 -veined, 0–3 -veined. Lemma surface asperulous. Lemma apex dentate, 2 -fid, obtuse, mucronate. Palea 1 length of lemma, 2 -veined. Palea keels wingless.

Flower and Fruit. Anthers 3, 1.2 mm long. Caryopsis with adherent pericarp, ellipsoid, isodiametric, 1.5 mm long.

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

Country /Province /State. Northern Africa. Algeria, Tunisia. **Arabian Peninsula.** Oman.

Tripogon anantaswamianus P.V. Sreekumar, V.J. Nair & N.C. Nair. *Bull. Bot. Surv. India*, 25: 185 (1985).

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

TYPE from India. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: India, Kerala, Eravikulam Sanctuary: Sreekumar 69432 (CAL holo, K).

Illustrations (Books): K.M.Matthew, *Flora Palni Hills* (1996) (877, Pl 877).

Derivation (Clifford & Bostock 2007): in honor of M. Anantaswami, Indian botanist.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose, clumped densely. Culms erect, 30–50 cm long. Culm-nodes glabrous. Leaf-sheaths smooth, glabrous on surface. Ligule a ciliolate membrane. Leaf-blades convolute, 25–40 cm long, 1–2 mm wide, glaucous. Leaf-blade midrib conspicuous. Leaf-blade surface glabrous or pilose, sparsely hairy.

Inflorescence composed of racemes. Racemes 1, single, unilateral, 15–20 cm long. Rhachis angular, smooth on margins, glabrous on margins. Spikelet packing broadside to rhachis, crowded, regular, 2 -rowed. Spikelets solitary. Fertile spikelets sessile.

Fertile Spikelets. Spikelets comprising 7–10 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets elliptic, laterally compressed, 8–15 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 lanceolate or ovate, 4–5 mm long, 0.66 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume lateral veins absent. Lower glume apex with a unilateral tooth, obtuse, awned, 1 -awned, awn 1 mm long. Upper glume lanceolate, 7–8 mm long, 1.4 length of adjacent fertile lemma, membranous, 1-keeled, 1 -veined. Upper glume lateral veins absent. Upper glume apex emarginate, awned, 1 -awned, awn 1 mm long.

Florets. Fertile lemma oblong, 5–6 mm long, 2.5 mm wide, coriaceous, grey, without keel, 3 -veined, 0–3 -veined. Lemma apex dentate, 6 -fid, with simple equal lobes, acuminate, awned, 3 -awned. Principal lemma awn from a sinus, 2 mm long overall. Lateral lemma awns present, arising on apex of lobes, 2 mm long, subequal to principal. Palea elliptic, 3–4 mm long, 2 -veined. Palea keels ciliolate, adorned all along. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, 0.5 mm long. Anthers 2, 1.5–2 mm long. Caryopsis with adherent pericarp.

Distribution (TDWG). Continent. Tropical Asia.

Country /Province /State. Indian Subcontinent. India.

TDWG4. Kerala.

Tripogon bromoides Roth ex Roem. & Schult. *Syst. ii.* 600 (1817).

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>: *vide* TROPICOS and Kew Synonymy Database: India, Coromandel: Heyne (B holo).

Illustrations (Books): K.M.Mathew, *Illustrations on the Flora of Tamilnadu Carnatic* (1982) (Pl. 951).

Derivation (Clifford & Bostock 2007): Gk. -oides, resembling. Resembling *Bromus*, usually with respect to the inflorescence.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose. Butt sheaths persistent and investing base of culm, with fibrous dead sheaths. Culms 20–40 cm long. Culm-nodes glabrous. Lateral branches lacking. Leaf-sheaths scaberulous, glabrous on surface or pilose. Leaf-sheath oral hairs bearded. Ligule a ciliolate membrane, 0.2 mm long. Leaf-blades filiform or linear, flat or involute, 10–20 cm long, 1–2.5 mm wide, stiff. Leaf-blade surface scaberulous, rough adaxially, glabrous to hirsute. Leaf-blade apex acuminate.

Inflorescence. Inflorescence composed of racemes. Racemes 1, single, straight or arcuate, unilateral, 5.5–8 cm long. Rhachis flattened, scaberulous on margins, glabrous on margins or ciliate on margins. Spikelet packing broadside to rhachis, regular, 2 -rowed. Spikelets appressed, solitary. Fertile spikelets sessile.

Fertile Spikelets. Spikelets comprising 7 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets oblong, laterally compressed, 9–10 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus bearded. Floret callus hairs 1–1.5 mm long.

Glumes. Glumes persistent, similar, shorter than spikelet. Lower glume lanceolate, 3–3.5 mm long, 0.66 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume primary vein scaberulous. Lower glume lateral veins absent. Lower glume apex dentate, 2 -fid, mucicous or mucronate. Upper glume elliptic, 4.5–5 mm long, 1.2 length of adjacent fertile lemma, membranous, 1-keeled, 1 -veined. Upper glume primary vein thickened (obtusely). Upper glume lateral veins absent. Upper glume apex entire or dentate, 2 -fid, acuminate, mucicous or mucronate.

Florets. Fertile lemma elliptic, 3.5–4 mm long, membranous, without keel, 3 -veined, 0–3 -veined. Lemma apex lobed, 3 -fid, with central lobe bidentate, mucronate or awned, 1 -awned. Principal lemma awn from a sinus, 0.5–4 mm long overall. Palea 1 length of lemma, 2 -veined. Palea keels smooth or scabrous. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Anthers 3, 1.5 mm long. Caryopsis with adherent pericarp.

N = 10 (1 ref TROPICOS).

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

Country /Province /State. China. China South Central, Qinghai, Tibet. **Indian Subcontinent, Indo-China.** India, Sri Lanka. Myanmar.

TDWG4. Sichuan, Yunnan. Meghalaya. Karnataka, Kerala. Rajasthan, Tamilnadu.

Tripogon capillatus Jaub. & Spach. *Illustr.* iv. 47. (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>: *vide* TROPICOS and Kew Synonymy Database: India, Poona: Jacquemont (P holo, K).

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

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Annual, caespitose. Culms erect or geniculately ascending, 10–25 cm long. Culm-nodes glabrous. Ligule a ciliolate membrane. Leaf-blades filiform, involute, 2–10 cm long, 0.5–1 mm wide, stiff. Leaf-blade surface glabrous.

Inflorescence. Inflorescence composed of racemes. Racemes 1, single, unilateral, 10–12 cm long. Rhachis angular. Spikelet packing broadside to rhachis, regular, 2 -rowed. Spikelets appressed, 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 oblong, laterally compressed, 6–8 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus bearded.

Glumes. Glumes persistent, similar, shorter than spikelet. Lower glume lanceolate, 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, 2.5 mm long, 1 length of adjacent fertile lemma, membranous, 1-keeled, 1 -veined. Upper glume lateral veins absent. Upper glume apex setaceously acuminate.

Florets. Fertile lemma oblong, 2–3 mm long, membranous, without keel, 3 -veined, 0–3 -veined. Lemma apex lobed, 2 -fid, incised 0.33 of lemma length, awned, 1 -awned. Principal lemma awn from a sinus, flexuous, 10–25 mm long overall. Palea 1 length of lemma, 2 -veined. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Anthers 3, 0.5–1 mm long. Caryopsis with adherent pericarp.

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

Country /Province /State. Arabian Peninsula. Oman. Indian Subcontinent, Indo-China. India.

TDWG4. Bihar, Karnataka, Kerala. Maharashtra, Orissa.

Tripogon chinensis (Franch.) Hack. *Bull. Herb. Boiss. Ser. II. iii.* 503. (1903).

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 China. **Basionym or Replaced Name:** *Nardurus filiformis* var. *chinensis* Franch., *Pl. David.* 1:339 (1884). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: China, Sang-yu: David 2065 (K iso).

Illustrations (Books): T. Koyama, *Grasses of Japan and its neighbouring regions* (1987) (273, Fig. 104), C-C Hsu, *Taiwan Grasses* (1975) (428), S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 653).

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

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose, clumped densely. Butt sheaths persistent and investing base of culm, with compacted dead sheaths. Culms erect, slender, 10–30 cm long, 0.8–1 mm diam., 2–3 -noded. Leaf-sheaths glabrous on surface. Ligule a fringe of hairs, 2.5 mm long. Leaf-blades filiform, involute, 3–10 cm long, 0.5–0.8 mm wide. Leaf-blade surface scabrous, rough adaxially, pilose, sparsely hairy. Leaf-blade margins glabrous or ciliate.

Inflorescence. Inflorescence composed of racemes. Racemes 1, single, unilateral, 8–15 cm long, 2 mm wide, bearing 10–25 fertile spikelets on each. Rhachis flattened, 0.5 mm wide, glabrous on surface. Spikelet packing broadside to rhachis, regular, 2 -rowed. Spikelets solitary. Fertile spikelets sessile.

Fertile Spikelets. Spikelets comprising 2–8 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, 4–10 mm long, 1–1.2 mm wide, breaking up at maturity, disarticulating below each fertile floret. Floret callus 0.5 mm long, pilose.

Glumes. Glumes persistent, similar, shorter than spikelet. Lower glume lanceolate, 1.5–3 mm long, 0.6–0.7 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume lateral veins absent. Lower glume apex acuminate. Upper glume lanceolate, 2.5–5 mm long, 0.8–1.4 length of adjacent fertile lemma, membranous, 1-keeled, 1 -veined. Upper glume lateral veins absent. Upper glume apex acuminate.

Florets. Fertile lemma oblong, 3–3.5 mm long, membranous, without keel, 3 -veined, 0–3 -veined. Lemma lateral veins excurrent. Lemma apex dentate, 2 -fid, obtuse, awned, 1 -awned. Principal lemma awn from a sinus, straight, 1–2 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, 1–1.2 mm long. Caryopsis with adherent pericarp, 1.2–1.3 mm long.

$2n = 20$ (1 ref TROPICOS).

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

Country /Province /State. Siberia, Russian far east, China, Mongolia, Eastern Asia, Russia. Buryatiya. Primorye. China South Central, Inner Mongolia, Manchuria, China North-Central, China Southeast, Tibet, Xinjiang. Mongolia. Japan, Korea, Taiwan. Japan Kyushu. **Malesia.** Philippines.

TDWG4. Gansu, Hebei, Shaanxi, Shandong, Shanxi. Anhui, Henan, Jiangsu. Hubei, Sichuan, Yunnan.

Tripogon copei Newmaster et al. *Syst. Bot.* 33: 698 (2008).

TYPE from India. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Tamil Nadu, Velliangri hills, 1840 m, 18 Dec 2006, *Ragu & Newmaster 55277* (holo: OAC; iso: KASCH).

Illustrations (Journals): *Systematic Botany* (33: 697, Fig. 2 (2008)).

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Annual, caespitose, clumped loosely. Butt sheaths persistent and investing base of culm, with compacted dead sheaths. Culms erect, 10–25 cm long. Ligule an eciliate membrane, 0.5–0.8 mm long. Leaf-blades involute, 5–20 cm long, 1.5–2.5 mm wide. Leaf-blade surface scaberulous, rough on both sides. Leaf-blade margins glabrous to with tufts of hair.

Inflorescence. Inflorescence composed of racemes. Racemes 2–3, single, 12 cm long. Spikelet packing broadside to rachis, regular, 2 -rowed. Spikelets appressed, solitary. Fertile spikelets sessile.

Fertile Spikelets. Spikelets comprising 6–7 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets oblong, 1.5–2 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus 1–1.8 mm long, pilose.

Glumes. Lower glume lanceolate, 5–6.5 mm long, 0.7–0.8 length of upper glume, hyaline to membranous, 1-keeled, 1 -veined. Lower glume lateral veins absent. Lower glume apex narrowly acuminate. Upper glume lanceolate, 5–10 mm long, 1.5 length of adjacent fertile lemma, membranous, 1-keeled, 3 -veined. Upper glume lateral veins absent. Upper glume apex narrowly acuminate.

Florets. Fertile lemma lanceolate, 3.5–4 mm long, membranous, without keel, 3 -veined, 0–3 -veined. Lemma lateral veins excurrent. Lemma apex lobed, 2 -fid, incised 0.1 of lemma length, awned, 1 -awned. Principal lemma awn from a sinus, 8–9.5 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, 1–1.2 mm long. Caryopsis with adherent pericarp, 0.5 mm long.

Distribution (TDWG). Continent. Tropical Asia.

Country /Province /State. Indian Subcontinent. India.

Tamilnadu.

Tripogon curvatus S.M. Phillips & Launert. *Kew Bull.*, 25(2): 318 (1971).

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

TYPE from Kenya. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: Kenya, Nairobi: McCallum-Webster K105 (K holo).

Illustrations (Books): R.M.Phillips, F.T.E.A., *Gramineae* (2(1974):293, Fig. 80).

Derivation (Clifford & Bostock 2007): L. curved. Spikelets curved or gibbous.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose. Culms geniculately ascending, 23–50 cm long. Ligule a ciliolate membrane. Leaf-blades curled, filiform, conduplicate or convolute, 5.5–11 cm long, 1–2 mm wide. Leaf-blade surface glabrous or pilose, sparsely hairy, hairy adaxially. Leaf-blade apex acute.

Inflorescence. Inflorescence composed of racemes. Peduncle flexuous. Racemes 1, single, drooping, straight or arcuate, unilateral, 5–15 cm long. Rachis angular. Spikelet packing broadside to rachis, distant (below), regular, 2 -rowed. Spikelets appressed, solitary. Fertile spikelets sessile.

Fertile Spikelets. Spikelets comprising 5–12 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets oblong, laterally compressed, 12–20 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes glabrous. Floret callus pilose.

Glumes. Glumes persistent, similar, shorter than spikelet. Lower glume lanceolate, asymmetrical, 3–4.7 mm long, 0.7–0.8 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume lateral veins absent. Lower glume apex obtuse or acute, muticous or mucronate. Upper glume oblong, 4.2–6 mm long, 1.1–1.2 length of adjacent fertile lemma, membranous, 1-keeled, 1 -veined. Upper glume lateral veins absent. Upper glume apex obtuse or acute, muticous or mucronate.

Florets. Fertile lemma elliptic or oblong, 3.5–5.2 mm long, membranous, dark green, without keel, 3 -veined, 0–3 -veined. Lemma lateral veins excurrent. Lemma apex dentate, 2 -fid, awned, 3 -awned. Principal lemma awn from a sinus, 3.3–6 mm long overall. Lateral lemma awns absent or present, arising on outer edge of lobes, 0.2–0.8 mm long, shorter than principal. Palea 1 length of lemma, 2 -veined. Palea keels winged, narrowly winged, ciliolate. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Anthers 2, 0.5–0.75 mm long. Caryopsis with adherent pericarp, ellipsoid or oblong, isodiametric, trigonous, 1.8–2 mm long.

Distribution (TDWG). Continent. Africa.

Country /Province /State. East tropical Africa. Kenya.

Tripogon debilis L. B. Cai. *Novon* 15 : 390 (2005).

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

TYPE from China. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: China, Sichuan, Jiulong, Tanggu: Cai 0318 (HNWP holo, CDBI).

Illustrations (Journals): *Novon* (15: 391 Fig 1 (2005)).

Derivation (Clifford & Bostock 2007): L. weak. Culms decumbent often much branched at the base.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose. Culms erect, 25–34 cm long. Leaf-sheath oral hairs ciliate. Ligule a fringe of hairs. Leaf-blades involute, 4–11 cm long, 1–2 mm wide. Leaf-blade surface scabrous, rough adaxially, glabrous, hairless except near base.

Inflorescence. Inflorescence composed of racemes. Racemes 1, single, drooping, unilateral, 8–15 cm long. Spikelet packing broadside to rhachis, 1 their length apart. Spikelets solitary. Fertile spikelets sessile.

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

Glumes. Glumes persistent, similar, shorter than spikelet. Lower glume lanceolate, symmetrical, 2.5–3.5 mm long, 0.66–0.75 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume lateral veins absent. Lower glume apex acuminate. Upper glume lanceolate, 4–5 mm long, 1.1–1.2 length of adjacent fertile lemma, membranous, with scarious margins, 1-keeled. Upper glume apex dentate, 2 -fid.

Florets. Fertile lemma lanceolate, 3.5–4.5 mm long, membranous, without keel, 3 -veined, 0–3 -veined. Lemma lateral veins excurrent. Lemma apex dentate, 2 -fid, awned, 1 -awned. Principal lemma awn from a sinus, straight, 3–4 mm long overall. Palea 2.5–3.5 mm long, 2 -veined. Palea keels wingless, ciliolate. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Anthers 3, 1.3–1.5 mm long. Caryopsis with adherent pericarp.

Distribution (TDWG). Continent. Temperate Asia.

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

TDWG4. Sichuan.

Triopogon ekmanii E.G.Nicora & Z.E.Rugolo de Agrasar. *Candollea*, 46:3 (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 Paraguay. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Paraguay, Alto Parana: Fiebrig 5905 (SI holo, BAA, G, LIL).

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

Derivation (Clifford & Bostock 2007): in honor of Erik Leonard Eckman (1888–1931) Swedish botanist.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose. Butt sheaths woolly, persistent and investing base of culm, with fibrous dead sheaths. Culms erect, 45–65 cm long, 2–3 -noded. Leaf-sheaths mostly shorter than adjacent culm internode. Ligule a ciliolate membrane. Leaf-blades flexuous, conduplicate, 3–10 cm long, 1 mm wide. Leaf-blade surface scaberulous, rough adaxially. Leaf-blade margins scabrous. Leaf-blade apex acute.

Inflorescence. Inflorescence composed of racemes. Racemes 1, single, unilateral, 10–15 cm long. Rhachis flattened. Spikelet packing broadside to rhachis, regular, 2 -rowed. Spikelets appressed, solitary. Fertile spikelets pedicelled. Pedicels present, reduced to a stump.

Fertile Spikelets. Spikelets comprising 8–13 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, 11–17.5 mm long, 1.4–2.2 mm wide, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes 0.9–1.4 mm long. Floret callus pilose. Floret callus hairs 1 mm long.

Glumes. Glumes persistent, similar, shorter than spikelet. Lower glume lanceolate, 3–4.5 mm long, 0.75 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume lateral veins absent. Lower glume apex acute. Upper glume lanceolate, 4.2–5.5 mm long, 1 length of adjacent fertile lemma, membranous, 1-keeled, 1 -veined. Upper glume lateral veins absent. Upper glume apex acute.

Florets. Fertile lemma ovate, 4–6.2 mm long, membranous, without keel, 3 -veined, 0–3 -veined. Lemma lateral veins extending close to apex. Lemma apex dentate, 2 -fid, awned, 1 -awned. Principal lemma awn from a sinus, 1.3–1.75 mm long overall. Palea 2.8–3.2 mm long, 0.75 length of lemma, 2 -veined. Palea keels ciliolate. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, 0.3–0.5 mm long. Anthers 3, 1.4–1.6 mm long. Caryopsis with adherent pericarp, ovoid, trigonous, 2–2.3 mm long, dark brown. Embryo 0.5 length of caryopsis. Hilum punctiform.

Distribution (TDWG). Continent. South America.

Country /Province /State. Southern South America. Paraguay.

TDWG4. Misiones.

Tripogon filiformis Nees ex Steud. *Syn. Pl. Gram.* 301 [Apr.] (1854).

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 Synonymy Database: India: Coll?.

Recent Synonyms: *Tripogon semitruncatus* Nees ex Steud., *Syn. Pl. Gram.* 301 [Apr.] (1854).

Illustrations (Books): H.J.Noltie, *The Grasses of Bhutan* (2000) (653, Fig. 32), S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 653).

Derivation (Clifford & Bostock 2007): L. filum, thread; forma, shape. Leaf-blades narrow.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose. Culms erect, 25–50 cm long. Lateral branches lacking. Ligule a ciliolate membrane. Leaf-blades filiform, convolute, 5–17 cm long, 1 mm wide.

Inflorescence. Inflorescence composed of racemes. Racemes 1, single, erect, straight or flexuous, unilateral, 5–23 cm long. Rhachis angular. Spikelet packing broadside to rhachis, regular, 2 -rowed. Spikelets appressed, solitary. Fertile spikelets sessile.

Fertile Spikelets. Spikelets comprising 5–8 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets elliptic or oblong, laterally compressed, 3.7–10 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes glabrous. Floret callus bearded.

Glumes. Glumes persistent, similar, shorter than spikelet, parallel to lemmas. Lower glume lanceolate, symmetrical or asymmetrical, 1.6–2.3 mm long, 0.75 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume lateral veins absent. Lower glume apex obtuse. Upper glume lanceolate, (2.5–)3–4.5 mm long, 1.2–1.5 length of adjacent fertile lemma, membranous, 1-keeled, 1 -veined. Upper glume lateral veins absent. Upper glume apex emarginate or obtuse, mucronate.

Florets. Fertile lemma lanceolate or elliptic, (1.5–)2–3.5 mm long, membranous, without keel, 3 -veined, 0–3 -veined. Lemma apex dentate, 4 -fid, awned, 3 -awned. Principal lemma awn from a sinus, straight or curved, 4–10 mm long overall. Lateral lemma awns present, arising on apex of lobes, 1–3 mm long. Palea 1 length of lemma, 2 -veined. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Caryopsis with adherent pericarp.

N = 10 (1 ref TROPICOS).

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

Country /Province /State. **China.** China South Central, China North-Central, China Southeast, Tibet. **Indian Subcontinent, Indo-China, Malesia.** Eastern Himalaya, India, Nepal, Pakistan, West Himalaya. Myanmar. Java, Lesser Sunda Is.

TDWG4. Shaanxi, Fujian, Henan, Zhejiang, Guizhou, Sichuan, Yunnan. Darjeeling, Bhutan, Sikkim. Assam, Meghalaya. Madhya Pradesh, Maharashtra, Punjab, Tamilnadu, Uttah Pradesh. Himachal Pradesh.

Tripogon humilis H.L. Yang. *Acta Bot. Yunnanica*, 5(1): 72 (1983).

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

TYPE from China. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: China, Ba-su Xian: Qinghai-Xizang Exped. 12213 (holo: NWBI).

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

Derivation (Clifford & Bostock 2007): L. low growing. Short-statured in comparison with related species often prostrate.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose, clumped densely. Culms erect, 5–8 cm long. Leaf-sheaths glabrous on surface. Leaf-sheath oral hairs ciliate. Ligule a fringe of hairs, 0.5 mm long. Leaf-blades filiform, involute, 1.5–6 cm long, 1 mm wide. Leaf-blade surface smooth or scaberulous, rough abaxially, pubescent, hairy adaxially.

Inflorescence. Inflorescence composed of racemes. Racemes 1, single, unilateral, 2–14 cm long. Rhachis flattened, glabrous on surface, ciliate on margins. Spikelet packing broadside to rhachis, regular, 2 -rowed. 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 oblong, laterally compressed, 3.5–5.5 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus pubescent.

Glumes. Glumes persistent, similar, shorter than spikelet. Lower glume lanceolate, 2–3 mm long, 0.66–0.75 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume primary vein smooth or scaberulous.

Lower glume lateral veins absent. Lower glume apex acuminate. Upper glume lanceolate, 3–4 mm long, 1 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 acuminate.

Florets. Fertile lemma oblong, 3–3.5 mm long, membranous, without keel, 3 -veined, 0–3 -veined. Lemma midvein without distinctive roughness or scaberulous. Lemma apex dentate, 2 -fid, with lobes 0.5–0.75 mm long, awned, 3 -awned. Principal lemma awn from a sinus, straight, 1.75–2.5 mm long overall. Lateral lemma awns present, arising on outer edge of lobes, 0.2–0.7 mm long. Palea 1–1.5 mm long, 2 -veined. Palea keels ciliolate. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Anthers 3, 0.5–0.75 mm long, yellow. Caryopsis with adherent pericarp.

Distribution (TDWG). Continent. Temperate Asia.

Country /Province /State. China. Tibet.

Tripogon jacquemontii Stapf. *Kew Bull.* 85. (1892).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), N.L.Bor, *Grasses of Burma, Ceylon, India and Pakistan* (1960).

TYPE from India. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: India, Poona: Jacquemont 320bis (K iso).

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

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

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose. Culms erect, 20–90 cm long. Culm-nodes glabrous. Leaf-sheaths 3–6.5 cm long, keeled, striately veined, glabrous on surface. Ligule a ciliate membrane. Leaf-blades filiform, involute, 5–10 cm long, 1–2.5 mm wide, stiff, glaucous. Leaf-blade surface glabrous. Leaf-blade apex acute.

Inflorescence. Inflorescence composed of racemes. Racemes 1, single, straight or arcuate, unilateral, 5–25 cm long. Rhachis flattened. Spikelet packing broadside to rhachis, regular, 2 -rowed. Spikelets appressed, solitary. Fertile spikelets sessile.

Fertile Spikelets. Spikelets comprising 8–36 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets linear, laterally compressed, 7.5–35 mm long, 2–2.5 mm wide, breaking up at maturity, disarticulating below each fertile floret. Floret callus bearded.

Glumes. Glumes persistent, similar, shorter than spikelet. Lower glume lanceolate, asymmetrical, 2.5 mm long, 0.5 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume lateral veins absent. Lower glume apex with a unilateral tooth, mucronate. Upper glume oblong, 4–5 mm long, 1 length of adjacent fertile lemma, membranous, 1-keeled, 1 -veined. Upper glume lateral veins absent. Upper glume apex truncate, mucronate.

Florets. Fertile lemma ovate, 4 mm long, membranous, without keel, 3 -veined, 0–3 -veined. Lemma lateral veins excurrent. Lemma apex lobed, 2 -fid, awned, 1 -awned. Principal lemma awn from a sinus, 1.5–2 mm long overall. Palea 1 length of lemma, 2 -veined. Palea keels scaberulous. Apical sterile florets resembling fertile though underdeveloped.

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

N = 20 (1 ref TROPICOS).

Distribution (TDWG). Continent. Tropical Asia.

Country /Province /State. Indian Subcontinent. Assam, India.

TDWG4. Karnataka. Maharashtra, Rajasthan.

Tripogon larsenii Bor. *Dansk Bot. Arkiv*, xxiii. 470 (1968).

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

TYPE from Thailand. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Thailand, Puh Mieng Mt.: Larsen, Smitinand & Warncke 1012 (K holotype).

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

Derivation (Clifford & Bostock 2007): in honor of Kai Larsen (1926–) Danish botanist.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose, clumped densely. Butt sheaths persistent and investing base of culm, with compacted dead sheaths. Culms erect, 30–60 cm long. Lateral branches lacking.

Ligule a ciliate membrane, 6 mm long. Leaf-blades involute, 15–26 cm long, 2–4 mm wide. Leaf-blade surface scaberulous, rough adaxially. Leaf-blade margins scabrous.

Inflorescence. Inflorescence composed of racemes. Racemes 1, single, unilateral, 8–16 cm long. Rhachis flattened. Spikelet packing broadside to rhachis, lax, regular, 2 -rowed. Spikelets solitary. Fertile spikelets sessile.

Fertile Spikelets. Spikelets comprising 8–12 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets oblong, laterally compressed, 10–12 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus pubescent.

Glumes. Glumes persistent, similar, shorter than spikelet. Lower glume lanceolate, 2.5 mm long, 0.5 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume lateral veins absent. Lower glume apex dentate, 2 -fid, acuminate. Upper glume lanceolate, 5 mm long, 1.5 length of adjacent fertile lemma, membranous, 1-keeled, 1 -veined. Upper glume lateral veins absent. Upper glume apex acute.

Florets. Fertile lemma ovate, 3.5 mm long, membranous, purple, without keel, 3 -veined, 0–3 -veined. Lemma lateral veins extending close to apex. Lemma apex dentate, 2 -fid, awned, 1 -awned. Principal lemma awn from a sinus, straight, 2–3 mm long overall. Palea 2 -veined. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Caryopsis with adherent pericarp.

Distribution (TDWG). Continent. Tropical Asia.

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

Tripogon leptophyllus (A. Rich.) Cufod. *Bull. Jard. Bot. Nat. Belg.* viii. Suppl., 1269 (1968).

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:** *Tripogon abyssinicus* Nees ex Steud., *Syn. Pl. Glumac.* 1: 301 (1854). T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: HT: *Schimper 1732*, 15 Aug 1840, Ethiopia: in rupibus ad montes versus fluvium Tacaze (P; IT: MO-2108844, BM, FI, K, L, M, MPU, US-733069).

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

Derivation (Clifford & Bostock 2007): Gk. leptos, narrow; phyllon, leaf. Leaf-blades narrow.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose. Butt sheaths persistent and investing base of culm, with fibrous dead sheaths. Culms erect, 10–55 cm long, 1 -noded. Leaf-sheaths pilose. Ligule a ciliate membrane. Leaf-blades filiform, convolute, 3–28 cm long, 0.5–2 mm wide. Leaf-blade surface pilose, hairy abaxially. Leaf-blade apex filiform.

Inflorescence. Inflorescence composed of racemes. Racemes 1, single, linear, straight, unilateral, 3–18 cm long. Rhachis angular. Spikelet packing broadside to rhachis, regular, 2 -rowed. Spikelets appressed, solitary. Fertile spikelets sessile.

Fertile Spikelets. Spikelets comprising 4–10 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets oblong, laterally compressed, 6.5–11 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes 0.8 mm long, eventually visible between lemmas, glabrous. Floret callus pubescent.

Glumes. Glumes persistent, similar, shorter than spikelet. Lower glume lanceolate, 2–4.7 mm long, 0.8–0.9 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume primary vein scaberulous. Lower glume lateral veins absent. Lower glume apex obtuse or acute or acuminate. Upper glume lanceolate, 2.3–5 mm long, 1–1.4 length of adjacent fertile lemma, membranous, 1-keeled, 1 -veined. Upper glume primary vein scaberulous. Upper glume apex acuminate.

Florets. Fertile lemma oblong, 2.2–3.3(–4) mm long, membranous, dark green or grey, without keel, 3 -veined, 0–3 -veined. Lemma lateral veins extending close to apex. Lemma apex dentate, 2 -fid, awned, 1 -awned. Principal lemma awn from a sinus, straight or flexuous, 1.8–4 mm long overall. Palea 1 length of lemma, 2 -veined. Palea keels winged, narrowly winged, ciliate. Palea surface pilose, hairy on back. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Anthers 3, 0.85–1.3 mm long. Caryopsis with adherent pericarp.

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

Country /Province /State. Northeast tropical Africa. Eritrea, Ethiopia (inc. Eritrea), Sudan. **Arabian Peninsula.** Oman.

TDWG4. Madhya Pradesh.

Tripogon liouae S.M.Phillips & S.L.Chen. *Kew Bull.* 57: 922 (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. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: China: Miehle 1157 (K holo).

Illustrations (Books): S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 658).

Illustrations (Journals): *Kew Bulletin* (57: 923, Fig.2 (2002)).

Derivation (Clifford & Bostock 2007): In honor of Lian(g) Liou (1933-) Chinese botanist.

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, 10–30 cm long. Ligule a fringe of hairs. Leaf-blades filiform, involute, 1.5–6 cm long, 1 mm wide. Leaf-blade surface pilose, sparsely hairy, hairy adaxially.

Inflorescence. Inflorescence composed of racemes. Racemes 1, single, flexuous, unilateral, 2–8 cm long. Spikelet packing broadside to rachis, crowded, 0.5 their length apart. Spikelets ascending, solitary. Fertile spikelets sessile.

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

Glumes. Glumes persistent, similar, shorter than spikelet. Lower glume lanceolate, asymmetrical, 1.8–2.5 mm long, 0.6–0.7 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume lateral veins absent. Lower glume apex acute, mucronate. Upper glume lanceolate or oblong, 2.7–4 mm long, membranous, 1-keeled, 1 -veined. Upper glume lateral veins absent. Upper glume apex emarginate, mucronate.

Florets. Fertile lemma lanceolate or oblong, 2.2–2.6 mm long, membranous, black, without keel, 3 -veined, 0–3 -veined. Lemma lateral veins excurrent. Lemma apex dentate, 2 -fid, truncate to acute, awned, 1 -awned. Principal lemma awn from a sinus, straight, 1.8–2.8 mm long overall. Palea 2 -veined. Palea keels winged, narrowly winged, ciliolate. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Anthers 1, 1.3–1.8 mm long. Caryopsis with adherent pericarp.

Distribution (TDWG). Continent. Temperate Asia.

Country /Province /State. China. Tibet.

Tripogon lisboae Stapf. *Kew Bull.* 84. (1892).

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>: *vide* TROPICOS and Kew Synonymy Database: India, Bombay: Lisboa (K holo).

Illustrations (Books): K.M.Mathew, *Flora Palni Hills* (1996) (878, Pl. 878).

Derivation (Clifford & Bostock 2007): in honor of Josi Camillo Lisboa (c. 1822–1897) Indian physician and botanist.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose. Culms erect, 20–60 cm long. Ligule an eciliate membrane, 0.2 mm long. Leaf-blades linear, flat or convolute, 15–40 cm long, 3–6 mm wide. Leaf-blade apex filiform.

Inflorescence. Inflorescence composed of racemes. Racemes 1, single, straight, unilateral, 7–25 cm long. Rachis angular. Spikelet packing broadside to rachis, regular, 2 -rowed. Spikelets ascending, solitary. Fertile spikelets sessile.

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

Glumes. Glumes persistent, dissimilar, shorter than spikelet, firmer than fertile lemma. Lower glume lanceolate, 1 mm long, 0.3–0.4 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume lateral veins absent. Lower glume apex acuminate. Upper glume elliptic, 3–3.5 mm long, 0.9–1 length of adjacent fertile lemma, coriaceous, 1-keeled, 1 -veined. Upper glume lateral veins absent. Upper glume apex acuminate, mucronate.

Florets. Fertile lemma ovate, 3–5 mm long, chartaceous, keeled, 3 -veined, 0–3 -veined. Lemma apex dentate, 2 -fid, awned, 1 -awned. Principal lemma awn from a sinus, 1–2 mm long overall. Palea 1 length of lemma, 2 -veined. Palea keels winged, narrowly winged, scaberulous. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Anthers 3, 0.8 mm long. Caryopsis with adherent pericarp.

Distribution (TDWG). Continent. Tropical Asia.

Country /Province /State. Indian Subcontinent. India.

TDWG4. Gujarat. Maharashtra, Rajasthan.

Tripogon loliiformis (F. Muell.) C.E.Hubb. *Kew Bull.* 1934, 448 (1934).

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

TYPE from Australia. **Basionym or Replaced Name:** *Festuca loliiformis* F. Muell., *Fragm.* 8: 128 (1873). T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: ST: *Bowman s.n.*, Australia: Suttor's River ST: *Leichhardt s.n.*, Australia: ad Noretton's Bay ST: *Leichhardt s.n.*, Australia: Charley's Creek ST: *Bowman s.n.*, Australia: Walloon ST: *Bowman s.n.*, Australia: Gracemere ST: *Bowman s.n.*, Herbert's Creek ST: *O'Shanesy s.n.*, Australia: Rockhampton ST: *J. Drummond 976*, Australia occidentali extratropica.

Illustrations (Books): J.P.Jessop, G.R.M. Dashorst & F.M.James, *Grasses of South Australia* (2006) (404, Fig. 336), C.A.Gardner, *Flora of Western Australia*, Vol 1, Part 1, *Gramineae* (1952) (206, Pl. 61), N.Walsh & T.Entwistle, *Flora of Victoria* Vol 2 (1994) (559, Fig. 112), J.C.Tothill, & J.B.Hacker. *The grasses of southern Queensland* (1983) (416), T.D.Stanley & E.Ross, *Flora of South East Queensland, Gramineae* (1989), K.O.Mallett (ed.), *Flora of Australia*, Vol 44B. *Poaceae* (2004) (410, Fig. 73), S.W.L.Jacobs, R.D.B.Whalley & D.J.B.Wheeler., *Grasses of New South Wales*, 4th edn (2008) (389), 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. forma*, appearance. Inflorescence resembles that of *Lolium*.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Annual, caespitose. Culms erect, 5–30 cm long, 3–4 -noded. Culm-internodes distally pubescent. Culm-nodes glabrous. Lateral branches lacking. Leaves mostly basal. Leaf-sheath oral hairs bearded. Ligule a ciliate membrane. Leaf-blades 2–6 cm long, 0.5–1 mm wide. Leaf-blade surface glabrous or pubescent.

Inflorescence. Inflorescence composed of racemes. Racemes 1, single, erect, straight, unilateral, 6–12 cm long. Rhachis angular. Spikelet packing broadside to rhachis, regular, 2 -rowed. Spikelets appressed, solitary. Fertile spikelets sessile.

Fertile Spikelets. Spikelets comprising 6–18 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets oblong, laterally compressed, 10–14 mm long, 2 mm wide, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes glabrous. Floret callus bearded.

Glumes. Glumes persistent, similar, shorter than spikelet. Lower glume lanceolate, asymmetrical, 2 mm long, 0.66 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume lateral veins absent. Lower glume apex acute. Upper glume oblong, 3 mm long, 1 length of adjacent fertile lemma, membranous, 1-keeled, 3 -veined. Upper glume apex obtuse.

Florets. Fertile lemma ovate, 2.5–3 mm long, membranous, without keel, 3 -veined, 0–3 -veined. Lemma apex dentate, 2 -fid, mucronate. Palea 1 mm long, 0.33–0.5 length of lemma, 2 -veined. Palea keels ciliate. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Anthers 2, 0.2 mm long. Caryopsis with adherent pericarp.

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

Country /Province /State. Papuaia. New Guinea PNG. New Guinea. **Australia.** Western Australia, Northern Territory, South Australia, Queensland, New South Wales, A.C.T., Victoria.

TDWG4. Kimberley, Eremaean, South-West. Darwin & Gulf, Victoria R & Barkly Tableland, Central Australia. NW & Lake Eyre, Southern. North, Central, South East, Inland. Coast, Tablelands, Western Slopes, Western Plains.

Tripogon longearistatus Hackel ex Honda. *Bot. Mag., Tokyo*, xli. 11 (1927).

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

TYPE from Korea. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: Korea, Quelpaert: Nakai 4845 ; Korea, Quelpaert: Taquet 1882 ; Korea, Quelpaert: Taquet 3425.

Illustrations (Books): T.Koyama, *Grasses of Japan and its neighbouring regions* (1987) (272, Fig. 103), S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 657).

Derivation (Clifford & Bostock 2007): *L. longus*, long; arista, bristle. Lemmas or glumes long awned.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose, clumped densely. Butt sheaths persistent and investing base of culm, with compacted dead sheaths. Culms erect, slender, 20–30 cm long, 0.8–1 mm diam. Leaf-sheaths glabrous on surface. Leaf-sheath oral hairs ciliate. Ligule an eciliate membrane or a ciliolate membrane. Leaf-blades flat or conduplicate, 4–15 cm long, 1 mm wide. Leaf-blade surface glabrous, hairless throughout.

Inflorescence. Inflorescence composed of racemes. Racemes 1, single, unilateral, 10–15 cm long, bearing 7–15 fertile spikelets on each. Rhachis flattened. Spikelet packing broadside to rhachis, regular, 2 -rowed. Spikelets appressed, solitary. Fertile spikelets sessile.

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, 5–10 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus pubescent.

Glumes. Glumes persistent, similar, shorter than spikelet. Lower glume lanceolate, 2.5–3 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, 4–4.5 mm long, 1.3 length of adjacent fertile lemma, membranous, 1-keeled, 1 -veined. Upper glume lateral veins absent. Upper glume apex acuminate, awned, 1 -awned, awn 0.5 mm long.

Florets. Fertile lemma lanceolate or elliptic, 3–3.5 mm long, membranous, without keel, 3 -veined, 0–3 -veined. Lemma lateral veins excurrent. Lemma apex dentate, 2 -fid, awned, 3 -awned. Principal lemma awn from a sinus, geniculate, 4–5 mm long overall. Lateral lemma awns present, 1 mm long. Palea 2 -veined. 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, Eastern Asia. China South Central, China North-Central, China Southeast. Japan, Korea. Japan Honshu.

TDWG4. Gansu, Shaanxi. Fujian, Guangdong, Hunan, Jiangxi, Zhejiang. Guizhou, Sichuan, Yunnan.

Tripogon major Hook. f. *Journ. Linn. Soc.* vii. 230. (1864).

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

TYPE from Cameroun, Cameroon Mt. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Cameroun, Cameroon Mt.: Mann 2098 (K holo).

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

Derivation (Clifford & Bostock 2007): L. larger. Larger in some respect than related species.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose. Butt sheaths thickened and forming a bulb, pallid. Culms erect, 20–65 cm long, wiry. Ligule a ciliolate membrane. Leaf-blades filiform, convolute, 5–25 cm long, 0.5–2 mm wide, stiff. Leaf-blade surface pilose, sparsely hairy, hairy on both sides. Leaf-blade apex acuminate.

Inflorescence. Inflorescence composed of racemes. Racemes 1, single, erect, straight, unilateral, 8–25 cm long. Rhachis angular. Spikelet packing broadside to rhachis, contiguous or lax, regular, 2 -rowed. Spikelets appressed, solitary. Fertile spikelets sessile.

Fertile Spikelets. Spikelets comprising 6–18 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets elliptic or oblong, laterally compressed, 13–25 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes glabrous. Floret callus bearded. Floret callus hairs 0.25–0.33 length of lemma.

Glumes. Glumes persistent, similar, shorter than spikelet, parallel to lemmas or gaping. Lower glume linear or lanceolate, 4.1–8.4 mm long, 0.6–0.8 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume lateral veins absent. Lower glume apex obtuse. Upper glume oblong, 6.2–11 mm long, 1.3–1.5 length of adjacent fertile lemma, membranous, 1-keeled, 1 -veined. Upper glume lateral veins absent. Upper glume apex acute or acuminate.

Florets. Fertile lemma elliptic or oblong, 4.2–8.5 mm long, membranous, dark green or grey, without keel, 3 -veined, 0–3 -veined. Lemma lateral veins extending close to apex. Lemma apex emarginate, awned, 1 -awned. Principal lemma awn from a sinus, 1–5 mm long overall. Palea 1 length of lemma, 2 -veined. Palea keels winged, narrowly winged, ciliolate. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Anthers 2, 1.4–2 mm long. Caryopsis with adherent pericarp, oblong, isodiametric, biconvex, 2.2 mm long.

Distribution (TDWG). Continent. Africa.

Country /Province /State. West tropical Africa, West-central tropical Africa, Northeast tropical Africa, East tropical Africa, South tropical Africa. Nigeria, Sierre Leone. Cameroon. Ethiopia (inc. Eritrea), Sudan. Kenya, Tanzania, Uganda. Malawi.

Tripogon minimus (A.Rich.) Hochst. ex Steud. *Syn. Pl. Gram.* 301 (1854).

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:** *Festuca minima* A. Rich., *Tent. Fl. Abyss.* . . . 2: 436 (1850). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: ST: *Schimper 1652*, 3 Aug 1840, Ethiopia: prope Djeladjeranne in montibus versus fluvium Tacaze (P; IT: BM, FI, K, L, MO-2108845, US-899302, US-3243713, US-1006682 (ex hb J. Gay sent to US by Hooker)). ST: *Quartin Dillon*, Chiré [Shire] (P).

Illustrations (Books): H.Jacques-Felix, *Les Graminees d'Afrique tropicale* (1962) (217, Fig. 141), G.V.Pope et al., *Flora Zambesiaca* 10 (2(1999):30, t. 13), L.K.A. Chippindall, *Grasses and Pastures of South Africa* (1955) (123, Fig. 95, as *T. abyssinicus*), G.E.Gibbs Russell et al., *Grasses of Southern Africa* (1990) (345, Fig 226), S.Phillips, *Poaceae* (Gramineae) in I.Hedberg & S.Edwards, *Flora of Ethiopia and Eritrea* (1995).

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

Derivation (Clifford & Bostock 2007): L. least. Smallest of the known species.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose. Butt sheaths persistent and investing base of culm, with fibrous dead sheaths. Culms erect, 4.5–28 cm long, wiry. Ligule a ciliate membrane. Leaf-blades filiform, flat or conduplicate, 1–9 cm long, 0.5 mm wide. Leaf-blade apex acute.

Inflorescence. Inflorescence composed of racemes. Racemes 1, single, erect, straight, unilateral, 2–8 cm long. Rhachis angular. Spikelet packing broadside to rhachis, 0.5 their length apart, regular, 2 -rowed. Spikelets appressed, solitary. Fertile spikelets sessile.

Fertile Spikelets. Spikelets comprising 3–10 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 elliptic, laterally compressed, 2.6–8 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes villous, hairy below. Floret callus pubescent.

Glumes. Glumes persistent, similar, shorter than spikelet. Lower glume lanceolate, 0.8–2 mm long, 0.5–0.6 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume lateral veins absent. Lower glume apex acute or acuminate. Upper glume elliptic, 1.7–3.2 mm long, 1.4–1.7 length of adjacent fertile lemma, membranous, 1-keeled, 1 -veined. Upper glume lateral veins absent. Upper glume apex obtuse or acute.

Florets. Fertile lemma elliptic, 1–2.3 mm long, membranous, mid-green or purple, without keel, 3 -veined, 0–3 -veined. Lemma lateral veins extending close to apex. Lemma apex emarginate, mucronate or awned, 1 -awned. Principal lemma awn from a sinus, 0.1–0.7(–1.2) mm long overall. Palea 1 length of lemma, 2 -veined. Palea keels winged, narrowly winged, ciliate. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Anthers 3, 0.2–0.5 mm long. Caryopsis with adherent pericarp, lanceolate, isodiametric, trigonous, 0.8–1.7 mm long.

Distribution (TDWG). Continent. Africa.

Country /Province /State. Macaronesia, West tropical Africa, West-central tropical Africa, Northeast tropical Africa, East tropical Africa, South tropical Africa, Southern Africa, Western Indian ocean. Cape Verde. Ghana, Ivory Coast, Mali, Nigeria, Senegal, Niger. Chad, Ethiopia (inc. Eritrea), Sudan. Kenya, Tanzania. Angola, Malawi, Mozambique, Zambia, Zimbabwe. Namibia, Botswana, Limpopo, North-West, Gauteng, Mpumalanga, Swaziland, Kwazulu-Natal. Madagascar.

Tripogon modestus S.M. Phillips & Launert. *Kew Bull.*, 25 (2): 313 (1971).

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

TYPE from Malawi. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Malawi, Bunda Hill: Robson 1500 (K holo, BM).

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

Derivation (Clifford & Bostock 2007): L. moderate. Culms of average height.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose. Butt sheaths persistent and investing base of culm, with fibrous dead sheaths. Culms erect, 15–28 cm long, 1 -noded. Leaf-sheaths glabrous on surface or pilose. Leaf-sheath oral hairs bearded. Ligule a ciliate membrane. Leaf-blades filiform, convolute, 2–15 cm long, 1–1.8 mm wide. Leaf-blade surface glabrous or pilose, hairy adaxially.

Inflorescence. Inflorescence composed of racemes. Racemes 1, single, linear, straight, unilateral, 4–15 cm long. Rhachis angular. Spikelet packing broadside to rhachis, lax, regular, 2 -rowed. Spikelets appressed, solitary. Fertile spikelets sessile.

Fertile Spikelets. Spikelets comprising 6–12 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets oblong, laterally compressed, 8.5–16 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes obscured by lemmas, pilose, hairy below. Floret callus pilose.

Glumes. Glumes persistent, similar, shorter than spikelet. Lower glume lanceolate, asymmetrical, 2.3–3.3 mm long, 0.7–0.9 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume lateral veins absent. Lower glume apex acute. Upper glume elliptic, 3.1–3.7 mm long, 1 length of adjacent fertile lemma, membranous, 1-keeled, 1 -veined. Upper glume lateral veins absent. Upper glume apex emarginate, mucronate.

Florets. Fertile lemma elliptic, 3–3.6 mm long, membranous, dark green, without keel, 3 -veined, 0–3 -veined. Lemma apex dentate, 2 -fid, awned, 1 -awned. Principal lemma awn from a sinus, 1.6–2.6 mm long overall. Palea 1 length of lemma, 2 -veined. Palea keels winged, narrowly winged, ciliate. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Anthers 3, 1.3–1.7 mm long. Caryopsis with adherent pericarp.

Distribution (TDWG). Continent. Africa.

Country /Province /State. South tropical Africa. Angola, Malawi.

Tripogon montanus Chiov. *Ann. Ist. Bot. Roma*, viii. 351 (1908).

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

TYPE from Eritrea. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Eritrea, Guna Guna: Pappi 614 (FI lecto, K).

Illustrations (Books): S.Phillips, *Poaceae* (Gramineae) in I.Hedberg & S.Edwards, *Flora of Ethiopia and Eritrea* (1995) (99, Fig. 41).

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

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose. Culms erect, 6–33 cm long. Ligule a ciliate membrane. Leaf-blades filiform, involute, 2.5–15 cm long, 0.5–0.75 mm wide. Leaf-blade surface pilose, sparsely hairy, hairy adaxially. Leaf-blade apex acuminate.

Inflorescence. Inflorescence composed of racemes. Racemes 1, single, erect or drooping, straight or flexuous, unilateral, 3–15 cm long. Rhachis angular. Spikelet packing broadside to rhachis, 0.25–0.33 their length apart, regular, 2 -rowed. Spikelets appressed, solitary. Fertile spikelets sessile.

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, 8.5–15 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes villous, hairy below. Floret callus pilose.

Glumes. Glumes persistent, similar, shorter than spikelet. Lower glume linear or lanceolate, 1.3–4.3 mm long, 0.3–0.5 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume lateral veins absent. Lower glume apex acute or acuminate. Upper glume linear or lanceolate, 4.5–8.4 mm long, 1.3–1.6 length of adjacent fertile lemma, membranous, 1-keeled, 1 -veined. Upper glume apex caudate or acuminate.

Florets. Fertile lemma elliptic, 3.5–5.2 mm long, membranous, black, without keel, 3 -veined, 0–3 -veined. Lemma surface scaberulous. Lemma apex dentate, 2 -fid, awned, 3 -awned. Principal lemma awn from a sinus, flexuous, 4–10 mm long overall. Lateral lemma awns present, arising on outer edge of lobes, 0.5–1.5 mm long, shorter than principal. Palea 1 length of lemma, 2 -veined. Palea keels wingless, ciliate. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Anthers 3, 1.4–2 mm long. Caryopsis with adherent pericarp, linear or oblong, isodiametric, biconvex, 1.4–1.7 mm long.

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

Country /Province /State. Northeast tropical Africa, East tropical Africa. Eritrea, Ethiopia (inc. Eritrea), Sudan. Uganda. Arabian Peninsula. Saudi Arabia, Yemen.

Tripogon multiflorus DeMire & H.Gillet. *Journ. Agric. Trop. & Bot. Appliq.* iii. 737 (1956).

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

TYPE from Niger. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Niger, Air, Taraouadji Mts.: Gillet 1051 (PAT holo).

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

Derivation (Clifford & Bostock 2007): *L. multus*, many; flos, flower. Spikelets with more florets than those of related species.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose. Culms erect, 10–65 cm long. Ligule a ciliolate membrane. Leaf-blades filiform, convolute, 3–20 cm long, 1 mm wide. Leaf-blade margins scabrous (towards tip). Leaf-blade apex acute.

Inflorescence. Inflorescence composed of racemes. Racemes 1, single, erect, linear or oblong, straight, unilateral, 5–23 cm long. Rhachis angular. Spikelet packing broadside to rhachis, 0.33–0.5 their length apart, regular, 2 -rowed. Spikelets appressed, solitary. Fertile spikelets sessile.

Fertile Spikelets. Spikelets comprising 8–19 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets linear or oblong, laterally compressed, 9–20 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes glabrous. Floret callus pilose.

Glumes. Glumes persistent, similar, shorter than spikelet. Lower glume lanceolate, asymmetrical, 2.6–3.2 mm long, 0.7–0.8 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume lateral veins absent. Lower glume apex acute. Upper glume elliptic or oblong, 3.2–3.8 mm long, 0.8–1 length of adjacent fertile lemma, membranous, 1-keeled, 1 -veined. Upper glume lateral veins absent. Upper glume apex obtuse or acute.

Florets. Fertile lemma elliptic, 3–4.4 mm long, membranous, mid-green or purple, without keel, 3 -veined, 0–3 -veined. Lemma lateral veins extending close to apex. Lemma apex entire or dentate, 2 -fid, emarginate, awned, 1 -awned. Principal lemma awn from a sinus, 0.5–1.3 mm long overall. Palea 1 length of lemma, 2 -veined. Palea keels winged, narrowly winged, ciliolate. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Anthers 3, 1.1–1.5 mm long. Caryopsis with adherent pericarp, oblong, isodiametric, trigonous, 1.7 mm long.

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

Country /Province /State. Northeast tropical Africa, East tropical Africa. Eritrea, Ethiopia (inc. Eritrea). Kenya. Arabian Peninsula. Oman.

Tripogon nanus P. C. Keng, *Acta Bot. Sin.* ix. 71 (1960).

Regarded by K as a synonym (*T. filiformis*).

TYPE from China. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: China, Miaoniu: Chu 7683.

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

Derivation (Clifford & Bostock 2007): *L. dwarf*. Smaller than related species.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose. Culms erect, 7.5–12.5 cm long, 0.3 mm diam., 1–2 -noded. Culm-internodes distally glabrous. Leaf-sheaths mostly shorter than adjacent culm internode, glabrous on surface. Ligule a fringe of hairs, 0.2 mm long. Leaf-blades erect, filiform, involute, 10–18 cm long, 1.2 mm wide, stiff. Leaf-blade surface pilose, hairy adaxially.

Inflorescence. Inflorescence composed of racemes. Racemes 1, single, unilateral, 2–14 cm long. Rhachis flattened, 2–4 mm wide, glabrous on surface. Spikelet packing broadside to rhachis, regular, 2 -rowed. Spikelets solitary. Fertile spikelets sessile.

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, 4–6 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes 0.8–1 mm long, glabrous. Floret callus pubescent. Floret callus hairs 0.3 mm long.

Glumes. Glumes persistent, similar, shorter than spikelet. Lower glume lanceolate, 2 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 with a unilateral tooth, acuminate. Upper glume lanceolate, 3–3.5 mm long, 1.2 length of adjacent fertile lemma, membranous, 1-keeled, 1 -veined. Upper glume primary vein scabrous. Upper glume lateral veins absent. Upper glume apex acute, mucronate.

Florets. Fertile lemma oblong, 2.5–3 mm long, membranous, without keel, 3 -veined, 0–3 -veined. Lemma apex dentate, 2 -fid, with lobes 1 mm long, awned, 3 -awned. Principal lemma awn from a sinus, straight, 3–4 mm long overall. Lateral lemma awns present, arising on outer edge of lobes, 2–3 mm long. Palea 2–2.5 mm long, 2 -veined. Palea keels ciliolate. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Anthers 3, 1 mm long, pallid. Caryopsis with adherent pericarp, linear, 1.2–1.5 mm long, dark brown.

Distribution (TDWG). Continent. Temperate Asia.

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

TDWG4. Sichuan, Yunnan.

Tripogon narayanae P.V. Sreekumar, V.J. Nair & N.C. Nair. *J. Bombay Nat. Hist. Soc.*, 80(1): 196 (1983).

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

TYPE from India. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: India, Eravikulam Nat. Park: Sreekumar 68412 (CAL holo, K, MH).

Illustrations (Books): K.M.Mathew, *Flora Palni Hills* (1996) (879, Pl. 879 as *T. narayanii*).

Derivation (Clifford & Bostock 2007): in honor of N. Narayana, Indian botanist.

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, 10–20 cm long. Culm-nodes glabrous. Leaf-sheaths hirsute. Ligule a ciliolate membrane. Leaf-blades 10–25 cm long, 1.5–2.5 mm wide. Leaf-blade midrib indistinct. Leaf-blade surface hirsute, densely hairy, hairy on both sides.

Inflorescence. Inflorescence composed of racemes. Racemes 1, single, unilateral, 6–12 cm long. Rhachis angular, smooth on margins, glabrous on margins. Spikelet packing broadside to rhachis, crowded, regular, 2-rowed. Spikelets solitary. Fertile spikelets sessile.

Fertile Spikelets. Spikelets comprising 4–6 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets elliptic, laterally compressed, 5–10 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 lanceolate or ovate, 3.5 mm long, 0.66 length of upper glume, membranous, 1-keeled, 1-veined. Lower glume lateral veins absent. Lower glume apex with a unilateral tooth, obtuse. Upper glume lanceolate, 5.5 mm long, 1.4 length of adjacent fertile lemma, membranous, 1-keeled, 1-veined. Upper glume lateral veins absent. Upper glume apex emarginate, mucronate.

Florets. Fertile lemma oblong, 4 mm long, 1.75 mm wide, coriaceous, yellow to light green, without keel, 3-veined, 0–3-veined. Lemma apex dentate, 4-fid, with outer lobes longer, acute, awned, 3-awned. Principal lemma awn from a sinus, 2.5 mm long overall. Lateral lemma awns present, arising on apex of lobes, 1 mm long, shorter than principal. Palea 3 mm long, 2-veined. Palea keels ciliolate, adorned above. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, 0.25 mm long. Anthers 2, 1 mm long. Caryopsis with adherent pericarp.

Distribution (TDWG). Continent. Tropical Asia.

Country /Province /State. Indian Subcontinent. India.

TDWG4. Kerala.

Tripogon nicorae Rugolo & A.S. Vega. *Syst. Bot.* 29(4): 874, f. 1 (2004).

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

TYPE from Bolivia. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: Bolivia, Cochibamba, Calacala: Parodi 10227 (BAA holo).

Illustrations (Journals): *Systematic Botany* (29:875, Fig.1 (2004)).

Derivation (Clifford & Bostock 2007): In honor of Elisa Gernaela Juana Raquel Nicora de Panza (1912–2001) Argentinian 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, 4–22 cm long. Leaf-sheaths without keel, striately veined, glabrous on surface. Leaf-sheath oral hairs ciliate, 0.5 mm long. Ligule a ciliolate membrane, 0.2–0.3 mm long. Leaf-blades filiform, conduplicate, 1.5–5 cm long, 0.6–0.8 mm wide. Leaf-blade surface pilose, hairy adaxially. Leaf-blade margins scaberulous.

Inflorescence. Inflorescence composed of racemes. Racemes 1, single, unilateral, 1.5–9 cm long. Rhachis 0.5–0.6 mm wide, scaberulous on margins. Spikelet packing broadside to rhachis. Spikelets appressed, solitary. Fertile spikelets sessile.

Fertile Spikelets. Spikelets comprising 8–17 fertile florets, with diminished florets at 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, 9–14 mm long, 1.6–2 mm wide, breaking up at maturity, disarticulating

below each fertile floret. Rhachilla internodes 0.6–0.9 mm long, glabrous. Floret callus pilose, with elliptic scar. Floret callus hairs 0.5–1 mm long.

Glumes. Glumes persistent, similar, shorter than spikelet. Lower glume lanceolate, 2–2.6 mm long, 0.75 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume lateral veins absent. Lower glume apex acute or acuminate. Upper glume lanceolate, 2.6–3.5 mm long, 0.9–1 length of adjacent fertile lemma, membranous, 1-keeled, 1 -veined. Upper glume lateral veins absent. Upper glume apex acute or acuminate, muticous or mucronate.

Florets. Fertile lemma ovate, widest at 0.5 of its length from base, 3–3.3 mm long, membranous, without keel, 3 -veined, 0–3 -veined. Lemma lateral veins excurrent. Lemma apex dentate, 2 -fid, awned, 1 -awned. Principal lemma awn from a sinus, 1.2–2 mm long overall. Palea 2–2.7 mm long, 0.66 length of lemma, 2 -veined. Palea keels winged, scaberulous, ciliolate. Palea apex dentate, 2 -fid, with excurrent keel veins. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, 0.3 mm long, truncate. Anthers 3, 0.2–0.5 mm long, purple. Stigmas 2. Caryopsis with adherent pericarp, lanceolate, trigonous, 1.3–1.6 mm long. Embryo 0.33–0.5 length of caryopsis. Hilum elliptic.

Distribution (TDWG). Continent. South America.

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

TDWG4. Catamarca, La Rioja. Tarapaca.

Tripogon oliganthos T.A. Cope. *Kew Bull.*, 47(4): 662 (1992).

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

TYPE from Yemen. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Yemen, Menacha: Wood 1685 (K holo).

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

Derivation (Clifford & Bostock 2007): Gk. oligos, few; anthos, flower. Spikelets few-flowered.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose, clumped densely. Butt sheaths persistent and investing base of culm, with compacted dead sheaths. Culms erect, 30 cm long. Ligule a ciliate membrane. Leaf-blades involute, 5–8 cm long, 0.5–1 mm wide.

Inflorescence. Inflorescence composed of racemes. Racemes 1, single, flexuous, unilateral, 15 cm long. Rhachis flattened. Spikelet packing broadside to rhachis, regular, 2 -rowed. Spikelets solitary. 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 oblong, laterally compressed, 5.2 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus pubescent.

Glumes. Glumes persistent, similar, shorter than spikelet. Lower glume lanceolate, 2.3 mm long, 0.5 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume lateral veins absent. Lower glume apex acuminate. Upper glume lanceolate, 4.1 mm long, 1.4 length of adjacent fertile lemma, membranous, 1-keeled, 1 -veined. Upper glume lateral veins absent. Upper glume apex acuminate.

Florets. Fertile lemma oblong, 2.9 mm long, membranous, without keel, 3 -veined, 0–3 -veined. Lemma lateral veins excurrent. Lemma apex dentate, 2 -fid, awned, 3 -awned. Principal lemma awn from a sinus, straight, 1.4 mm long overall. Lateral lemma awns present, 0.5 mm long. Palea 2 -veined. Palea keels winged, narrowly winged.

Flower and Fruit. Anthers 3, 1.4 mm long. Caryopsis with adherent pericarp.

Distribution (TDWG). Continent. Temperate Asia.

Country /Province /State. Arabian Peninsula. Yemen.

Tripogon panxianensis H. Peng. *Acta Bot. Yunnanica*, 13(2): 147 (1991).

Regarded by K as a synonym (*T. longearistatus*).

TYPE from China. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: China, Guizhou, Panxian: Dang Cheng-zhong 1010 (HGAS holo).

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

Derivation (Clifford & Bostock 2007): L. -ensis, denoting origin. From Panxian, Guizhan Province, China.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Distribution (TDWG). Continent. Temperate Asia.

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

Tripogon polyanthus V.N. Naik & B.W. Patunkar. *Bull. Bot. Surv. India*, 15(1–2): 158 (1976).

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

TYPE from India. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: India, Daulatabad: Patunkar 1859.

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

Derivation (Clifford & Bostock 2007): Gk. polys, many; anthos, flower. Spikelets with more than the expected number of florets.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose, clumped densely. Rhizomes short. Culms 60–80 cm long. Lateral branches lacking. Leaf-sheaths smooth, glabrous on surface. Ligule an eciliate membrane. Leaf-blades convolute, 30–75 cm long, 2–3 mm wide. Leaf-blade surface glabrous.

Inflorescence. Inflorescence composed of racemes. Racemes 1, single, unilateral, 15–18 cm long. Rhachis flattened, smooth on surface, glabrous on surface. Spikelet packing broadside to rhachis, regular, 2 -rowed. Spikelets appressed, solitary. Fertile spikelets sessile.

Fertile Spikelets. Spikelets comprising 40–50 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets oblong, laterally compressed, 20–65 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus pubescent.

Glumes. Glumes persistent, similar, shorter than spikelet. Lower glume lanceolate, asymmetrical, 3–3.25 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, 4.5 mm long, 1 length of adjacent fertile lemma, membranous, 1-keeled, 1 -veined. Upper glume lateral veins absent. Upper glume apex acuminate.

Florets. Fertile lemma lanceolate, 4 mm long, membranous, without keel, 3 -veined, 0–3 -veined. Lemma apex lobed, 2 -fid, awned, 1 -awned. Principal lemma awn from a sinus, 1–1.25 mm long overall. Palea 4–4.25 mm long, 2 -veined. Palea keels ciliate. Apical sterile florets resembling fertile though underdeveloped.

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

Distribution (TDWG). Continent. Tropical Asia.

Country /Province /State. Indian Subcontinent. India.

TDWG4. Maharashtra.

Tripogon pungens C.E.C. Fischer. *Kew Bull.* 1934, 170. (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. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: India, Punachi: Barber 3717 (K holo).

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

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose. Rhizomes short. Culms erect, 6–10 cm long, 2–3 -noded. Ligule an eciliate membrane. Leaf-blades aciculate, convolute, 1–2.5 cm long, 1–2 mm wide, coriaceous, stiff. Leaf-blade surface glabrous or pilose, sparsely hairy. Leaf-blade apex pungent.

Inflorescence. Inflorescence composed of racemes. Racemes 1, single, flexuous, unilateral, 2–5 cm long. Rhachis angular. Spikelet packing broadside to rhachis, regular, 2 -rowed. Spikelets ascending, solitary. Fertile spikelets sessile.

Fertile Spikelets. Spikelets comprising 5–7 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets oblong, laterally compressed, 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 oblong, asymmetrical, 1–1.3 mm long, 0.5–0.6 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume lateral veins absent. Lower glume apex acute. Upper glume oblong, 2–2.5 mm long, 1.4–1.7 length of adjacent fertile lemma, membranous, 1-keeled, 1 -veined. Upper glume primary vein grooved on either side. Upper glume lateral veins absent. Upper glume apex acute.

Florets. Fertile lemma elliptic, 1.2–1.5 mm long, membranous, without keel, 3 -veined, 0–3 -veined. Lemma apex dentate, 2 -fid, obtuse, awned, 1 -awned. Principal lemma awn from a sinus, 0.2–0.5 mm long overall. Palea 1 length of lemma, 2 -veined. Palea keels winged, narrowly winged, scaberulous. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Anthers 3. Caryopsis with adherent pericarp, 0.5 mm long.

Distribution (TDWG). Continent. Tropical Asia.

Country /Province /State. Indian Subcontinent. India.

Tripogon purpurascens Duthie. *Ann. Hort. Bot. Calc.* ix. 74. (1901).

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) (& as *T. purpurascens*).

TYPE from India. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: India, Tehri-Garhwal: Duthie 23532 (K iso).

Illustrations (Books): N.L.Bor, *Gramineae* in K.H.Rechinger, *Flora Iranica*. No. 70/30 (1970) (Tab. 63), H.J.Noltie, *The Grasses of Bhutan* (2000) (653, Fig. 32).

Derivation (Clifford & Bostock 2007): *L. purpurascens*, become purple. Inflorescences reddish-purple.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose. Butt sheaths persistent and investing base of culm, with compacted dead sheaths. Culms erect, 9–50 cm long. Ligule a ciliolate membrane. Leaf-blades filiform, convolute, 5–15 cm long, 1–2 mm wide. Leaf-blade surface pilose, hairy adaxially. Leaf-blade margins ciliate.

Inflorescence. Inflorescence composed of racemes. Racemes 1, single, linear, straight or arcuate, unilateral, 3–17 cm long. Rhachis angular. Spikelet packing broadside to rhachis, regular, 2 -rowed. Spikelets appressed, solitary. Fertile spikelets sessile.

Fertile Spikelets. Spikelets comprising 2–5(–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, 3.5–7.5 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes glabrous. Floret callus bearded.

Glumes. Glumes persistent, similar, shorter than spikelet. Lower glume linear, 1.5–2.5(–3) mm long, 0.5–0.6 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume lateral veins absent. Lower glume apex acute. Upper glume lanceolate, (2.2–)2.6–4.5 mm long, 1.1–1.3 length of adjacent fertile lemma, membranous, 1-keeled, 1 -veined. Upper glume lateral veins absent. Upper glume apex acute.

Florets. Fertile lemma elliptic, 2–4 mm long, membranous, without keel, 3 -veined, 0–3 -veined. Lemma lateral veins excurrent or extending close to apex. Lemma apex dentate, 2 -fid, truncate, mucronate. Palea 1 length of lemma, 2 -veined. Palea keels winged, narrowly winged, ciliolate. Apical sterile florets resembling fertile though underdeveloped.

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

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

Country /Province /State. **Western Asia, Arabian Peninsula, China, Mongolia.** Afghanistan, Iran, Oman, Saudi Arabia, Yemen. Xinjiang. **Indian Subcontinent.** Eastern Himalaya, India, Nepal, Pakistan, West Himalaya.

TDWG4. Bhutan. Rajasthan, Uttah Pradesh. Jammu Kashmir.

Tripogon ravianus Sunil, Pradeep. *Sida* 19(4): 803 (2001).

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>: *vide* TROPICOS and Kew Synonymy Database: India, Tamil Nadu, Pykara: Sunil 2176 (BRIT holo, CALI, K, NY).

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

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose. Culms 24–70 cm long. Lateral branches lacking. Leaf-sheaths smooth, glabrous on surface. Leaf-sheath oral hairs ciliate, 2–3 mm long. Ligule an eciliate membrane. Leaf-blades 5–35 cm long, 2–4 mm wide. Leaf-blade surface pubescent, hairy adaxially. Leaf-blade margins scaberulous.

Inflorescence. Inflorescence composed of racemes. Racemes 1, single, unilateral, 15–40 cm long, bearing 15–48 fertile spikelets on each. Rhachis flattened, smooth on surface, glabrous on surface. Spikelet packing broadside to rhachis, regular, 2 -rowed. Spikelets appressed, solitary. Fertile spikelets sessile.

Fertile Spikelets. Spikelets comprising 6–14 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets oblong, laterally compressed, 10–25 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus pilose. Floret callus hairs 0.5–1 mm long.

Glumes. Glumes persistent, similar, shorter than spikelet. Lower glume ovate, 2–4 mm long, 0.5–0.66 length of upper glume, coriaceous, 1-keeled, 1 -veined. Lower glume lateral veins absent. Lower glume apex dentate, 2 -fid. Upper glume lanceolate, 5–6 mm long, 1.5 length of adjacent fertile lemma, coriaceous, 1-keeled, 1 -veined. Upper glume lateral veins absent. Upper glume apex dentate, 2 -fid, awned, 1 -awned, awn 1.5–2 mm long.

Florets. Fertile lemma lanceolate, 3–4 mm long, coriaceous, grey, without keel, 3 -veined, 0–3 -veined. Lemma apex lobed, 4 -fid, with lobes 2 mm long, awned, 3 -awned. Principal lemma awn from a sinus, 4–5 mm long overall. Lateral lemma awns present, arising on apex of lobes (outer lobes), 3–3.5 mm long. Palea 2.5–3.5 mm long, 2 -veined. Palea keels ciliate. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, 0.5–0.75 mm long. Anthers 3, 1.5–2 mm long. Caryopsis with adherent pericarp, oblong, 1.8–2.3 mm long.

Distribution (TDWG). Continent. Tropical Asia.

Country /Province /State. Indian Subcontinent. India.

Tamilnadu.

Tripogon rupestris S.M.Phillips & S.L.Chen. *Kew Bull.* 57: 917 (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. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: China, Xizang: Miehe 808 (K holo).

Illustrations (Books): S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 853).

Illustrations (Journals): *Kew Bulletin* (57: 918, Fig.1 (2002)).

Derivation (Clifford & Bostock 2007): *L. rupestris*, rock; -estre, place of growth; Growing amongst rocks.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose. Butt sheaths papery, withering or persistent and investing base of culm, with fibrous dead sheaths. Culms erect, 10–35 cm long. Ligule a fringe of hairs. Leaf-blades filiform, involute, 4–12 cm long, 0.8–1.2 mm wide. Leaf-blade surface scabrous, rough adaxially, pilose, sparsely hairy, hairy adaxially.

Inflorescence. Inflorescence composed of racemes. Racemes 1, single, flexuous, unilateral, 5–20 cm long. Spikelet packing broadside to rachis, 1 their length apart. Spikelets appressed, solitary. Fertile spikelets sessile.

Fertile Spikelets. Spikelets comprising 4–7 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets oblong, laterally compressed, 4.3–8 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, similar, shorter than spikelet. Lower glume lanceolate, asymmetrical, 2.2–3 mm long, 0.6–0.7 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume lateral veins absent. Lower glume apex with a unilateral tooth, acuminate. Upper glume lanceolate or oblong, 3.2–5 mm long, membranous, 1-keeled, 1 -veined. Upper glume lateral veins absent. Upper glume apex emarginate, mucronate.

Florets. Fertile lemma lanceolate or elliptic, 2.4–3 mm long, membranous, purple, without keel, 3 -veined, 0–3 -veined. Lemma apex dentate, 2 -fid, obtuse to acuminate, awned, 3 -awned. Principal lemma awn from a sinus, flexuous, 5–9 mm long overall. Lateral lemma awns present, arising on outer edge of lobes, 1.5–3.5 mm long. Palea 2 -veined. Palea keels winged, ciliate. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Anthers 3, 0.5–0.9 mm long. Caryopsis with adherent pericarp.

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

Country /Province /State. China. China South Central, Tibet. **Indian Subcontinent.** India, Nepal.

TDWG4. Yunnan.

Tripogon siamensis Bor. *Journ. Ind. Bot. Soc.* xlii. A. 14 (1963).

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

TYPE from Thailand. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Thailand, Phu Krading: Smitinand 6074 (K holo).

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

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

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose. Culms erect, 30–45 cm long. Ligule a ciliate membrane. Leaf-blades filiform, convolute, 10–25 cm long, 2–3 mm wide. Leaf-blade surface scaberulous, rough adaxially. Leaf-blade apex acute.

Inflorescence. Inflorescence composed of racemes, shorter than basal leaves. Racemes 1, single, erect, flexuous, unilateral, 10–25 cm long. Rachis angular. Spikelet packing broadside to rachis, lax, regular, 2 -rowed. Spikelets appressed, solitary. Fertile spikelets sessile.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 8–10 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile

or the upper sterile. Spikelets lanceolate, laterally compressed, 7–11 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus pubescent.

Glumes. Glumes persistent, similar, shorter than spikelet. Lower glume oblong, 4–5 mm long, 1 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume lateral veins absent. Lower glume apex with a unilateral tooth, acute. Upper glume lanceolate, 4–5 mm long, 1–1.1 length of adjacent fertile lemma, membranous, 1-keeled, 1 -veined. 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 similar to upper glume, elliptic, 4–5 mm long, membranous, 1 -veined, without lateral veins, acute, mucronate. Fertile lemma oblong, 4–4.5 mm long, membranous, without keel, 3 -veined, 0–3 -veined. Lemma lateral veins extending close to apex. Lemma apex dentate, 2 -fid, awned, 1 -awned. Principal lemma awn from a sinus, 3 mm long overall. Palea 0.5 length of lemma, 2 -veined. Palea keels winged, narrowly winged, ciliolate. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Anthers 3, 1 mm long. Caryopsis with adherent pericarp.

Distribution (TDWG). Continent. Tropical Asia.

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

Tripogon sichuanicus S.M.Phillips & S.L.Chen. *Kew Bull.* 57: 916 (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. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: China: Li Anren & Zhu Jiaran 75033 (NAS holo).

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

Derivation (Clifford & Bostock 2007): L. *-icus*, belonging to. From Sichuan Province, China.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose. Butt sheaths papery. Culms erect, 15–30 cm long. Ligule a fringe of hairs. Leaf-blades filiform, involute, 1–10 cm long, 1–2 mm wide. Leaf-blade surface scabrous, rough adaxially, glabrous or pilose, sparsely hairy, hairy adaxially.

Inflorescence. Inflorescence composed of racemes. Racemes 1, single, unilateral, 5–13 cm long. Spikelet packing broadside to rachis, 0.5–0.66 their length apart. Spikelets solitary. Fertile spikelets sessile.

Fertile Spikelets. Spikelets comprising 5–10 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets oblong, laterally compressed, 5–13 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes eventually visible between lemmas.

Glumes. Glumes persistent, similar, shorter than spikelet. Lower glume lanceolate, symmetrical, 2.1–2.7 mm long, 0.6–0.7 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume lateral veins absent. Lower glume apex acuminate. Upper glume lanceolate or oblong, 3.5–4.3 mm long, membranous, with scarious margins, 1-keeled, 1–3 -veined. Upper glume primary vein thickened. Upper glume lateral veins absent or obscure. Upper glume apex acute, mucronate.

Florets. Fertile lemma oblong or ovate, 2.8–3 mm long, membranous, dark green (olive), without keel, 3 -veined, 0–3 -veined. Lemma lateral veins excurrent. Lemma apex dentate, 2 -fid, truncate or obtuse, awned, 1 -awned. Principal lemma awn from a sinus, straight, 1.8–3.3 mm long overall. Palea 2 -veined. Palea keels wingless, ciliolate. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Anthers 3, 1.2–1.3 mm long. Caryopsis with adherent pericarp.

Distribution (TDWG). Continent. Temperate Asia.

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

TDWG4. Sichuan.

Tripogon sivarajanii C.N. Sunil. *Sida*, 18(3): 809 (1999).

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

TYPE from India. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: India, Kerala, Moolamattam: Sunil 2177 (MH holo, BRIT, K, L, PBL).

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

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose. Culms 40–70 cm long. Culm-nodes glabrous. Lateral branches lacking. Leaf-sheaths smooth, glabrous on surface. Ligule an eciliate membrane. Leaf-blades 15–40 cm long, 2–3 mm wide. Leaf-blade midrib indistinct. Leaf-blade surface pubescent and pilose, hairy adaxially. Leaf-blade apex acuminate.

Inflorescence. Inflorescence composed of racemes. Racemes 1, single, unilateral, 20–45 cm long, bearing 25–60 fertile spikelets on each. Rhachis flattened, smooth on surface, glabrous on surface. Spikelet packing broadside to rhachis, regular, 2 -rowed. Spikelets appressed, solitary. Fertile spikelets sessile.

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, 7–8 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 mm long, 0.5–0.66 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume lateral veins absent. Lower glume apex emarginate. Upper glume lanceolate, 3–4 mm long, 1 length of adjacent fertile lemma, membranous, 1-keeled.

Florets. Fertile lemma lanceolate, 3–3.5 mm long, membranous, without keel, 3 -veined, 0–3 -veined. Lemma apex lobed, 2 -fid, awned, 1 -awned. Principal lemma awn from a sinus, 3–3.5 mm long overall. Palea 2–3 mm long, 2 -veined. Palea keels winged, narrowly winged. Palea surface pilose, hairy on margins. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Anthers 3, 1 mm long, yellow. Caryopsis with adherent pericarp.

Distribution (TDWG). Continent. Tropical Asia.

Country /Province /State. Indian Subcontinent. India.

Kerala.

Tripogon spicatus (Nees) Ekman. *Arkiv Bot. Stockh.* xi. No. 4, 36 (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 Brazil. **Basionym or Replaced Name:** *Bromus spicatus* Nees, *Mart. Fl. Bras.* 2: 471 (1829). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: IT: Martius s.n.; ; Brazil: Piauí (LE-TRIN-2313.01 (& fig.), M).

Illustrations (Books): M.E.Barkworth et al, *Flora of North America north of Mexico Vol 25 Poaceae*, part 2 (2003) (62), F.W.Gould, *The Grasses of Texas* (1975) (237, Fig. 125), A.S.Hitchcock, *Manual of the Grasses of the West Indies* (1936) (110, Fig. 70), S.A.Renvoize, *Gramineas de Bolivia* (1998) (302, Fig. 62), S.A.Renvoize, *The Grasses of Bahia*, 1984 (75, Fig. 26), J.A.Steyermark et al, *Flora of the Venezuelan Guayana Vol. 8* (2004) (293, Fig. 236), E.G.Nicora, *Los Generos de Gramineas de America Austral* (1987) (371, Fig. 128 as *T. spicatum*), A.Burkat, *Flora Ilustrada de Entre Rios (Argentina)*, Pt II, Gramineas (1969) (237, Fig. 90), A.L.Cabrera, *Flora de la Provincia de Buenos Aires, IV Pt 2 Gramineas* (1970) (383, Fig. 98), B.Rosengurt, *Gramineas Uruguayas I* (1970) (248, Fig. 101), G.Harling & C.Persson, *Flora of Ecuador* (2006) (68: 24, Fig. 4 (2001)).

Illustrations (Journals): *Ruizia* (13:275, Fig 32c-e (1993) as *T. spicatum*).

Derivation (Clifford & Bostock 2007): *L. spica*, thorn; -ata, possessing; Inflorescence a spike or spicate panicle.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose. Culms erect, 10–30 cm long. Leaves mostly basal. Leaf-sheaths without keel, glabrous on surface. Leaf-sheath oral hairs ciliate. Ligule a ciliolate membrane, 0.1–0.2 mm long. Leaf-blades filiform, involute, 3–10 cm long, 1 mm wide. Leaf-blade surface glabrous or pilose, sparsely hairy.

Inflorescence. Inflorescence composed of racemes. Racemes 1, single, unilateral, 4–10 cm long. Rhachis flattened. Spikelet packing broadside to rhachis, regular, 2 -rowed. Spikelets appressed, solitary. Fertile spikelets sessile or pedicelled. Pedicels absent or present, reduced to a stump, 0–0.3 mm long.

Fertile Spikelets. Spikelets comprising 6–12 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets oblong, laterally compressed, 5–10 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus pilose.

Glumes. Glumes persistent, similar, shorter than spikelet. Lower glume lanceolate, 1–1.6 mm long, 0.5–0.66 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume lateral veins absent. Lower glume apex acute or acuminate. Upper glume lanceolate, 2.5–2.7 mm long, 0.9 length of adjacent fertile lemma, membranous, 1-keeled, 1 -veined. Upper glume lateral veins absent. Upper glume apex acute or acuminate.

Florets. Fertile lemma ovate, 3 mm long, membranous, without keel, 3 -veined, 0–3 -veined. Lemma lateral veins extending close to apex. Lemma apex dentate, 2 -fid, mucronate or awned, 1 -awned. Principal lemma awn from a sinus, 0.2–0.5 mm long overall. Palea 1 length of lemma, 2 -veined. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Caryopsis with adherent pericarp, lanceolate, 1.5 mm long, dark brown. Embryo 0.25 length of caryopsis.

N = 10 (1 ref TROPICOS).

Distribution (TDWG). Continent. North America, South America.

Country /Province /State. South-central USA, Mexico. Texas. Central Mexico, Northeast Mexico, Gulf (Mexico), Southwest Mexico, Southeast Mexico. **Mesoamerica, Caribbean, Northern South America, Western South America, Brazil, Southern South America.** Guatemala, Honduras, Nicaragua. Cuba, Haiti. Venezuela. Bolivia, Colombia, Ecuador, Peru. Brazil West Central, Brazil Northeast, Brazil Southeast, Brazil South. Argentina Northeast, Argentina Northwest, Chile North, Chile South, Paraguay, Uruguay.

TDWG4. Bahia, Maranhao, Piaui, Sao Paulo Parana, Catarina, Rio Grande do Sul. Catamarca, La Rioja, Mendoza, Salta, San Juan, San Luis, Tucuman. Buenos Aires, Chaco, Cordoba, Corrientes, Entre Rios, Formosa, Misiones, Santa Fe. Tarapaca, Antofagasta, Atacama, Coquimbo. Tarapaca. Distrito Federal. Aguascalientes, Durango, San Luis Potosi, Zacatecas. Veracruz. Jalisco. Yucatan.

Tripogon subtilissimus Chiov. *Ann. Bot., Roma*, v. 66 (1906).

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

TYPE from Somalia. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Somalia, Gerar-Amaden: Baudi & Candeo 42 (FI holo).

Illustrations (Books): S.Phillips, *Poaceae* (Gramineae) in I.Hedberg & S.Edwards, *Flora of Ethiopia and Eritrea* (1995) (99, Fig. 41), T.A.Cope, in M.Thulin, *Poaceae* (Gramineae). *Flora of Somalia* (1995) (172, Fig. 86).

Derivation (Clifford & Bostock 2007): L. very subtle. Distinguished from related species only by careful comparison.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose. Culms erect, 3–23 cm long. Ligule a ciliolate membrane. Leaf-blades filiform, flat or conduplicate or involute, 1–11 cm long, 0.5–0.9 mm wide. Leaf-blade surface glabrous or pilose, sparsely hairy, hairy adaxially. Leaf-blade apex acuminate.

Inflorescence. Inflorescence composed of racemes. Racemes 1, single, erect, straight or flexuous, unilateral, 2–11 cm long. Rhachis angular. Spikelet packing broadside to rhachis, 0.66 their length apart, regular, 2 -rowed. Spikelets appressed, solitary. Fertile spikelets sessile.

Fertile Spikelets. Spikelets comprising 7–19 fertile florets, with diminished florets at 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, 4.2–11 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes glabrous. Floret callus pubescent.

Glumes. Glumes persistent, similar, shorter than spikelet. Lower glume linear or lanceolate or oblong, 0.8–2.2 mm long, 0.5–0.6 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume lateral veins absent. Lower glume apex truncate or acute or acuminate, mucous or mucronate. Upper glume oblong, 1.6–3.8 mm long, 1.4–1.6 length of adjacent fertile lemma, membranous, 1-keeled, 1(–3) -veined. Upper glume apex truncate or acute or acuminate.

Florets. Fertile lemma oblong, 1.1–2.4 mm long, membranous, mid-green or purple, without keel, 3 -veined, 0–3 -veined. Lemma apex dentate, 2–4 -fid, awned, 3 -awned. Principal lemma awn from a sinus, 4–10 mm long overall. Lateral lemma awns absent or present, arising on outer edge of lobes, 0.1–1.6 mm long, shorter than principal. Palea 1 length of lemma, 2 -veined. Palea keels winged, narrowly winged, ciliolate. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Anthers 2, 0.2–0.5 mm long. Caryopsis with adherent pericarp, lanceolate, isodiametric, plano-convex, 0.8 mm long.

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

Country /Province /State. Northeast tropical Africa, East tropical Africa. Ethiopia (inc. Eritrea), Somalia. Kenya. **Arabian Peninsula.** Oman.

Tripogon thorelii A.Camus. *Lecomte, Not. Syst.* iv. 14 (1920).

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

TYPE from Laos. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: Thorel 2479; ; Laos: 'Kouy' ('Kong') (P(photo, K); IT: L(fragment), P).

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

Derivation (Clifford & Bostock 2007): in honor of Clovis Thorel (1833–1911) French botanist who collected in Laos.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose, clumped densely. Culms erect, slender, 40–80 cm long, 1–2 -noded. Leaf-sheaths glabrous on surface. Leaf-sheath oral hairs pubescent. Ligule a fringe of hairs. Leaf-blades flat or involute, 20–30 cm long, 1–2 mm wide. Leaf-blade surface pubescent, hairy adaxially.

Inflorescence. Inflorescence composed of racemes. Racemes 1, single, unilateral, 15–40 cm long, bearing 16–35 fertile spikelets on each. Rhachis flattened. Spikelet packing broadside to rhachis, regular, 2 -rowed. Spikelets appressed, solitary. Fertile spikelets sessile. Pedicels present, reduced to a stump, ciliate.

Fertile Spikelets. Spikelets comprising 6–7 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets oblong, laterally compressed, 9–10 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, similar, shorter than spikelet. Lower glume linear, 3.5 mm long, 0.8–0.9 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, 4 mm long, 0.9 length of adjacent fertile lemma, membranous, 1-keeled, 1 -veined. Upper glume lateral veins absent. Upper glume apex acuminate.

Florets. Fertile lemma lanceolate or ovate, 4.5 mm long, membranous, without keel, 3 -veined, 0–3 -veined. Lemma lateral veins extending close to apex. Lemma apex dentate, 2 -fid, awned, 1 -awned. Principal lemma awn from a sinus, 1.5–2 mm long overall. Palea 3–4 mm long, 2 -veined. Palea keels ciliate. Palea apex dentate, 2 -fid. Apical sterile florets resembling fertile though underdeveloped.

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

Distribution (TDWG). Continent. Tropical Asia.

Country /Province /State. Indo-China. Laos, Thailand.

Tripogon trifidus Munro ex Hook. f. *Fl. Brit. Ind.* vii. 286 (1896).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), S-L Chen et al, *Flora of China* 22 (Poaceae) (2006), N.L.Bor, *Grasses of Burma, Ceylon, India and Pakistan* (1960).

TYPE from India. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: India: Griffith 6634 (K holo).

Illustrations (Books): H.J.Noltie, *The Grasses of Bhutan* (2000) (653, Fig. 32).

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose. Butt sheaths persistent and investing base of culm, with compacted dead sheaths. Culms 20–45 cm long. Leaf-sheaths ribbed, smooth, glabrous on surface. Leaf-sheath oral hairs bearded. Ligule a ciliate membrane. Leaf-blades filiform, involute, 15–25 cm long, 1–2 mm wide, stiff. Leaf-blade surface glabrous. Leaf-blade apex attenuate, filiform.

Inflorescence. Inflorescence composed of racemes. Racemes 1, single, unilateral, 5–30 cm long. Rhachis angular. Spikelet packing broadside to rhachis, regular, 2 -rowed. Spikelets appressed, solitary. Fertile spikelets sessile.

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 elliptic, laterally compressed, 4–10 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus bearded.

Glumes. Glumes persistent, similar, shorter than spikelet. Lower glume lanceolate, asymmetrical, 1.5–2 mm long, 0.33 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume lateral veins absent. Lower glume apex with a unilateral tooth, acuminate to setaceously acuminate. Upper glume lanceolate, 4.5–5.5 mm long, 1 length of adjacent fertile lemma, membranous, 1-keeled, 1 -veined. Upper glume lateral veins absent. Upper glume apex dentate, 2 -fid, acuminate, awned, 1 -awned.

Florets. Fertile lemma elliptic, 4.5–5 mm long, membranous, without keel, 3 -veined, 0–3 -veined. Lemma apex lobed, 2 -fid, awned, 3 -awned. Principal lemma awn from a sinus, 8–10 mm long overall. Lateral lemma awns present, arising on apex of lobes. Palea 1 length of lemma, 2 -veined. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Anthers 3, 1.3 mm long. Caryopsis with adherent pericarp.

$N = 10$ (1 ref TROPICOS), or 30 (1 ref TROPICOS).

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

Country /Province /State. China. China South Central, Xinjiang. **Indian Subcontinent, Indo-China.** Eastern Himalaya, India, Nepal. Myanmar, Thailand, Vietnam.

TDWG4. Yunnan. Bhutan, Sikkim. Meghalaya, Nagaland.

Tripogon vellarianus A.K. Pradeep. *Sida*, 18(3): 811 (1999).

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>: *vide* TROPICOS and Kew Synonymy Database: India, Kerala, Vellarimala: Pradeep 56110 (MH holo, BRIT, K, L, PBL).

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

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose, clumped densely. Culms erect, 30–90 cm long. Culm-nodes glabrous. Lateral branches lacking. Leaf-sheaths tight, smooth, glabrous on surface. Ligule absent. Leaf-blades 30–60 cm long, 8–15 mm wide. Leaf-blade surface glabrous.

Inflorescence. Inflorescence composed of racemes. Racemes 1, single, unilateral, 30–40 cm long. Rhachis flattened, smooth on surface, glabrous on surface. Spikelet packing broadside to rhachis, regular, 2 -rowed. Spikelets appressed, solitary. Fertile spikelets sessile.

Fertile Spikelets. Spikelets comprising 8–10 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets oblong, laterally compressed, 10–17 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus pubescent.

Glumes. Glumes persistent, similar, shorter than spikelet. Lower glume lanceolate, 1.25–4 mm long, 0.8 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume lateral veins absent. Upper glume lanceolate, 1.5–5 mm long, 0.75–1 length of adjacent fertile lemma, membranous, 1-keeled, 3 -veined.

Florets. Fertile lemma lanceolate, 2.5 mm long, membranous, without keel, 3 -veined, 0–3 -veined. Lemma apex entire, awned, 1 -awned or 3 -awned. Principal lemma awn apical, 3 mm long overall. Lateral lemma awns absent or present, 0–5 mm long. Palea 2–4 mm long, 2 -veined. Palea keels winged, narrowly winged, scaberulous. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, 0.25 mm long. Anthers 3, 1.5 mm long. Caryopsis with adherent pericarp.

Distribution (TDWG). Continent. Tropical Asia.

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

Tripogon wardii Bor. *Kew Bull.* 1957, 417 (1958).

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>: *vide* TROPICOS and Kew Synonymy Database: IT: F. Kingdom Ward 22821; 4 Nov 1956; Burma: Mount Victoria (US-2238416).

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

Derivation (Clifford & Bostock 2007): in honor of Francis Kingdon-Ward (1885–1958) English botanist.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose. Culms erect, 20–45 cm long. Leaf-sheaths pilose. Ligule an eciliate membrane, lacerate. Leaf-blades flat or involute, 8–15 cm long, 1–1.5 mm wide. Leaf-blade surface pilose, hairy on both sides. Leaf-blade apex attenuate.

Inflorescence. Inflorescence composed of racemes. Racemes 1, single, erect, unilateral, 6–11 cm long. Rhachis angular. Spikelet packing broadside to rhachis, regular, 2 -rowed. Spikelets appressed, solitary. Fertile spikelets sessile.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 7–8 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets oblong, laterally compressed, 8–10 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, similar, shorter than spikelet. Lower glume oblong, 3.5 mm long, 0.75 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume lateral veins absent. Lower glume apex with a unilateral tooth, acute. Upper glume lanceolate, 5–5.5 mm long, 1–1.1 length of adjacent fertile lemma, membranous, 1-keeled, 1 -veined. 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 similar to upper glume, ovate, 5 mm long, membranous, 1 -veined, without lateral veins, acute, awned. Awn of lower sterile floret 1 mm long. Fertile lemma oblong, 5 mm long, membranous, without keel, 3 -veined, 0–3 -veined. Lemma apex dentate, 3 -fid, with central lobe bidentate, awned, 3 -awned. Principal lemma awn from a sinus, 2–3 mm long overall. Lateral lemma awns present, arising on apex of lobes, 2–3 mm long, subequal to principal. Palea 2 -veined. Apical sterile florets resembling fertile though underdeveloped.

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

Distribution (TDWG). Continent. Tropical Asia.
Country /Province /State. Indo-China. Myanmar.

Tripogon wightii Hook. f. *Fl. Brit. Ind.* vii. 286. (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).

TYPE from India. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: India, Bellary: Wight 1793.

Illustrations (Journals): *Systematic Botany* (33: 697, Fig. 3 (2008)).

Derivation (Clifford & Bostock 2007): in honor of Robert Wight (1796–1872) Scots-born physician and sometime Superintendent, Botanic Gardens, Madras.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose. Butt sheaths persistent and investing base of culm, with compacted dead sheaths or fibrous dead sheaths. Culms erect, 15–40 cm long. Ligule a fringe of hairs. Leaf-blades filiform, involute, 5–12 cm long, 1 mm wide.

Inflorescence. Inflorescence composed of racemes. Racemes 1, single, unilateral, 4–15 cm long. Rhachis flattened. Spikelet packing broadside to rhachis, distant, regular, 2 -rowed. Spikelets solitary. Fertile spikelets sessile.

Fertile Spikelets. Spikelets comprising 10–14 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets oblong, laterally compressed, 15–23 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes 11 mm long, eventually visible between lemmas. Floret callus pubescent.

Glumes. Glumes persistent, similar, shorter than spikelet. Lower glume linear, 6–8 mm long, 0.9 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume lateral veins absent. Lower glume apex acuminate. Upper glume lanceolate, 7–9 mm long, 1.5 length of adjacent fertile lemma, membranous, 1-keeled, 1 -veined. Upper glume lateral veins absent. Upper glume apex acuminate.

Florets. Fertile lemma oblong, 5–6 mm long, membranous, without keel, 3 -veined, 0–3 -veined. Lemma lateral veins extending close to apex. Lemma apex dentate, 2 -fid, with lobes 1.5 mm long, obtuse, awned, 1 -awned. Principal lemma awn from a sinus, straight, 5–6 mm long overall. Palea 2 -veined. Palea keels winged, conspicuously winged, ciliolate. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Caryopsis with adherent pericarp.

Distribution (TDWG). Continent. Tropical Asia.

Country /Province /State. Indian Subcontinent. India.

TDWG4. Andhra Pradesh. Tamilnadu.

Tripogon yunnanensis J.L.Yang ex S.M.Phillips & S.L.Chen. *Kew Bull.* 57:921 (2002).

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

TYPE from China. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: China, Yunnan, Tungshan: Rock 10505 (E holo, US).

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

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

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, 25–33 cm long. Ligule a fringe of hairs. Leaf-blades filiform, involute, 2.5–10 cm long, 1 mm wide. Leaf-blade surface glabrous or pilose, hairy adaxially.

Inflorescence. Inflorescence composed of racemes. Racemes 1, single, unilateral, 9–15 cm long. Spikelet packing broadside to rhachis, 1 their length apart. Spikelets solitary. Fertile spikelets sessile.

Fertile Spikelets. Spikelets comprising 4–17 fertile florets, with diminished florets at 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–)10–22 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes eventually visible between lemmas.

Glumes. Glumes persistent, similar, shorter than spikelet. Lower glume lanceolate, asymmetrical, 1.5–3.5 mm long, 0.6–0.7 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume lateral veins absent. Lower glume apex with a unilateral tooth, acuminate. Upper glume lanceolate or oblong, 4–5.5 mm long, membranous, 1-keeled, 1 -veined. Upper glume lateral veins absent. Upper glume apex emarginate, mucronate.

Florets. Fertile lemma lanceolate or oblong, 3.3–4.5 mm long, membranous, grey, without keel, 3 -veined, 0–3 -veined. Lemma lateral veins excurrent. Lemma apex dentate, 2 -fid, awned, 1 -awned. Principal lemma

awn from a sinus, flexuous, 2.5–4 mm long overall. Palea 2 -veined. Palea keels winged, narrowly winged, ciliate. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Anthers 1, 1.4–2 mm long. Caryopsis with adherent pericarp.

Distribution (TDWG). Continent. Temperate Asia.

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

TDWG4. Sichuan, Yunnan.

Tripsacum andersonii J.R. Gray. *Phytologia*, 33(3): 204 (1976).

Accepted by: R.J.Soreng et al., *Catalogue of 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*), W.D.Clayton & N.Snow, Key to Pacific Grasses (2010).

TYPE from Honduras. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *Edgar Anderson 15576*, 15 Dec 1948, Honduras: San Francisco, El Paraíso, "Zacate de Guatemala" (MO-1612128; IT: NY, US).

Illustrations (Books): S.A.Renvoize, *The Grasses of Bahia*, 1984 (264, Fig. 99), G.Harling & C.Persson, *Flora of Ecuador* (2006) (78: 196, Fig. 23 (2006)).

Derivation (Clifford & Bostock 2007): in honor of Edgar Shannon Anderson (1897–1969) United States botanist.

Classification. Subfamily Panicoideae. Tribe: Andropogoneae. Subtribe Zea+ Tripsacum clade.

Habit, Vegetative Morphology. Perennial. Rhizomes short. Butt sheaths pilose. Culms geniculately ascending or decumbent, robust, 300–500 cm long, 20–30 mm diam., without nodal roots or with prop roots. Culm-internodes distally glabrous. Leaf-sheaths glabrous on surface. Ligule a ciliate membrane, 1 mm long. Leaf-blades 60–120 cm long, 40–100 mm wide. Leaf-blade surface pubescent, sparsely hairy, hairy adaxially, with tubercle-based hairs. Leaf-blade apex acuminate. Monoecious, with male and female spikelets in the same inflorescence.

Inflorescence. Inflorescence composed of racemes, terminal and axillary. Racemes 3–8, digitate, erect, smoothly terete, unilateral, 15–20 cm long, bearing 4–12 fertile spikelets on each. Rhachis (female) fragile at the nodes, subcylindrical and excavated, 4–5.5 mm wide. Spikelet packing abaxial. Rhachis internodes oblong, 6–10 mm long, adherent to upper glume of sessile spikelet. Rhachis internode tip transverse, crateriform. Sexes segregated, on bisexual branches, with male above. Spikelets sunken, solitary. Fertile spikelets sessile. Male spikelets sessile and pedicelled, 2 in a cluster. Pedicels present, (male) 1–3 mm long.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets ovate, dorsally compressed, 8–10 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, shiny. Lower glume ovate, 1 length of spikelet, indurate, without keels. Lower glume apex acute. Upper glume ovate, cartilaginous, without keels. Upper glume apex acute.

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

Flower and Fruit. Male spikelets distinct from female, with free pedicels, all deciduous together, 6–10 mm long, hairy, acute. Male spikelet glumes 2, coriaceous, muticous.

$2n = 64$ (2 refs TROPICOS).

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

Country /Province /State. West-central tropical Africa, Western Indian ocean. Rwanda. Madagascar (*), Seychelles. Indian Subcontinent, Malesia (cult.), Papuaia. Philippines. Solomon Is (*). North-central Pacific. Fiji (*), Niue (*). Society Is (*). Marianas (*). Hawaii. Mexico. Gulf (Mexico), Southeast Mexico. Mesoamerica, Caribbean, Northern South America, Western South America, Brazil. Honduras. Leeward Is. Brazil Northeast, Brazil Southeast.

TDWG4. Bahia, Minas Gerais, Rio de Janeiro, Espirito Santo. Veracruz. Campeche, Chiapas.

Tripsacum australe Cutler & E.Anders. *Ann. Missouri Bot. Gard.* xxviii. 259 (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 Bolivia. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: O.E. White 2324; ; Bolivia: Amazon Basin, Ixiamus, marshy edges of forest (US; IT: NY, US-1128856).

Illustrations (Books): S.A.Renvoize, *Gramineas de Bolivia* (1998) (621, Fig. 148), J.A.Steyermark et al, *Flora of the Venezuelan Guayana* Vol. 8 (2004) (295, Fig. 237), L.B. Smith, D.C. Wasshausen, R.M. Klein

Flora Illustrada Catarinensis Gramineas (1981–1982) (1312, Fig. 259), E.Judziewicz, *Flora of the Guianas*, 187. *Poaceae* (1990) (649, Fig. 113).

Illustrations (Journals): *Ruizia* (13:457, Fig 62g-1 (1993)).

Derivation (Clifford & Bostock 2007): L. of the south. From the south in general as from Africa, America, Europe or elsewhere.

Classification. Subfamily Panicoideae. Tribe: Andropogoneae. Subtribe Zea+ Tripsacum clade.

Habit, Vegetative Morphology. Perennial, caespitose. Culms erect or geniculately ascending, robust, 200–350 cm long, 10–15 mm diam. Culm-internodes distally glabrous. Culm-nodes purple. Leaves basal and cauline. Leaf-sheaths keeled, woolly. Ligule a ciliolate membrane, 0.4–0.6 mm long. Leaf-blade base with a false petiole. Leaf-blades lanceolate, 30–140 cm long, 18–40 mm wide. Leaf-blade surface glabrous. Leaf-blade apex acuminate. Monoecious, with male and female spikelets in the same inflorescence.

Inflorescence. Inflorescence composed of racemes, terminal and axillary. Racemes 1–4, single or paired or digitate, erect, smoothly terete, unilateral, 17–22 cm long. Rhachis female portion 5.5–7.5 cm long, fragile at the nodes, subcylindrical and excavated, 3.4–5 mm wide, glabrous on surface. Spikelet packing abaxial. Rhachis internodes oblong, adherent to upper glume of sessile spikelet. Rhachis internode tip transverse, crateriform. Sexes segregated, on bisexual branches, with male above. Spikelets sunken, solitary. Fertile spikelets sessile. Male spikelets sessile or sessile and pedicelled, 2 in a cluster. Pedicels absent or present, (male) 0–0.7 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 ovate, dorsally compressed, 5.5–7 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 ovate, 1 length of spikelet, indurate, without keels. Lower glume apex acuminate. Upper glume ovate, cartilaginous, without keels. Upper glume apex acute.

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

Flower and Fruit. Anthers 3, 3.2–3.5 mm long. Styles connate below.

Male spikelets distinct from female, with free pedicels, all deciduous together, lanceolate or elliptic, 7–8.5 mm long, hairy, obtuse or acute. Male spikelet glumes 2, coriaceous, mucous. Male spikelet lemma 6–8 mm long, 5 -veined.

$2n = 36$ (2 refs TROPICOS).

Distribution (TDWG). Continent. South America.

Country /Province /State. Western South America, Brazil. Bolivia, Colombia. Brazil West Central, Brazil North.

Para, Amapa.

Tripsacum bravum J.R. Gray. *Phytologia*, 33(3): 206 (1976).

Regarded by K as a synonym (*T. dactyloides*).

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 Synonymy Database: Mexico, Santa Tomas: Harlan & Gutierrez 93 (CEL holo, ILL, MEXU).

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

Derivation (Clifford & Bostock 2007): from Valley de Bravo, Mexico.

Classification. Subfamily Panicoideae. Tribe: Andropogoneae. Subtribe Zea+ Tripsacum clade.

Flower and Fruit. $2n = 36$ (1 ref TROPICOS), or 72 (1 ref TROPICOS).

Distribution (TDWG). Continent. North America.

Country /Province /State. Mexico. Central Mexico, Southwest Mexico. Mexico State. Jalisco.

Tripsacum cundinamarce J.M.J. de Wet & D.H. Timothy. *Amer. J. Bot.*, 68(2): 274 (1981).

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

TYPE from Columbia. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Colombia, Rio Pacho: Patino 63–5 (CEL holo).

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

Derivation (Clifford & Bostock 2007): From Cundinamarca, Municipality of Guadalito, Colombia.

Classification. Subfamily Panicoideae. Tribe: Andropogoneae. Subtribe Zea+ Tripsacum clade.

Habit, Vegetative Morphology. Perennial, caespitose. Rhizomes elongated, knotty. Culms erect or geniculately ascending, robust, 400–500 cm long. Culm-internodes solid. Leaf-sheaths glabrous on surface. Ligule a ciliolate membrane. Leaf-blade base with a false petiole. Leaf-blades lanceolate, 60–120 cm long, 40–60 mm wide, glaucous. Leaf-blade surface smooth, glabrous. Monoecious, with male and female spikelets in the same inflorescence.

Inflorescence. Inflorescence composed of racemes, terminal and axillary. Racemes 4–10, digitate, erect, arcuate, smoothly terete, unilateral, 12–25 cm long. Central inflorescence axis 3–5 cm long. Rhachis (female) fragile at the nodes, subcylindrical and excavated. Spikelet packing abaxial. Rhachis internodes oblong, adherent to upper glume of sessile spikelet. Rhachis internode tip transverse, crateriform. Sexes segregated, on bisexual branches, with male above. Spikelets sunken, solitary. Fertile spikelets sessile. Male spikelets sessile, 2 in a cluster.

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, 6–8 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 ovate, 1 length of spikelet, indurate, without keels. Lower glume apex acute. Upper glume ovate, cartilaginous, without keels. Upper glume apex acute.

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

Flower and Fruit. Male spikelets distinct from female, all deciduous together, 5–7 mm long, hairy. Male spikelet glumes 2, coriaceous, muticous.

$2n = 36$ (1 ref TROPICOS).

Distribution (TDWG). Continent. South America.

Country /Province /State. Western South America. Colombia.

Tripsacum dactyloides (L.) L. *Syst. ed.* X. 1261. (1759).

Accepted by: R.J.Soreng et al., *Catalogue of 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)*, N.L.Bor, *Grasses of Burma, Ceylon, India and Pakistan* (1960).

TYPE from USA. **Basionym or Replaced Name:** *Coix dactyloides* L., *Sp. Pl.* 972 (1753). T:<Type of Basionym>; *fide* TROPICOS and Kew Synonymy Database: LT: ; ; "2 dactyloides H U" (LINN-1097.1) LT designated by Hitchcock, *Contr. U.S. Natl. Herb.* 12: 124 (1908).

Illustrations (Books): H.B.Gilliland, *Grasses of Malaya* (1971) (310, Fig. 67), H.Duistermaat, *Field Guide to the Grasses of Singapore* (2005) (137, Fig.142), M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 25 *Poaceae*, part 2 (2003) (697), F.W.Gould, *The Grasses of Texas* (1975) (623, Fig. 330), A.S.Hitchcock, *Manual of the Grasses of the West Indies* (1936) (425, Fig. 374), E.G.Nicora, *Los Generos de Gramineas de America Austral* (1987) (561, Fig. 205), R.Pilger, *Die Natürlichen Pflanzenfamilien* 14e (1940) (104, Fig. 191).

Images: R.Darke, *Ornamental Grasses* (2004);, R.Darke, *The Encyclopaedia of Grasses for Liveable Landscapes* (2007);.

Derivation (Clifford & Bostock 2007): Gk. daktylos, finger; -oides, resembling. Inflorescence branches finger-like.

Classification. Subfamily Panicoideae. Tribe: Andropogoneae. Subtribe Zea+ Tripsacum clade.

Habit, Vegetative Morphology. Perennial, caespitose. Rhizomes short, knotty. Butt sheaths pilose. Culms erect or geniculately ascending, robust or of moderate stature, 150–400 cm long, 30–40 mm diam., with prop roots. Culm-internodes solid. Leaves basal and cauline. Leaf-sheaths glabrous on surface. Ligule a ciliolate membrane, 1 mm long. Leaf-blades 60–120 cm long, 18–60 mm wide. Leaf-blade surface scaberulous, rough adaxially, glabrous. Leaf-blade margins scabrous. Monoecious, with male and female spikelets in the same inflorescence.

Inflorescence. Inflorescence composed of racemes, terminal and axillary. Racemes 1–10, single or paired or digitate, erect, arcuate, smoothly terete, unilateral, 12–25 cm long. Central inflorescence axis 0.5–1.5 cm long. Rhachis (female) fragile at the nodes, subcylindrical and excavated, 3–5.5 mm wide. Spikelet packing abaxial. Rhachis internodes oblong, 6–10 mm long, adherent to upper glume of sessile spikelet. Rhachis internode tip transverse, crateriform. Sexes segregated, on bisexual branches, with male above. Spikelets sunken, solitary. Fertile spikelets sessile. Male spikelets sessile or sessile and pedicelled, 2 in a cluster. Pedicels absent or present, (male) 0–2 mm long.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret

male or barren, the upper fertile. Spikelets ovate, dorsally compressed, 6–8 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, shiny. Lower glume ovate, 1 length of spikelet, indurate, without keels. Lower glume apex acute. Upper glume ovate, cartilaginous, without keels. Upper glume apex acute.

Florets. Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret oblong, 3 mm long, hyaline. Fertile florets female. Fertile lemma oblong, 8 mm long, hyaline, without keel. Palea hyaline.

Flower and Fruit. Styles connate below.

Male spikelets distinct from female, with free pedicels, all deciduous together, 6–12 mm long, glabrous or hairy, obtuse or acute or dentate. Male spikelet glumes 2, coriaceous, muticous.

$2n = 20$ (1 ref TROPICOS), or 36 (1 ref TROPICOS), or 72 (1 ref TROPICOS).

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

Country /Province /State. Indian Subcontinent, Malesia (cult.). Malaya, Philippines, Singapore. **Australia.** Queensland. Hawaii (*). **North-central USA, Northeast USA, South-central USA, Southeastern USA, Mexico.** Illinois, Iowa, Kansas, Missouri, Nebraska, Oklahoma. Connecticut, Massachusetts, Michigan, New Jersey, New York, Pennsylvania, Rhode Island, Vermont. Texas. Alabama, Delaware, Florida, Georgia, Louisiana, Maryland, Mississippi, North Carolina, South Carolina, Virginia. Central Mexico, Northeast Mexico, Gulf (Mexico), Southwest Mexico, Southeast Mexico. **Mesoamerica, Caribbean, Northern South America, Western South America, Brazil.** Cuba, Dominican Republic, Haiti. Colombia. Brazil Northeast.

TDWG4. Tamilnadu. Distrito Federal, Mexico State, Morelos, Puebla. Aguascalientes, Coahuila, Durango, Neuvo Leon, San Luis Potosi, Tamaulipas, Zacatecas. Veracruz. Guerrero, Jalisco, Michoacan, Nayarit, Oaxaca. Chiapas, Yucatan.

Tripsacum floridanum Porter ex Vasey. *Contrib. U. S. Nat. Herb.* iii. 6 (1892).

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 Synonymy Database: LT: A.P. Garber 77; Jun 1877; USA: Florida: Miami (NY; ILT: US) LT designated by Hitchcock, Bot. Gazette (Crawfordsville) 41: 296 (1906)

ST: G. C. Neally s.n.; ; USA: Texas.

Illustrations (Books): M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 25 *Poaceae*, part 2 (2003) (697).

Images: R.Darke, *Ornamental Grasses* (2004);, R.Darke, *The Encyclopaedia of Grasses for Liveable Landscapes* (2007);

Derivation (Clifford & Bostock 2007): L.-ana, indicating location. From Florida State, USA.

Classification. Subfamily Panicoideae. Tribe: Andropogoneae. Subtribe Zea+ Tripsacum clade.

Habit, Vegetative Morphology. Perennial. Rhizomes short. Culms erect, slender, 50–100 cm long. Ligule a ciliolate membrane. Leaf-blades flat or involute, 20–40 cm long, 2–5 mm wide. Leaf-blade surface glabrous. Leaf-blade apex acuminate. Monoecious, with male and female spikelets in the same inflorescence.

Inflorescence. Inflorescence composed of racemes, terminal and axillary. Racemes 1, single, smoothly terete, unilateral, 8–20 cm long. Rhachis fragile at the nodes, subcylindrical and excavated. Spikelet packing abaxial. Rhachis internodes oblong, 6–7 mm long, adherent to upper glume of sessile spikelet. Rhachis internode tip transverse, crateriform. Sexes segregated, on bisexual branches, with male above. Spikelets sunken, solitary. Fertile spikelets sessile. Male spikelets sessile, 2 in a cluster.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets ovate, dorsally compressed, 6–7 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, shiny. Lower glume ovate, 1 length of spikelet, indurate, without keels. Lower glume apex acute. Upper glume ovate, cartilaginous, without keels. Upper glume apex acute.

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

Flower and Fruit. Male spikelets distinct from female, 5–6 mm long, glabrous or hairy. Male spikelet glumes 2, muticous.

$2n = 36$ (1 ref TROPICOS).

Distribution (TDWG). Continent. North America.

Country /Province /State. Southeastern USA. Florida.

Tripsacum intermedium J.M.J. de Wet & J.R. Harlan. *Amer. J. Bot.*, 69(8): 1255 (1982).

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

TYPE from Mexico. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Mexico, Tuxtla Gutierrez: Anon (CEL holo).

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

Derivation (Clifford & Bostock 2007): *L. intermedium*. Having affinities with but distinct from other species.

Classification. Subfamily Panicoideae. Tribe: Andropogoneae. Subtribe Zea+ Tripsacum clade.

Habit, Vegetative Morphology. Perennial. Rhizomes short. Culms erect, of moderate stature, 200–300 cm long. Leaves cauline. Leaf-sheaths glabrous on surface to pubescent. Ligule a ciliolate membrane. Leaf-blades 20–40 mm wide. Leaf-blade surface glabrous. Monoecious, with male and female spikelets in the same inflorescence.

Inflorescence. Inflorescence composed of racemes, terminal and axillary. Racemes 2–7, digitate, spreading, arcuate, smoothly terete, unilateral. Central inflorescence axis 2–8 cm long. Rhachis (female) fragile at the nodes, subcylindrical and excavated. Spikelet packing abaxial. Rhachis internodes oblong, adherent to upper glume of sessile spikelet. Rhachis internode tip transverse, crateriform. Sexes segregated, on bisexual branches, with male above. Spikelets sunken, solitary. Fertile spikelets sessile. Male spikelets sessile, 2 in a cluster. Pedicels absent.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets ovate, dorsally compressed, 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 ovate, 1 length of spikelet, indurate, without keels. Upper glume ovate, cartilaginous, without keels.

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

Flower and Fruit. Male spikelets distinct from female, all deciduous together, 6–8 mm long. Male spikelet glumes 2, coriaceous, muticous.

$2n = 72$ (1 ref TROPICOS).

Distribution (TDWG), Continent. North America, South America.

Country /Province /State. Mexico. Southeast Mexico. **Mesoamerica.** Guatemala, Honduras. Chiapas.

Tripsacum jalapense J.M.J. de Wet & D.E. Brink. *Amer. J. Bot.*, 70(8): 1141 (1983).

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

TYPE from Guatemala. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Guatemala, Jalapa: Harlan CEL 4590 (CEL holo).

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

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

Classification. Subfamily Panicoideae. Tribe: Andropogoneae. Subtribe Zea+ Tripsacum clade.

Habit, Vegetative Morphology. Perennial. Rhizomes short. Culms erect, robust, 200–300 cm long. Leaves cauline. Ligule a ciliolate membrane. Leaf-blades 25–40 mm wide. Leaf-blade surface glabrous. Monoecious, with male and female spikelets in the same inflorescence.

Inflorescence. Inflorescence composed of racemes, terminal and axillary. Racemes 3–6, digitate, ascending, smoothly terete, unilateral. Central inflorescence axis 1.5–2 cm long. Rhachis (female) fragile at the nodes, subcylindrical and excavated. Spikelet packing abaxial. Rhachis internodes oblong, adherent to upper glume of sessile spikelet. Rhachis internode tip transverse, crateriform. Sexes segregated, on bisexual branches, with male above. Spikelets sunken, solitary. Fertile spikelets sessile. Male spikelets sessile and pedicelled, 2 in a cluster. Pedicels present, (male) 2–4 mm long.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets ovate, dorsally compressed, 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 ovate, 1 length of spikelet, indurate, without keels. Upper glume ovate, cartilaginous, without keels.

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

Flower and Fruit. Male spikelets distinct from female, all deciduous together, 6–10 mm long. Male spikelet glumes 2, coriaceous, muticous.

$2n = 72$ (1 ref TROPICOS).

Distribution (TDWG). Continent. North America, South America.

Country /Province /State. Mexico. Southwest Mexico, Southeast Mexico. **Mesoamerica.** El Salvador, Guatemala.

Guerrero, Jalisco, Oaxaca. Chiapas.

Tripsacum lanceolatum Fourn. *Mex. Pl.* 2:68 (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), J.F.Veldkamp, Poaceae ms (*Flora Malesiana*).

TYPE from Mexico. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: LT: Hartweg 252; ; Mexico: Aguascalientes, in saxosis Aguascalientes (K; ILT: GH, L, NY, US (fragm. ex G, LE-TRIN & P-STEUD), W) LT designated by Hitchcock, Bot. Gazette (Crawfordsville) 41: 297 (1906).

Illustrations (Books): M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 25 *Poaceae*, part 2 (2003) (697), R.McVaugh, *Flora Nova-Galiciana* Vol.14 *Gramineae* (1983).

Derivation (Clifford & Bostock 2007): *L. lanceus*, lance; -ola, diminutive; -ata, possessing. Mostly a reference to lanceolate leaf-blades.

Classification. Subfamily Panicoideae. Tribe: Andropogoneae. Subtribe Zea+ Tripsacum clade.

Habit, Vegetative Morphology. Perennial. Butt sheaths pilose. Culms erect, 50–200 cm long. Leaf-sheaths glabrous on surface, outer margin glabrous or hairy. Ligule a ciliolate membrane. Leaf-blades flat or conduplicate, 20–45 cm long, 10–20 mm wide. Leaf-blade surface glabrous or pubescent, hairy adaxially. Leaf-blade apex acuminate. Monoecious, with male and female spikelets in the same inflorescence.

Inflorescence. Inflorescence composed of racemes, terminal and axillary. Racemes 2–5(–9), digitate, arcuate, smoothly terete, unilateral, 5–20 cm long. Rhachis fragile at the nodes, subcylindrical and excavated. Spikelet packing abaxial. Rhachis internodes oblong, 4–6 mm long, adherent to upper glume of sessile spikelet. Rhachis internode tip transverse, crateriform. Sexes segregated, on bisexual branches, with male above. Spikelets sunken, solitary. Fertile spikelets sessile. Male spikelets sessile and pedicelled, 2 in a cluster. Pedicels present, 2–3.5 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 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, reaching apex of florets, firmer than fertile lemma, shiny. Lower glume ovate, 1 length of spikelet, indurate, without keels. Lower glume apex acute. Upper glume ovate, cartilaginous, without keels. Upper glume apex acute.

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

Flower and Fruit. Male spikelets distinct from female, with free pedicels, (5–)7–8(–9) mm long, hairy. Male spikelet glumes 2, muticous.

$2n = 72$ (3 refs TROPICOS).

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

Country /Province /State. Malesia (+). Java. **Southwestern USA, South-central USA, Mexico.** Arizona. New Mexico. Central Mexico, Northeast Mexico, Northwest Mexico, Southwest Mexico. **Mesoamerica, Brazil.** Guatemala, Honduras, Panama. Brazil Southeast.

TDWG4. Mexico State, Puebla. Aguascalientes, Chihuahua, Durango, San Luis Potosi, Zacatecas. Baja California, Sinaloa, Sonora. Jalisco, Michoacan, Oaxaca.

Tripsacum latifolium Hitchcock. *Coult. Bot. Gaz.* xli. 294 (1906).

Accepted by: R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), J.F.Veldkamp, Poaceae ms (*Flora Malesiana*), W.D.Clayton & N.Snow, Key to Pacific Grasses (2010).

TYPE from Guatemala. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: H. von Tuerckheim 8333; Jan 1902; Guatemala: Alta Verapaz (US-825574).

Illustrations (Books): W.Burger, *Flora Costaricensis* 15, Gramineae: *Fieldiana Botany New Series* 4 (1980) (576, Fig. 216).

Derivation (Clifford & Bostock 2007): *L. latus*, broad; folium, leaf. Leaf-blades broad or relatively broad with respect to related species.

Classification. Subfamily Panicoideae. Tribe: Andropogoneae. Subtribe Zea+ Tripsacum clade.

Habit, Vegetative Morphology. Perennial. Rhizomes short. Culms geniculately ascending, robust, 250–500 cm long, 5–10 mm diam. Leaf-sheaths glabrous on surface or pubescent. Leaf-sheath oral hairs lacking or pubescent. Ligule a ciliolate membrane, 3 mm long. Leaf-blades 30–90 cm long, 40–70 mm wide. Leaf-blade surface pubescent, sparsely hairy, hairy adaxially. Leaf-blade apex acuminate. Monoecious, with male and female spikelets in the same inflorescence.

Inflorescence. Inflorescence composed of racemes, terminal and axillary. Racemes 1(–3), single, ascending, straight, smoothly terete, unilateral, 10–30 cm long. Rhachis (female) fragile at the nodes, subcylindrical and excavated, 2.5–3 mm wide. Spikelet packing abaxial. Rhachis internodes oblong, 5–7 mm long, adherent to upper glume of sessile spikelet. Rhachis internode tip transverse, crateriform. Sexes segregated, on bisexual branches, with male above. Spikelets sunken, solitary. Fertile spikelets sessile. Male spikelets sessile, 2 in a cluster. Pedicels absent or 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, 3–4 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, shiny. Lower glume ovate, 1 length of spikelet, indurate, without keels. Lower glume apex acute. Upper glume ovate, cartilaginous, without keels. Upper glume apex acute.

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

Flower and Fruit. Male spikelets distinct from female, all deciduous together, 3–5 mm long, hairy, obtuse. Male spikelet glumes 2, coriaceous, muticous.

$2n = 36$ (2 refs TROPICOS).

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

Country /Province /State. **Malesia** (cult.). Java. **North-central Pacific.** Marianas (as *Hackelochloa*). **Mexico.** Central Mexico, Southwest Mexico, Southeast Mexico. **Mesoamerica, Caribbean, Northern South America.** Belize, Costa Rica, Guatemala, Honduras, Nicaragua, Panama. Dominican Republic, Haiti, Trinidad-Tobago. Surinam.

Mexico State, Puebla. Oaxaca. Quintana Roo.

Tripsacum laxum Nash. *N. Am. Fl.* xvii. 81 (1909). (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), J.F.Veldkamp, *Poaceae ms (Flora Malesiana)*, N.L.Bor, *Grasses of Burma, Ceylon, India and Pakistan* (1960).

TYPE from Mexico. **Basionym or Replaced Name:** *Tripsacum fasciculatum* Trin. ex Asch., *Bot. Zeitung (Berlin)* 33: 525 (1877). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: LT: C.J.W. Schiede 947; 1836; Mexico: Veracruz: Hacienda de la Laguna (?; ILT: US-727179 (fragm. ex LE-TRIN)) LT designated by de Wet et al. *Phytologia* 33:208 (1976), without citation of herbarium of the LT.

Recent Synonyms: *Arthropogon piptostachyus* (Griseb.) Pilg., *Revista Mus. Paul. Univ. Sao Paulo* 13: 1250 (1922).

Illustrations (Books): K.M.Matthew, *Illustrations on the Flora of Tamilnadu Carnatic* (1982) (Pl. 952), E.Hafliger & E.Schultz, *Grass Weeds, CIBA-GEIGY* (1:141(1980)).

Derivation (Clifford & Bostock 2007): *L. loose*. Inflorescence much branched either as a single panicle or from branching of the culms.

Classification. Subfamily Panicoideae. Tribe: Andropogoneae. Subtribe Zea+ Tripsacum clade.

Habit, Vegetative Morphology. Perennial. Butt sheaths pilose. Culms erect, robust, 300–500 cm long, 5–10 mm diam. Leaves cauline. Leaf-sheaths glabrous on surface. Ligule a ciliolate membrane. Leaf-blades 40–80 cm long, 30–70 mm wide. Leaf-blade surface glabrous. Leaf-blade apex acuminate. Monoecious, with male and female spikelets in the same inflorescence.

Inflorescence. Inflorescence composed of racemes, terminal and axillary. Peduncle glabrous. Racemes 12–23, digitate, drooping, arcuate, smoothly terete, unilateral, 10–20 cm long. Central inflorescence axis 4–10 cm long. Rhachis (female) fragile at the nodes, subcylindrical and excavated, 2–3 mm wide. Spikelet packing abaxial. Rhachis internodes oblong, 2–3 mm long, adherent to upper glume of sessile spikelet. Rhachis internode tip transverse, crateriform. Sexes segregated, on bisexual branches, with male above. Spikelets sunken, solitary. Fertile spikelets sessile. Male spikelets sessile and pedicelled, 2 in a cluster. Pedicels present, (male) 2.5–7 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 ovate, dorsally compressed, 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, shiny. Lower glume ovate, 1 length of spikelet, indurate, without keels. Lower glume apex acute. Upper glume ovate, cartilaginous, without keels. Upper glume apex acute.

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

Flower and Fruit. Male spikelets distinct from female, with free pedicels, all deciduous together, 4–6 mm long. Male spikelet glumes 2, membranous, muticous.

$2n = 36$ (1 ref TROPICOS).

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

Country /Province /State. China, Eastern Asia. Taiwan. Indian Subcontinent (+), Malesia (+). Sri Lanka (+). Malaya, Philippines. Fiji (*), New Caledonia. Mexico. Central Mexico, Gulf (Mexico), Southwest Mexico, Southeast Mexico. Mesoamerica, Caribbean, Northern South America, Western South America. Belize, El Salvador, Guatemala. Jamaica, Windward Islands. French Guiana. Colombia.

TDWG4. Morelos. Veracruz. Guerrero, Jalisco, Michoacan, Oaxaca. Chiapas.

Tripsacum maizar Hernandez Xolocot & Randolph. *Ofic. Estud. Espec. Foll. Tecn.*, No. 4, 7 (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>: *vide* TROPICOS and Kew Synonymy Database: Mexico, Acahuiztota: Hernandez & Randolph 4431.

Illustrations (Books): R.McVaugh, *Flora Nova-Galiciana* Vol.14 *Gramineae* (1983).

Derivation (Clifford & Bostock 2007): from "zacatsn maizor" the vernacular name of the species in Mexico.

Classification. Subfamily Panicoideae. Tribe: Andropogoneae. Subtribe Zea+ Tripsacum clade.

Habit, Vegetative Morphology. Perennial. Rhizomes short. Culms decumbent, robust, 250–500 cm long, 10–25 mm diam. Culm-internodes distally hispid. Leaves cauline. Leaf-sheaths hispid. Ligule a ciliate membrane. Leaf-blades 100–200 cm long, 50–100 mm wide, coriaceous. Leaf-blade surface glabrous, hairless throughout or except near base. Monoecious, with male and female spikelets in the same inflorescence.

Inflorescence. Inflorescence composed of racemes, terminal and axillary. Racemes 15–35, digitate, drooping, smoothly terete, unilateral. Central inflorescence axis 4–8 cm long. Rhachis (female) fragile at the nodes, subcylindrical and excavated, 2–3 mm wide. Spikelet packing abaxial. Rhachis internodes oblong, 2–3 mm long, adherent to upper glume of sessile spikelet. Rhachis internode tip transverse, crateriform. Sexes segregated, on bisexual branches, with male above. Spikelets sunken, solitary. Fertile spikelets sessile. Male spikelets sessile and pedicelled, 2 in a cluster. Pedicels present, (male) 4–6 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 ovate, dorsally compressed, 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 ovate, 1 length of spikelet, indurate, without keels. Upper glume ovate, cartilaginous, without keels.

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

Flower and Fruit. Male spikelets distinct from female, all deciduous together, 4–6 mm long, obtuse. Male spikelet glumes 2, membranous, muticous.

$N = 18$ (2 refs TROPICOS). $2n = 72$ (1 ref TROPICOS).

Distribution (TDWG). Continent. North America, South America.

Country /Province /State. Mexico. Northeast Mexico, Southwest Mexico, Southeast Mexico. Mesoamerica. Costa Rica, Guatemala.

TDWG4. Guanajuato. Colima, Guerrero, Jalisco, Nayarit, Oaxaca. Chiapas.

Tripsacum manisuroides J.M.J. de Wet & J.R. Harlan. *Amer. J. Bot.*, 69(8): 1255 (1982).

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

TYPE from Mexico. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Mexico, Tuxtla, cult. in Florida: Anon CEL-7442 (CEL holo, US).

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

Derivation (Clifford & Bostock 2007): Gk *-oides*, resembling. Inflorescence resembles that of *Manisurus*.

Classification. Subfamily Panicoideae. Tribe: Andropogoneae. Subtribe Zea+ Tripsacum clade.

Habit, Vegetative Morphology. Perennial. Rhizomes short. Culms erect or geniculately ascending, of moderate stature, 100 cm long. Leaves cauline. Leaf-sheaths pubescent. Leaf-sheath auricles erect. Ligule a ciliolate membrane. Leaf-blades 10–20 mm wide. Leaf-blade surface glabrous. Monoecious, with male and female spikelets in the same inflorescence.

Inflorescence. Inflorescence composed of racemes, terminal and axillary. Racemes 1(–2), single or paired, erect, smoothly terete, unilateral. Rhachis (female) fragile at the nodes, subcylindrical and excavated. Spikelet packing abaxial. Rhachis internodes oblong, adherent to upper glume of sessile spikelet. Rhachis internode tip transverse, crateriform. Sexes segregated, on bisexual branches, with male above. Spikelets sunken, solitary. Fertile spikelets sessile. Male spikelets sessile, 2 in a cluster. Pedicels absent.

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, 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 ovate, 1 length of spikelet, indurate, without keels. Upper glume ovate, cartilaginous, without keels.

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

Flower and Fruit. Male spikelets distinct from female, all deciduous together, 6 mm long. Male spikelet glumes 2, coriaceous, muticous.

Distribution (TDWG). Continent. North America.

Country /Province /State. Mexico. Southeast Mexico.

TDWG4. Chiapas.

Tripsacum peruvianum J.M.J. de Wet & D.H. Timothy. *Amer. J. Bot.*, 68(2): 275 (1981).

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

TYPE from Peru. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Peru, San Martin: Timothy 66–13 (CEL holo).

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

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

Classification. Subfamily Panicoideae. Tribe: Andropogoneae. Subtribe Zea+ Tripsacum clade.

Habit, Vegetative Morphology. Perennial, caespitose. Rhizomes elongated. Culms erect, robust, 100–250 cm long. Culm-internodes distally hirsute. Leaf-sheaths hirsute. Ligule a ciliolate membrane. Leaf-blade base with a false petiole. Leaf-blades lanceolate, 30–140 cm long, 30–45 mm wide. Leaf-blade surface glabrous, hairless except near base. Monoecious, with male and female spikelets in the same inflorescence.

Inflorescence. Inflorescence composed of racemes, terminal and axillary. Peduncle hirsute above. Racemes 3–5, digitate, erect, smoothly terete, unilateral, 17–22 cm long. Rhachis female fragile at the nodes, subcylindrical and excavated. Spikelet packing abaxial. Rhachis internodes oblong, adherent to upper glume of sessile spikelet. Rhachis internode tip transverse, crateriform. Sexes segregated, on bisexual branches, with male above. Spikelets sunken, solitary. Fertile spikelets sessile. Male spikelets sessile, 2 in a cluster.

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, 5.5–7 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 ovate, 1 length of spikelet, indurate, without keels. Lower glume margins ciliate. Lower glume apex acuminate. Upper glume ovate, cartilaginous, without keels. Upper glume apex acute.

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

Flower and Fruit. Male spikelets distinct from female, all deciduous together, lanceolate or elliptic, 5–7 mm long, hairy. Male spikelet glumes 2, coriaceous, muticous.

$2n = 36$ (1 ref TROPICOS).

Distribution (TDWG). Continent. South America.

Country /Province /State. Western South America. Ecuador, Peru.

Tripsacum pilosum Scribn. & Merrill. *U.S. Dept. Agric. Bull. Agrost.* xxiv. 6. (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 Mexico. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: Mexico, Colotlan to Bolanos: Rose 2841 (US holo).

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

Derivation (Clifford & Bostock 2007): *L. pilus*, a hair; -osa, abundance. The whole plant or any of its organs invested with long spreading hairs.

Classification. Subfamily Panicoideae. Tribe: Andropogoneae. Subtribe Zea+ Tripsacum clade.

Habit, Vegetative Morphology. Perennial. Rhizomes short. Butt sheaths pilose. Culms geniculately ascending, robust, 300–500 cm long, 20–30 mm diam., without nodal roots or with prop roots. Culm-internodes distally glabrous. Leaf-sheaths glabrous on surface. Ligule a ciliolate membrane. Leaf-blades 40–60 cm long, 20–40 mm wide, herbaceous. Leaf-blade surface hirsute, hairy adaxially or on both sides. Leaf-blade apex acuminate. Monoecious, with male and female spikelets in the same inflorescence.

Inflorescence. Inflorescence composed of racemes, terminal and axillary. Peduncle glabrous or pubescent above. Racemes 8–15, digitate, drooping, arcuate, smoothly terete, unilateral, 10–25 cm long. Central inflorescence axis 3.5–12 cm long. Rhachis (female) fragile at the nodes, subcylindrical and excavated, 2–3 mm wide. Spikelet packing abaxial. Rhachis internodes oblong, 5 mm long, adherent to upper glume of sessile spikelet. Rhachis internode tip transverse, crateriform. Sexes segregated, on bisexual branches, with male above. Spikelets sunken, solitary. Fertile spikelets sessile. Male spikelets sessile and pedicelled, 2 in a cluster. Pedicels present, (male) 2–6 mm long.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets ovate, dorsally compressed, 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, shiny. Lower glume ovate, 1 length of spikelet, indurate, without keels. Lower glume apex acute. Upper glume ovate, cartilaginous, without keels. Upper glume apex acute.

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

Flower and Fruit. Male spikelets distinct from female, with free pedicels, all deciduous together, 4–10 mm long, acute. Male spikelet glumes 2, membranous, mucous.

$2n = 72$ (1 ref TROPICOS).

Distribution (TDWG). Continent. North America, South America.

Country /Province /State. Mexico. Central Mexico, Northeast Mexico, Southwest Mexico, Southeast Mexico. **Mesoamerica.** Guatemala, Honduras.

TDWG4. Mexico State. Durango, San Luis Potosi, Zacatecas. Colima, Guerrero, Jalisco, Michoacan, Nayarit, Oaxaca. Chiapas.

Tripsacum zopilotense Hernandez Xolocot & Randolph. *Ofic. Estud. Espec. Foll. Tecn.*, No. 4, 22 (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>: *vide* TROPICOS and Kew Synonymy Database: Mexico, Zopilote: Hernandez & Randolph X-4413 (CEL holo, US).

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

Derivation (Clifford & Bostock 2007): *L. -ense*, denoting origin. From Canada del Zopilote, Mexico.

Classification. Subfamily Panicoideae. Tribe: Andropogoneae. Subtribe Zea+ Tripsacum clade.

Habit, Vegetative Morphology. Perennial, caespitose. Rhizomes absent. Butt sheaths glabrous to pubescent. Culms erect, of moderate stature, 80–150 cm long. Culm-internodes distally glabrous. Leaves mostly basal. Leaf-sheaths glabrous on surface. Ligule a ciliolate membrane. Leaf-blades 5–18 mm wide. Leaf-blade surface glabrous. Monoecious, with male and female spikelets in the same inflorescence.

Inflorescence. Inflorescence composed of racemes, terminal and axillary. Racemes 1–4, single or paired or digitate, erect, smoothly terete, unilateral. Rhachis (female) fragile at the nodes, subcylindrical and excavated, 2–2.5 mm wide. Spikelet packing abaxial. Rhachis internodes oblong, 4–5 mm long, adherent to upper glume of sessile spikelet. Rhachis internode tip transverse, crateriform. Sexes segregated, on bisexual branches, with male above. Spikelets sunken, solitary. Fertile spikelets sessile. Male spikelets sessile, 2 in a cluster. Pedicels absent.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret

male or barren, the upper fertile. Spikelets ovate, dorsally compressed, 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 ovate, 1 length of spikelet, indurate, without keels. Upper glume ovate, cartilaginous, without keels.

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

Flower and Fruit. Male spikelets distinct from female, all deciduous together, 5–7 mm long, acute. Male spikelet glumes 2, coriaceous, muticous.

$N = 18$ (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.** Guatemala.

TDWG4. Puebla. Chihuahua, Guanajuato, San Luis Potosi, Zacatecas. Sinaloa. Colima, Guerrero, Jalisco, Oaxaca. Chiapas.

Triraphis andropogonoides (Steud.) Phillips. *S. Afr. Grasses (S. Afr. Agric. Ser. vi.)* 219 (1931).

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

TYPE from South Africa. **Basionym or Replaced Name:** *Avena andropogonoides* Steud., *Flora* 12: 486 (1829). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: T: von Ludwig s.n.; ; South Africa: Cape: Cape of Good Hope.

Illustrations (Books): L.K.A. Chippindall, *Grasses and Pastures of South Africa* (1955) (126, Fig. 98), G.E.Gibbs Russell et al, *Grasses of Southern Africa* (1990) (346, Fig. 227).

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

Derivation (Clifford & Bostock 2007): Gk. -oides, resembling. Resembling species of *Andropogon*.

Classification. Subfamily Chloridoideae.

Habit, Vegetative Morphology. Perennial. Rootstock evident. Rhizomes elongated. Butt sheaths dark brown. Culms 40–120 cm long. Lateral branches lacking. Ligule a fringe of hairs. Leaf-blades flat or involute, 20–40 cm long, 2–6 mm wide.

Inflorescence. Inflorescence a panicle. Panicle open, elliptic, dense, 12–30 cm long. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 5–15 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets oblong, laterally compressed, 6–10 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus pubescent.

Glumes. Glumes persistent, dissimilar, shorter than spikelet, similar to fertile lemma in texture. Lower glume lanceolate, 3.5 mm long, 0.75 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume lateral veins absent. Lower glume apex acute. Upper glume lanceolate, 4 mm long, 1.1 length of adjacent fertile lemma, membranous, 1-keeled, 1 -veined. Upper glume lateral veins absent. Upper glume apex dentate, 2 -fid.

Florets. Fertile lemma elliptic, 3.5 mm long, membranous, keeled, 3 -veined, 0–3 -veined. Lemma surface pilose. Lemma margins ciliate. Lemma apex dentate, 2 -fid, awned, 3 -awned. Principal lemma awn from a sinus, 2 mm long overall. Lateral lemma awns present, arising on margin of lemma, ascending, 1.5 mm long, shorter than principal. Palea 2 -veined. Palea keels scaberulous. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, fleshy. Anthers 3, 1.2–2.3 mm long. Caryopsis with adherent pericarp, linear, trigonous.

$2n = 20$ (1 ref TROPICOS).

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

Country /Province /State. Southern Africa. Botswana (?), Limpopo, North-West, Gauteng, Mpumalanga, Free State, Kwazulu-Natal, Northern Cape, Western Cape, Eastern Cape. **Brazil.** Brazil Southeast.

Triraphis compacta T.A. Cope. *Kew Bull.*, 35(3): 566 (1980).

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

TYPE from Ethiopia. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Ethiopia, Neghelle to Fitu: Friis et al. 969 (K holo, C).

Illustrations (Books): S.Phillips, *Poaceae* (Gramineae) in I.Hedberg & S.Edwards, *Flora of Ethiopia and Eritrea* (1995) (95, Fig. 39).

Derivation (Clifford & Bostock 2007): *L. compact.* Inflorescence a contracted panicle.

Classification. Subfamily Chloridoideae.

Habit, Vegetative Morphology. Perennial, caespitose. Culms erect, 40–70 cm long. Culm-nodes glabrous. Lateral branches lacking. Leaf-sheaths glabrous on surface or pilose. Leaf-sheath oral hairs bearded. Ligule a fringe of hairs. Leaf-blades 6–15 cm long, 2–3.5 mm wide. Leaf-blade surface scaberulous, rough adaxially, glabrous or pilose, sparsely hairy.

Inflorescence. Inflorescence a panicle. Panicle contracted, linear, interrupted, 6–23 cm long, 1–1.5 cm wide. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, 0.5–2 mm long.

Fertile Spikelets. Spikelets comprising 6–8 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets oblong, laterally compressed, 5.5–6 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus evident, 0.2 mm long, pubescent.

Glumes. Glumes persistent, dissimilar, shorter than spikelet, similar to fertile lemma in texture. Lower glume lanceolate, 2.5–3.5(–4) mm long, 0.75 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume lateral veins absent. Lower glume apex dentate, 2 -fid, acute, mucronate. Upper glume lanceolate, (2.5–)3–4 mm long, 1 length of adjacent fertile lemma, membranous, 1-keeled, 1 -veined. Upper glume lateral veins absent. Upper glume apex dentate, 2 -fid.

Florets. Fertile lemma elliptic, 3–3.5 mm long, membranous, keeled, 3 -veined, 0–3 -veined. Lemma margins ciliate, hairy above. Lemma apex dentate, 2 -fid, awned, 3 -awned. Principal lemma awn from a sinus, 3–3.5 mm long overall. Lateral lemma awns present, arising on margin of lemma, ascending, 3–3.5 mm long, subequal to principal. Palea 2 -veined. Palea keels scaberulous. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, fleshy. Anthers 3, 0.25 mm long, yellow. Caryopsis with adherent pericarp, linear, trigonous.

Distribution (TDWG). Continent. Africa.

Country /Province /State. Northeast tropical Africa. Ethiopia (inc. Eritrea).

Triraphis devia T.S. Filgueiras & F.O. Zuloaga. *Novon*, 9(1): 36 (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 Brazil. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: Brazil, Chapada dos Veadeiros: Filgueiras & Alvarenga 3168 (IBGE holo, F, ICN, K, MEXU, MO, SI, SP, US).

Illustrations (Journals): *Novon* (9:37 Fig.1 (1999)).

Derivation (Clifford & Bostock 2007): *L. out of the way.* The only species of the genus not Australian.

Classification. Subfamily Chloridoideae.

Habit, Vegetative Morphology. Perennial, caespitose, clumped densely. Rhizomes short, knotty. Butt sheaths glabrous. Basal innovations flabellate. Culms erect, slender, 12–49 cm long, 1–2 -noded. Culm-internodes terete, solid, 6.5–27.5 cm long, yellow or purple, striate, distally glabrous. Culm-nodes brown, glabrous. Lateral branches lacking. Leaves mostly basal. Leaf-sheaths 3.5–5 cm long, without keel or keeled, striately veined, glabrous on surface or pilose. Ligule a fringe of hairs, 0.5 mm long. Leaf-blades flat or conduplicate, 1.8–11.2 cm long, 1.2–2.8 mm wide. Leaf-blade surface scabrous, glabrous or pilose, sparsely hairy. Leaf-blade margins scabrous. Leaf-blade apex abruptly acute, hooded.

Inflorescence. Inflorescence a panicle, comprising 3–7 fertile spikelets. Panicle open, ovate, 2–6 cm long, 1.6–4 cm wide, bearing few spikelets. Spikelets solitary or in pairs. Fertile spikelets pedicelled. Pedicels present, 5–18 mm long, scabrous.

Fertile Spikelets. Spikelets comprising 4–8 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets oblong, laterally compressed, 6–12 mm long, 5–9 mm wide, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes 0.5–0.8 mm long. Floret callus pubescent.

Glumes. Glumes persistent, dissimilar, shorter than spikelet, similar to fertile lemma in texture. Lower glume lanceolate, 4–4.5 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, mucronate or awned, 1 -awned, awn 0.5–2.5 mm long. Upper glume lanceolate, 4–4.5 mm long, 1 length of adjacent fertile lemma, membranous, 1-keeled, 1 -veined. Upper glume lateral veins absent. Upper glume apex dentate, 2 -fid, mucronate or awned, 1 -awned, awn 0.5–1.5 mm long.

Florets. Fertile lemma elliptic, 4–4.3 mm long, membranous, keeled, 3 -veined, 0–3 -veined. Lemma surface pilose, hairy at base. Lemma apex dentate, 2 -fid, incised 0.25 of lemma length, awned, 3 -awned. Principal lemma awn from a sinus, 3.8–4.2 mm long overall, limb retrorsely scabrous. Lateral lemma awns

present, arising on margin of lemma, ascending, 4–5 mm long, longer than principal. Palea 4–4.5 mm long, hyaline, 2 -veined. Palea apex dentate, 2 -fid. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, fleshy, glabrous. Anthers 3, 1.8–2 mm long, yellow or brown. Caryopsis with adherent pericarp, ellipsoid, 1.8–3 mm long. Embryo 0.5 length of caryopsis. Hilum linear, 0.25–0.33 length of caryopsis.

Distribution (TDWG). Continent. South America.

Country /Province /State. Brazil. Brazil West Central.

Triraphis mollis R. Br. *Prod.* 185. (1810).

Accepted by: R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), D.Sharp, D. & B.K.Simon, *AusGrass* (2002).

TYPE from Australia. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: *Littora Novae Hollandiae* intra tropicum. HT: *R. Br.* 6248, (K).

Illustrations (Books): J.P.Jessop, G.R.M. Dashorst & F.M.James, *Grasses of South Australia* (2006) (406, Fig. 337), C.A.Gardner, *Flora of Western Australia*, Vol 1, Part 1, *Gramineae* (1952) (84, Pl. 23), J.R.Wheeler et al, *Flora of the Kimberley Region* (1992) (1237, Fig. 350), N.Walsh & T.Entwistle, *Flora of Victoria* Vol 2 (1994) (559, Fig. 112), S.W.L.Jacobs, R.D.B.Whalley & D.J.B.Wheeler., *Grasses of New South Wales*, 4th edn (2008), J.C.Tothill, & J.B.Hacker. *The grasses of southern Queensland* (1983) (418), 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) (425, Fig. 76), 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) (32).

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

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

Classification. Subfamily Chloridoideae.

Habit, Vegetative Morphology. Perennial, caespitose. Butt sheaths purple. Culms erect, slender, 10–60 cm long. Culm-nodes purple, glabrous. Lateral branches lacking. Leaves mostly basal. Leaf-sheaths glabrous on surface. Ligule a fringe of hairs. Leaf-blades 5–50 cm long, 1–1.5 mm wide.

Inflorescence. Inflorescence a panicle. Panicle contracted, linear, interrupted, 5–25 cm long. Primary panicle branches appressed, bearing spikelets almost to the base. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 8–10 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets oblong, laterally compressed, 4.5–6 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus evident, 0.5 mm long, pubescent.

Glumes. Glumes persistent, dissimilar, shorter than spikelet, similar to fertile lemma in texture. Lower glume lanceolate, 0.8–0.9 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume lateral veins absent. Lower glume apex acuminate. Upper glume lanceolate, 0.75 length of adjacent fertile lemma, membranous, 1-keeled, 1 -veined. Upper glume lateral veins absent. Upper glume apex dentate, 2 -fid, awned, 1 -awned, awn 2 mm long.

Florets. Fertile lemma elliptic, 4 mm long, membranous, keeled, 3 -veined, 0–3 -veined. Lemma midvein ciliate. Lemma margins ciliate. Lemma apex dentate, 2 -fid, awned, 3 -awned. Principal lemma awn from a sinus, 7–9 mm long overall. Lateral lemma awns present, arising on margin of lemma, ascending, 6–7 mm long, shorter than principal. Palea 2 -veined. Palea keels scaberulous. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, fleshy. Anthers 3, 0.4 mm long. Caryopsis with adherent pericarp, linear, trigonous, 2–2.5 mm long.

Distribution (TDWG). Continent. Europe (*), Tropical Asia, Australasia, North America (* from Australia).

Region. Northern Europe (*).

Country /Province /State. : GB Aliens (Ryves et al). **Papuasiasia.** New Guinea PNG. New Guinea. **Australia.** Western Australia, Northern Territory, South Australia, Queensland, New South Wales, A.C.T., Victoria. **South-central USA.** Texas (*).

TDWG4. Kimberley, Eremean. Central Australia. NW & Lake Eyre, Southern. North, Central, South East, Inland. Coast, Western Slopes, Western Plains.

Triraphis pumilio R. Br. *Denh. & Clapp. Trav. App.* 245. (1826).

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

TYPE from Africa. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: Africa: Oudney.

Illustrations (Books): L.K.A. Chippindall, *Grasses and Pastures of South Africa* (1955) (127, Fig. 99), L.Boulos, *Flora of Egypt* 4 (2005) (246, Pl. 72).

Derivation (Clifford & Bostock 2007): L. a dwarf. Plants small compared with those of related species.

Classification. Subfamily Chloridoideae.

Habit, Vegetative Morphology. Annual, caespitose. Culms geniculately ascending or decumbent, 3–25 cm long. Leaf-sheaths pilose, with tubercle-based hairs. Leaf-sheath oral hairs bearded. Ligule a fringe of hairs. Leaf-blades convolute, 3–8 cm long, 1–3 mm wide. Leaf-blade surface scabrous. Leaf-blade margins scabrous. Leaf-blade apex attenuate.

Inflorescence. Inflorescence a panicle, exerted or embraced at base by subtending leaf. Panicle spiciform or glomerate, oblong or ovate, 0.6–8 cm long, 0.4–2 cm wide. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 5–11 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, laterally compressed, 4–6 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes pilose, hairy at tip. Floret callus evident, pubescent, obtuse, disarticulating obliquely.

Glumes. Glumes persistent, similar, shorter than spikelet. Lower glume lanceolate, 1.5–2.5 mm long, 0.7–0.8 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume primary vein scaberulous. Lower glume lateral veins absent. Lower glume apex dentate, 2 -fid, mucronate. Upper glume lanceolate, 2–3 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 dentate, 2 -fid, mucronate.

Florets. Fertile lemma oblong, 2–3 mm long, membranous, keeled, 3 -veined, 0–3 -veined. Lemma surface pilose. Lemma margins ciliate. Lemma apex dentate, 2 -fid, awned, 3 -awned. Principal lemma awn from a sinus, 1.5–2.5 mm long overall. Lateral lemma awns present, arising on margin of lemma, ascending, 0.5–1 mm long. Palea 2 -veined. Palea keels scaberulous. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, fleshy. Anthers 3, 0.35 mm long. Caryopsis with adherent pericarp, 1.2–1.8 mm long.

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

Country /Province /State. Northern Africa, West tropical Africa, Northeast tropical Africa, South tropical Africa, Southern Africa. Algeria, Egypt. Mauritania, Nigeria. Sudan. Angola. Namibia. Arabian Peninsula. Gulf States, Saudi Arabia.

Triraphis purpurea Hack. ex Schinz. *Verh. Bot. Ver. Brand.* 146 (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>: *vide* TROPICOS and Kew Synonymy Database: Namibia, Cubub bei Aus: Pohle.

Recent Synonyms: *Triraphis welwitschii* Rendle, *Cat. Afr. Pl.* 2(1): 227 (1899).

Illustrations (Books): M.A.N.Muller, *Grasses of South West Africa/Namibia* (1984), R.Pilger, *Die Natürlichen Pflanzenfamilien* 14d (1956) (48, Fig. 10).

Derivation (Clifford & Bostock 2007): L. purple to reddish. Usually of purple spikelets.

Classification. Subfamily Chloridoideae.

Habit, Vegetative Morphology. Annual, caespitose. Culms 9–37 cm long. Leaves mostly basal. Ligule a fringe of hairs. Leaf-blades 3.5–6 cm long, 1–2 mm wide.

Inflorescence. Inflorescence a panicle. Panicle open, elliptic, dense or loose, 3–20 cm long. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 5–11(–24) fertile florets, with diminished florets at 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, 6–10 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus pubescent.

Glumes. Glumes persistent, dissimilar, shorter than spikelet, similar to fertile lemma in texture. Lower glume lanceolate, 3 mm long, 0.75 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume lateral veins absent. Lower glume apex acute, mucronate. Upper glume lanceolate, 4 mm long, 1.1 length of

adjacent fertile lemma, membranous, 1-keeled, 1 -veined. Upper glume lateral veins absent. Upper glume apex dentate, 2 -fid, awned, 1 -awned, awn 0.5 mm long.

Florets. Fertile lemma elliptic, 3.5 mm long, membranous, keeled, 3 -veined, 0–3 -veined. Lemma margins ciliate. Lemma apex dentate, 2 -fid, awned, 3 -awned. Principal lemma awn from a sinus, 2.5–3 mm long overall. Lateral lemma awns present, arising on margin of lemma, ascending, 2–2.5 mm long, shorter than principal. Palea 2 -veined. Palea keels scaberulous. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, fleshy. Anthers 3, 1.2–2 mm long. Caryopsis with adherent pericarp, linear, trigonous.

Distribution (TDWG). Continent. Africa.

Country /Province /State. South tropical Africa, Southern Africa. Angola. Namibia.

Triraphis ramosissima Hack. ex Schinz. *Verh. Bot. Ver. Brand.* 237 (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 Synonymy Database: Namibia, Ausis to Kuias: Schenck 83 (K iso).

Illustrations (Books): L.K.A. Chippindall, *Grasses and Pastures of South Africa* (1955) (125, Fig. 97), M.A.N.Muller, *Grasses of South West Africa/Namibia* (1984).

Derivation (Clifford & Bostock 2007): *L. ramus*, branch; -osa, abundance; -issima, most. Culms much branched.

Classification. Subfamily Chloridoideae.

Habit, Vegetative Morphology. Perennial. Rhizomes elongated. Culms decumbent, 28–80 cm long, woody. Culm-internodes yellow. Lateral branches ample. Ligule a fringe of hairs. Leaf-blades filiform, 6–12 cm long, 1 mm wide.

Inflorescence. Inflorescence a panicle. Panicle contracted, oblong, 5–13 cm long. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 4–19 fertile florets, with diminished florets at 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, 4–15 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus pubescent.

Glumes. Glumes persistent, dissimilar, shorter than spikelet, similar to fertile lemma in texture. Lower glume lanceolate, 2.5 mm long, 0.75 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume lateral veins absent. Lower glume apex acute, mucronate. Upper glume lanceolate, 3 mm long, 1 length of adjacent fertile lemma, membranous, 1-keeled, 1 -veined. Upper glume lateral veins absent. Upper glume apex dentate, 2 -fid, awned, 1 -awned, awn 1.5 mm long.

Florets. Fertile lemma elliptic, 3 mm long, membranous, keeled, 3 -veined, 0–3 -veined. Lemma margins ciliate. Lemma apex dentate, 2 -fid, awned, 3 -awned. Principal lemma awn from a sinus, 3 mm long overall. Lateral lemma awns present, arising on margin of lemma, ascending, 2–2.5 mm long, shorter than principal. Palea 2 -veined. Palea keels scaberulous. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, fleshy. Anthers 3. Caryopsis with adherent pericarp, linear, trigonous.

N = 10 (1 ref TROPICOS).

Distribution (TDWG). Continent. Africa.

Country /Province /State. South tropical Africa, Southern Africa. Angola. Namibia, Northern Cape.

Triraphis schinzii Hack. *Verh. Bot. Ver. Brand.* 147 (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 Synonymy Database: HT: Schinz s.n.; ; Omatope.

Recent Synonyms: *Triraphis schlechteri* Pilg. ex Stent, *Bothalia* 1: 294 (1921).

Illustrations (Books): H.Jacques-Felix, *Les Graminees d'Afrique tropicale* (1962) (as *T. schinzii*), R.M.Pollhill, F.T.E.A., *Gramineae* (1(1970):129, Fig.41), G.V.Pope et al., *Flora Zambesiaca* 10 (2(1999):22, t. 10), M.A.N.Muller, *Grasses of South West Africa/Namibia* (1984).

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

Derivation (Clifford & Bostock 2007): in honor of Hans Schinz (1858–1941) Swiss traveller and botanist.

Classification. Subfamily Chloridoideae.

Habit, Vegetative Morphology. Perennial, caespitose. Culms erect, 60–100 cm long. Ligule a fringe of hairs. Leaf-blades 25–50 cm long, 2–5 mm wide. Leaf-blade apex attenuate.

Inflorescence. Inflorescence a panicle. Panicle open, oblong, 15–45 cm long. Panicle branches flexuous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 4–6(–7) fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets oblong, laterally compressed, 6–11 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes eventually visible between lemmas, pubescent, hairy at tip. Floret callus elongated, 0.3–0.5 mm long, pilose, acute, disarticulating obliquely.

Glumes. Glumes persistent, similar, shorter than spikelet, similar to fertile lemma in texture. Lower glume lanceolate, 4.5–6.5 mm long, 0.8–1 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume lateral veins absent. Lower glume apex dentate, 2 -fid, mucronate. Upper glume lanceolate, 4.5–6.5 mm long, 1–1.3 length of adjacent fertile lemma, membranous, 1-keeled, 1 -veined. Upper glume lateral veins absent. Upper glume apex dentate, 2 -fid, mucronate.

Florets. Fertile lemma elliptic, 5 mm long, membranous, keeled, 3 -veined, 0–3 -veined. Lemma margins ciliate. Lemma hairs 2 mm long. Lemma apex dentate, 2 -fid, awned, 3 -awned. Principal lemma awn from a sinus, 5–7 mm long overall. Lateral lemma awns present, arising on margin of lemma, ascending, 5–7 mm long. Palea 0.75 length of lemma, 2 -veined. Palea keels scaberulous. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, fleshy. Anthers 3. Caryopsis with adherent pericarp, linear, trigonous.

Distribution (TDWG). Continent. Africa.

Country /Province /State. East tropical Africa, South tropical Africa, Southern Africa. Tanzania. Angola, Mozambique, Zambia, Zimbabwe. Namibia, Botswana, Limpopo, North-West, Kwazulu-Natal.

Triscenia ovina Griseb. *Mem. Am. Acad. N. S.* viii. 534 (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 Cuba. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: IT: Wright 756; ; Cuba (NY-71119) HT: C. Wright 756; ; Cuba (GOET).

Illustrations (Books): A.S.Hitchcock, *Manual of the Grasses of the West Indies* (1936) (162, Fig. 103).

Derivation (Clifford & Bostock 2007): *L. ovum*, egg; *-ina*, indicating resemblance. Spikelets egg-shaped.

Classification. Subfamily Panicoideae. Tribe: Paspaleae. Subtribe ARTHROPOGONINE.

Habit, Vegetative Morphology. Perennial, caespitose. Culms 20–50 cm long. Leaves mostly basal. Ligule a ciliate membrane. Leaf-blades curled, filiform, 10–25 cm long, 0.5–1 mm wide.

Inflorescence. Inflorescence a panicle. Panicle open, oblong, 3–10 cm long, contracted about primary branches. Primary panicle branches appressed, distant, simple, 2–4 cm long. Panicle branches angular. Spikelets in pairs. Fertile spikelets pedicelled, 2 in the cluster. Pedicels present, 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, acute, 3 mm long, falling entire.

Glumes. Glumes dissimilar, reaching apex of florets, thinner than fertile lemma. Lower glume ovate, 0.5 length of spikelet, membranous, without keels, 3 -veined. Lower glume apex acute. Upper glume lanceolate, membranous, without keels, 5 -veined. Upper glume apex acuminate.

Florets. Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret similar to upper glume, lanceolate, 1 length of spikelet, membranous, 3 -veined, acuminate. Fertile lemma elliptic, 1.75 mm long, chartaceous, without keel. Lemma margins flat. Lemma apex acute. Palea chartaceous.

Distribution (TDWG). Continent. South America.

Country /Province /State. Caribbean. Cuba.

Trisetaria chaudharyana H. Scholz. *Willdenowia*, 21: 185 (1991).

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

TYPE from Arabia. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Arabia, Hail: Collette 6167 (B holotype, K).

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

Derivation (Clifford & Bostock 2007): *L. -ana*, indicating connection. In honor of Shaikat Ali Chaudhary (1931-) Saudi Arabian botanist.

Classification. Subfamily Pooideae. Tribe: Poeae.

Habit, Vegetative Morphology. Annual. Culms 5–12 cm long. Culm-internodes distally glabrous. Leaf-sheaths hirsute. Ligule an eciliate membrane, 1–2 mm long. Leaf-blades lanceolate, 2–3 cm long, 1–3 mm wide. Leaf-blade surface pubescent, sparsely hairy. Leaf-blade apex acute.

Inflorescence. Inflorescence a panicle. Panicle contracted, oblong or obovate, 1.5–2.5 cm long. Panicle branches scabrous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 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, 6–7 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes 0.3–0.6 mm long, pilose. Floret callus pubescent. Floret callus hairs 0.1–0.2 mm long.

Glumes. Glumes persistent, similar, shorter than spikelet, shiny, gaping. Lower glume lanceolate, 4–5 mm long, 1 length of upper glume, membranous, much thinner on margins, 1-keeled, 1 -veined. Lower glume lateral veins absent. Lower glume apex acuminate. Upper glume lanceolate, 4–5 mm long, 0.8–1 length of adjacent fertile lemma, membranous, with hyaline margins, 1-keeled, 3 -veined. Upper glume apex acuminate.

Florets. Fertile lemma lanceolate, 5 mm long, membranous, keeled, 5 -veined, more than 3-veined. Lemma surface scabrous. Lemma margins eciliate or pubescent. Lemma apex dentate, 2 -fid, awned, 3 -awned. Principal lemma awn dorsal, curved or geniculate, 8–9 mm long overall, without a column or with a straight or slightly twisted column. Lateral lemma awns present, arising on apex of lobes, 0.8–1.3 mm long, shorter than principal. Palea gaping, 4 mm long, hyaline. Palea apex lobed, 2 -fid, awned, awns 2 mm long. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, 0.4 mm long, membranous. Anthers 3, 0.5–0.9 mm long. Ovary glabrous. Caryopsis with adherent pericarp. Hilum punctiform. Endosperm farinose.

Distribution (TDWG). Continent. Temperate Asia.

Country /Province /State. Arabian Peninsula. Saudi Arabia.

Trisetaria dufourei (Boiss.) Paunero. *An. Jard. Bot. Madrid*, ix. 521 (1950).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, T.G.Tutin et al, *Flora Europaea* 5 (1980).

TYPE from Spain. **Basionym or Replaced Name:** *Trisetum dufourei* Boiss., *Pugill. Pl. Nov.* 122 (1852). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Spain, Cadiz: Dufour.

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

Derivation (Clifford & Bostock 2007): in honor of Jean Marie Lion Dufour (1779–1865) French physician and botanist.

Classification. Subfamily Pooideae. Tribe: Poeae.

Habit, Vegetative Morphology. Annual, caespitose. Culms erect or geniculately ascending, 10–35 cm long. Culm-internodes distally glabrous or pubescent, with reflexed hairs. Leaf-sheaths pubescent, with reflexed hairs. Ligule an eciliate membrane, 1 mm long, truncate. Leaf-blades 2–5 cm long, 1–3 mm wide. Leaf-blade surface pubescent, hairy on both sides.

Inflorescence. Inflorescence a panicle. Panicle contracted, lanceolate or ovate, continuous or interrupted, 2–6 cm long, 1–2.5 cm wide. Panicle axis pubescent. Panicle branches pubescent. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, pubescent.

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 cuneate, laterally compressed, 5–7 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes 1 mm long, pubescent, with 0.5 mm long hairs. Floret callus pubescent.

Glumes. Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma, shiny, gaping. Lower glume linear, 3–5 mm long, 0.7–0.8 length of upper glume, membranous, 1-keeled, 2–3 -veined. Lower glume primary vein scabrous. Lower glume apex acuminate. Upper glume lanceolate, 4.5–6.5 mm long, 1.1 length of adjacent fertile lemma, membranous, 1-keeled, 3 -veined. Upper glume primary vein scabrous. Upper glume apex acuminate.

Florets. Fertile lemma lanceolate, 4–6 mm long, membranous, without keel, 3–5 -veined, 0–3 -veined or more than 3-veined. Lemma surface scaberulous. Lemma apex dentate, 2 -fid, awned, 3 -awned. Principal lemma awn dorsal, arising 0.66 way up back of lemma, geniculate, 5–7 mm long overall, with twisted column. Lateral lemma awns present, arising on apex of lobes, 1–2 mm long, shorter than principal. Palea gaping, linear, 3–4 mm long, hyaline. Palea keels scabrous. Palea apex dentate, 2 -fid.

Flower and Fruit. Anthers 3, 2 mm long. Ovary glabrous. Caryopsis with adherent pericarp. Hilum punctiform.

N = 7 (1 ref TROPICOS).

Distribution (TDWG). Continent. Europe.

Region. Southwestern Europe.
Country /Province /State. : Portugal, Spain.

Trisetaria glumacea (Boiss.) Maire. *Bull. Soc. Hist. Nat. Afr. Nord*, iii. 93 (1942).

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

TYPE from Arabia. **Basionym or Replaced Name:** *Trisetum glumaceum* Boiss., *Diagn. Ser. I.* 13: 49 (1854). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Arabia: Boissier.

Illustrations (Books): N.Feinbrun-Dothan, *Flora Palaestina* 4 (1986) (Pl. 263).

Derivation (Clifford & Bostock 2007): L. gluma, husk; -acea, belonging to. Glumes conspicuous.

Classification. Subfamily Pooideae. Tribe: Poeae.

Habit, Vegetative Morphology. Annual, caespitose. Culms erect or geniculately ascending, 6–16 cm long. Culm-nodes black. Leaf-sheaths without keel, pubescent, with reflexed hairs. Ligule an eciliate membrane, 1 mm long, truncate. Leaf-blades 3–6 cm long, 1–2 mm wide. Leaf-blade surface pilose, hairy on both sides.

Inflorescence. Inflorescence a panicle. Panicle contracted, lanceolate or oblong, continuous, 2–5 cm long, 1–1.5 cm wide. Panicle axis glabrous. Panicle branches scabrous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, oblong, scabrous.

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 cuneate, laterally compressed, 4–5 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes pilose.

Glumes. Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma, shiny, gaping. Lower glume lanceolate or oblong, 4–5 mm long, 1 length of upper glume, membranous, 1-keeled, 3 -veined. Lower glume primary vein scabrous. Lower glume apex acuminate, mucronate. Upper glume lanceolate or oblong, 4–5 mm long, 2 length of adjacent fertile lemma, membranous, 1-keeled, 3 -veined. Upper glume primary vein scabrous. Upper glume apex acuminate, mucronate.

Florets. Fertile lemma lanceolate or oblong, 2–2.5 mm long, membranous, shiny, without keel, 5 -veined, more than 3-veined. Lemma apex dentate, 2 -fid, awned, 3 -awned. Principal lemma awn dorsal, arising 0.25–0.4 way up back of lemma, geniculate, 2.5–3 mm long overall, not or scarcely exerted from spikelet, with twisted column. Lateral lemma awns present, arising on apex of lobes, 1–1.5 mm long, shorter than principal. Palea gaping, linear, 0.66 length of lemma, hyaline. Palea keels scabrous. Palea apex dentate, 2 -fid. Rhachilla extension pilose.

Flower and Fruit. Anthers 3, 1.5 mm long. Ovary glabrous. Caryopsis with adherent pericarp. Hilum punctiform.

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

Country /Province /State. **Northern Africa.** Egypt, Libya. **Western Asia.** Lebanon-Syria, Palestine, Israel & Jordan.

Trisetaria koelerioides (Bornm. & Hack.) Melderis. *Arkiv Bot., Stockh.*, andra ser., ii. 292 (1952).

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

TYPE from Palestine. **Basionym or Replaced Name:** *Trisetum koelerioides* Bornm. & Hack., *Verh. Zool.-Bot. Ges. Wien*, 48: 646 (1898). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Palestine, Jaffa: Bornmuller 1746b.

Illustrations (Books): N.Feinbrun-Dothan, *Flora Palaestina* 4 (1986) (Pl. 262).

Derivation (Clifford & Bostock 2007): Gk. -oides, resembling. Similar to *Koeleria* especially with respect to the inflorescence.

Classification. Subfamily Pooideae. Tribe: Poeae.

Habit, Vegetative Morphology. Annual, caespitose. Culms 9–25 cm long. Ligule an eciliate membrane. Leaf-blades 2–6 cm long, 1–2 mm wide.

Inflorescence. Inflorescence a panicle, embraced at base by subtending leaf. Panicle spiciform, linear, 4–8 cm long. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

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 cuneate, laterally compressed, 6–7 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes definite, glabrous. Floret callus glabrous.

Glumes. Glumes persistent, similar, exceeding apex of florets, firmer than fertile lemma, shiny, gaping. Lower glume lanceolate, 5.5–6.5 mm long, 0.9 length of upper glume, chartaceous, 1-keeled, 3 -veined. Lower glume primary vein scaberulous. Lower glume lateral veins ribbed. Lower glume surface asperulous. Lower glume apex acuminate. Upper glume lanceolate, 6–7 mm long, 1.7 length of adjacent fertile lemma, chartaceous,

1-keeled, 3 -veined. Upper glume primary vein scaberulous. Upper glume lateral veins ribbed. Upper glume surface asperulous. Upper glume apex acuminate.

Florets. Fertile lemma lanceolate, 3.5–4 mm long, membranous, without keel, 5 -veined, more than 3-veined. Lemma lateral veins obscure. Lemma surface asperulous. Lemma apex entire, acuminate, mucronate or awned, 1 -awned. Principal lemma awn apical, straight, 0–2 mm long overall. Palea gaping, linear, 0.7–0.8 length of lemma, hyaline. Palea keels scaberulous. Palea apex dentate, 2 -fid.

Flower and Fruit. Lodicules 2, membranous. Anthers 3. Ovary glabrous. Caryopsis with adherent pericarp. Hilum punctiform.

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

Country /Province /State. Northern Africa. Egypt. Western Asia. Lebanon-Syria, Palestine, Israel & Jordan, Sinai.

Trisetaria linearis Forsk. *Fl. Aegypt. Arab.* p. lx. (1775).

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

TYPE from Egypt. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Egypt, Alexandria: Forsskal.

Illustrations (Books): N.Feinbrun-Dothan, *Flora Palaestina* 4 (1986) (Pl. 261), L.Boulos, *Flora of Egypt* 4 (2005) (163, Fig. 45), N.L.Bor, *Gramineae in Flora of Iraq* (1968) (357, Pl. 135).

Images: L.Boulos, *Flora of Egypt* 4 (2005);

Derivation (Clifford & Bostock 2007): *L. linea*, linen thread; -are, pertaining to. Leaf-blades narrow.

Classification. Subfamily Pooideae. Tribe: Poeae.

Habit, Vegetative Morphology. Annual. Culms erect or geniculately ascending, 10–30 cm long. Leaf-sheaths inflated, pubescent, with reflexed hairs. Ligule an eciliate membrane. Leaf-blades 1–6 cm long, 1–2 mm wide. Leaf-blade surface pubescent.

Inflorescence. Inflorescence a panicle, subtended by an inflated leaf-sheath, embraced at base by subtending leaf. Panicle spiciform, linear, 5–10 cm long, 0.5–1 cm wide. Panicle branches scabrous. 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 cuneate, laterally compressed, 6 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus pubescent.

Glumes. Glumes persistent, similar, exceeding apex of florets, shiny, gaping. Lower glume lanceolate, 6 mm long, 1 length of upper glume, membranous, 1-keeled, 1–3 -veined. Lower glume primary vein scaberulous. Lower glume apex acuminate. Upper glume lanceolate, 6 mm long, 1.2 length of adjacent fertile lemma, membranous, 1-keeled, 3 -veined. Upper glume primary vein scaberulous. Upper glume apex acuminate.

Florets. Fertile lemma oblong, 5 mm long, membranous, keeled, 5 -veined, more than 3-veined. Lemma apex dentate, 2 -fid, awned, 3 -awned. Principal lemma awn dorsal, arising 0.75 way up back of lemma, geniculate, 8–10 mm long overall, with twisted column. Lateral lemma awns present, arising on apex of lobes, 3–5 mm long, shorter than principal. Palea gaping, hyaline. Palea keels scaberulous. Rhachilla extension 0.2–0.3 length of fertile floret, pilose.

Flower and Fruit. Lodicules 2, membranous. Anthers 3, 0.5 mm long. Ovary glabrous. Caryopsis with adherent pericarp, lanceolate. Embryo 0.15 length of caryopsis. Hilum punctiform.

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

Country /Province /State. Northern Africa. Egypt, Libya. Caucasus, Western Asia, Arabian Peninsula. Transcaucasus. Cyprus, Iran, Iraq, Palestine, Israel & Jordan. Kuwait, Saudi Arabia.

TDWG4.

Trisetaria loeflingiana (L.) Paunero. *An. Jard. Bot. Madrid*, ix. 5 527 (1950).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, N.L.Bor, Grasses of Burma, Ceylon, India and Pakistan (1960) (as *Lophochloa cavanillesii*), T.G.Tutin et al, *Flora Europaea* 5 (1980) (as *Trisetum*), N.Tsvelev, *Grasses of the Soviet Union* (1983) (as *T. cavanillesii*).

TYPE from Spain. **Basionym or Replaced Name:** *Trisetaria cavanillesii*, *Avena loeflingiana* L., *Sp. Fil.* 79 (1753). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Europe: Spain: 1800–2400 m, *Loefling s.n.* (LT: S-LINN-95.4) excluding specimen at bottom left.

Illustrations (Books): G.Hegi, *Flora von Mitteleuropa* 1 (1909) (as *T. cavanillesii*), N.L.Bor, *Gramineae in Flora of Iraq* (1968) (359, Pl. 136 as *T. cavanillesii*), T.A.Cope, *Flora of Pakistan* 143: *Poaceae* (1982) (522, Fig. 60).

Derivation (Clifford & Bostock 2007): L. -ana, indicating connection. In honor of Pehr Lvfving (1729–1756) Swedish botanist and traveller.

Classification. Subfamily Pooideae. Tribe: Poeae.

Habit, Vegetative Morphology. Annual. Culms erect or geniculately ascending, 9–25 cm long. Leaf-sheaths pubescent, with reflexed hairs. Ligule an eciliate membrane, 1.5–2 mm long, pubescent on abaxial surface. Leaf-blades 3–6.5 cm long, 0.9–1.7 mm wide. Leaf-blade surface pubescent, hairy on both sides. Leaf-blade apex acuminate.

Inflorescence. Inflorescence a panicle. Panicle contracted, oblong, 1–3 cm long. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, scaberulous.

Fertile Spikelets. Spikelets comprising 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 cuneate, laterally compressed, 5–5.5(–6) mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes definite, villous, hairy all along but hairs longer above, with 1 mm long hairs.

Glumes. Glumes persistent, dissimilar, shorter than spikelet, thinner than fertile lemma, shiny, gaping. Lower glume linear, 3–4 mm long, 0.7–0.8 length of upper glume, hyaline, 1-keeled, 1 -veined. Lower glume lateral veins absent. Lower glume apex acuminate. Upper glume lanceolate, 4–5 mm long, 1–1.25 length of adjacent fertile lemma, hyaline, 1-keeled, 3 -veined. Upper glume apex acuminate.

Florets. Fertile lemma lanceolate, 4 mm long, membranous, shiny, without keel, 5 -veined, more than 3-veined. Lemma apex dentate, 2 -fid, awned, 3 -awned. Principal lemma awn dorsal, arising 0.5–0.66 way up back of lemma, geniculate, 10–12 mm long overall, with twisted column. Lateral lemma awns present, arising on apex of lobes, 2.5–3.5 mm long, shorter than principal. Palea gaping, linear, hyaline. Rhachilla extension 0.5 length of fertile floret, villous, with 0.5–1 mm long hairs.

Flower and Fruit. Anthers 3, 0.3–0.6 mm long. Ovary glabrous. Caryopsis with adherent pericarp, fusiform, laterally compressed, concavo-convex. Embryo 0.1–0.15 length of caryopsis. Hilum punctiform.

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

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

Country /Province /State. : GB Aliens (Ryves et al). : Switzerland. : Spain. : Italy. East European Russia, South European Russia. **Macaronesia.** Canary Is. **Middle Asia, Caucasus, Western Asia.** Kazakhstan, Kirgizistan, Turkmenistan, Tadjikistan, Uzbekistan. Transcaucasus. Afghanistan, Iran, Iraq. **Indian Subcontinent.** Pakistan, West Himalaya.

TDWG4. Uttah Pradesh.

Trisetaria macrochaeta (Boiss.) Maire. *Bull. Soc. Hist. Nat. Afr. Nord*, iii. 92, in obs. (1942).

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

TYPE from Palestine. **Basionym or Replaced Name:** *Trisetum macrochaetum* Boiss., *Diagn. Ser. I*. 13: 48 (1854). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Palestine, Hierosolyma: Boissier.

Illustrations (Books): N.Feinbrun-Dothan, *Flora Palaestina* 4 (1986) (Pl. 260), L.Boulos, *Flora of Egypt* 4 (2005) (163, Fig. 45).

Derivation (Clifford & Bostock 2007): Gk. makros, large; chaete, bristle. Lemmas long-awned.

Classification. Subfamily Pooideae. Tribe: Poeae.

Habit, Vegetative Morphology. Annual, culms solitary or caespitose. Culms erect or geniculately ascending, 10–22 cm long. Leaf-sheaths smooth or scaberulous, glabrous on surface. Ligule an eciliate membrane, 0.5 mm long. Leaf-blades flat or convolute, 4–8 cm long, 1–1.5 mm wide. Leaf-blade midrib conspicuous. Leaf-blade surface puberulous, hairy adaxially. Leaf-blade margins scabrous.

Inflorescence. Inflorescence a panicle. Panicle contracted, oblong or ovate, 1–7 cm long, 0.5–3.5 cm wide. Primary panicle branches 0.5–3 cm long. Panicle axis scabrous. Panicle branches scabrous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, scabrous.

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 cuneate, laterally compressed, 3.5–4 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes glabrous or pubescent.

Glumes. Glumes persistent, dissimilar, exceeding apex of florets, thinner than fertile lemma, shiny, gaping. Lower glume linear or lanceolate, 2.5–3 mm long, 0.7–0.8 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume primary vein scabrous. Lower glume lateral veins absent. Lower glume apex attenuate, muticous or mucronate or awned, 1 -awned, awn 0.5 mm long. Upper glume ovate, 3.5–4 mm long, 1–1.25 length of adjacent fertile lemma, membranous, 1-keeled, 3 -veined. Upper glume primary vein scabrous. Upper glume apex entire or dentate, 2 -fid, acuminate, muticous or mucronate or awned, 1 -awned, awn 0.5 mm long.

Florets. Fertile lemma lanceolate, 3 mm long, membranous, shiny, without keel, 3 -veined, 0–3 -veined. Lemma surface glabrous or pubescent. Lemma apex dentate, 2 -fid, awned, 3 -awned. Principal lemma awn dorsal, arising 0.6 way up back of lemma, geniculate, 5–7 mm long overall, with twisted column. Lateral lemma awns present, arising on apex of lobes, 1.5 mm long, shorter than principal. Palea gaping, linear, 0.66 length of lemma, hyaline. Palea keels scabrous. Palea apex dentate, 2 -fid.

Flower and Fruit. Anthers 3, 1 mm long. Ovary glabrous. Caryopsis with adherent pericarp. Hilum punctiform.

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

Region. Southwestern Europe.

Country /Province /State. : Spain. **Northern Africa.** Egypt, Libya. **Western Asia.** Palestine, Israel & Jordan.

Trisetaria myriantha (Bertol.) D.Heller. *Conspect. Fl. Oriental.*, 6: 93: (1991).

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

TYPE from Italy. **Basionym or Replaced Name:** *Parvotrisetum myrianthum*, *Avena myriantha* Bertol., *Fl. Ital.* 1: 722 (1834). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Italy, Mediolana: Balsamo-Crivellius & De Notaris (BOLO holo).

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

Derivation (Clifford & Bostock 2007): Gk. myrios, countless; anthos, flower. Inflorescence many spikelets.

Classification. Subfamily Pooideae. Tribe: Poeae.

Habit, Vegetative Morphology. Annual. Culms 20–60 cm long. Ligule an eciliate membrane. Leaf-blades involute, 6–12 cm long, 1–2 mm wide. Leaf-blade surface pubescent, hairy adaxially.

Inflorescence. Inflorescence a panicle. Panicle open, elliptic, 6–20 cm long, 1–3 cm wide. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, scaberulous.

Fertile Spikelets. Spikelets comprising 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 or cuneate, laterally compressed, 2.4–3.3 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes definite, glabrous. Floret callus glabrous.

Glumes. Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma, shiny, gaping. Lower glume ovate, 2.4–3.3 mm long, 1 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume primary vein scaberulous. Lower glume lateral veins absent. Lower glume apex attenuate. Upper glume ovate, 2.4–3.3 mm long, 2 length of adjacent fertile lemma, membranous, 1-keeled, 3 -veined. Upper glume primary vein scaberulous. Upper glume apex attenuate.

Florets. Fertile lemma obovate, 1.2–1.7 mm long, cartilaginous, without keel, 5 -veined, more than 3-veined. Lemma surface glabrous or pubescent. Lemma margins ciliolate. Lemma apex lobed, 2 -fid, with linear lobes, incised 0.33 of lemma length, awned, 1 -awned. Principal lemma awn dorsal, arising 0.4 way up back of lemma, geniculate, 2–3 mm long overall, with twisted column. Palea gaping, hyaline.

Flower and Fruit. Lodicules 2, membranous. Anthers 3, 1 mm long. Ovary glabrous. Caryopsis with adherent pericarp. Hilum punctiform.

Distribution (TDWG). Continent. Europe.

Region. Southeastern Europe.

Country /Province /State. : Albania, Greece, Italy, Turkey Europe, Yugoslavia.

Trisetaria nitida (Desf.) Maire. *Bull. Soc. Hist. Nat. Afr. Nord*, iii. 92 (1942).

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

TYPE from Algeria. **Basionym or Replaced Name:** *Avena nitida* Desf., *Fl. Atlant.* 1: 102 (1798). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Algeria, Mascar: Coll?.

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

Derivation (Clifford & Bostock 2007): L. niteo, shine; Spikelets or lemmas shiny.

Classification. Subfamily Pooideae. Tribe: Poeae.

Habit, Vegetative Morphology. Annual, culms solitary or caespitose. Culms erect or geniculately ascending, 10–30 cm long. Leaf-sheaths without keel, glabrous on surface or puberulous, outer margin hairy. Ligule an eciliate membrane, 0.5–1 mm long. Leaf-blades 4–8 cm long, 1–3 mm wide. Leaf-blade surface pubescent, hairy on both sides.

Inflorescence. Inflorescence a panicle. Panicle contracted or spiciform, lanceolate or oblong, continuous, 3–7 cm long, 1–1.5 cm wide. Panicle axis pubescent. Panicle branches pubescent. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, oblong, 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, 6.5 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes pubescent.

Glumes. Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma, gaping. Lower glume lanceolate or oblong, 6 mm long, 0.9 length of upper glume, membranous, 1-keeled, 3 -veined. Lower glume surface pubescent. Lower glume apex acuminate, mucronate. Upper glume lanceolate or oblong, 6.5 mm long, 1.1 length of adjacent fertile lemma, membranous, 1-keeled, 3 -veined. Upper glume surface pilose. Upper glume apex acuminate, awned, 1 -awned, awn 1.5 mm long.

Florets. Fertile lemma lanceolate, 6 mm long, membranous, shiny, without keel, 5 -veined, more than 3-veined. Lemma midvein scaberulous. Lemma margins scaberulous. Lemma apex dentate, 2 -fid, awned, 3 -awned. Principal lemma awn dorsal, arising 0.5–0.66 way up back of lemma, geniculate, 10–14 mm long overall, with a straight or slightly twisted column. Lateral lemma awns present, arising on apex of lobes, 4–6 mm long, shorter than principal. Palea gaping, linear, 1 length of lemma, hyaline. Palea keels scabrous. Palea apex dentate, 2 -fid, mucicous or with excurrent keel veins.

Flower and Fruit. Anthers 3, 4 mm long. Ovary glabrous. Caryopsis with adherent pericarp. Hilum punctiform.

Distribution (TDWG). Continent. Africa.

Country /Province /State. Northern Africa. Algeria.

Trisetaria ovata (Pers.) Paunero. *An. Jard. Bot. Madrid*, ix. 517 (1950).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, T.G.Tutin et al, *Flora Europaea* 5 (1980) (as *Trisetum*).

TYPE from Spain. **Basionym or Replaced Name:** *Bromus ovatus* Cav., non Gaertn.(1770), *Ic.* 6: 67 (1801). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Spain, Valdigna: Coll?.

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

Derivation (Clifford & Bostock 2007): L. ovum, egg; -ata, possessing. Inflorescences, spikelets, or leaf-blades ovate in outline.

Classification. Subfamily Pooideae. Tribe: Poeae.

Habit, Vegetative Morphology. Annual, caespitose. Culms erect, 4–50 cm long. Leaf-sheaths inflated, pubescent. Ligule an eciliate membrane. Leaf-blades 1–4 cm long, 2–4 mm wide. Leaf-blade surface pilose.

Inflorescence. Inflorescence a panicle. Panicle capitate, ovate, 0.5–3 cm long, 0.5–1.5 cm wide. 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 or cuneate, laterally compressed, 5 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes definite, glabrous or pubescent. Floret callus glabrous.

Glumes. Glumes persistent, dissimilar, reaching apex of florets, gaping. Lower glume lanceolate, 4 mm long, 0.8 length of upper glume, cartilaginous, 1-keeled, 3 -veined. Lower glume lateral veins unequally thickened (midrib thickened). Lower glume surface setose, hairy on veins. Lower glume apex attenuate, awned, 1 -awned, awn 1–1.5 mm long. Upper glume elliptic, 5 mm long, 1.4–1.5 length of adjacent fertile lemma, cartilaginous, 1-keeled, 3 -veined. Upper glume surface setose, hairy on veins. Upper glume apex attenuate, awned, 1 -awned, awn 1.5–2 mm long.

Florets. Fertile lemma obovate, 3.5 mm long, cartilaginous, keeled, 5 -veined, more than 3-veined. Lemma lateral veins obscure. Lemma surface pubescent. Lemma apex lobed, 2 -fid, incised 0.25 of lemma length, awned, 3 -awned. Principal lemma awn subapical, curved, 3–6.5 mm long overall. Lateral lemma awns present, arising on apex of lobes, 1–1.5 mm long, shorter than principal. Palea gaping, hyaline. Palea keels scaberulous. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, membranous. Anthers 3. Ovary glabrous. Caryopsis with adherent pericarp. Hilum punctiform.

N = 7 (1 ref TROPICOS).

Distribution (TDWG). Continent. Europe.

Region. Southwestern Europe.

Country /Province /State. : Portugal, Spain.

Trisetaria panicea (Lam.) Paunero. *An. Jard. Bot. Madrid*, ix. 524 (1950).

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

TYPE from Spain. **Basionym or Replaced Name:** *Trisetum paniceum*, *Avena panicea* Lam., *Illustr.* 1: 202 (1791). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Spain: Coll?.

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

Derivation (Clifford & Bostock 2007): L. -ea, resembling. Resembling *Panicum*.

Classification. Subfamily Pooideae. Tribe: Poeae.

Habit, Vegetative Morphology. Annual. Culms erect or geniculately ascending, 35–75 cm long. Leaf-sheaths pilose. Ligule an eciliate membrane, 1 mm long. Leaf-blades 2–13 cm long, 2–8 mm wide. Leaf-blade surface pilose, hairy on both sides.

Inflorescence. Inflorescence a panicle. Panicle contracted, oblong or ovate, interrupted, 2–15 cm long. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 3–5 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets cuneate, laterally compressed, 2.7–3.5 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes villous.

Glumes. Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma, shiny, gaping. Lower glume linear, 2.3–2.8 mm long, 0.75 length of upper glume, hyaline, 1-keeled, 1 -veined. Lower glume lateral veins absent. Lower glume apex acuminate. Upper glume lanceolate, 3–3.8 mm long, 1.2–1.3 length of adjacent fertile lemma, hyaline, 1-keeled, 3 -veined. Upper glume apex acuminate.

Florets. Fertile lemma lanceolate, 2.5–3 mm long, membranous, shiny, without keel, 3 -veined, 0–3 -veined. Lemma surface glabrous or pubescent. Lemma apex dentate, 2 -fid, awned, 1 -awned. Principal lemma awn dorsal, arising 0.66 way up back of lemma, straight or curved or geniculate, (1.5–)2.5–4.5(–5.5) mm long overall, without a column or with a straight or slightly twisted column. Palea gaping, linear, hyaline. Palea keels scaberulous. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Anthers 3, 0.4–1.7 mm long. Ovary glabrous. Caryopsis with adherent pericarp, 1.5 mm long. Embryo 0.1–0.15 length of caryopsis. Hilum punctiform.

N = 7 (2 refs TROPICOS).

Distribution (TDWG). Continent. Europe, Africa.

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

Country /Province /State. : GB Aliens (Ryves et al). : Balears, Corsica, France, Portugal, Sardinia, Spain. : Italy, Sicily. **Northern Africa, Macaronesia.** Algeria, Morocco, Tunisia. Canary Is.

Trisetaria parviflora (Desf.) Maire. *Bull. Soc. Hist. Nat. Afr. Nord*, iii. 92, in obs. (1942).

Accepted by: W.D. Clayton & K. Harman, *GrassBase* (2008) and online, T.G. Tutin et al, *Flora Europaea* 5 (1980) (as *Trisetum*).

TYPE from Algeria. **Basionym or Replaced Name:** *Avena parviflora* Desf., *Fl. Atlant.* 1: 98 (1798). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Algeria: Coll?.

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

Derivation (Clifford & Bostock 2007): L. parvus, small; flos, flower. Spikelets small or with few florets.

Classification. Subfamily Pooideae. Tribe: Poeae.

Habit, Vegetative Morphology. Annual, culms solitary. Culms erect or geniculately ascending, 30–80 cm long. Leaf-sheaths without keel, pilose. Ligule an eciliate membrane, 2 mm long, lacerate, truncate. Leaf-blades 7–15 cm long, 2–5 mm wide. Leaf-blade midrib conspicuous. Leaf-blade surface pilose, hairy on both sides. Leaf-blade margins scabrous.

Inflorescence. Inflorescence a panicle. Panicle open, elliptic, 10–25 cm long. Panicle axis glabrous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

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 cuneate, laterally compressed, 2–2.5 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes scaberulous, glabrous. Floret callus glabrous.

Glumes. Glumes persistent, dissimilar, exceeding apex of florets, thinner than fertile lemma, shiny, gaping. Lower glume linear, 1.2–1.4 mm long, 0.5–0.6 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume primary vein smooth. Lower glume lateral veins absent. Lower glume apex acute. Upper glume lanceolate, 2–2.5 mm long, 1–1.1 length of adjacent fertile lemma, membranous, 1-keeled, 3 -veined. Upper glume primary vein smooth. Upper glume apex acute, mucronate.

Florets. Fertile lemma lanceolate, 2 mm long, membranous, shiny, without keel, 3 -veined, 0–3 -veined. Lemma midvein scaberulous. Lemma lateral veins obscure. Lemma apex dentate, 2 -fid, awned, 1 -awned. Principal lemma awn subapical, straight or geniculate, 4 mm long overall, without a column or with a straight or slightly twisted column. Palea gaping, linear, hyaline. Palea keels scabrous. Palea apex dentate, 2 -fid.

Flower and Fruit. Anthers 3, 1.5 mm long. Ovary glabrous. Caryopsis with adherent pericarp. Hilum punctiform.

Distribution (TDWG). Continent. Europe, Africa.

Region. Southwestern Europe, Southeastern Europe.

Country /Province /State. : Sardinia. : Italy, Sicily. **Northern Africa.** Algeria, Tunisia.

Trisetaria scabriuscula (Lag.) Paunero. *An. Jard. Bot. Madrid*, ix. 519 (1950).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, T.G.Tutin et al, *Flora Europaea* 5 (1980) (as *Trisetum*).

TYPE from Spain. **Basionym or Replaced Name:** *Avena scabriuscula* Lag., *Varied. Cienc.* 2 : IV 212 (1805). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Spain: Coll?.

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

Derivation (Clifford & Bostock 2007): *L. scabrius*, rougher; -ula, diminutive. Somewhat scabrous usually of leaf-blades or leaf-sheaths.

Classification. Subfamily Pooideae. Tribe: Poeae.

Habit, Vegetative Morphology. Annual, caespitose, clumped loosely. Culms slender, 10–30 cm long. Culm-internodes distally glabrous. Leaf-sheaths pubescent to hirsute. Ligule an eciliate membrane. Leaf-blades 1–3 cm long, 1.5 mm wide. Leaf-blade surface pubescent to hirsute.

Inflorescence. Inflorescence a panicle. Panicle contracted, linear, 5–9 cm long, 0.5 cm wide. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 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, 3.2–4 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes pubescent, with 0.3 mm long hairs. Floret callus pubescent.

Glumes. Glumes persistent, similar, shorter than spikelet, thinner than fertile lemma, shiny, gaping. Lower glume lanceolate, 1 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume lateral veins absent. Lower glume surface asperulous, glabrous or puberulous. Lower glume apex acute. Upper glume lanceolate, 0.9 length of adjacent fertile lemma, membranous, 1-keeled, 3 -veined. Upper glume surface asperulous, glabrous or puberulous. Upper glume apex acute.

Florets. Fertile lemma oblong, 2.5–3.3 mm long, membranous, shiny, without keel, 5 -veined, more than 3-veined. Lemma midvein scaberulous. Lemma apex dentate, 2 -fid, awned, 1 -awned. Principal lemma awn subapical, straight, 0.8–2 mm long overall. Palea gaping, hyaline.

Flower and Fruit. Anthers 3, 1 mm long. Caryopsis with adherent pericarp. Hilum punctiform.

Distribution (TDWG). Continent. Europe.

Region. Northern Europe (*), Southwestern Europe.

Country /Province /State. : GB Aliens (Ryves et al). : Portugal, Spain.

Trisetaria vaccariana (Maire & Weiller) Maire. *Bull. Soc. Hist. Nat. Afr. Nord*, iii. 93 (1942).

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

TYPE from Libya. **Basionym or Replaced Name:** *Trisetum vaccarianum* Maire & Weiller, *Bull. Soc. Hist. Nat. Afr. Nord* 30: 222, 307 (1939). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Libya: Maire & Weiler.

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

Derivation (Clifford & Bostock 2007): *L. -ana*, indicating connection. In honor of Antonio Vaccari (1867–1961) Italian physician and botanist.

Classification. Subfamily Pooideae. Tribe: Poeae.

Habit, Vegetative Morphology. Annual, culms solitary. Culms erect, 6–16 cm long, 3–4 -noded. Culm-internodes estriate, smooth, distally glabrous or pubescent. Culm-nodes purple. Lateral branches lacking or sparse. Leaf-sheaths without keel, pubescent, outer margin hairy. Ligule a ciliate membrane, 1–1.5 mm long. Leaf-blades 3–6 cm long, 1–2 mm wide. Leaf-blade surface scabrous, rough adaxially, pubescent. Leaf-blade margins scabrous. Leaf-blade apex obtuse or abruptly acute, callose.

Inflorescence. Inflorescence a panicle. Panicle spiciform, oblong, continuous, 2–3 cm long, 0.5–1 cm wide. Primary panicle branches 1–2 -nate. Panicle axis scabrous. Panicle branches scabrous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, oblong, scabrous.

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 cuneate, laterally compressed, 4–5 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes pilose.

Glumes. Glumes persistent, similar, reaching apex of florets or exceeding apex of florets, thinner than fertile lemma, shiny, gaping. Lower glume lanceolate, 4–5 mm long, 1 length of upper glume, membranous, 1-keeled, 3 -veined. Lower glume primary vein scabrous. Lower glume surface glabrous or pilose. Lower glume apex acuminate. Upper glume lanceolate, 4–5 mm long, 1–1.4 length of adjacent fertile lemma, membranous, 1-keeled, 3 -veined. Upper glume primary vein scabrous. Upper glume surface glabrous or pilose. Upper glume apex acuminate.

Florets. Fertile florets with the lowest dissimilar. Lowest fertile lemma glabrous. Fertile lemma lanceolate, 4 mm long, membranous, shiny, without keel, 5 -veined, more than 3-veined. Lemma midvein scabrous. Lemma surface villous. Lemma apex dentate, 2 -fid, awned, 3 -awned. Principal lemma awn dorsal, arising 0.75 way up back of lemma, geniculate, 4 mm long overall, with twisted column. Lateral lemma awns present, arising on apex of lobes, 0.5 mm long, shorter than principal. Palea gaping, 1 mm long, hyaline. Palea keels scabrous. Rhachilla extension pilose.

Flower and Fruit. Lodicules 2, 0.4 mm long. Anthers 3, 1.7–2.3 mm long, purple. Ovary glabrous. Caryopsis with adherent pericarp. Hilum punctiform.

Distribution (TDWG). Continent. Africa.

Country /Province /State. Northern Africa. Libya.

Trisetum aeneum (Hook. f.) R. R. Stewart. *Brittonia*, v. 431 (1945).

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:** *Avena aenea* Hook. f., *Fl. Brit. Ind.* 7: 279 (1896). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: India, Kashmir, Kalapani: Duthie 12562 (K holo).

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

Derivation (Clifford & Bostock 2007): *L. aeneus*, of copper. Spikelets copper-colored.

Classification. Subfamily Pooideae. Tribe: Poeae.

Habit, Vegetative Morphology. Perennial, caespitose, clumped loosely. Culms erect or geniculately ascending, 45–65 cm long, 2–5 -noded. Ligule an eciliate membrane. Leaf-blades 7–20 cm long, 3–9 mm wide. Leaf-blade surface glabrous or pilose, sparsely hairy. Leaf-blade apex acuminate.

Inflorescence. Inflorescence a panicle. Peduncle glabrous. Panicle contracted or spiciform, lanceolate or oblong, 5–15 cm long, 1.5–2.5 cm wide. Panicle axis glabrous. Panicle branches glabrous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 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, 5.5–8.5 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes pubescent. Floret callus pubescent.

Glumes. Glumes persistent, similar, shorter than spikelet, thinner than fertile lemma, shiny, gaping. Lower glume lanceolate, 3.5–5.5 mm long, 0.75 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume lateral veins absent. Lower glume apex acute. Upper glume elliptic, 4.5–6.5 mm long, 0.9–1.2 length of adjacent fertile lemma, membranous, 1-keeled, 3 -veined. Upper glume apex acute.

Florets. Fertile lemma elliptic, 5–5.5 mm long, membranous, much thinner above, much thinner on margins, shiny, keeled, 5 -veined, more than 3-veined. Lemma midvein scabrous. Lemma surface scaberulous, rough below. Lemma apex dentate, 2 -fid, awned, 1 -awned. Principal lemma awn dorsal, curved, 6–9.5 mm long overall. Palea gaping, hyaline. Palea keels scaberulous.

Flower and Fruit. Anthers 3. Ovary glabrous. Caryopsis with adherent pericarp. Hilum punctiform.

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

Country /Province /State. Western Asia. Iran. **Indian Subcontinent.** Pakistan, West Himalaya.

TDWG4. Himachal Pradesh, Jammu Kashmir.

Trisetum agrostideum (Laest.) Fries. *Mant.* 3: 180. (1842).

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

TYPE from Sweden. **Basionym or Replaced Name:** *Avena subspicata* var. *agrostidea* Laest., *Nova Acta Regiae Soc. Sci. Upsal.* 11: 245 (1839). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: IT: L. Laestadius; ; Lapp. Tornens., Karesuando ad Mannu (LE, LE).

Recent Synonyms: *Trisetum subalpestre* (Hartm.) Neum., *Mant.* 3: 180. (1842).

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

Derivation (Clifford & Bostock 2007): Gk. -idea, resembling. Similar to *Agrostis* in habit or inflorescence.

Classification. Subfamily Pooideae. Tribe: Poeae.

Habit, Vegetative Morphology. Perennial, caespitose, clumped loosely. Culms 20–40 cm long. Culm-internodes distally glabrous. Leaf-sheaths pubescent. Ligule an eciliate membrane. Leaf-blades flat or convolute, 7–15 cm long, 1–3 mm wide. Leaf-blade surface glabrous or pubescent, hairy adaxially. Leaf-blade margins ciliate.

Inflorescence. Inflorescence a panicle. Panicle open, lanceolate or oblong, 3–7 cm long, 0.5–1 cm wide. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, glabrous.

Fertile Spikelets. Spikelets comprising 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, 4.2–5.7 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes pubescent, with 0.7 mm long hairs. Floret callus pubescent.

Glumes. Glumes persistent, similar, reaching apex of florets, thinner than fertile lemma, shiny, gaping. Lower glume lanceolate, 0.75 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume lateral veins absent. Lower glume apex acute. Upper glume lanceolate, 1.1 length of adjacent fertile lemma, membranous, 1-keeled, 3 -veined. Upper glume apex acute.

Florets. Fertile lemma oblong, 3.5–4.5 mm long, membranous, shiny, keeled, 5 -veined, more than 3-veined. Lemma apex dentate, 2 -fid, awned, 1 -awned. Principal lemma awn dorsal, arising 0.66 way up back of lemma, curved, 4.5–7 mm long overall. Palea gaping, hyaline.

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

$2n = 28$ (1 ref TROPICOS).

Distribution (TDWG). Continent. Europe and Temperate Asia.

Region. Northern Europe, Eastern Europe.

Country /Province /State. : Finland, Norway, Sweden. North European Russia. Siberia and Russian far east. Buryatiya, Chita, Irkutsk, Krasnoyarsk. Magadan.

TDWG4.

Trisetum albidum Sodiro. *Rev. Col. Nac. Vicente Rocafuerte*, xi. Nos. 40–41, 86 (1930).

Regarded by K as a synonym.

Accepted 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 Ecuador. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: IT: R.P.L. Sodiro s.n.; 1890; Ecuador: Pichincha: Quito, crece in los potreros interandinos (US-1163185 (fragm.)).

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

Derivation (Clifford & Bostock 2007): L. whitish. Plant in whole or in part white usually due to an indumentum of short hairs.

Classification. Subfamily Pooideae. Tribe: Poeae.

Distribution (TDWG). Continent. South America.

Country /Province /State. Western South America. Ecuador.

Trisetum alpestre (Host) Beauv. *Agrost.* 88. (1812).

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 Austria. **Basionym or Replaced Name:** *Avena alpestris* Host, *Gram. Austr.* 3: 27. t. 39 (1805). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Austria: Host (LE iso).

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

Derivation (Clifford & Bostock 2007): L. alpes, high mountain; -estre, place of growth. Growing on high mountains.

Classification. Subfamily Pooideae. Tribe: Poeae.

Habit, Vegetative Morphology. Perennial, caespitose, clumped densely. Culms 15–35 cm long, 2 -noded. Culm-internodes distally glabrous or pubescent. Leaf-sheaths longer than adjacent culm internode. Ligule an eciliate membrane. Leaf-blades flat or convolute, 2–5 cm long, 1–2 mm wide.

Inflorescence. Inflorescence a panicle. Panicle open, ovate, 3–6 cm long. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 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, 5–7 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes pilose. Floret callus pubescent.

Glumes. Glumes persistent, similar, shorter than spikelet, thinner than fertile lemma, shiny, gaping. Lower glume lanceolate, 0.75 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume lateral veins absent. Lower glume apex acute. Upper glume lanceolate, 0.9 length of adjacent fertile lemma, membranous, 1-keeled, 3 -veined. Upper glume apex acute.

Florets. Fertile lemma oblong, 4.5–6.5 mm long, membranous, shiny, keeled, 5 -veined, more than 3-veined. Lemma apex dentate, 2 -fid, awned, 1 -awned. Principal lemma awn dorsal, arising 0.66 way up back of lemma, geniculate, 5–7 mm long overall, with twisted column. Palea gaping, hyaline.

Flower and Fruit. Anthers 3. Ovary with a few apical hairs. Caryopsis with adherent pericarp. Hilum punctiform.

$2n = 14$ (5 refs TROPICOS), or 28 (1 ref TROPICOS).

Distribution (TDWG). Continent. Europe.

Region. Middle Europe, Southeastern Europe, Eastern Europe.

Country /Province /State. : Austria, Czechoslovakia, Germany, Poland, Switzerland. : Italy, Romania, Yugoslavia. Northwest European Russia, Ukraine.

TDWG4.

Trisetum altaicum Roshev. *Not. Syst. Herb. Hort. Petrop.* iii. 85 (1922).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, S-L Chen et al, *Flora of China* 22 (Poaceae) (2006), N.Tsvelev, *Grasses of the Soviet Union* (1983).

TYPE from Russia. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Russia, Altai: Fischer (LE holo).

Illustrations (Books): S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 446).

Derivation (Clifford & Bostock 2007): L. -ica, belonging to. From the Altai Mts., Mongolia.

Classification. Subfamily Pooideae. Tribe: Poeae.

Habit, Vegetative Morphology. Perennial, caespitose, clumped loosely. Culms geniculately ascending, 15–35 cm long. Culm-internodes distally glabrous. Leaf-sheaths pilose. Ligule an eciliate membrane, 2–3 mm long, truncate. Leaf-blades 2–4 mm wide. Leaf-blade surface pilose.

Inflorescence. Inflorescence a panicle. Panicle open, linear or lanceolate, dense, 4–9 cm long, 1–2 cm wide. Primary panicle branches bearing spikelets almost to the base. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 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, 5–7 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes pilose.

Glumes. Glumes persistent, similar, shorter than spikelet, thinner than fertile lemma, shiny, gaping. Lower glume elliptic, 0.66–0.75 length of upper glume, membranous, purple, 1-keeled, 1 -veined. Lower glume lateral veins absent. Lower glume apex acute. Upper glume elliptic, 0.8–0.9 length of adjacent fertile lemma, membranous, purple, 1-keeled, 3 -veined. Upper glume apex acute.

Florets. Fertile lemma oblong, 4 mm long, membranous, shiny, keeled, 5 -veined, more than 3-veined. Lemma apex dentate, 2 -fid, awned, 1 -awned. Principal lemma awn dorsal, arising 0.66 way up back of lemma, geniculate, 5–6 mm long overall, with a straight or slightly twisted column. Palea gaping, hyaline.

Flower and Fruit. Anthers 3. Ovary glabrous. Caryopsis with adherent pericarp. Hilum punctiform.

Distribution (TDWG). Continent. Temperate Asia.

Country /Province /State. Siberia, Middle Asia, China, Mongolia. Altai, Buryatiya, Chita, Irkutsk, Krasnoyarsk, Tuva. Kazakhstan, Kirgizistan. Xinjiang. Mongolia.

TDWG4.

Trisetum ambiguum Z.E. Rugolo de Agrasar & E.G. Nicora. *Bol. Soc. Argent. Bot.*, 25: 468 (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.

TYPE from Argentina. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Argentina, Estancia Sofia: Boelcke, Moore & Roig 3119 (BAB holo, SI).

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

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 Pooideae. Tribe: Poeae.

Habit, Vegetative Morphology. Perennial, caespitose. Rhizomes elongated. Basal innovations extravaginal. Culms 17–34 cm long. Leaf-sheaths longer than adjacent culm internode, pubescent. Ligule a ciliolate membrane, 1.5–2.5 mm long. Leaf-blades flat or convolute, 1.5–7 cm long, 2–3 mm wide. Leaf-blade surface scabrous, rough adaxially. Leaf-blade apex abruptly acute, hooded.

Inflorescence. Inflorescence a panicle. Peduncle pubescent above or pilose above. Panicle spiciform, linear, continuous, 4.5–7.5 cm long, 1.5 cm wide. Panicle axis pubescent. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, pubescent.

Fertile Spikelets. Spikelets comprising 1(–2) 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, 6.8–8 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus pubescent. Floret callus hairs 0.5–0.8 mm long.

Glumes. Glumes persistent, similar, with lower narrower than upper, exceeding apex of florets, thinner than fertile lemma, gaping. Lower glume lanceolate, 6–7.5 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. Upper glume lanceolate, 6.8–8 mm long, 1.3 length of adjacent fertile lemma, membranous, 1-keeled, 1(–3) -veined. Upper glume primary vein scabrous. Upper glume lateral veins absent or obscure. Upper glume apex acuminate.

Florets. Fertile lemma oblong, 4–6 mm long, membranous, keeled, 5 -veined, more than 3-veined. Lemma lateral veins excurrent. Lemma surface scabrous. Lemma apex dentate, 4 -fid, awned, 1 -awned. Principal lemma awn dorsal, arising 0.5 way up back of lemma, geniculate, 5–7.5 mm long overall, with twisted column. Palea gaping, 3.6–4.5 mm long, hyaline. Palea keels scaberulous. Rhachilla extension 2.5 mm long, pubescent.

Flower and Fruit. Lodicules 2, 0.6–0.7 mm long. Anthers 3, 0.6–0.8 mm long. Caryopsis with adherent pericarp, fusiform, 3.4 mm long, hairy at apex, apex rostrate. Hilum elliptic. Endosperm liquid.

Distribution (TDWG). Continent. South America.

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

TDWG4. Santa Cruz, Tierra del Fuego. Magellanes.

Trisetum andinum Benth. *Pl. Hartw.* 261 (1847).

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

TYPE from Ecuador. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: Ecuador, Antisana: Hartweg 1449 (K holotype).

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

Derivation (Clifford & Bostock 2007): L. -inus, belonging to. From the Andes.

Classification. Subfamily Pooideae. Tribe: Poeae.

Habit, Vegetative Morphology. Perennial, caespitose. Rhizomes absent or short. Culms erect, (9–)20–42 cm long, 2–4 mm diam., 1–2 -noded. Culm-internodes distally pubescent. Leaf-sheaths 5–10 cm long, pubescent or pilose. Ligule a ciliolate membrane, 0.5–2 mm long, pilose on abaxial surface, truncate. Leaf-blades 3–15 cm long, 2–3.5 mm wide. Leaf-blade surface pilose, hairy on both sides. Leaf-blade apex acuminate.

Inflorescence. Inflorescence a panicle, exerted or embraced at base by subtending leaf. Peduncle pubescent above. Panicle spiciform, ovate, truncate or rounded at the ends, 3–6 cm long, 1–2.5 cm wide. Panicle axis pubescent. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 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, 5–7 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes 0.6–0.8 mm long, pilose. Floret callus pubescent, obtuse.

Glumes. Glumes persistent, similar, with lower narrower than upper, reaching apex of florets or exceeding apex of florets, thinner than fertile lemma, shiny, gaping. Lower glume linear or lanceolate, 3.5–6 mm long, 0.9 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume lateral veins absent. Lower glume apex attenuate. Upper glume ovate, 4–7 mm long, 1–1.1 length of adjacent fertile lemma, membranous, 1-keeled, 3 -veined. Upper glume apex acute.

Florets. Fertile lemma elliptic, 5–5.5 mm long, membranous, shiny, keeled, 5 -veined, more than 3-veined. Lemma surface puberulous. Lemma apex dentate, 2 -fid, awned, 3 -awned. Principal lemma awn dorsal, arising 0.66 way up back of lemma, curved, 3.6–4.5 mm long overall. Lateral lemma awns present, arising on apex of lobes, 0.4–0.5 mm long. Palea gaping, 3.7–6 mm long, hyaline. Palea keels scaberulous.

Flower and Fruit. Lodicules 2, 0.6 mm long. Anthers 3, 0.7–1 mm long. Ovary glabrous. Caryopsis with adherent pericarp, 2.2–2.5 mm long, glabrous.

Distribution (TDWG). Continent. South America.

Country /Province /State. Western South America. Ecuador.

Trisetum angustum Swallen. *Phytologia*, iv. 423 (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 Guatemala. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: J.A. Steyermark 35525; 13 Feb 1940; Guatemala: San Marcos: Between San Sebastián and summit of Volcán Tajumulco (F-1046564 (photo, US); IT: US-2236479 (fragm. ex F)).

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

Derivation (Clifford & Bostock 2007): L. narrow. Narrow, with respect to leaf-blades or spicate panicles.

Classification. Subfamily Pooideae. Tribe: Poeae.

Habit, Vegetative Morphology. Perennial, caespitose. Culms erect, slender, 12–24 cm long. Culm-nodes constricted. Lateral branches lacking. Leaf-sheaths glabrous on surface or pilose. Ligule an eciliate membrane, 1.5–2.2 mm long. Leaf-blades flat or involute, 1–5 cm long, 1 mm wide. Leaf-blade surface glabrous or puberulous.

Inflorescence. Inflorescence a panicle. Panicle open or contracted, lanceolate, 4–11 cm long, 1 cm wide. Primary panicle branches appressed, whorled at most nodes. Panicle axis glabrous. Spikelets appressed, solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 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, 4.5–6 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes pilose. Floret callus pubescent. Floret callus hairs 0.4–0.6 mm long.

Glumes. Glumes persistent, shorter than spikelet, thinner than fertile lemma. Lower glume ovate, 3–4 mm long, 0.66 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume lateral veins absent. Lower glume apex acute. Upper glume oblong or ovate, 4.3–5.8 mm long, 1.1–1.2 length of adjacent fertile lemma, membranous, 1-keeled, 3 -veined. Upper glume apex acute.

Florets. Fertile lemma elliptic, 4.1–4.8 mm long, membranous, much thinner on margins, keeled, 5 -veined, more than 3-veined. Lemma surface scaberulous, rough below, pubescent, hairy below. Lemma apex dentate, 4 -fid, muticous or mucronate. Principal lemma awn subapical. Rhachilla extension pubescent.

Flower and Fruit. Anthers 3, 0.8–0.9 mm long. Ovary glabrous. Caryopsis with adherent pericarp, 2.1 mm long. Endosperm farinose.

Distribution (TDWG). Continent. North America, South America.

Country /Province /State. Mexico. Southeast Mexico. **Mesoamerica.** Guatemala. Chiapas.

Trisetum antarcticum (Forst.) Trin. *Mem. Acad. Petersb. Ser. VI.* 1: 61 (1831).

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).

TYPE from New Zealand. **Basionym or Replaced Name:** *Aira antarctica* Forst. f., *Prod.* 8 (1786). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: G. Forster s.n.; ; New Zealand: Queen Charlotte Sound (GOET; IT: K).

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

Derivation (Clifford & Bostock 2007): L. anti, opposite; arctica, the Arctic. With southern hemisphere distributions south of about the latitude of the Shetland Islands.

Classification. Subfamily Pooideae. Tribe: Poeae.

Habit, Vegetative Morphology. Perennial, caespitose. Culms slender, 15–60 cm long. Culm-internodes distally glabrous or pubescent. Ligule an eciliate membrane, truncate. Leaf-blades flat or involute, 1–2 mm wide, flaccid. Leaf-blade surface smooth. Leaf-blade margins smooth or scaberulous.

Inflorescence. Inflorescence a panicle. Panicle open, lanceolate, dense, 3–25 cm long. Primary panicle branches bearing spikelets almost to the base. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 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. Rhachilla internodes pilose.

Glumes. Glumes persistent, similar, shorter than spikelet, thinner than fertile lemma, shiny, gaping. Lower glume elliptic, 0.75 length of upper glume, membranous, much thinner on margins, 1-keeled, 1 -veined. Lower glume primary vein scabrous. Lower glume lateral veins absent. Lower glume apex acute. Upper glume elliptic, 0.75–0.85 length of adjacent fertile lemma, membranous, with hyaline margins, 1-keeled, 3 -veined. Upper glume primary vein scabrous. Upper glume apex acute.

Florets. Fertile lemma oblong, 5–5.5 mm long, membranous, much thinner on margins, shiny, keeled, 5 -veined, more than 3-veined. Lemma surface scabrous. Lemma apex dentate, 2 -fid, awned, 1 -awned. Principal lemma awn dorsal, arising 0.75–0.9 way up back of lemma, curved, 4–6 mm long overall. Palea gaping, hyaline.

Flower and Fruit. Anthers 3. Ovary glabrous. Caryopsis with adherent pericarp. Hilum punctiform.

$2n = 28$ (1 ref TROPICOS).

Distribution (TDWG). Continent. Australasia.

Country /Province /State. New Zealand. New Zealand North I, New Zealand South I.

Trisetum arduanum E. Edgar & A. P. Druce. *New Zealand J. Bot.*, 36(4): 545 (1998).

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).

TYPE from New Zealand. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: New Zealand, Mutuorahi: Esler 3597 (CHR holo).

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

Derivation (Clifford & Bostock 2007): *L. arduum*, a steep place; *-anum*, indicating connection. Cliff dweller.

Classification. Subfamily Pooideae. Tribe: Poeae.

Habit, Vegetative Morphology. Perennial, caespitose, clumped loosely. Culms erect, 30–60 cm long. Leaf-sheaths 3–6 cm long, smooth or scaberulous, glabrous on surface or puberulous. Ligule an eciliate membrane, 0.2–0.3 mm long, erose. Leaf-blades involute, 10–20(–30) cm long, 0.5–1.5(–4) mm wide. Leaf-blade surface glabrous or puberulous, hairy adaxially. Leaf-blade margins scaberulous.

Inflorescence. Inflorescence a panicle. Peduncle smooth or scaberulous above. Panicle contracted, linear or oblong, (3–)8–18(–27) cm long, 0.7–3.5(–5) cm wide, contracted about primary branches. Primary panicle branches ascending, bearing spikelets almost to the base. Panicle axis scaberulous. Panicle branches scaberulous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, scaberulous.

Fertile Spikelets. Spikelets comprising 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, 4–7.5 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes pilose, with 1–2 mm long hairs. Floret callus pubescent. Floret callus hairs 0.2–0.5 mm long.

Glumes. Glumes persistent, similar, exceeding apex of florets, similar to fertile lemma in texture or firmer than fertile lemma, shiny, gaping. Lower glume elliptic, 0.66–0.75 length of upper glume, hyaline, pallid or yellow, 1-keeled. Lower glume apex acute. Upper glume lanceolate or elliptic, hyaline, pallid or yellow, 1-keeled. Upper glume apex acute.

Florets. Fertile lemma elliptic, 4.5–6 mm long, membranous, shiny, keeled, 5 -veined, more than 3-veined. Lemma surface papillose. Lemma apex dentate, 2 -fid, awned, 1 -awned. Principal lemma awn dorsal, arising 0.75 way up back of lemma, straight or curved, 3.5–8 mm long overall. Palea gaping, hyaline. Palea keels scaberulous, adorned above, with 0.66 of their length adorned.

Flower and Fruit. Lodicules 2, 1 mm long. Anthers 3, 1.2–2 mm long. Caryopsis with adherent pericarp, 2.6 mm long.

Distribution (TDWG). Continent. Australasia.

Country /Province /State. New Zealand. New Zealand South I.

Trisetum argenteum (Willd.) Roem. & Schult. *Syst. ii.* 665. (1817).

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 Austria. **Basionym or Replaced Name:** *Avena argentea* Willd., *Enum. Hort. Berol.* 125 (1809). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Austria: Coll?.

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

Derivation (Clifford & Bostock 2007): *L. silvery*. Glumes or lemmas silvery.

Classification. Subfamily Pooideae. Tribe: Poeae.

Habit, Vegetative Morphology. Perennial. Stolons present. Culms erect, slender, 30–35 cm long. Leaf-sheaths glabrous on surface or pubescent. Ligule an eciliate membrane. Leaf-blades 5–10 cm long, 1 mm wide. Leaf-blade surface ribbed, scaberulous, rough abaxially.

Inflorescence. Inflorescence a panicle. Panicle open, lanceolate, 4–8 cm long. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 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, 4–6.5 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes pilose, with 2–2.5 mm long hairs. Floret callus pilose. Floret callus hairs 0.33 length of lemma.

Glumes. Glumes persistent, similar, shorter than spikelet, thinner than fertile lemma, shiny, gaping. Lower glume lanceolate, 0.75 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume lateral veins absent. Lower glume apex acute. Upper glume lanceolate, 0.9 length of adjacent fertile lemma, membranous, 1-keeled, 3 -veined. Upper glume apex acute.

Florets. Fertile lemma oblong, 3.7–5 mm long, membranous, shiny, keeled, 5 -veined, more than 3-veined. Lemma apex dentate, 2 -fid, awned, 1 -awned. Principal lemma awn dorsal, arising 0.66 way up back of lemma, geniculate, 6–7 mm long overall, with twisted column. Palea gaping, hyaline.

Flower and Fruit. Anthers 3, 2–2.5 mm long. Caryopsis with adherent pericarp. Hilum punctiform.

Distribution (TDWG). Continent. Europe.

Region. Middle Europe, Southeastern Europe.

Country /Province /State. : Austria, Switzerland. : Italy, Yugoslavia.

Trisetum aureum (Ten.) Tenore. *Fl. Nap.* ii. 378. (1820).

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

TYPE from Italy. **Basionym or Replaced Name:** *Koeleria aurea* Ten., *Tratt. Fitogn.* 1: 58 (1806). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Italy, Granatello: Tenore (NAP holo, K).

Recent Synonyms: *Trisetaria aurea* (Ten.) Tenore, *Archiv. Bot., Forli*, 1: 51 (1955).

Illustrations (Books): M.E.Barkworth et al, *Flora of North America north of Mexico Vol 24 Poaceae*, part 1 (2007) (752).

Derivation (Clifford & Bostock 2007): L. golden-yellow. With spikelets or pedicels or other parts invested in golden-yellow hairs.

Classification. Subfamily Pooideae. Tribe: Poeae.

Habit, Vegetative Morphology. Annual, caespitose. Butt sheaths villous. Culms erect or geniculately ascending, 5.5–12 cm long. Leaf-sheaths glabrous on surface. Ligule an eciliate membrane, 1.5–3 mm long, obtuse. Leaf-blades 1.5–3.5 cm long, 1–2 mm wide. Leaf-blade surface glabrous or pilose. Leaf-blade apex acuminate.

Inflorescence. Inflorescence a panicle, subtended by an unspecialized leaf-sheath or an inflated leaf-sheath. Panicle spiciform, ovate or pyramidal, 1.6–3 cm long, 0.9–1.5 cm wide. Primary panicle branches 1.4–2 cm long. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, 0.6–1.6 mm long, glabrous.

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 cuneate, laterally compressed, 2.6–3.3 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes definite, 0.3–0.4 mm long, pubescent. Floret callus pubescent.

Glumes. Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma, shiny, gaping. Lower glume lanceolate, 2.4–2.6 mm long, 0.9 length of upper glume, hyaline, 1-keeled, 1 -veined. Lower glume lateral veins absent. Lower glume apex acuminate. Upper glume lanceolate, 2.8–3.2 mm long, 1.2–1.6 length of adjacent fertile lemma, hyaline, 1-keeled, 3 -veined. Upper glume apex acuminate.

Florets. Fertile lemma lanceolate, 1.7–2.7 mm long, membranous, much thinner on margins, without keel, 5 -veined, more than 3-veined. Lemma apex entire, acuminate, awned, 3 -awned. Principal lemma awn dorsal, geniculate, 1.7–4.3 mm long overall, with twisted column. Lateral lemma awns present, 0.3 mm long. Palea gaping, 1.5 mm long, hyaline.

Flower and Fruit. Lodicules 2, membranous. Anthers 3, 0.8–1.5 mm long. Ovary glabrous. Caryopsis with adherent pericarp. Embryo 0.1–0.15 length of caryopsis. Hilum punctiform.

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

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

Country /Province /State. : Balears. : Greece, Italy, Sicily, Yugoslavia. **Northeast USA.** New Jersey.

Trisetum barbatipaleum (Hulten ex Veldkamp) Finot. *Contr. U. S. Natl. Herb.* 48: 661 (2003).

Accepted by: R.J.Soreng et al., *Catalogue of New World 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:** *Trisetum spicatum* var. *barbatipaleum* Hulten ex Veldkamp, *Gard. Bull. Singapore* 36(1): 135 (1983). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Mexico, Trinidad Iron Works: Pringle 10032 (S lecto, C, L, US).

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

Classification. Subfamily Pooideae. Tribe: Poeae.

Habit, Vegetative Morphology. Perennial, caespitose. Culms 40 cm long. Culm-internodes distally pubescent. Culm-nodes pubescent. Leaf-sheaths mostly shorter than adjacent culm internode, pubescent. Ligule an eciliate membrane. Leaf-blades 7 cm long, 1–2 mm wide. Leaf-blade surface pubescent, hairy adaxially.

Inflorescence. Inflorescence a panicle. Panicle spiciform, linear, interrupted, 8–10 cm long, 0.5–1 cm wide. Panicle axis pubescent. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, pubescent.

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, 5–5.5 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus pilose. Floret callus hairs 2 mm long.

Glumes. Glumes persistent, similar, with lower narrower than upper, shorter than spikelet, thinner than fertile lemma, shiny, gaping. Lower glume lanceolate, 3–3.2 mm long, 0.75 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume primary vein scaberulous. Lower glume lateral veins absent. Lower glume apex acute. Upper glume ovate, 4 mm long, 1 length of adjacent fertile lemma, membranous, 1-keeled, 3 -veined. Upper glume primary vein scaberulous. Upper glume apex acute.

Florets. Fertile lemma elliptic, 3.5–5 mm long, membranous, shiny, keeled, 5 -veined, more than 3-veined. Lemma surface pubescent. Lemma apex dentate, 2 -fid, setaceously acuminate, awned, 1 -awned. Principal lemma awn dorsal, arising 0.66 way up back of lemma, curved, 6 mm long overall. Palea gaping, hyaline. Palea keels ciliate, adorned above. Rhachilla extension 1 mm long, pilose.

Flower and Fruit. Lodicules 2, 1 mm long, 2-toothed. Anthers 3. Ovary glabrous. Hilum punctiform.

Distribution (TDWG). Continent. North America.

Country /Province /State. Mexico. Northeast Mexico, Gulf (Mexico). Hidalgo. Veracruz.

Trisetum barbinode Trin. *Linnaea*, 10: 300 (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 Chile. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: E.F. Poeppig s.n.; 1828; Chile austr.: Andes de Antuco (LE-TRIN-1886.01 (photo, SGO-73101); IT: BAA-3351 (fragm. ex LE-TRIN), SGO-73101 (photo ex LE-TRIN), US-81770 ex W, US-868486 (fragm. ex LE-TRIN), W).

Illustrations (Books): M.N.Correa, *Flora Patagonica* Parte III, Gramineae (1978) (256, Fig. 165).

Derivation (Clifford & Bostock 2007): L. barba, beard; nodus, knot. Nodes bearded.

Classification. Subfamily Pooideae. Tribe: Poeae.

Habit, Vegetative Morphology. Perennial. Culms robust, 25–60 cm long, 2–3 -noded. Culm-nodes pubescent. Leaf-sheaths smooth. Ligule a ciliate membrane, 1–1.5 mm long, truncate. Leaf-blades 2–4 mm wide. Leaf-blade surface scabrous, rough abaxially or on both sides, glabrous. Leaf-blade margins scabrous.

Inflorescence. Inflorescence a panicle. Peduncle pubescent above. Panicle contracted, linear, equilateral or nodding, 6–15 cm long. Panicle axis pubescent. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 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, 8–10 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes pilose. Floret callus pilose. Floret callus hairs 2.3–3.5 mm long.

Glumes. Glumes persistent, similar, reaching apex of florets, thinner than fertile lemma, shiny, gaping. Lower glume lanceolate, 7–8 mm long, 0.75 length of upper glume, membranous, 1-keeled, 3 -veined. Lower glume apex acuminate or setaceously acuminate. Upper glume lanceolate, 8–10 mm long, 1.2 length of adjacent fertile lemma, membranous, 1-keeled, 3 -veined. Upper glume apex acuminate or setaceously acuminate.

Florets. Fertile lemma oblong, 7–8 mm long, membranous, shiny, keeled, 5 -veined, more than 3-veined. Lemma surface pubescent. Lemma apex dentate, 2 -fid, awned, 3 -awned. Principal lemma awn dorsal, arising 0.66 way up back of lemma, geniculate, 7–9 mm long overall, with a straight or slightly twisted column. Column of lemma awn pubescent, hairy on lower part. Lateral lemma awns present, 0.5–1 mm long. Palea gaping, hyaline. Palea apex with excurrent keel veins.

Flower and Fruit. Anthers 3, 1–1.5 mm long. Caryopsis with adherent pericarp, 3.5 mm long, glabrous. Hilum punctiform. Endosperm liquid.

Distribution (TDWG). Continent. South America.

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

TDWG4. Mendoza, Chubut, Neuquén, Río Negro. Rest of Chile- Biobio, La Auracania, Maule, O'Higgins, Santado, Valpariso. Maule, Biobio, La Araucania.

Trisetum baregense Tuzson. *Mag. Bot. Lapok* 16:146 (1917).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, T.G.Tutin et al, *Flora Europaea* 5 (1980).

TYPE from France. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: France, Bareges valley: Miegeville.

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

Derivation (Clifford & Bostock 2007): L. *-ense*, denoting origin. From Vallee de Bareges (Hautes Pyrenees), France.

Classification. Subfamily Pooideae. Tribe: Poeae.

Habit, Vegetative Morphology. Perennial, caespitose, clumped loosely. Culms 20–40 cm long. Culm-internodes distally glabrous. Leaf-sheaths pilose. Ligule an eciliate membrane. Leaf-blades flat or convolute, 7–15 cm long, 1–3 mm wide. Leaf-blade surface glabrous or pubescent, hairy adaxially. Leaf-blade margins ciliate.

Inflorescence. Inflorescence a panicle. Panicle open, lanceolate or oblong, 3–7 cm long, 0.5–1 cm wide. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 3–4 fertile florets, with a barren rhachilla extension. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets oblong, laterally compressed, 4.2–5.5 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes pilose, with 1 mm long hairs. Floret callus pubescent. Floret callus hairs 0.5 mm long.

Glumes. Glumes persistent, similar, shorter than spikelet, thinner than fertile lemma, shiny, gaping. Lower glume lanceolate, 0.75 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume lateral veins absent. Lower glume apex acute. Upper glume lanceolate, 0.9 length of adjacent fertile lemma, membranous, 1-keeled, 3 -veined. Upper glume apex acute.

Florets. Fertile lemma oblong, 3.5–4.5 mm long, membranous, shiny, keeled, 5 -veined, more than 3-veined. Lemma apex dentate, 2 -fid, awned, 1 -awned. Principal lemma awn dorsal, arising 0.66 way up back of lemma, straight, 4.5–7 mm long overall. Palea gaping, hyaline.

Flower and Fruit. Anthers 3, 1.5–2 mm long. Caryopsis with adherent pericarp. Hilum punctiform.

Distribution (TDWG). Continent. Europe.

Region. Southwestern Europe.

Country /Province /State. : France, Spain.

Trisetum bertolonii B.Jonsell. *Bot. J. Linn. Soc.*, 76(4): 320 (1978).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, T.G.Tutin et al, *Flora Europaea* 5 (1980).

TYPE from Italy. **Basionym or Replaced Name:** *Avena villosa* Bertol., *Exc. de Re Herb.* 6. n. 3 (1820). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Italy, Abruzzo: Orsini (BOLO holo).

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

Derivation (Clifford & Bostock 2007): in honor of Antonio Bertoloni (1775–1868) Italian botanist.

Classification. Subfamily Pooideae. Tribe: Poeae.

Habit, Vegetative Morphology. Perennial, caespitose. Butt sheaths persistent and investing base of culm, with compacted dead sheaths. Culms 20–25 cm long. Culm-internodes distally hirsute. Leaf-sheaths glabrous on surface. Ligule an eciliate membrane. Leaf-blades curved, filiform, involute, 3–12 cm long, 1 mm wide, stiff, grey-green. Leaf-blade surface pubescent, hairy adaxially. Leaf-blade margins unthickened.

Inflorescence. Inflorescence a panicle, comprising 20–40 fertile spikelets. Panicle open, ovate, 2–6 cm long, 1–1.5 cm wide. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 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, 6.5–9 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes pilose. Floret callus pubescent.

Glumes. Glumes persistent, similar, reaching apex of florets, thinner than fertile lemma, shiny, gaping. Lower glume lanceolate, 0.66 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume lateral veins absent. Lower glume apex acute. Upper glume lanceolate, 0.9–1 length of adjacent fertile lemma, membranous, 1-keeled, 3 -veined. Upper glume apex acute.

Florets. Fertile lemma oblong, 4.8–7.5 mm long, membranous, shiny, keeled, 5 -veined, more than 3-veined. Lemma apex dentate, 2 -fid, awned, 3 -awned. Principal lemma awn dorsal, arising 0.5–0.6 way up back of lemma, geniculate, 9–13 mm long overall, with twisted column. Lateral lemma awns present, 1–2 mm long. Palea gaping, hyaline.

Flower and Fruit. Anthers 3, 2–2.5 mm long. Caryopsis with adherent pericarp. Hilum punctiform.

Distribution (TDWG). Continent. Europe.

Region. Southeastern Europe.

Country /Province /State. : Italy.

Trisetum bifidum (Thunb.) Ohwi. *Bot. Mag., Tokyo*, xlv. 191 (1931).

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

TYPE from Japan. **Basionym or Replaced Name:** *Bromus bifidus* Thunb., *Fl. Jap.* . . . 53 (1784). T:<Type of Basionym>; *vide* TROPICOS and Kew Synonymy Database: Japan: Kiushiu: Nagasaki, 1774, *Thunberg* 2576 (HT: UPS; IT: L).

Illustrations (Books): T.Koyama, *Grasses of Japan and its neighbouring regions* (1987) (154, Fig. 51), C-C Hsu, *Flora of Taiwan*, Vol 5 (1978) (286), C-C Hsu, *Taiwan Grasses* (1975) (423, Pl. 1384), S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 448).

Derivation (Clifford & Bostock 2007): L. bis, twice; findo, divide. With structures such as panicle branches regularly bifurcating.

Classification. Subfamily Pooideae. Tribe: Poae.

Habit, Vegetative Morphology. Perennial, caespitose, clumped densely. Culms erect, 40–75 cm long, 1–2 mm diam., 2–4 -noded. Leaf-sheaths loose, glabrous on surface or pilose. Ligule an eciliate membrane, 0.2–1.5 mm long. Leaf-blades 10–20 cm long, 3–5 mm wide. Leaf-blade surface glabrous or pilose.

Inflorescence. Inflorescence a panicle. Panicle open, lanceolate or oblong, 10–20 cm long, 2–5 cm wide. Primary panicle branches 2 -nate, 1.5–7 cm long, bearing spikelets almost to the base. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 2–3 fertile florets, with a barren rhachilla extension or with diminished florets at 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, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes 1.5 mm long, glabrous to pubescent, hairy below. Floret callus pubescent.

Glumes. Glumes persistent, similar, shorter than spikelet, thinner than fertile lemma, shiny, gaping. Lower glume lanceolate, 2–3.5 mm long, 0.4–0.5 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume lateral veins absent. Lower glume apex acute. Upper glume lanceolate, 5–7 mm long, 1 length of adjacent fertile lemma, membranous, 1-keeled, 3 -veined. Upper glume apex acute.

Florets. Fertile lemma lanceolate, 5–7 mm long, membranous, much thinner on margins, keeled, 5 -veined, more than 3-veined. Lemma surface scaberulous. Lemma apex dentate, 2 -fid, acuminate, awned, 1 -awned. Principal lemma awn dorsal, arising 0.25 way up back of lemma, geniculate, 6–10 mm long overall, with twisted column. Palea gaping, 3.5–4 mm long, hyaline.

Flower and Fruit. Anthers 3, 0.8 mm long. Ovary glabrous. Caryopsis with adherent pericarp. Hilum punctiform.

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

Country /Province /State. China, Eastern Asia. China South Central, China North-Central, China Southeast, Tibet. Japan, Korea, Taiwan. Japan Hokkaido, or Honshu, or Shikoku, or Kyushu. **Malesia, Papuasias.** New Guinea West Papua (Irian Jaya). New Guinea.

TDWG4. Gansu, Shaanxi. Anhui, Fujian, Guangdong, Guangxi, Henan, Hunan, Jiangsu, Jiangxi, Zhejiang. Guizhou, Hubei, Sichuan, Yunnan.

Trisetum brasiliense Louis-Marie. *Rhodora*, . 242 (1929).

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 Brazil. T:<Type of Basionym>; *vide* TROPICOS and Kew Synonymy Database: HT: A. Chase 8304; 17 Jan 1925; Brazil: Rio de Janeiro: Itatiaia: peaty soil among rocks above timberline, 2200–2400 m (US-1257235; IT: GH, MO-924156, US-1447199) [US-1257235 appears to be annotated as type in Louis-Marie's hand].

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

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

Classification. Subfamily Pooideae. Tribe: Poeae.

Habit, Vegetative Morphology. Perennial, caespitose, clumped densely. Culms erect, 35–50 cm long. Culm-internodes smooth, distally glabrous. Leaf-sheaths striately veined. Ligule an eciliate membrane, 0.5–1 mm long, bilobed. Leaf-blades filiform, involute, 25 cm long, 1–1.5 mm wide.

Inflorescence. Inflorescence a panicle. Panicle lanceolate, 5–8 cm long, 1 cm wide, bearing few spikelets. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

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, 5 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes pubescent. Floret callus pubescent.

Glumes. Glumes persistent, similar, exceeding apex of florets, shiny. Lower glume ovate, 5 mm long, 1 length of upper glume, membranous, 1-keeled, 3 -veined. Lower glume apex acuminate. Upper glume ovate, 5 mm long, 1.1 length of adjacent fertile lemma, membranous, 1-keeled, 3 -veined. Upper glume apex acuminate.

Florets. Fertile lemma ovate, 4.5 mm long, 2 mm wide, cartilaginous, shiny, without keel, 5 -veined, more than 3-veined. Lemma apex dentate, 2 -fid, awned, 1 -awned. Principal lemma awn dorsal, arising 0.1 way up back of lemma, geniculate, 5–6 mm long overall, with twisted column. Palea 1 length of lemma. Palea keels ciliate.

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

Distribution (TDWG). Continent. South America.

Country /Province /State. Brazil. Brazil Southeast.

Trisetum bulbosum Hitchcock. *Journ. Wash. Acad. Sc.* xvii. 217. (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 Chile. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: C. Joseph 4607; 30 Oct 1926; Chile: Concepción (US-1297352).

Recent Synonyms: *Helictotrichon bulbosum* (Hitchcock) Parodi, *Rev. Argent. Agron.* 16: 211 (1949).

Illustrations (Books): E.G.Nicora, *Los Generos de Gramineas de America Austral* (1987) (248, Fig.79 as *Helictotrichon*), A.L.Cabrera, *Flora de la Provincia de Buenos Aires, IV Pt 2 Gramineas* (1970) (158, Fig. 43 as *Helictotrichon*).

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

Classification. Subfamily Pooideae. Tribe: Poeae.

Habit, Vegetative Morphology. Perennial, caespitose. Butt sheaths thickened and forming a bulb. Culms erect, 30–50 cm long. Culm-internodes distally glabrous. Leaf-sheaths glabrous on surface. Ligule an eciliate membrane, 1–2 mm long, lacerate, obtuse. Leaf-blades flat or conduplicate or involute, 2–5 cm long, 0.5–1.5 mm wide. Leaf-blade surface scaberulous, glabrous.

Inflorescence. Inflorescence a panicle. Panicle contracted, linear, 8–10 cm long. Primary panicle branches appressed. Panicle axis scabrous. Panicle branches scabrous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 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 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes pilose. Floret callus pubescent.

Glumes. Glumes persistent, similar, shorter than spikelet, thinner than fertile lemma. Lower glume elliptic, 6–7 mm long, 0.9 length of upper glume, membranous, 1-keeled, 1–3 -veined. Lower glume lateral veins absent or obscure. Lower glume apex acute. Upper glume elliptic, 7–8 mm long, 0.75 length of adjacent fertile lemma, membranous, 1-keeled, 3–5 -veined. Upper glume apex acute.

Florets. Fertile lemma lanceolate, 10 mm long, cartilaginous, without keel, 3 -veined, 0–3 -veined. Lemma surface asperulous, rough below. Lemma apex dentate, 2 -fid, awned, 1 -awned. Principal lemma awn dorsal, arising 0.5 way up back of lemma, geniculate, 12–15 mm long overall, with twisted column. Palea 0.5 mm long. Palea keels ciliate.

Flower and Fruit. Anthers 3, 2 mm long. Ovary pubescent on apex. Caryopsis with adherent pericarp, hairy at apex. Hilum linear.

Distribution (TDWG). Continent. South America.

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

TDWG4. Buenos Aires. Rest of Chile- Biobio, La Auracania, Maule, O'Higgins, Santado, Valpariso. Biobio.

Trisetum bungei Boiss. *Fl. Orient.* v. 535. (1884).

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

TYPE from Iran. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Iran, Ziarat: Bunge 68 (G hol., K) ; Iran, Ziarat: Bunge 69 (G hol.).

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

Derivation (Clifford & Bostock 2007): In honor of Aleksandr Andreevic Bunge (1803–1890) Ukrainian physician and botanist.

Classification. Subfamily Pooideae. Tribe: Poeae.

Habit, Vegetative Morphology. Perennial. Rhizomes elongated. Culms erect or geniculately ascending, 10–20 cm long. Ligule an eciliate membrane. Leaf-blades 3–6 cm long, 1–2 mm wide, flaccid. Leaf-blade surface puberulous, sparsely hairy, hairy on both sides.

Inflorescence. Inflorescence a panicle. Panicle contracted, linear, 7 cm long, 0.5 cm wide. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

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, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, similar, shorter than spikelet, thinner than fertile lemma, shiny, gaping. Lower glume linear, 2–3 mm long, 0.75 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume lateral veins absent. Lower glume apex acute. Upper glume lanceolate, 3.5–4.5 mm long, 1 length of adjacent fertile lemma, membranous, 1-keeled, 3 -veined. Upper glume apex acute.

Florets. Fertile lemma lanceolate, 3.5–4.5 mm long, membranous, shiny, keeled, 5 -veined, more than 3-veined. Lemma apex dentate, 2 -fid, awned, 1 -awned. Principal lemma awn dorsal, arising 0.5 way up back of lemma, geniculate, 6 mm long overall, with twisted column. Palea gaping, hyaline.

Flower and Fruit. Anthers 3. Ovary glabrous. Caryopsis with adherent pericarp. Hilum punctiform.

Distribution (TDWG). Continent. Temperate Asia.

Country /Province /State. Western Asia. Iran.

Trisetum burnoufii Req. ex Parl. *Fl. Ital.* i. 263. (1850).

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

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

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

Derivation (Clifford & Bostock 2007): in honor of Charles Burnouf (fl. 1850) Corsican educator.

Classification. Subfamily Pooideae. Tribe: Poeae.

Habit, Vegetative Morphology. Perennial, caespitose, clumped loosely. Butt sheaths pubescent. Culms slender, 15–40 cm long. Culm-internodes distally pubescent. Ligule an eciliate membrane. Leaf-blades convolute, 3–6 cm long, 1 mm wide. Leaf-blade surface glabrous or pubescent.

Inflorescence. Inflorescence a panicle. Panicle open, lanceolate or oblong, 3–6 cm long, 0.5–1.5 cm wide. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, glabrous.

Fertile Spikelets. Spikelets comprising 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, 4–6 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes pilose, with 0.7–1 mm long hairs. Floret callus pubescent. Floret callus hairs 0.3 mm long.

Glumes. Glumes persistent, similar, shorter than spikelet, thinner than fertile lemma, shiny, gaping. Lower glume lanceolate, 0.75 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume lateral veins absent. Lower glume apex acute. Upper glume lanceolate, 0.9 length of adjacent fertile lemma, membranous, 1-keeled, 3 -veined. Upper glume apex acute.

Florets. Fertile lemma oblong, 4–5.5 mm long, membranous, shiny, keeled, 5 -veined, more than 3-veined. Lemma surface pubescent. Lemma apex dentate, 2 -fid, awned, 1 -awned. Principal lemma awn dorsal, arising 0.5–0.6 way up back of lemma, curved, 2–2.5 mm long overall. Palea gaping, hyaline.

Flower and Fruit. Anthers 3, 2–2.5 mm long. Caryopsis with adherent pericarp. Hilum punctiform.

Distribution (TDWG). Continent. Europe.

Region. Southwestern Europe.

Country /Province /State. : Corsica.

Trisetum buschianum Seregin. *Not. Syst. Herb. Inst. Bot. Acad. Sci. URSS*, xxi. 51 (1961).

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 Synonymy Database: HT: Seregin s. n.; 10 Jul 1958; [Caucasus]: Kabardino-Balkaria: glac. Bezengi (LE) Orig. label: Kab.-Balk. ASSR, ushk. reki Bezengijskij Cherek, verkh. r. Bezengi, svezhie moreny ledn. Bezengi.

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

Derivation (Clifford & Bostock 2007): L. *-ana*, indicating connection. In honor of Elizabeth (Elizaveta) Alexandrowna Busch (1886–1960) and Nicolai Adolfowitsch (Adolfovich) Busch (1869–1941) who jointly collected in the Caucasus.

Classification. Subfamily Pooideae. Tribe: Poeae.

Habit, Vegetative Morphology. Perennial, caespitose, clumped loosely. Butt sheaths pilose, persistent and investing base of culm, with compacted dead sheaths. Culms 15–25 cm long. Culm-internodes smooth, distally glabrous. Ligule an eciliate membrane, 2.2 mm long, truncate. Leaf-blades 4–8 cm long, 3–5 mm wide. Leaf-blade surface pilose, hairy on both sides. Leaf-blade margins ciliate. Leaf-blade apex acute.

Inflorescence. Inflorescence a panicle. Panicle open, linear or lanceolate, dense, 3–7 cm long, 1.5 cm wide. Primary panicle branches 1-nate, bearing spikelets almost to the base. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 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, 6–8 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes pilose.

Glumes. Glumes persistent, similar, shorter than spikelet, thinner than fertile lemma, shiny, gaping. Lower glume elliptic, 0.75 length of upper glume, membranous, 1-keeled, 1-veined. Lower glume lateral veins absent. Lower glume apex acuminate. Upper glume elliptic, 0.9 length of adjacent fertile lemma, membranous, 1-keeled, 3-veined. Upper glume apex obtuse.

Florets. Fertile lemma oblong, 5–6 mm long, membranous, shiny, keeled, 5-veined, more than 3-veined. Lemma apex dentate, 2-fid, awned, 1-awned. Principal lemma awn dorsal, arising 0.66 way up back of lemma, geniculate, 5–6 mm long overall, with a straight or slightly twisted column. Palea gaping, hyaline.

Flower and Fruit. Anthers 3. Ovary glabrous. Caryopsis with adherent pericarp. Hilum punctiform.

Distribution (TDWG). Continent. Temperate Asia.

Country /Province /State. Caucasus. North Caucasus.

TDWG4.

Trisetum canescens Buckl. *Proc. Acad. Sc. Philad.* 1862 : 100 (1863).

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

TYPE from USA. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: Nuttall s.n.; ; USA: Oregon: Columbia Plains (PH).

Illustrations (Books): M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 24 *Poaceae*, part 1 (2007) (749).

Derivation (Clifford & Bostock 2007): L. *canesco*, grow white. Leaf-blades or leaf-sheaths densely invested with white or grey hairs.

Classification. Subfamily Pooideae. Tribe: Poeae.

Habit, Vegetative Morphology. Perennial, caespitose. Culms erect or geniculately ascending, 50–100 cm long. Leaf-sheaths antrorsely scabrous, glabrous on surface to pilose. Leaf-sheath oral hairs ciliate, 2–3 mm long. Ligule an eciliate membrane, 1.5–4 mm long, erose, truncate. Leaf-blades 4–10 mm wide. Leaf-blade surface scaberulous, glabrous to pilose.

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

Fertile Spikelets. Spikelets comprising 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, 8 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes 2–3 mm long, pilose, with 2 mm long hairs. Floret callus pubescent.

Glumes. Glumes persistent, dissimilar, shorter than spikelet, thinner than fertile lemma, shiny. Lower glume linear, 3–4 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, 5–6 mm long, 1 length of adjacent fertile lemma, membranous, 1-keeled, 3-veined. Upper glume apex acute.

Florets. Fertile lemma oblong, 5–7 mm long, membranous, keeled, 5-veined, more than 3-veined. Lemma surface scaberulous. Lemma apex lobed, 2-fid, with lobes 2 mm long, incised 0.25 of lemma length, awned, 1-

awned. Principal lemma awn dorsal, arising 0.66 way up back of lemma, geniculate, 10–14 mm long overall, with twisted column. Palea gaping, hyaline. Rhachilla extension pilose.

Flower and Fruit. Lodicules 2, 1–1.5 mm long. Anthers 3, 1.3–2.3 mm long. Ovary pubescent on apex. Caryopsis with adherent pericarp. Hilum punctiform. Endosperm soft.

Distribution (TDWG). Continent. North America.

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

Trisetum caudulatum Trin. *Linnaea*, x. 300. (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 Chile. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Chile: Poeppig (LE holo).

Recent Synonyms: *Trisetum malacophyllum* Steud., nom nud., *Syn. Pl. Glum.* 1:299 (1854). *Trisetum monticola* Phil., *Linnaea*, 33: 291 (1865).

Koeleria grisebachii Domin, *Magyar Bot. Lap.* 3: 342 (1904).

Illustrations (Books): M.N.Correa, *Flora Patagonica* Parte III, Gramineae (1978) (65, Fig. 31 as *Koeleria grisebachii* & 251, Fig. 164).

Derivation (Clifford & Bostock 2007): L. caudex, tail; -ula, diminutive; -ata, possessing. Glumes narrow, tail-like.

Classification. Subfamily Pooideae. Tribe: Poeae.

Habit, Vegetative Morphology. Perennial. Rhizomes short. Culms erect, slender, 40–90 cm long, 3-noded. Culm-internodes smooth or scaberulous. Culm-nodes pubescent. Leaf-sheaths pubescent. Ligule a ciliolate membrane, 1–2.5 mm long, pubescent on abaxial surface, obtuse or acute. Leaf-blades 10–20 cm long, 2.5–5 mm wide. Leaf-blade surface scabrous, rough adaxially, pubescent, hairy abaxially.

Inflorescence. Inflorescence a panicle. Panicle contracted, lanceolate or oblong, 10–14 cm long. Panicle axis glabrous or pubescent. Panicle branches glabrous or pubescent. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 2–6 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 oblong, laterally compressed, 6–8 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes 1 mm long, pilose, with 1–1.5 mm long hairs. Floret callus pubescent.

Glumes. Glumes persistent, similar, shorter than spikelet, thinner than fertile lemma, shiny, gaping. Lower glume lanceolate, 4–5 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 setaceously acuminate. Upper glume lanceolate, 6–6.5 mm long, 0.9 length of adjacent fertile lemma, membranous, 1-keeled, 3-veined. Upper glume primary vein scabrous. Upper glume apex setaceously acuminate.

Florets. Fertile lemma oblong, 6–6.5 mm long, membranous, much thinner on margins, shiny, keeled, 5-veined, more than 3-veined. Lemma surface asperulous. Lemma apex dentate, 2-fid, awned, 3-awned. Principal lemma awn dorsal, arising 0.66 way up back of lemma, curved, 6–8 mm long overall. Lateral lemma awns present, 1 mm long. Palea gaping, 0.75–1 length of lemma, hyaline. Palea keels scaberulous. Palea apex with excurrent keel veins.

Flower and Fruit. Anthers 3, 1 mm long, eventually exerted or retained within floret. Caryopsis with adherent pericarp, 3–3.5 mm long, glabrous or hairy at apex. Hilum punctiform. Endosperm liquid.

Distribution (TDWG). Continent. South America.

Country /Province /State. Southern South America. Argentina South, Chile North, Chile Central, Chile South, Juan Fernandez Is.

TDWG4. Chubut, Neuquén, Río Negro. Rest of Chile- Biobio, La Araucania, Maule, O'Higgins, Santado, Valpariso, Chiloe, Aisen, Magellanes. Antofagasta. Coquimbo, Valparaiso, Santiago, O'Higgins, Maule, Biobio, La Araucania. Los Lagos, Aisen, Magellanes.

Trisetum cernuum Trin. *Mem. Acad. Petersb. Ser.* VI. i. 61. (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 USA. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: J.F.G. von Eschscholz s.n.; 1826; USA: Alaska: Sitcha (LE-TRIN-1889.01 (& fig.); IT: BAA-3366, NY-232366 (possible), P, US-81779 (fragm. ex LE-TRIN)) deinde D.Mertens 1829.

Illustrations (Books): M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 24 *Poaceae*, part 1 (2007) (749), M.N.Correa, *Flora Patagonica* Parte III, Gramineae (1978) (242, Fig. 156).

Derivation (Clifford & Bostock 2007): *L. nodding*. Panicle branches pendant.

Classification. Subfamily Pooideae. Tribe: Poeae.

Habit, Vegetative Morphology. Perennial, caespitose. Culms 50–110 cm long. Culm-internodes distally glabrous. Leaf-sheaths scaberulous, glabrous on surface to pilose. Ligule an eciliate membrane, 1.5–3 mm long, erose, truncate or acute. Leaf-blades 5–10 mm wide. Leaf-blade surface scaberulous.

Inflorescence. Inflorescence a panicle. Panicle open, pyramidal, 10–30 cm long, bearing few spikelets. Primary panicle branches spreading or drooping, whorled at most nodes. Panicle branches capillary, flexuous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

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, 6–12 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes 2 mm long, pilose, with 2 mm long hairs. Floret callus pubescent.

Glumes. Glumes persistent, dissimilar, shorter than spikelet, thinner than fertile lemma, shiny. Lower glume linear, 1–2 mm long, 0.25–0.5 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume lateral veins absent. Lower glume apex acuminate. Upper glume linear, 3.5–4 mm long, 0.66–0.75 length of adjacent fertile lemma, membranous, 1-keeled, 3 -veined. Upper glume apex erose, acute.

Florets. Fertile lemma ovate, 5–6 mm long, membranous, keeled, 5 -veined, more than 3-veined. Lemma apex dentate, 2 -fid, awned, 1 -awned. Principal lemma awn dorsal, arising 0.5–0.66 way up back of lemma, flexuous, 10 mm long overall. Palea gaping, hyaline. Rhachilla extension pilose. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Anthers 3, 1 mm long. Ovary pubescent on apex. Caryopsis with adherent pericarp. Hilum punctiform. Endosperm soft.

Distribution (TDWG). Continent. North America, South America.

Country /Province /State. Western Canada, Northwest USA, Southwestern USA. Alberta, British Columbia. Colorado, Idaho, Oregon, Washington, Wyoming. Arizona, California, Utah. Southern South America. Argentina South, Chile Central, Chile South.

TDWG4. Chubut, Neuquén, Río Negro, Tierra del Fuego. La Araucania. Los Lagos, Aisen, Magellanes.

Trisetum ciliare (Kit.) Domin. *Preslia*, xiii-xv. 41 (1935).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), N.Tsvelev, *Grasses of the Soviet Union* (1983).

TYPE from Czechoslovakia. **Basionym or Replaced Name:** *Avena ciliaris* Kit. ex Schult., *Oestr. Fl.* (2 ed.) 1: 268 (1814). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Czechoslovakia, Carpathians: Coll?.

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

Derivation (Clifford & Bostock 2007): *L. cilium*, eyelid; -are, pertaining to. Glumes or lemmas ciliate on nerves or margins.

Classification. Subfamily Pooideae. Tribe: Poeae.

Habit, Vegetative Morphology. Perennial, caespitose, clumped loosely. Butt sheaths pubescent. Culms 25–70 cm long. Culm-internodes distally glabrous. Leaf-sheaths glabrous on surface. Ligule an eciliate membrane. Leaf-blades 7–15 cm long, 3–5 mm wide. Leaf-blade surface pubescent. Leaf-blade margins ciliate.

Inflorescence. Inflorescence a panicle. Panicle open, elliptic, 5–13 cm long, 1–4 cm wide. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 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, 4.4–7.5 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes pilose, with 1.3 mm long hairs. Floret callus pubescent.

Glumes. Glumes persistent, similar, shorter than spikelet, thinner than fertile lemma, shiny, gaping. Lower glume lanceolate, 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, 0.9 length of adjacent fertile lemma, membranous, 1-keeled, 3 -veined. Upper glume primary vein scabrous. Upper glume apex acute.

Florets. Fertile lemma oblong, 4.2–5 mm long, membranous, shiny, keeled, 5 -veined, more than 3-veined. Lemma midvein ciliate. Lemma apex dentate, 2 -fid, awned, 1 -awned. Principal lemma awn dorsal, arising 0.66 way up back of lemma, curved, 4–7 mm long overall, limb puberulous, with 0.1–0.3 mm long hairs, glabrescent towards tip. Palea gaping, hyaline.

Flower and Fruit. Anthers 3, 2–2.5 mm long. Caryopsis with adherent pericarp. Hilum punctiform.

Distribution (TDWG). Continent. Europe.
Region. Middle Europe, Southeastern Europe, and Eastern Europe.
Country /Province /State. Ukraine.
TDWG4.

Trisetum clarkei (Hook.f.) R. R. Stewart. *Brittonia*, v. 431 (1945).

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:** *Avena clarkei* Hook. f., *Fl. Brit. India* 7(22): 278–279 (1897 [1896]). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: India: Himachal Pradesh: Chamba Distr., Dalhousie, 8700 ft, *C.B. Clarke* 22985 (HT: ?; ST: K) and 31514, 31517, 24605.

Illustrations (Books): S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 446).

Derivation (Clifford & Bostock 2007): in honor of Charles Baron Clarke (1832–1906) English-born Indian teacher-botanist.

Classification. Subfamily Pooideae. Tribe: Poeae.

Habit, Vegetative Morphology. Perennial, caespitose. Culms erect or geniculately ascending, 20–70 cm long, 2–5 -noded. Leaf-sheaths pilose. Ligule an eciliate membrane. Leaf-blades 4–20 cm long, 1.5–2 mm wide. Leaf-blade surface glabrous or pubescent. Leaf-blade apex acuminate.

Inflorescence. Inflorescence a panicle. Peduncle pubescent above. Panicle contracted, linear or lanceolate, 4.5–18 cm long, 1–3 cm wide. Primary panicle branches 1–2 cm long. Panicle axis puberulous. Panicle branches puberulous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 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, 5–8.5 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes pubescent. Floret callus pubescent.

Glumes. Glumes persistent, similar, reaching apex of florets, thinner than fertile lemma, shiny, gaping. Lower glume lanceolate, 4–6 mm long, 0.75 length of upper glume, membranous, much thinner on margins, 1-keeled, 3 -veined. Lower glume lateral veins obscure. Lower glume apex acute. Upper glume elliptic, 5.5–7.5 mm long, 1 length of adjacent fertile lemma, membranous, with hyaline margins, 1-keeled, 3 -veined. Upper glume apex acute.

Florets. Fertile lemma elliptic, 5.5–7 mm long, membranous, much thinner above, much thinner on margins, shiny, keeled, 5 -veined, more than 3-veined. Lemma apex dentate, 2 -fid, awned, 1 -awned. Principal lemma awn dorsal, curved, reflexed, 4–8 mm long overall. Palea gaping, hyaline. Palea keels scaberulous.

Flower and Fruit. Anthers 3. Ovary glabrous. Caryopsis with adherent pericarp. Hilum punctiform.

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

Country /Province /State. Western Asia, China. Afghanistan, Iran. China South Central, China North-Central, Qinghai, Tibet, Xinjiang. **Indian Subcontinent.** India, Pakistan, West Himalaya.

TDWG4. Gansu, Shaanxi. Hubei, Sichuan, Yunnan. Uttah Pradesh. Himachal Pradesh, Jammu Kashmir.

Trisetum cumingii (Steud.) L.R. Parodi & E.G.Nicora. *Fl. Patagonica*, 3: 250 (1978).

Accepted by: R.J.Soreng et al., *Catalogue of New World 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:** *Koeleria cumingii* Nees ex Steud., *Syn. Pl. Glumac.* 1: 294 (1854). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: LT: H. Cuming 460; 1831; Chile: Valparaíso (BAA-3396 (fragm. ex B); ILT: BM (Cuming 460 ex hb. Shuttleworth, mixed with Poa), US-91889 (fragm. ex CGE, mix of Poa & *Koeleria cumingii*)) LT designated by Finot et al., *Ann. Missouri Bot. Gard.* 92(4): 562 (2006).

Illustrations (Books): M.N.Correa, *Flora Patagonica* Parte III, Gramineae (1978) (251, Fig. 162).

Derivation (Clifford & Bostock 2007): in honor of Hugh Cuming (1791–1865) English naturalist and traveller.

Classification. Subfamily Pooideae. Tribe: Poeae.

Habit, Vegetative Morphology. Perennial, caespitose. Culms erect, 45–50 cm long, 4 -noded. Culm-internodes distally glabrous. Culm-nodes glabrous or pubescent. Leaf-sheaths glabrous on surface or pubescent. Ligule an eciliate membrane, 1.5–3 mm long, pubescent on abaxial surface. Leaf-blades 10–20 cm long, 2–5 mm wide.

Inflorescence. Inflorescence a panicle. Panicle contracted, lanceolate, 3–12 cm long. Primary panicle branches 2–5 cm long. Panicle axis glabrous or pubescent. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 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, 6–7 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes sparsely hairy, with 1 mm long hairs. Floret callus pubescent.

Glumes. Glumes persistent, similar, reaching apex of florets or exceeding apex of florets, thinner than fertile lemma, shiny, gaping. Lower glume lanceolate, 5–7 mm long, 0.9–1 length of upper glume, membranous, much thinner on margins, 1-keeled, 1 -veined. Lower glume primary vein scabrous. Lower glume lateral veins absent. Lower glume apex acuminate. Upper glume ovate, 5.5–7 mm long, 1–1.1 length of adjacent fertile lemma, membranous, with hyaline margins, 1-keeled, 3 -veined. Upper glume primary vein scabrous. Upper glume apex acuminate.

Florets. Fertile lemma oblong, 6–7 mm long, membranous, much thinner on margins, shiny, keeled, 5 -veined, more than 3-veined. Lemma surface asperulous. Lemma apex dentate, 2 -fid, awned, 3 -awned. Principal lemma awn dorsal, arising 0.5 way up back of lemma, straight, 5–7 mm long overall. Lateral lemma awns present, 0.5 mm long. Palea gaping, 1 length of lemma, hyaline.

Flower and Fruit. Anthers 3, 1–1.2 mm long. Ovary glabrous. Caryopsis with adherent pericarp. Hilum punctiform.

Distribution (TDWG). Continent. South America.

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

Neuquén, Río Negro, Santa Cruz. Rest of Chile- Biobio, La Auracania, Maule, O'Higgins, Santado, Valpariso.

Trisetum curvisetum C.W.Morden & J.Valdes-Reyna. *Brittonia*, 35(4): 375 (1983).

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

TYPE from Mexico. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Mexico, Sierra Madre Oriental, La Tinaja: Valdes & Capo VR-1419 (TAES holo, ANSM, CHAPA, ENCB, MEXU, MO, NY, TEX, US, UT, XALU).

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

Derivation (Clifford & Bostock 2007): *L. curvus*, bent; *seta*, bristle. Lemma with a curved awn.

Classification. Subfamily Pooideae. Tribe: Poeae.

Habit, Vegetative Morphology. Perennial. Rhizomes short. Culms erect, 60–150 cm long, 0.7–1.7 mm diam. Lateral branches lacking or sparse. Leaf-sheaths mostly shorter than adjacent culm internode, glabrous on surface or pilose. Ligule an eciliate membrane, 1.1–2.3 mm long, entire or erose, truncate. Leaf-blades 5–19 cm long, 1.5–8.5 mm wide. Leaf-blade surface pubescent, hairy adaxially. Leaf-blade apex acuminate.

Inflorescence. Inflorescence a panicle. Panicle open, lanceolate or pyramidal, 11–229 cm long, 2–15 cm wide. Primary panicle branches ascending, 3–5 -nate, 1–14 cm long. Panicle axis with lower internodes 2–10 cm long. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 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, 3–5.2 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes 1–1.8 mm long, pubescent.

Glumes. Glumes persistent, similar, shorter than spikelet, thinner than fertile lemma, shiny, gaping. Lower glume lanceolate, 1.8–2.5 mm long, 0.5–0.66 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume primary vein scaberulous. Lower glume lateral veins absent. Lower glume apex acuminate. Upper glume elliptic, 2.8–3.8 mm long, 1 length of adjacent fertile lemma, membranous, 1-keeled, 3 -veined. Upper glume primary vein smooth or scaberulous. Upper glume lateral veins all falling short of apex. Upper glume apex acuminate.

Florets. Fertile lemma lanceolate, 2.7–4.3 mm long, membranous, shiny, without keel, 5 -veined, more than 3-veined. Lemma lateral veins obscure. Lemma apex dentate, 2 -fid, with lobes 0.1–0.2 mm long, awned, 1 -awned. Principal lemma awn dorsal, arising 0.75 way up back of lemma, flexuous, 1.5–5.7 mm long overall. Palea gaping, 2.3–3.1 mm long, 0.5–0.8 length of lemma, hyaline. Palea keels scaberulous.

Flower and Fruit. Lodicules 2, oblong, 0.2–0.3 mm long, truncate. Anthers 3, 0.5–0.9 mm long. Caryopsis with adherent pericarp, 1.7–2.2 mm long. Embryo 0.2 length of caryopsis. Endosperm soft.

Distribution (TDWG). Continent. North America.

Country /Province /State. Mexico. Northeast Mexico.

TDWG4. Neuvo Leon.

Trisetum debile J. Chrtek. *Folia Geobot. Phytotax.*, 25(3): 334 (1990).

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

TYPE from China. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: China, Yunnan, Chungtien: Handel-Mazzetti 7739 (W holo).

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

Derivation (Clifford & Bostock 2007): L. weak. Culms decumbent often much branched at the base.

Classification. Subfamily Pooideae. Tribe: Poeae.

Habit, Vegetative Morphology. Perennial, caespitose. Culms erect, 25 cm long, 0.8 mm diam., 3 -noded. Culm-internodes smooth, distally glabrous or pubescent. Leaf-sheaths 5.5 cm long, puberulous. Ligule an eciliate membrane, 0.7 mm long. Leaf-blades 4 cm long, 1–1.2 mm wide. Leaf-blade surface puberulous, hairy on both sides. Leaf-blade apex acuminate.

Inflorescence. Inflorescence a panicle. Peduncle pilose above. Panicle open, lanceolate, 4 cm long, 0.5 cm wide, bearing few spikelets. Panicle branches pubescent. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, 2 mm long, 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 oblong or cuneate, laterally compressed, 5–6 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes pubescent.

Glumes. Glumes persistent, dissimilar, shorter than spikelet, thinner than fertile lemma, gaping. Lower glume lanceolate, 3–4 mm long, 0.75–0.8 length of upper glume, membranous, 1-keeled, 3 -veined. Lower glume primary vein scaberulous. Lower glume lateral veins obscure. Lower glume apex acuminate, mucronate. Upper glume lanceolate, 4–4.5 mm long, 1 length of adjacent fertile lemma, membranous, 1-keeled, 5 -veined. Upper glume primary vein obscure, scaberulous. Upper glume apex acuminate, mucronate.

Florets. Fertile lemma lanceolate, 4–4.5 mm long, chartaceous, keeled, 5 -veined, more than 3-veined. Lemma midvein scaberulous. Lemma lateral veins obscure. Lemma apex dentate, 2 -fid, awned, 1 -awned. Principal lemma awn dorsal, arising 0.66 way up back of lemma, curved or geniculate, 5–7 mm long overall, without a column or with a straight or slightly twisted column. Palea 4.5 mm long, hyaline. Palea keels ciliate. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Anthers 3. Ovary pubescent on apex.

Distribution (TDWG). Continent. Temperate Asia.

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

TDWG4. Yunnan.

Trisetum dianthemum (Louis-Marie) Finot. *Contr. U. S. Natl. Herb.* 48: 664 (2003).

Accepted 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 Chile. **Basionym or Replaced Name:** *Trisetum biflorum* Phil., non Hochst.(1855), *Anal. Univ. Chil.* 568 (1873). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: : Based on *T. biflorum* Phil. ; Chile, Rio Puelo: Gormaz (SGO holo).

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

Derivation (Clifford & Bostock 2007): Gk *dis*, twice; *antheon*, flower. Spikelets with two florets.

Classification. Subfamily Pooideae. Tribe: Poeae.

Habit, Vegetative Morphology. Perennial, caespitose. Culms geniculately ascending, 18–60 cm long, 1–2 -noded. Culm-nodes glabrous. Leaf-sheaths 3–4 cm long, glabrous on surface. Ligule an eciliate membrane, 1–1.5 mm long, 1 mm long on basal shoots or 2 mm long on basal shoots, glabrous on abaxial surface, erose. Leaf-blades 5–15 cm long, 1.5–2.5 mm wide. Leaf-blade surface smooth, glabrous. Leaf-blade margins scabrous, glabrous or ciliate. Leaf-blade apex acuminate.

Inflorescence. Inflorescence a panicle. Peduncle pilose above. Panicle contracted, lanceolate, 4–8 cm long, 1–2 cm wide. Panicle axis pubescent. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, 1.5–4 mm long, scabrous.

Fertile Spikelets. Spikelets comprising 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, 6.5–8 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes 0.9–1 mm long, pilose. Floret callus pubescent, obtuse.

Glumes. Glumes persistent, similar, with lower narrower than upper, reaching apex of florets, thinner than fertile lemma, shiny, gaping. Lower glume lanceolate, 6–7.5 mm long, 0.9 length of upper glume, membranous, much thinner on margins, 1-keeled, 1–3 -veined. Lower glume primary vein scabrous. Lower glume lateral veins absent or obscure. Lower glume apex setaceously acuminate. Upper glume lanceolate, 6.5–8 mm long,

1.2–1.3 length of adjacent fertile lemma, membranous, with hyaline margins, 1-keeled, 3 -veined. Upper glume primary vein scabrous. Upper glume apex setaceously acuminate.

Florets. Fertile lemma elliptic, 5.6–6.3 mm long, membranous, shiny, keeled, 5 -veined, more than 3-veined. Lemma midvein scaberulous. Lemma surface glabrous. Lemma apex dentate, 2 -fid, awned, 1 -awned. Principal lemma awn dorsal, arising 0.66–0.75 way up back of lemma, geniculate, 3.5–7 mm long overall, with a straight or slightly twisted column. Palea gaping, 4.2–4.5 mm long, hyaline. Palea keels scaberulous.

Flower and Fruit. Lodicules 2, 0.6–0.8 mm long. Anthers 3, 0.8 mm long. Ovary glabrous. Caryopsis with adherent pericarp.

Distribution (TDWG). Continent. South America.

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

TDWG4. Chubut. Los Lagos.

Trisetum distichophyllum (Vill.) Beauv. *Agrost.* 88. (1812).

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 France. **Basionym or Replaced Name:** *Avena distichophylla* Vill., *Prosp. Hist. Pl. Dauphine* 2: 144 (1787). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: ST: Hall. hist n. 1489; ; ST: Hall. Emend. III. n. 135; ;

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

Derivation (Clifford & Bostock 2007): Gk. distichos, in two rows; phyllon, leaf. Leaves arranged conspicuously in two rows.

Classification. Subfamily Pooideae. Tribe: Poeae.

Habit, Vegetative Morphology. Perennial. Stolons present. Culms geniculately ascending, 10–30 cm long. Culm-internodes distally glabrous or pubescent. Leaves mostly basal, distichous. Leaf-sheaths glabrous on surface or pubescent. Ligule an eciliate membrane. Leaf-blades flat or conduplicate, 3–6 cm long, 1–3 mm wide. Leaf-blade surface puberulous.

Inflorescence. Inflorescence a panicle, comprising 30–50 fertile spikelets. Panicle open, ovate, 3–6 cm long, 1–3 cm wide. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 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, 5.5–8.5 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes pilose, with 3 mm long hairs. Floret callus bearded. Floret callus hairs 0.66 length of lemma.

Glumes. Glumes persistent, similar, with lower narrower than upper, shorter than spikelet, thinner than fertile lemma, shiny, gaping. Lower glume lanceolate, 0.75–0.85 length of upper glume, membranous, 1-keeled, 3 -veined. Lower glume apex acute. Upper glume lanceolate, 1 length of adjacent fertile lemma, membranous, 1-keeled, 3 -veined. Upper glume apex acute.

Florets. Fertile lemma oblong, 4–5.5 mm long, membranous, shiny, keeled, 5 -veined, more than 3-veined. Lemma apex dentate, 2 -fid, awned, 3 -awned. Principal lemma awn dorsal, arising 0.66 way up back of lemma, geniculate, 4.5–6.8 mm long overall, with twisted column. Lateral lemma awns present, 0.5–1 mm long. Palea gaping, hyaline.

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

Distribution (TDWG). Continent. Europe.

Region. Middle Europe, Southwestern Europe, Southeastern Europe.

Country /Province /State. : Austria, Germany, Switzerland. : France, Spain. : Albania, Italy, Yugoslavia.

Trisetum drucei E.Edgar. *New Zealand J. Bot.*, 36(4): 548 (1998).

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).

TYPE from New Zealand. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: New Zealand: SE of Imjin Camp, Moawhango Range, Kaimanawa Mountains, 2700 ft, cliff in gorge, Jan 1974, *A.P. druce s.n.* (CHR-260294).

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

Derivation (Clifford & Bostock 2007): In honor of Anthony Peter Druce (1920–1998) New Zealand botanist.

Classification. Subfamily Pooideae. Tribe: Poeae.

Habit, Vegetative Morphology. Perennial, caespitose, clumped densely. Culms 30–60 cm long. Leaf-sheaths 2–8 cm long, scaberulous or papillose, glabrous on surface or puberulous. Ligule a ciliolate membrane,

0.8–1 mm long, erose. Leaf-blades conduplicate, (3–)12–25(–30) cm long, (0.5–)1–4 mm wide, stiff, dark green. Leaf-blade surface scaberulous, rough adaxially or on both sides. Leaf-blade margins scaberulous.

Inflorescence. Inflorescence a panicle. Peduncle glabrous or pubescent above. Panicle contracted, lanceolate, interrupted, 5–20 cm long, 1–1.5(–3) cm wide, contracted about primary branches. Primary panicle branches bearing spikelets almost to the base. Panicle axis puberulous. Panicle branches puberulous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, puberulous.

Fertile Spikelets. Spikelets comprising 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, 6–8 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes pilose, with 1–2 mm long hairs. Floret callus pubescent. Floret callus hairs 0.5–1 mm long.

Glumes. Glumes persistent, similar, shorter than spikelet or reaching apex of florets, thinner than fertile lemma, shiny, gaping. Lower glume oblong or ovate, 0.75 length of upper glume, membranous, much thinner on margins, 1-keeled. Lower glume apex acute. Upper glume elliptic or oblong, membranous, with hyaline margins, 1-keeled. Upper glume apex acute.

Florets. Fertile lemma elliptic, 3.5–6 mm long, membranous, shiny, keeled, 5 -veined, more than 3-veined. Lemma midvein scaberulous. Lemma surface papillose. Lemma apex dentate, 2 -fid, awned, 1 -awned. Principal lemma awn dorsal, arising 0.75 way up back of lemma, curved, 3.5–7.5 mm long overall. Palea gaping, hyaline. Palea keels scaberulous.

Flower and Fruit. Lodicules 2, 0.8–1.2 mm long. Anthers 3. Caryopsis with adherent pericarp.

Distribution (TDWG). Continent. Australasia.

Country /Province /State. New Zealand. New Zealand South I.

Trisetum durangense Finot & P.M.Peterson. *Ann. Missouri Bot. Gard.* 91(1): 19 (-21; fig. 1) (2004).

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

TYPE from Mexico. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: Mexico, Sierra Madre: Peterson & Annable 6034 (US holo).

Illustrations (Journals): *Ann. Missouri Bot. Gard.* (91: 20: Fig.2 (2004)).

Derivation (Clifford & Bostock 2007): L. -ensis, denoting origin. From Durango, Mexico.

Classification. Subfamily Pooideae. Tribe: Poeae.

Habit, Vegetative Morphology. Perennial, caespitose. Rhizomes short. Culms 75–110 cm long, 3 -noded. Culm-nodes pubescent. Leaf-sheaths 11–23 cm long, subequal to internodes, pilose. Ligule an eciliate membrane, 3–7 mm long, lacerate, acute. Leaf-blades flat or conduplicate, 15–50 cm long, 1–4 mm wide, stiff. Leaf-blade surface scabrous, rough on both sides. Leaf-blade margins ciliate.

Inflorescence. Inflorescence a panicle. Peduncle smooth or retrorsely scabrous above. Panicle open, pyramidal, nodding, 15–22 cm long, 5–20 cm wide. Primary panicle branches ascending, 4–6 -nate, whorled at most nodes (4–5 whorls), 3–14 cm long. Panicle axis scabrous. Panicle branches capillary, scabrous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, scabrous.

Fertile Spikelets. Spikelets comprising 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, 7–9 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes 2 mm long, pubescent. Floret callus pubescent. Floret callus hairs 1 mm long.

Glumes. Glumes persistent, similar, with lower narrower than upper, reaching apex of florets, thinner than fertile lemma, shiny, gaping. Lower glume lanceolate, 5–6 mm long, 0.7–0.8 length of upper glume, membranous, 1-keeled, 3 -veined. Lower glume primary vein scabrous. Lower glume apex acute. Upper glume lanceolate, 6–9 mm long, 0.9–1.1 length of adjacent fertile lemma, membranous, 1-keeled, 3 -veined. Upper glume apex acute.

Florets. Fertile lemma elliptic, 7–8 mm long, membranous, shiny, keeled, 5 -veined, more than 3-veined. Lemma lateral veins prominent (above), excurrent. Lemma surface pilose. Lemma apex dentate, 2 -fid, awned, 1 -awned. Principal lemma awn dorsal, arising 0.5 way up back of lemma, geniculate, 7–10 mm long overall, with twisted column. Palea gaping, 5.8–7 mm long, hyaline. Palea keels ciliate.

Flower and Fruit. Lodicules 2, 0.7–1.1 mm long, ciliate. Anthers 3, 2–3 mm long. Ovary pubescent on apex. Caryopsis with adherent pericarp, 2–2.7 mm long.

Distribution (TDWG). Continent. North America.

Country /Province /State. Mexico. Northeast Mexico. Durango.

Trisetum filifolium Scribn. ex Beal. *Grasses N. Amer.* ii. 375 (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>: *vide* TROPICOS and Kew Synonymy Database: HT: C.G. Pringle 1431; 3 Oct 1887; Mexico: Chihuahua (US-81773; IT: CM, US-825600, US-747339).

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

Derivation (Clifford & Bostock 2007): L. filum, thread; folium, leaf. Leaf-blades very narrow.

Classification. Subfamily Pooideae. Tribe: Poeae.

Habit, Vegetative Morphology. Perennial, caespitose, clumped loosely. Butt sheaths persistent and investing base of culm. Culms geniculately ascending, 50–100 cm long. Leaves mostly basal. Leaf-sheaths antrorsely scabrous. Ligule an eciliate membrane, 0.5–1 mm long, entire. Leaf-blades flexuous, filiform, involute, 15–30 cm long, 0.5–1 mm wide. Leaf-blade surface scabrous.

Inflorescence. Inflorescence a panicle. Peduncle scaberulous above. Panicle open, elliptic, nodding, 10–15 cm long. Primary panicle branches appressed or ascending. Panicle axis angular, scabrous. Panicle branches capillary, scabrous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 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. Rhachilla internodes pilose. Floret callus pubescent. Floret callus hairs 0.5 mm long.

Glumes. Glumes persistent, similar, shorter than spikelet, thinner than fertile lemma, shiny. Lower glume oblong, 4 mm long, 1 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume lateral veins absent. Lower glume apex acute. Upper glume oblong, 4 mm long, 1 length of adjacent fertile lemma, membranous, 1-keeled, 3 -veined. Upper glume apex acute.

Florets. Fertile lemma oblong, 4 mm long, membranous, keeled, 5 -veined, more than 3-veined. Lemma surface scaberulous. Lemma apex dentate, 2 -fid, muticous or awned, 1 -awned. Principal lemma awn dorsal, arising 0.5–0.66 way up back of lemma, geniculate, 4–5 mm long overall, with twisted column. Palea gaping, hyaline. Rhachilla extension pilose.

Flower and Fruit. Anthers 3. Caryopsis with adherent pericarp. Hilum punctiform. Endosperm soft.

Distribution (TDWG). Continent. North America.

Country /Province /State. Mexico. Central Mexico, Northeast Mexico.

TDWG4. Mexico State. Coahuila, Chihuahua, Durango, Hidalgo.

Trisetum flavescens (L.) Beauv. *Agrost.* 88 (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), 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. **Basionym or Replaced Name:** *Avena flavescens* L., *Pl. Sp.* 80 (1753). T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: LT: *Herb. A. Van Royen no. 913.7–458*, (L). LT designated by Cope in Cafferty et al., *Taxon* 49(2): 247 (2000).

Recent Synonyms: *Trisetum sikkimense* (Hook. f.) Chrtek, *Acta Univ. Carol., Praha, Biol.* 1967, 104 (1968).

Illustrations (Books): C.E.Hubbard, *Grasses* (1968) (246), N.L.Bor, *Gramineae* in K.H.Rechinger, *Flora Iranica*. No. 70/30 (1970) (Tab. 49), N.L.Bor, *Gramineae* in *Flora of Iraq* (1968) (360, Pl. 137), H.J.Noltie, *The Grasses of Bhutan* (2000) (583, Fig. 22 as *T. sikkimense*), S.W.L.Jacobs, R.D.B.Whalley & D.J.B.Wheeler., *Grasses of New South Wales*, 4th edn (2008) (390), M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 24 *Poaceae*, part 1 (2007) (751), M.N.Correa, *Flora Patagonica* Parte III, *Gramineae* (1978) (242, Fig. 157).

Images: D.Sharp & B.K.Simon, *AusGrass*. Grasses of Australia. CD-Rom Version 1.0. (2002);

Derivation (Clifford & Bostock 2007): L. flavesco, become yellow. Spikelets yellowish.

Classification. Subfamily Pooideae. Tribe: Poeae.

Habit, Vegetative Morphology. Perennial, caespitose. Butt sheaths pilose. Culms erect or geniculately ascending, 20–80(–100) cm long, 2–5 -noded. Ligule an eciliate membrane, 0.3–1.1 mm long. Leaf-blades 3.5–12 cm long, 2–5 mm wide. Leaf-blade surface glabrous or pubescent. Leaf-blade apex acuminate.

Inflorescence. Inflorescence a panicle. Panicle open, elliptic, 7–15 cm long, 1.5–7 cm wide. Panicle branches scaberulous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, 1–4 mm long, scaberulous.

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 or cuneate, laterally compressed, 5–7(–8) mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes pubescent. Floret callus pubescent.

Glumes. Glumes persistent, dissimilar, shorter than spikelet, thinner than fertile lemma, shiny, gaping. Lower glume lanceolate, 2.5–4.7 mm long, 0.66–0.75 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume primary vein scaberulous. Lower glume lateral veins absent. Lower glume apex acuminate. Upper glume elliptic, 4.3–6.5 mm long, 1 length of adjacent fertile lemma, membranous, 1-keeled, 3 -veined. Upper glume primary vein scaberulous. Upper glume apex acuminate.

Florets. Fertile lemma obovate, 4.4–6.3 mm long, chartaceous, much thinner above, much thinner on margins, yellow, shiny, keeled, 5 -veined, more than 3-veined. Lemma surface asperulous, rough above. Lemma apex dentate, 2 -fid, awned, 1 -awned. Principal lemma awn dorsal, arising 0.5–0.66 way up back of lemma, geniculate, 5–9 mm long overall, with twisted column. Palea gaping, hyaline. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Anthers 3, 1.3–2.5(–2.8) mm long. Ovary glabrous. Caryopsis with adherent pericarp, linear. Hilum punctiform.

$N = 19$ (1 ref TROPICOS). $2n = 24$ (2 refs TROPICOS), or 28 (2 refs TROPICOS), or 36 (2 refs TROPICOS).

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

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

Country /Province /State. : Denmark, Finland, Great Britain, Ireland, Northern Ireland, Norway, Sweden. : Corsica, Channel Islands, France, Monaco, Portugal, Sardinia, Andorra, Gibraltar, Spain, Azores. : Albania, Bulgaria, Greece, Italy, San Marino, Vatican, Crete, Romania, Malta, Sicily, Turkey Europe, Yugoslavia. Belarus, Estonia, Kaliningrad, Latvia, Lithuania, Baltic States, Central European Russia, South European Russia, Northwest European Russia, Moldova, Ukraine. **Northern Africa, Macaronesia.** Algeria, Morocco. Azores. Siberia, **Middle Asia, Caucasus, Western Asia, Eastern Asia.** Krasnoyarsk. Tadjikistan. Iran, Iraq. Japan. Japan Hokkaido, or Honshu. **Indian Subcontinent.** Eastern Himalaya. **Australia.** New South Wales (*). Hawaii (*). **Subarctic America, Western Canada, Eastern Canada, Northwest USA, Northeast USA, Southwestern USA, Southeastern USA.** Alberta. Nova Scotia. Colorado, Montana, Washington. New York, Rhode Island. California. Arkansas. **Southern South America.** Argentina South, Chile South.

TDWG4. Bhutan, Sikkim. Tablelands. Neuquén. Magellanes.

Trisetum foliosum Swallen. *Contrib. U. S. Nat. Herb.* xxix. 256 (1948).

Accepted by: R.J.Soreng et al., *Catalogue of New World 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 Synonymy Database: HT: J.A. Steyermark 57482, 21 Jul 1944, Venezuela: Mérida: Laguna Mucubaji, above Apartaderos, alt. 11900–1200 ft, On rocky slopes along stream above Laguna Mucubaji, toward Laguna Negra (US-1911640; IT: F-1216139, MO-3846028, MO-3873805 (fragm. ex VEN), VEN).

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

Derivation (Clifford & Bostock 2007): L. folium, leaf; -osa, abundance. Culms with many leaves often separated by long evenly spaced internodes.

Classification. Subfamily Pooideae. Tribe: Poeae.

Habit, Vegetative Morphology. Perennial, caespitose. Butt sheaths pubescent. Culms erect, 35 cm long. Culm-internodes distally glabrous. Leaf-sheaths longer than adjacent culm internode, glabrous on surface or pubescent. Ligule an eciliate membrane, 3–4 mm long. Leaf-blades 7–11 cm long, 1.5–3 mm wide. Leaf-blade surface glabrous or pubescent. Leaf-blade margins ciliate.

Inflorescence. Inflorescence a panicle. Panicle contracted, linear, 14 cm long, 1.5 cm wide. Primary panicle branches appressed or ascending, 3–5.5 cm long. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

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, 7 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes 2 mm long, pilose, hairy above, with 1 mm long hairs. Floret callus 0.2–0.8 mm long.

Glumes. Glumes persistent, similar, reaching apex of florets, thinner than fertile lemma, shiny, gaping. Lower glume lanceolate, 5 mm long, 0.66–0.75 length of upper glume, membranous, 1-keeled. Lower glume

primary vein ciliolate. Lower glume apex acuminate. Upper glume lanceolate, 7 mm long, 1.2 length of adjacent fertile lemma, membranous, 1-keeled, 3 -veined. Upper glume apex acuminate.

Florets. Fertile lemma elliptic, 6 mm long, membranous, shiny, keeled, 5 -veined, more than 3-veined. Lemma surface scabrous. Lemma apex dentate, 2 -fid, with lobes 1 mm long, awned, 1 -awned. Principal lemma awn dorsal, arising 0.5 way up back of lemma, curved, 9 mm long overall. Palea gaping, 4 mm long, hyaline. Palea keels ciliolate.

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

Distribution (TDWG). Continent. South America.

Country /Province /State. Northern South America, Western South America. Venezuela. Colombia.

Trisetum fuscum (Kit. ex Schult.) Roem. & Schult. *Syst.* ii. 664 (1817).

Regarded by K as a synonym (*T. ciliare*).

Accepted by: T.G.Tutin et al, *Flora Europaea* 5 (1980).

TYPE from Hungary. **Basionym or Replaced Name:** *Avena fusca* Kit. ex Schult., *Fl. Oestr.* ed. II. 1: 268 (1814). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Hungary, Kronstadt: Coll?.

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

Derivation (Clifford & Bostock 2007): L., dark, swarthy. Glumes or lemmas dark-brown.

Classification. Subfamily Pooideae. Tribe: Poeae.

Habit, Vegetative Morphology. Perennial, caespitose, clumped loosely. Butt sheaths pubescent. Culms 25–70 cm long. Culm-internodes distally glabrous. Leaf-sheaths glabrous on surface. Ligule an eciliate membrane. Leaf-blades 7–15 cm long, 3–5 mm wide. Leaf-blade surface pubescent. Leaf-blade margins ciliate.

Inflorescence. Inflorescence a panicle. Panicle open, elliptic, 5–13 cm long, 1–4 cm wide. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 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, 4.4–7.5 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes pilose, with 1.3 mm long hairs. Floret callus pubescent.

Glumes. Glumes persistent, similar, shorter than spikelet, thinner than fertile lemma, shiny, gaping. Lower glume lanceolate, 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, 0.9 length of adjacent fertile lemma, membranous, 1-keeled, 3 -veined. Upper glume primary vein scabrous. Upper glume apex acute.

Florets. Fertile lemma oblong, 4.2–5 mm long, membranous, shiny, keeled, 5 -veined, more than 3-veined. Lemma midvein ciliate. Lemma apex dentate, 2 -fid, awned, 1 -awned. Principal lemma awn dorsal, arising 0.66 way up back of lemma, curved, 4–7 mm long overall, limb puberulous, with 0.1–0.3 mm long hairs, glabrescent towards tip. Palea gaping, hyaline.

Flower and Fruit. Anthers 3, 2–2.5 mm long. Caryopsis with adherent pericarp. Hilum punctiform.

$2n = 28$ (3 refs TROPICOS).

Distribution (TDWG). Continent. Europe.

Region. Middle Europe, Southeastern Europe, Eastern Europe.

Country /Province /State. : Czechoslovakia, Poland. : Romania. North European Russia.

Trisetum glaciale Boiss. *Elench.* 87. (1838).

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 Spain. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Spain, Sierra Nevada: Coll?.

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

Derivation (Clifford & Bostock 2007): L. frozen. Growing at high altitudes.

Classification. Subfamily Pooideae. Tribe: Poeae.

Habit, Vegetative Morphology. Perennial, caespitose. Butt sheaths persistent and investing base of culm, with fibrous dead sheaths. Culms 8–20 cm long. Leaf-sheaths pubescent. Ligule an eciliate membrane. Leaf-blades 2–5 cm long, 0.5–1 mm wide, stiff. Leaf-blade surface pubescent. Leaf-blade margins cartilaginous.

Inflorescence. Inflorescence a panicle. Panicle spiciform, oblong, 2.5–3 cm long, 0.7–1 cm wide. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 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 or cuneate, laterally

compressed, 5 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes pilose, with 1 mm long hairs. Floret callus pubescent.

Glumes. Glumes persistent, similar, reaching apex of florets, thinner than fertile lemma, shiny, gaping. Lower glume elliptic, 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, 5 mm long, 1.1–1.5 length of adjacent fertile lemma, membranous, 1-keeled, 3 -veined. Upper glume apex acute.

Florets. Fertile lemma obovate, 3.5–4.5 mm long, cartilaginous, much thinner above, keeled, 5 -veined, more than 3-veined. Lemma surface asperulous. Lemma apex dentate, 2 -fid, awned, 1 -awned. Principal lemma awn dorsal, arising 0.6–0.7 way up back of lemma, geniculate, 4–5 mm long overall, with twisted column. Palea gaping, hyaline. Palea keels scaberulous.

Flower and Fruit. Lodicules 2, membranous. Anthers 3, 2 mm long. Ovary pubescent all over. Caryopsis with adherent pericarp. Hilum punctiform.

Distribution (TDWG). Continent. Europe.

Region. Southwestern Europe.

Country /Province /State. : Spain.

Trisetum glomeratum (Kunth) Trin. ex Steud. *Syn. Pl. Gram.* 229. (1854).

Accepted by: 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 Hawaii. **Basionym or Replaced Name:** *Koeleria glomerata* Kunth, *Rev. Gram.* 2: I. 219. (1834). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Hawaii, Kaah Mt.: Macrae (K iso).

Illustrations (Books): W.L.Wagner et al., *Manual of the Flowering Plants of Hawai'i*, Vol. 2 (1990) (1600, Pl. 237).

Derivation (Clifford & Bostock 2007): *L. glomus*, ball of thread; -ata, possessing. Spikelets crowded and forming clusters in the inflorescence.

Classification. Subfamily Pooideae. Tribe: Poeae.

Habit, Vegetative Morphology. Perennial, caespitose, clumped densely. Culms erect, 40–90 cm long. Leaf-sheaths 4–12 cm long, glabrous on surface or pubescent. Ligule an eciliate membrane, 2–3 mm long, lacerate. Leaf-blades flat or involute, 10–25 cm long, 2–4(–6) mm wide, coriaceous, stiff. Leaf-blade surface glabrous or pubescent. Leaf-blade apex pungent.

Inflorescence. Inflorescence a panicle. Panicle contracted or spiciform, linear, interrupted, 12–20 cm long, 1 cm wide. Panicle axis puberulous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 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, 4–6 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes pubescent.

Glumes. Glumes persistent, similar, shorter than spikelet or reaching apex of florets, thinner than fertile lemma, shiny, gaping. Lower glume linear, 4–5 mm long, 1 length of upper glume, hyaline, 1-keeled, 1 -veined. Lower glume lateral veins absent. Lower glume surface asperulous. Lower glume margins ciliolate. Lower glume apex acuminate. Upper glume lanceolate, 4–5 mm long, 1 length of adjacent fertile lemma, hyaline, 1-keeled, 3 -veined. Upper glume surface asperulous. Upper glume margins ciliolate. Upper glume apex acuminate.

Florets. Fertile lemma elliptic, 4–5 mm long, membranous, keeled, 5 -veined, more than 3-veined. Lemma lateral veins obscure. Lemma apex entire or dentate, 2 -fid, awned, 1 -awned. Principal lemma awn dorsal, arising 0.75–0.8 way up back of lemma, geniculate, 2–5 mm long overall, with twisted column. Palea gaping, 4–5 mm long, hyaline. Palea keels scaberulous.

Flower and Fruit. Anthers 3. Ovary glabrous. Caryopsis with adherent pericarp, oblong, 2.5–3 mm long, dark brown or red. Hilum punctiform.

Distribution (TDWG). Continent. Pacific.

Country /Province /State. North-central Pacific. Hawaii.

Trisetum gracile (Moris) Boiss. *Voy. Bot. Espagne*, 2: 654 (1845).

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 Sardinia. **Basionym or Replaced Name:** *Avena gracilis* Moris, *Stirp. Sard. Elench.* 1: 50 (1827). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Sardinia, Mt Genargentu: Moris (K iso).

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

Derivation (Clifford & Bostock 2007): L. slender. Culms or inflorescences slender.

Classification. Subfamily Pooideae. Tribe: Poeae.

Habit, Vegetative Morphology. Perennial, caespitose, clumped densely. Butt sheaths pubescent, persistent and investing base of culm, with compacted dead sheaths. Culms 4–15 cm long. Culm-internodes distally glabrous. Leaf-sheaths inflated, striately veined, glabrous on surface. Ligule an eciliate membrane. Leaf-blades curved, filiform, conduplicate, 0.8–3 cm long, 1 mm wide, stiff, grey-green. Leaf-blade venation prominent. Leaf-blade surface puberulous, hairy adaxially. Leaf-blade margins unthickened.

Inflorescence. Inflorescence a panicle, comprising 15–25 fertile spikelets. Panicle open, ovate, dense, 2 cm long, 1.2 cm wide. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 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, 4–7 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes pilose, with 1 mm long hairs. Floret callus pubescent.

Glumes. Glumes persistent, similar, reaching apex of florets, thinner than fertile lemma, shiny, gaping. Lower glume lanceolate, 1 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume lateral veins absent. Lower glume apex acute. Upper glume lanceolate, 0.9–1 length of adjacent fertile lemma, membranous, 1-keeled, 3 -veined. Upper glume apex acute.

Florets. Fertile lemma oblong, 3.5–5 mm long, membranous, shiny, keeled, 5 -veined, more than 3-veined. Lemma surface glabrous or pubescent, hairy below. Lemma apex dentate, 2 -fid, incised 0.15 of lemma length, awned, 3 -awned. Principal lemma awn dorsal, arising 0.33–0.5 way up back of lemma, geniculate, 5 mm long overall, with twisted column. Lateral lemma awns present, 1 mm long. Palea gaping, hyaline.

Flower and Fruit. Anthers 3, 2.5 mm long. Caryopsis with adherent pericarp. Hilum punctiform.

Distribution (TDWG). Continent. Europe.

Region. Southwestern Europe.

Country /Province /State. : Corsica, Sardinia.

Trisetum henryi Rendle. *Journ. Linn. Soc.* 6: 400 (1904).

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>; *vide* TROPICOS and Kew Synonymy Database: China, Fang: Henry 6643 (BM syn, K) ; China, Fang: Henry 6706 (BM syn).

Illustrations (Books): S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 448).

Derivation (Clifford & Bostock 2007): in honor of Augustine Henry (1857–1936) Irish physician and forester.

Classification. Subfamily Pooideae. Tribe: Poeae.

Habit, Vegetative Morphology. Perennial. Culms robust, 120–160 cm long, 4–5 mm diam., 8 -noded. Culm-internodes distally glabrous. Leaf-sheaths smooth or scaberulous, outer margin hairy. Leaf-sheath oral hairs ciliate. Ligule an eciliate membrane. Leaf-blades 15–30 cm long, 8–12 mm wide. Leaf-blade midrib conspicuous. Leaf-blade surface scaberulous, glabrous or pubescent, sparsely hairy, hairy adaxially. Leaf-blade apex attenuate.

Inflorescence. Inflorescence a panicle. Panicle open, ovate, dense, 20 cm long, 9 cm wide. Primary panicle branches 3–5 -nate. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

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, 5–6 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes sparsely hairy. Floret callus pubescent.

Glumes. Glumes persistent, similar, shorter than spikelet, thinner than fertile lemma, shiny, gaping. Lower glume lanceolate, 3 mm long, 0.66 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume primary vein scaberulous. Lower glume lateral veins absent. Lower glume apex acute. Upper glume lanceolate, 5 mm long, 0.9 length of adjacent fertile lemma, membranous, 1-keeled, 3 -veined. Upper glume primary vein scaberulous. Upper glume apex acute.

Florets. Fertile lemma lanceolate, 5 mm long, membranous, shiny, keeled, 3 -veined, 0–3 -veined. Lemma surface asperulous. Lemma apex dentate, 2 -fid, awned, 1 -awned. Principal lemma awn dorsal, arising 0.66 way up back of lemma, geniculate, 6 mm long overall, with twisted column. Palea gaping, 4 mm long, hyaline. Palea keels scaberulous.

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

Distribution (TDWG). Continent. Temperate Asia.

Country /Province /State. **China.** China South Central, China North-Central, China Southeast.

TDWG4. Shaanxi, Shanxi. Anhui, Henan, Jiangsu, Jiangxi, Zhejiang. Hubei, Sichuan.

Trisetum hirtiflorum Hack. Fedde, *Repert.* x, 169 (1911).

Regarded by K as a synonym (*T. barbinode*).

TYPE from Chile. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: comm. C. Reiche s.n.; ; Chile (W; IT: BAA, SGO (fragm. & photo ex W), US (fragm. ex W)) this may be the same as SGO-PHIL-238 (see Hackel, Report on Grasses of Chile, ms, copy US).

Illustrations (Books): M.N.Corréa, *Flora Patagonica* Parte III, Gramineae (1978) (256, Fig. 166).

Derivation (Clifford & Bostock 2007): *L. hirtus*, hairy; flos, flower. Spikelets with hairy glumes and or lemmas.

Classification. Subfamily Pooideae. Tribe: Poeae.

Habit, Vegetative Morphology. Perennial. Rhizomes short. Basal innovations extravaginal. Culms erect, robust, 30–80 cm long. Culm-internodes distally pubescent. Culm-nodes glabrous or pubescent. Leaf-sheaths smooth or scaberulous. Ligule a ciliolate membrane, 1.5–2 mm long, truncate. Leaf-blades flat or conduplicate, 8–14 cm long, 2–5 mm wide. Leaf-blade surface scabrous, rough adaxially or on both sides. Leaf-blade margins ciliate, hairy at base. Leaf-blade apex acute, pungent.

Inflorescence. Inflorescence a panicle. Peduncle pubescent above. Panicle spiciform, linear, continuous or interrupted, 7–18 cm long. Panicle axis pubescent. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 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, 6.5–7.5 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes pilose. Floret callus pilose. Floret callus hairs 1.5–3 mm long.

Glumes. Glumes persistent, similar, reaching apex of florets, thinner than fertile lemma, shiny, gaping. Lower glume lanceolate, 5–5.5 mm long, 0.75 length of upper glume, membranous, 1-keeled, 1–3 -veined. Lower glume primary vein scabrous. Lower glume lateral veins absent or distinct. Lower glume apex acuminate. Upper glume lanceolate, 6.5–7.5 mm long, 1.1–1.2 length of adjacent fertile lemma, membranous, 1-keeled, 3 -veined. Upper glume primary vein scabrous. Upper glume apex acuminate.

Florets. Fertile lemma oblong, 5–7 mm long, membranous, much thinner on margins, shiny, keeled, 5 -veined, more than 3-veined. Lemma surface pilose. Lemma margins ciliate. Lemma apex dentate, 2 -fid, awned, 3 -awned. Principal lemma awn dorsal, arising 0.5–0.66 way up back of lemma, geniculate, 6–7 mm long overall, with twisted column. Column of lemma awn puberulous, hairy on lower part. Lateral lemma awns present, 0.5–1 mm long. Palea gaping, 1 length of lemma, hyaline. Palea keels scabrous.

Flower and Fruit. Anthers 3, 1–2 mm long. Ovary with a few apical hairs. Caryopsis with adherent pericarp, 3.5–3.8 mm long, hairy at apex. Hilum punctiform. Endosperm liquid.

Distribution (TDWG). Continent. South America.

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

TDWG4. Neuquén. Rest of Chile- Biobio, La Auracania, Maule, O'Higgins, Santado, Valpariso.

Trisetum hispidum Lange. *Kjoeb. Vidensk. Meddel.* 42. (1860).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, T.G.Tutin et al, *Flora Europaea* 5 (1980).

TYPE from Spain. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Spain, Villafranca del Biergo: Lange (K iso).

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

Derivation (Clifford & Bostock 2007): *L.* bearing coarse stiff hairs. Plant wholly or partly rough to the touch.

Classification. Subfamily Pooideae. Tribe: Poeae.

Habit, Vegetative Morphology. Perennial, caespitose, clumped densely. Butt sheaths purple, villous, persistent and investing base of culm. Culms 30–80 cm long. Culm-internodes distally pubescent or pilose. Ligule an ciliate membrane, 2–3 mm long. Leaf-blades 10–25 cm long, 2–5 mm wide. Leaf-blade surface pubescent to hirsute.

Inflorescence. Inflorescence a panicle. Panicle open, linear or oblong, dense, 6–12 cm long, 1–2.5 cm wide. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, villous.

Fertile Spikelets. Spikelets comprising 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, 4.5–6 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes pubescent, with 0.5 mm long hairs. Floret callus pubescent.

Glumes. Glumes persistent, similar, reaching apex of florets, thinner than fertile lemma, shiny, gaping. Lower glume lanceolate, 0.9 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume lateral veins absent. Lower glume apex acute. Upper glume lanceolate, 1 length of adjacent fertile lemma, membranous, 1-keeled, 3 -veined. Upper glume apex acute.

Florets. Fertile lemma oblong, 3–3.8 mm long, membranous, shiny, keeled, 5 -veined, more than 3-veined. Lemma apex dentate, 2 -fid, awned, 1 -awned. Principal lemma awn dorsal, arising 0.75 way up back of lemma, geniculate, 2.5–4.5 mm long overall, with twisted column. Palea gaping, hyaline.

Flower and Fruit. Anthers 3, 1.6–2.4 mm long. Caryopsis with adherent pericarp. Hilum punctiform.

$2n = 14$ (1 ref TROPICOS).

Distribution (TDWG). Continent. Europe.

Region. Southwestern Europe.

Country /Province /State. : Portugal, Spain.

Trisetum inaequale Whitney. *Occas. Papers Bishop Mus., Honolulu*, xiii. 171 (1937).

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

TYPE from Hawaii. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Hawaii, Maui, Olowalu valley: Forbes 2296 (BISH holo, K).

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

Classification. Subfamily Pooideae. Tribe: Poeae.

Habit, Vegetative Morphology. Perennial, caespitose. Culms 30–40 cm long. Leaf-sheaths 1–2 cm long, striately veined, glabrous on surface or pubescent. Ligule an eciliate membrane, 1 mm long. Leaf-blades filiform, involute, 20–30 cm long, 0.5–1 mm wide. Leaf-blade surface smooth or scaberulous, rough adaxially.

Inflorescence. Inflorescence a panicle. Panicle spiciform, oblong or globose, loose, 3–6 cm long. Panicle axis villous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 1–3 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, 3–6 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes pubescent. Floret callus pubescent.

Glumes. Glumes persistent, similar, shorter than spikelet, thinner than fertile lemma, shiny, gaping. Lower glume lanceolate, 3–3.7 mm long, 0.66 length of upper glume, hyaline, 1-keeled, 1 -veined. Lower glume primary vein scaberulous. Lower glume lateral veins absent. Lower glume apex acuminate. Upper glume elliptic, 4.5–5 mm long, 0.8–1 length of adjacent fertile lemma, hyaline, 1-keeled, 3 -veined. Upper glume primary vein scaberulous. Upper glume apex acute.

Florets. Fertile lemma elliptic, 4–6 mm long, membranous, keeled, 5 -veined, more than 3-veined. Lemma midvein scaberulous. Lemma surface scaberulous, glabrous. Lemma apex dentate, 2 -fid, awned, 1 -awned. Principal lemma awn dorsal, arising 0.75–0.8 way up back of lemma, straight, 1–2 mm long overall. Palea gaping, 3 mm long, 0.75–0.8 length of lemma, hyaline. Palea keels scaberulous. Rhachilla extension 2 mm long, pubescent.

Flower and Fruit. Anthers 3. Ovary glabrous. Caryopsis with adherent pericarp, fusiform, 1.6–2 mm long, light brown. Hilum punctiform.

Distribution (TDWG). Continent. Pacific.

Country /Province /State. North-central Pacific. Hawaii.

Trisetum irazuense (Kuntze) Hitchcock. *Proc. Biol. Soc. Wash.* xl. 82 (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 Costa Rica. **Basionym or Replaced Name:** *Calamagrostis irazuensis* Kuntze, *Rev. Gen.* 763 (1891). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Costa Rica, Irazu: Kuntze (NY holo).

Illustrations (Books): W.Burger, *Flora Costaricensis* 15, Gramineae: *Fieldiana Botany New Series* 4 (1980) (578, Fig. 217).

Derivation (Clifford & Bostock 2007): L. -ensis, denoting origin. From Mt. Irazu, Costa Rica.

Classification. Subfamily Pooideae. Tribe: Poeae.

Habit, Vegetative Morphology. Perennial. Culms erect or geniculately ascending, 45–105 cm long, 1–2 mm diam., without nodal roots or rooting from lower nodes. Culm-internodes distally glabrous or pubescent, with reflexed hairs. Culm-nodes constricted, brown. Lateral branches lacking. Leaf-sheaths pilose, with reflexed

hairs. Ligule an eciliate membrane, 1–3 mm long. Leaf-blades 10–33 cm long, 2–5 mm wide. Leaf-blade surface pilose, hairy on both sides.

Inflorescence. Inflorescence a panicle. Panicle open, linear, nodding, 13–30 cm long, 1–3 cm wide, contracted about secondary branches. Primary panicle branches ascending, 3–6 cm long. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 2–4 fertile florets, with a barren rhachilla extension. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets oblong, laterally compressed, 6–9 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes 1.7–2 mm long, pilose, hairy all along but hairs longer above, with 1.5 mm long hairs. Floret callus pubescent. Floret callus hairs 0.5 mm long.

Glumes. Glumes persistent, similar, shorter than spikelet, thinner than fertile lemma, shiny, gaping. Lower glume lanceolate, 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 obovate, 3.8–6.5 mm long, 0.9–1.1 length of adjacent fertile lemma, membranous, with hyaline margins, 1-keeled, 3 -veined. Upper glume apex acute.

Florets. Fertile lemma lanceolate, 4.3–6 mm long, membranous, shiny, keeled, 5 -veined, more than 3-veined. Lemma surface scabrous, rugose. Lemma apex dentate, 2 -fid, awned, 1 -awned. Principal lemma awn dorsal, arising 0.66 way up back of lemma, geniculate, 6–9 mm long overall, with twisted column. Palea gaping, 0.9 length of lemma, hyaline.

Flower and Fruit. Anthers 3, 1–1.3 mm long. Ovary glabrous. Caryopsis with adherent pericarp. Hilum punctiform. Endosperm soft.

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, Guatemala, Panama. Venezuela. Colombia, Ecuador.

Distrito Federal, Mexico State, Puebla. Durango, Hidalgo, San Luis Potosi. Veracruz. Oaxaca. Chiapas.

Trisetum juergensii Hack. *Verh. Zool. Bot. Ges. Wien*, 65: 75 (1915).

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 Brazil. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Brazil, Mun. Soledade: Jurgens G289 (W holotype).

Recent Synonyms: *Deschampsia juergensii* (Hack.) Valencia, *Rev. Argent. Agron.* 8: 125 (1941).

Illustrations (Books): L.B. Smith, D.C. Wasshausen, R.M. Klein *Flora Illustrada Catarinensis Gramineas* (1981–1982) (445, Fig. 94).

Derivation (Clifford & Bostock 2007): in honor of Carlo Juergens (fl. 1905) who collected in Brazil.

Classification. Subfamily Pooideae. Tribe: Poeae.

Habit, Vegetative Morphology. Perennial. Culms erect, 30–70 cm long, 6 -noded. Lateral branches lacking or sparse. Leaf-sheaths mostly shorter than adjacent culm internode. Ligule an eciliate membrane, 2–3 mm long, obtuse. Leaf-blades 4–5 cm long, 1.5 mm wide, indurate, stiff. Leaf-blade apex acuminate.

Inflorescence. Inflorescence a panicle. Panicle spiciform, linear, 7–10 cm long, 0.7–1 cm wide. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

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 or oblong, laterally compressed, 6 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes definite. Floret callus pubescent.

Glumes. Glumes persistent, similar, exceeding apex of florets, similar to fertile lemma in texture. Lower glume lanceolate, 6 mm long, 1 length of upper glume, membranous, 1-keeled. Lower glume apex acute. Upper glume lanceolate, 6 mm long, 2.5 length of adjacent fertile lemma, membranous, 1-keeled. Upper glume apex acute.

Florets. Fertile lemma lanceolate, 6 mm long, membranous, without keel, 5 -veined, more than 3-veined. Lemma apex dentate, 2 -fid, awned, 1 -awned. Principal lemma awn dorsal, arising 0.25 way up back of lemma, geniculate, 4 mm long overall, with twisted column.

Flower and Fruit. Lodicules 2, membranous. Anthers 3. Caryopsis with adherent pericarp. Hilum punctiform.

Distribution (TDWG). Continent. South America.

Country /Province /State. Brazil. Brazil South.

Catarina, Rio Grande do Sul.

Trisetum kangdingense (Wu) Phillips & Wu. *Fl. China* 22: 326 (2006).

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. 446).

Classification. Subfamily Pooideae. Tribe: Poeae.

Habit, Vegetative Morphology. Perennial, culms solitary. Rhizomes elongated. Culms erect or geniculately ascending, 40–50 cm long, 2–3 mm diam., 2–3 -noded. Leaf-sheaths loose, longer than adjacent culm internode, pilose. Ligule a ciliolate membrane, 1.5–3 mm long, truncate. Leaf-blades 7–10 cm long, 4–5 mm wide. Leaf-blade surface scaberulous, rough on both sides. Leaf-blade margins scaberulous.

Inflorescence. Inflorescence a panicle. Peduncle pubescent above. Panicle contracted, elliptic, interrupted, 12–15 cm long. Primary panicle branches appressed or ascending, 6–8 cm long. Panicle branches glabrous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 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, 5.5–6 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes pilose, with 1 mm long hairs.

Glumes. Glumes persistent, similar, reaching apex of florets, thinner than fertile lemma, gaping. Lower glume lanceolate, 5 mm long, 0.8 length of upper glume, membranous, 1-keeled, 3 -veined. Lower glume apex acuminate. Upper glume elliptic or oblong, 5.7–5.9 mm long, 1.1 length of adjacent fertile lemma, membranous, 1-keeled, 3 -veined. Upper glume apex acute.

Florets. Fertile lemma lanceolate or oblong, 5–5.3 mm long, membranous, shiny, keeled, 5 -veined, more than 3-veined. Lemma surface scabrous. Lemma apex entire, awned, 1 -awned. Principal lemma awn dorsal, arising 0.75 way up back of lemma, straight, 3.2–3.4 mm long overall. Palea gaping, hyaline. Palea keels scaberulous.

Flower and Fruit. Anthers 3, 1–1.1 mm long.

Distribution (TDWG). Continent. Temperate Asia.

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

TDWG4. Sichuan.

Trisetum koidzumianum Ohwi. *Acta Phytotax. & Geobot.* ii. 33. (1933).

Accepted by: W.D. Clayton & K. Harman, *GrassBase* (2008) and online, T. Koyama, *Grasses of Japan and its neighboring regions* (1987).

TYPE from Japan. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Japan, Mt. Akaishadake: Koidzumi.

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

Derivation (Clifford & Bostock 2007): L. -anum, indicating connection. In honor of Gen'ichi Yonezawa Koidzumi (1883–1953) Japanese botanist.

Classification. Subfamily Pooideae. Tribe: Poeae.

Habit, Vegetative Morphology. Perennial, caespitose, clumped loosely. Rhizomes short. Culms erect, 12–25 cm long. Culm-internodes distally pilose. Leaf-sheaths pilose. Ligule an eciliate membrane, 1–2 mm long. Leaf-blades 5–6 cm long, 2–4 mm wide. Leaf-blade surface glabrous or pilose.

Inflorescence. Inflorescence a panicle. Panicle open, lanceolate, dense, 5–9 cm long, 0.8–1.5 cm wide. Primary panicle branches 3–5 -nate. Panicle branches smooth. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 2 fertile florets, with a barren rhachilla extension or with diminished florets at 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, 4.5–5.5 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, shiny, gaping. Lower glume lanceolate, 3–3.5 mm long, 1 length of upper glume, membranous, 1-keeled, 3 -veined. Lower glume apex acute. Upper glume lanceolate, 3–3.5 mm long, 0.75–0.85 length of adjacent fertile lemma, membranous, 1-keeled, 3 -veined. Upper glume apex acute.

Florets. Fertile lemma lanceolate, 4 mm long, membranous, keeled, 5 -veined, more than 3-veined. Lemma apex dentate, 2 -fid, acute, awned, 1 -awned. Principal lemma awn dorsal, arising 0.25 way up back of lemma, geniculate, 5 mm long overall, with a straight or slightly twisted column. Palea gaping, hyaline.

Flower and Fruit. Anthers 3. Ovary glabrous. Caryopsis with adherent pericarp. Hilum punctiform.

Distribution (TDWG). Continent. Temperate Asia.

Country /Province /State. Eastern Asia. Japan. Japan Honshu.

Trisetum laconicum Boiss. & Orph. *Diagn. Ser. II. iv.* 129. (1859).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, T.G.Tutin et al, *Flora Europaea* 5 (1980).

TYPE from Greece. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: Greece, Mt. Malevo: Orphanides.

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

Derivation (Clifford & Bostock 2007): from Laconica, Greece.

Classification. Subfamily Pooideae. Tribe: Poeae.

Habit, Vegetative Morphology. Perennial. Stolons present. Culms 50–60 cm long. Culm-internodes smooth, distally glabrous. Leaf-sheaths pubescent. Ligule an eciliate membrane. Leaf-blades 6–12 cm long, 2–4 mm wide. Leaf-blade surface pubescent, densely hairy.

Inflorescence. Inflorescence a panicle. Panicle open, lanceolate, 6–15 cm long, 2–3 cm wide. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 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, 6–9 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes pilose, with 2–2.5 mm long hairs. Floret callus pubescent.

Glumes. Glumes persistent, similar, shorter than spikelet, thinner than fertile lemma, shiny, gaping. Lower glume lanceolate, 0.66 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume lateral veins absent. Lower glume apex acute. Upper glume lanceolate, 0.9 length of adjacent fertile lemma, membranous, 1-keeled, 3 -veined. Upper glume primary vein scaberulous. Upper glume apex acute.

Florets. Fertile lemma oblong, 4.5–7.5 mm long, membranous, shiny, keeled, 5 -veined, more than 3-veined. Lemma surface asperulous. Lemma apex dentate, 2 -fid, awned, 3 -awned. Principal lemma awn dorsal, arising 0.5–0.6 way up back of lemma, curved, 5–10 mm long overall. Lateral lemma awns present, 0.5–1 mm long. Palea gaping, hyaline.

Flower and Fruit. Anthers 3, 2.7–4 mm long. Caryopsis with adherent pericarp. Hilum punctiform.

Distribution (TDWG). Continent. Europe.

Region. Southeastern Europe.

Country /Province /State. : Greece.

Trisetum lasiolepis E.Desv. C. Gay, *Fl. Chil.* vi. 346. (1853).

Regarded by K as a synonym (*T. preslii*).

TYPE from Chile. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: Chile: Gay (K iso).

Illustrations (Books): M.N.Correa, *Flora Patagonica* Parte III, Gramineae (1978) (256, Fig. 168).

Derivation (Clifford & Bostock 2007): Gk. lasios, shaggy; lepis, scale. Glumes and lemmas hairy.

Classification. Subfamily Pooideae. Tribe: Poeae.

Habit, Vegetative Morphology. Perennial, caespitose. Culms erect, 20–30 cm long, 2–3 -noded. Leaf-sheaths smooth or scaberulous. Ligule a ciliate membrane, 0.5–1 mm long, truncate. Leaf-blades filiform, flat or conduplicate, 0.5–6 cm long, 1 mm wide. Leaf-blade surface scabrous, rough adaxially.

Inflorescence. Inflorescence a panicle. Peduncle glabrous or pubescent above. Panicle contracted, linear, 2.5–5 cm long. Panicle axis glabrous. Panicle branches pubescent in axils. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, scabrous, glabrous or pubescent.

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, 3–6.5 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes pilose. Floret callus pubescent. Floret callus hairs 1–1.5 mm long.

Glumes. Glumes persistent, similar, shorter than spikelet, thinner than fertile lemma, shiny, gaping. Lower glume ovate, 4.5–5.5 mm long, 0.8–0.9 length of upper glume, membranous, 1-keeled, 1–3 -veined. Lower glume primary vein scabrous. Lower glume lateral veins absent or distinct. Lower glume apex acute. Upper glume ovate, 5–6.5 mm long, 1.2–1.3 length of adjacent fertile lemma, membranous, 1-keeled, 3 -veined. Upper glume primary vein scabrous. Upper glume apex acute.

Florets. Fertile lemma oblong, 4–5 mm long, membranous, much thinner above, shiny, keeled, 5 -veined, more than 3-veined. Lemma surface pubescent. Lemma apex dentate, 2 -fid, awned, 1 -awned. Principal lemma awn dorsal, arising 0.66 way up back of lemma, straight, 4–5 mm long overall. Palea gaping, hyaline.

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

Distribution (TDWG). Continent. South America.

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

TDWG4. Neuquén. Rest of Chile- Biobio, La Auracania, Maule, O'Higgins, Santado, Valpariso.

Trisetum lasiorhachis (Hack.) E.Edgar. *New Zealand J. Bot.*, 36(4): 549 (1998).

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).

TYPE from New Zealand. **Basionym or Replaced Name:** *Trisetum antarcticum* var. *lasiorhachis* Hack., *Man. New Zealand Fl.* 880 (1906). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: LT: D. Petrei 10144; ; New Zealand: Mount Hikurangi, East Cape, 5000 ft (W-27977) LT designated by Edgar & Connor, *New Zealand J. Bot.* 36: 549–552 (1998) ST: Cheesman 1218; ; (IST: US).

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

Derivation (Clifford & Bostock 2007): Gk. lasios, shaggy; rhachis, backbone. The inflorescence branches are ciliate.

Classification. Subfamily Pooideae. Tribe: Poeae.

Habit, Vegetative Morphology. Perennial, caespitose, clumped densely. Rhizomes absent or elongated. Culms (5–)12–60(–85) cm long. Culm-internodes distally pilose. Leaf-sheaths 3–6 cm long, pubescent. Leaf-sheath oral hairs ciliate. Ligule an eciliate membrane or a ciliolate membrane, 0.3–0.8 mm long, erose. Leaf-blades 5–25 cm long, 1.3–3 mm wide, dark green. Leaf-blade surface scaberulous, rough adaxially, pilose, sparsely hairy, hairy on both sides. Leaf-blade margins ciliate.

Inflorescence. Inflorescence a panicle. Peduncle glabrous to pilose above. Panicle open, lanceolate, (3–)7–14(–21) cm long, 1–3(–5) cm wide, contracted about primary branches. Primary panicle branches bearing spikelets almost to the base. Panicle axis puberulous to pilose. Panicle branches puberulous to pilose. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, puberulous to ciliate.

Fertile Spikelets. Spikelets comprising 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, 5–8 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes pilose. Floret callus pubescent. Floret callus hairs 0.5–0.8 mm long.

Glumes. Glumes persistent, similar, shorter than spikelet, thinner than fertile lemma, shiny, gaping. Lower glume oblong, 0.66–0.8 length of upper glume, membranous, light green, 1-keeled. Lower glume apex acuminate. Upper glume elliptic, membranous, light green, 1-keeled. Upper glume apex acute or acuminate.

Florets. Fertile lemma elliptic, 5–7.5 mm long, membranous, shiny, keeled, 5 -veined, more than 3-veined. Lemma surface scaberulous. Lemma apex dentate, 2 -fid, awned, 1 -awned. Principal lemma awn dorsal, arising 0.5–0.66 way up back of lemma, straight or curved, 5–9.5 mm long overall. Palea gaping, hyaline. Palea keels scaberulous, adorned above, with 0.9 of their length adorned.

Flower and Fruit. Lodicules 2, 1.3 mm long. Anthers 3, 1.8–2.2 mm long. Caryopsis with adherent pericarp, 2.5 mm long.

Distribution (TDWG). Continent. Australasia.

Country /Province /State. New Zealand. New Zealand South I.

Trisetum lechleri (Steudel) E.G.Nicora. *Fl. Patagonica*, 3: 252 (1978).

Regarded by K as a synonym (*T. caudulatum*).

TYPE from Chile. **Basionym or Replaced Name:** *Koeleria lechleri* Steud., *Syn. Pl. Glumac.* 1: 294 (1854). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: W. Lechler 311; ; Chile: X Región: Arique (P-STEUD-175; IT: US (fragm. ex P-STEUD-175)).

Illustrations (Books): M.N.Correa, *Flora Patagonica* Parte III, Gramineae (1978) (251, Fig. 163).

Derivation (Clifford & Bostock 2007): in honor of Willibeld Lechler (1814–1856) German apothecary and traveller who collected in South America.

Classification. Subfamily Pooideae. Tribe: Poeae.

Habit, Vegetative Morphology. Perennial. Butt sheaths pilose. Culms erect, 25–50 cm long. Culm-internodes distally glabrous. Leaf-sheaths glabrous on surface. Ligule a ciliolate membrane, 0.5–1.5 mm long. Leaf-blades 0.5–10 cm long, 2–3 mm wide, stiff. Leaf-blade surface scabrous, rough adaxially, pilose, hairy abaxially. Leaf-blade margins ciliate.

Inflorescence. Inflorescence a panicle. Panicle contracted, lanceolate, continuous or interrupted, 4–6 cm long. Panicle axis glabrous or pubescent. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

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, 5–6 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes pilose. Floret callus pubescent. Floret callus hairs 0.5–1 mm long.

Glumes. Glumes persistent, similar, shorter than spikelet, thinner than fertile lemma, shiny, gaping. Lower glume lanceolate, 3–4 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 acuminate. Upper glume

lanceolate, 4–5 mm long, 0.9 length of adjacent fertile lemma, membranous, 1-keeled, 3 -veined. Upper glume primary vein scabrous. Upper glume apex acuminate.

Florets. Fertile lemma oblong, 4.5–5.5 mm long, membranous, much thinner on margins, shiny, keeled, 5 -veined, more than 3-veined. Lemma surface asperulous. Lemma apex dentate, 2 -fid, awned, 1 -awned. Principal lemma awn dorsal, arising 0.66 way up back of lemma, straight, 3–5 mm long overall. Palea gaping, hyaline.

Flower and Fruit. Anthers 3, 0.7–1.5 mm long. Caryopsis with adherent pericarp, 3–3.3 mm long, glabrous. Hilum punctiform. Endosperm liquid.

Distribution (TDWG). Continent. South America.

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

TDWG4. Chubut, Neuquén, Río Negro. Rest of Chile- Biobio, La Auracania, Maule, O'Higgins, Santado, Valpariso.

Trisetum lepidum E.Edgar & A.P.Druce. *New Zealand J. Bot.*, 36(4): 553 (1998).

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).

TYPE from New Zealand. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: New Zealand, Mt. Owen: Simpson 6735 (CHR holo).

Illustrations (Books): E.Edgar. & H.E.Connor, *Flora of New Zealand* 5, *Gramineae* (2000) (324, Fig. 10).

Derivation (Clifford & Bostock 2007): L. pretty. Plants with an attractive appearance as with colored spikelets.

Classification. Subfamily Pooideae. Tribe: Poeae.

Habit, Vegetative Morphology. Perennial, caespitose. Culms 12–65(–100) cm long. Leaf-sheaths 3–6 cm long, glabrous on surface to pubescent. Ligule an eciliate membrane, 0.2–0.6 mm long, erose. Leaf-blades flat, 3–16 cm long, 0.5–2(–6) mm wide, dark green. Leaf-blade surface puberulous, hairy adaxially. Leaf-blade margins smooth or scaberulous.

Inflorescence. Inflorescence a panicle. Panicle open, ovate, 3–20(–28) cm long, 1–10 cm wide. Panicle axis scabrous (above). Panicle branches scabrous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, scabrous.

Fertile Spikelets. Spikelets comprising 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, 4.5–9 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes pilose, with 0.5–1.3 mm long hairs. Floret callus pubescent. Floret callus hairs 0.2–0.5 mm long.

Glumes. Glumes persistent, similar, shorter than spikelet, thinner than fertile lemma, shiny, gaping. Lower glume elliptic, 0.5 length of upper glume, hyaline, light green, 1-keeled. Lower glume apex acute or acuminate. Upper glume ovate, hyaline, light green, 1-keeled. Upper glume apex obtuse.

Florets. Fertile lemma elliptic, 4.5–7 mm long, membranous, shiny, keeled, 5 -veined, more than 3-veined. Lemma surface scaberulous or papillose. Lemma apex dentate, 2 -fid, awned, 1 -awned. Principal lemma awn dorsal, arising 0.75 way up back of lemma, straight or curved, 5–9 mm long overall. Palea gaping, hyaline. Palea keels scaberulous.

Flower and Fruit. Lodicules 2, 1.3 mm long, glabrous or ciliate. Anthers 3, 0.8–1.5 mm long. Caryopsis with adherent pericarp, 2–3 mm long.

Distribution (TDWG). Continent. Australasia.

Country /Province /State. New Zealand. New Zealand South I.

Trisetum ligulatum Finot & Zuloaga. *Ann. Missouri Bot. Gard.* 91(1): 15 (-17; fig. 1) (2004).

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 Synonymy Database: Mexico, Pico de Orizaba: Nee 33192 (SI holo, CONC).

Illustrations (Journals): *Ann. Missouri Bot. Gard.* (91:16, Fig.1 (2004)).

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

Classification. Subfamily Pooideae. Tribe: Poeae.

Habit, Vegetative Morphology. Perennial. Rhizomes short. Culms 13–30 cm long, 1–3 -noded. Leaf-sheaths longer than adjacent culm internode, pubescent. Ligule an eciliate membrane, 3–4 mm long, pilose on abaxial surface, truncate. Leaf-blades flat or conduplicate, 5–20 cm long, 1–2.5 mm wide. Leaf-blade surface pubescent.

Inflorescence. Inflorescence a panicle. Peduncle pilose above. Panicle spiciform, linear, 5–9 cm long, 0.5–1.2 cm wide. Panicle axis pubescent. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 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, 5–6.5 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes 1 mm long, sparsely hairy, with 0.5 mm long hairs. Floret callus pubescent. Floret callus hairs 0.5 mm long.

Glumes. Glumes persistent, similar, reaching apex of florets, thinner than fertile lemma, shiny, gaping. Lower glume lanceolate, 3.8–6 mm long, 0.8–0.9 length of upper glume, membranous, mid-green or purple, 1-keeled, 3 -veined. Lower glume primary vein scabrous. Lower glume apex acute. Upper glume lanceolate, 4.5–6.5 mm long, 1 length of adjacent fertile lemma, membranous, mid-green or purple, 1-keeled, 3(–5) -veined. Upper glume primary vein scabrous. Upper glume apex acute.

Florets. Fertile lemma elliptic, 4.3–6.5 mm long, membranous, shiny, keeled, 5 -veined, more than 3-veined. Lemma lateral veins excurrent. Lemma surface scabrous, glabrous. Lemma apex dentate, 2 -fid, awned, 1 -awned. Principal lemma awn dorsal, arising 0.66 way up back of lemma, curved, 2–3.5 mm long overall. Palea gaping, 4.3–6.5 mm long, hyaline. Palea keels scabrous.

Flower and Fruit. Lodicules 2. Anthers 3, 1.5 mm long. Ovary glabrous. Caryopsis with adherent pericarp.

Distribution (TDWG). Continent. North America.

Country /Province /State. Mexico. Gulf (Mexico), Southwest Mexico. Veracruz. Jalisco.

Trisetum longiglume Hack. Fedde, *Repert. Nov. Sp.* vii. 319 (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 Argentina. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Argentina, San Rafael: Wilczek 571.

Illustrations (Books): M.N.Correa, *Flora Patagonica* Parte III, Gramineae (1978) (247, Fig. 158 as var. *glabrata*).

Derivation (Clifford & Bostock 2007): L. longus, long; gluma, husk. Spikelets with long glumes and or lemmas.

Classification. Subfamily Pooideae. Tribe: Poeae.

Habit, Vegetative Morphology. Perennial, caespitose. Culms 10–30 cm long. Leaf-sheaths longer than adjacent culm internode, smooth or scaberulous. Ligule a ciliolate membrane, 0.8–2 mm long, lacerate. Leaf-blades 4–7 cm long, 1–1.5 mm wide. Leaf-blade surface scabrous, rough adaxially. Leaf-blade margins scabrous.

Inflorescence. Inflorescence a panicle. Panicle spiciform, linear, 4–5 cm long, 1.5–2.5 cm wide. Panicle axis glabrous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, smooth or scaberulous.

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, 8–11 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes 1.5–2 mm long, pilose, with 2–3.5 mm long hairs. Floret callus pilose. Floret callus hairs 2–3.5 mm long, 0.33–0.5 length of lemma.

Glumes. Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma, shiny, gaping. Lower glume lanceolate, 8–11 mm long, 1 length of upper glume, membranous, 1-keeled, 1–3 -veined. Lower glume lateral veins absent or obscure. Lower glume apex acute. Upper glume lanceolate, 8–11 mm long, 1.2–1.3 length of adjacent fertile lemma, membranous, 1-keeled, 3 -veined. Upper glume apex acute.

Florets. Fertile lemma oblong, 6–9 mm long, membranous, shiny, keeled, 5 -veined, more than 3-veined. Lemma surface scabrous. Lemma apex dentate, 2 -fid, awned, 3 -awned. Principal lemma awn dorsal, arising 0.5 way up back of lemma, geniculate, 8–11 mm long overall, with twisted column. Lateral lemma awns present, 0.5–1 mm long. Palea gaping, hyaline. Palea keels scaberulous. Palea apex with excurrent keel veins.

Flower and Fruit. Lodicules 2, 0.8 mm long. Anthers 3. Ovary glabrous or pubescent on apex. Caryopsis with adherent pericarp, fusiform, 2.5 mm long, hairy at apex. Hilum punctiform. Endosperm farinose.

Distribution (TDWG). Continent. South America.

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

TDWG4. Mendoza. Chubut, Neuquén. Rest of Chile- Biobio, La Auracania, Maule, O'Higgins, Santado, Valpariso. Santiago.

Trisetum macbridei Hitchcock. *Contrib. U. S. Nat. Herb.* xxiv. 359 (1927).

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

TYPE from Peru. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: J.F. Macbride & Featherstone 1131; 12 June 1922; Peru: Huaron, rocky ne slope, ca. 14000 ft, in loose clumps (US-1161510; IT: F-50168, F-517642, P, S (fragm.)).

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

Derivation (Clifford & Bostock 2007): in honor of James Francis Macbride (1892–1976) United States botanist.

Classification. Subfamily Pooideae. Tribe: Poeae.

Habit, Vegetative Morphology. Perennial, caespitose. Culms erect, 20–40 cm long. Culm-internodes distally glabrous. Leaves mostly basal. Leaf-sheaths puberulous. Ligule an eciliate membrane, 1–2 mm long, pubescent on abaxial surface. Leaf-blades 4–10 cm long, 1–6 mm wide. Leaf-blade surface puberulous.

Inflorescence. Inflorescence a panicle. Panicle spiciform, linear, interrupted, 7–8 cm long. Panicle axis scaberulous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, scaberulous.

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, 8 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes 1 mm long, pubescent, with 1 mm long hairs. Floret callus pubescent. Floret callus hairs 0.5 mm long.

Glumes. Glumes persistent, similar, reaching apex of florets, thinner than fertile lemma, shiny, gaping. Lower glume lanceolate, 1 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume lateral veins absent. Lower glume apex acute. Upper glume lanceolate, 1.1 length of adjacent fertile lemma, membranous, 1-keeled, 1 -veined. Upper glume lateral veins absent. Upper glume apex acute.

Florets. Fertile lemma oblong, 5 mm long, membranous, shiny, keeled, 5 -veined, more than 3-veined. Lemma surface scaberulous. Lemma apex dentate, 2 -fid, awned, 1 -awned. Principal lemma awn dorsal, arising 0.5–0.6 way up back of lemma, geniculate, 5–6 mm long overall, with twisted column. Palea gaping, 3 mm long, hyaline. Palea keels ciliate.

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

Distribution (TDWG). Continent. South America.

Country /Province /State. Western South America. Peru.

Trisetum macrotrichum Hack. *Magyar Bot. Lap.* ii. 110. (1903).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, 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 Synonymy Database: Rumania, Siebenburgen: Knerucker 577 (LE iso).

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

Derivation (Clifford & Bostock 2007): Gk *makros*, large; *thrix*, hair. Lower glume long-awned.

Classification. Subfamily Pooideae. Tribe: Poeae.

Habit, Vegetative Morphology. Perennial. Stolons present. Culms 40–50 cm long. Culm-internodes scaberulous. Leaf-sheaths scaberulous, pilose. Ligule an eciliate membrane. Leaf-blades 7–15 cm long, 5–10 mm wide. Leaf-blade surface scabrous. Leaf-blade margins ciliate.

Inflorescence. Inflorescence a panicle. Panicle open, lanceolate, equilateral or nodding, 6–10 cm long, 2–3 cm wide. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 3–4 fertile florets, with a barren rhachilla extension. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets oblong, laterally compressed, 5–8 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes pilose, with 2.5–4 mm long hairs. Floret callus pubescent.

Glumes. Glumes persistent, similar, with lower narrower than upper, shorter than spikelet, thinner than fertile lemma, shiny, gaping. Lower glume lanceolate, 0.66 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume primary vein smooth or scaberulous. Lower glume lateral veins absent. Lower glume apex acute. Upper glume lanceolate, 0.9 length of adjacent fertile lemma, membranous, 1-keeled, 3 -veined. Upper glume primary vein smooth or scaberulous. Upper glume apex acute.

Florets. Fertile lemma oblong, 4–6.5 mm long, membranous, shiny, keeled, 5 -veined, more than 3-veined. Lemma surface asperulous. Lemma apex dentate, 2 -fid, awned, 1 -awned. Principal lemma awn dorsal, arising 0.5–0.66 way up back of lemma, curved or geniculate, 3.5–5.5 mm long overall, without a column or with a straight or slightly twisted column. Palea gaping, hyaline.

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

2n = 56 (1 ref TROPICOS).

Distribution (TDWG). Continent. Europe.

Region. Southeastern Europe, Eastern Europe.

Country /Province /State. : Romania. Northwest European Russia, Ukraine.

TDWG4.

Trisetum martha-gonzaleziae P.M.Peterson & Finot. *Ann. Missouri Bot. Gard.* 91(1): 21 (fig. 3) (2004).

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 Synonymy Database: Mexico, El Mesquital: Gonzales-Elizondo et al. 1645 (CHDIR holo).

Illustrations (Journals): *Ann. Missouri Bot. Gard.* (91: 22: Fig.3 (2004)).

Derivation (Clifford & Bostock 2007): In honor of Martha Gonzalez-Elizondo (1958-) Mexican botanist.

Classification. Subfamily Pooideae. Tribe: Poeae.

Habit, Vegetative Morphology. Perennial. Culms 75–100 cm long, 3 -noded. Culm-internodes striate, distally glabrous. Culm-nodes glabrous. Leaf-sheaths 3–10 cm long, mostly shorter than adjacent culm internode, striately veined, glabrous on surface, outer margin hairy. Ligule a ciliolate membrane, 0.5–1 mm long, glabrous on abaxial surface, truncate. Leaf-blades flat or convolute, 10–30 cm long, 2–3.5 mm wide, stiff. Leaf-blade surface scabrous, rough on both sides.

Inflorescence. Inflorescence a panicle. Panicle contracted or spiciform, oblong, 10–20 cm long, 1.5–2(–4) cm wide. Primary panicle branches 5–6 -nate, whorled at most nodes, 2–5 cm long. Panicle axis glabrous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, glabrous.

Fertile Spikelets. Spikelets comprising 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, 7.5–9 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes 1.4–1.5 mm long, pilose, with 1.5 mm long hairs. Floret callus pilose, obtuse. Floret callus hairs 1–1.2 mm long.

Glumes. Glumes persistent, similar, reaching apex of florets, thinner than fertile lemma, shiny, gaping. Lower glume lanceolate, 7.5–9 mm long, 1 length of upper glume, membranous, 1-keeled, 3 -veined. Lower glume primary vein scaberulous. Lower glume apex acute. Upper glume lanceolate, 7.5–9 mm long, 1.5 length of adjacent fertile lemma, membranous, 1-keeled, 3 -veined. Upper glume primary vein scaberulous. Upper glume apex acute.

Florets. Fertile lemma elliptic, 5 mm long, membranous, shiny, without keel, 5 -veined, more than 3-veined. Lemma lateral veins excurrent or extending close to apex. Lemma surface glabrous. Lemma apex dentate, 2 -fid, awned, 1 -awned. Principal lemma awn dorsal, arising 0.33–0.5 way up back of lemma, geniculate, 5 mm long overall, with twisted column. Palea gaping, 5 mm long, hyaline.

Flower and Fruit. Lodicules 2, 0.5 mm long, 2-toothed. Anthers 3. Ovary pubescent on apex. Caryopsis with adherent pericarp.

Distribution (TDWG). Continent. North America.

Country /Province /State. Mexico. Northeast Mexico.

Chihuahua, Durango.

Trisetum mattheii Finot. *Ann. Missouri Bot. Gard.* 92(4): 551 (-553; fig. 1) (2005).

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

TYPE from Chile. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Chile, Tarapaca, Arica to Portezuela de Chapiquina: Marticorina, Matthei & Quezada 80 (CONC holo).

Illustrations (Journals): *Ann. Missouri Bot. Gard.* (92:552, Fig.1 (2005)).

Classification. Subfamily Pooideae. Tribe: Poeae.

Habit, Vegetative Morphology. Perennial, caespitose. Culms 20–30 cm long, 2 -noded. Culm-nodes glabrous. Leaf-sheaths longer than adjacent culm internode, glabrous on surface or pilose. Ligule a ciliolate membrane, 1.5–2 mm long, glabrous on abaxial surface, erose. Leaf-blades conduplicate, 1–6 cm long, 0.5–1 mm wide, stiff. Leaf-blade surface scabrous, rough adaxially, glabrous or pilose. Leaf-blade margins scabrous. Leaf-blade apex acuminate.

Inflorescence. Inflorescence a panicle. Panicle spiciform, linear, continuous or interrupted, tapering above, nodding, 3–5.5 cm long, 0.5–0.8 cm wide. Panicle axis pubescent. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, pubescent.

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, 4.5–5 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes 0.6–0.9 mm long. Floret callus pubescent, obtuse.

Glumes. Glumes persistent, similar, shorter than spikelet, thinner than fertile lemma, shiny, gaping. Lower glume linear or lanceolate, 3.5–4.5 mm long, 0.9 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume lateral veins absent. Lower glume apex acute. Upper glume lanceolate or ovate, 3.8–4.7 mm long, 1.1 length of adjacent fertile lemma, membranous, 1-keeled, 3 -veined. Upper glume apex acute.

Florets. Fertile lemma elliptic, 3.5–4 mm long, membranous, mid-green and purple, tipped with last colour, shiny, keeled, 5 -veined, more than 3-veined. Lemma surface hirsute. Lemma apex dentate, 2 -fid, awned, 3 -awned. Principal lemma awn dorsal, arising 0.66 way up back of lemma, curved, 2.5–3.5 mm long overall. Lateral lemma awns present, arising on apex of lobes, 0.3 mm long. Palea gaping, 2.8–3 mm long, hyaline. Palea keels scaberulous, adorned below. Palea apex with excurrent keel veins.

Flower and Fruit. Lodicules 2, 0.6–0.8 mm long. Anthers 3, 1.1 mm long. Ovary glabrous. Caryopsis with adherent pericarp.

Distribution (TDWG). Continent. South America.

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

Trisetum mexicanum (Swallen) S.D. Koch. *Taxon*, 28(1–3): 233 (1979).

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. **Basionym or Replaced Name:** *Deschampsia mexicana* Swallen, *Bol. Soc. Bot. Mexico* 23: 28–30, f. 2 (1958 [1959]). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: E. Matuda 27795; 21 Nov 1952; Mexico: Mexico: Valle de Bravo, en bosque de Pinus, ladera humeda, 1800 m (US-2119866; IT: MEXU).

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

Derivation (Clifford & Bostock 2007): L. -ana, indicating origin. From Mexico.

Classification. Subfamily Pooideae. Tribe: Poeae.

Habit, Vegetative Morphology. Perennial, caespitose. Culms 50–90 cm long. Leaf-sheaths outer margin hairy. Leaf-sheath oral hairs ciliate, 2.5 mm long. Ligule an eciliate membrane, 2–3 mm long, truncate. Leaf-blades involute, 20–30 cm long, 1–2 mm wide. Leaf-blade surface glabrous, hairless throughout or except near base.

Inflorescence. Inflorescence a panicle. Panicle open, lanceolate, 5–30 cm long, 1.5–3 cm wide. Primary panicle branches ascending, 3–5 cm long. Panicle axis smooth, glabrous. Panicle branches scaberulous, glabrous. Spikelets appressed, solitary. Fertile spikelets pedicelled. Pedicels present.

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, 6–9 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, 6–9 mm long, 0.9–1 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, 6–9 mm long, 1.2–1.4 length of adjacent fertile lemma, membranous, 1-keeled, 3 -veined. Upper glume primary vein scabrous. Upper glume apex acute.

Florets. Fertile lemma lanceolate, 5–6.5 mm long, membranous, without keel, 5 -veined, more than 3-veined. Lemma surface pilose, hairy above. Lemma apex entire or dentate, 2–4 -fid, obtuse, awned, 1 -awned. Principal lemma awn dorsal, arising 0.25–0.33 way up back of lemma, geniculate, 7–10 mm long overall, with twisted column. Palea gaping, 0.75 length of lemma, hyaline. Palea keels scaberulous. Rhachilla extension 1–1.7 mm long, pilose, with 1–2 mm long hairs.

Flower and Fruit. Lodicules 2, obovate, 0.5 mm long, emarginate. Anthers 3, 2 mm long. Ovary glabrous. Caryopsis with adherent pericarp. Hilum punctiform.

Distribution (TDWG). Continent. North America.

Country /Province /State. Mexico. Central Mexico, Southwest Mexico.

TDWG4. Mexico State. Jalisco, Michoacan.

Trisetum micans (Hook. f.) Bor. *Grasses Burma, Ceyl., Ind. & Pakist.* 448 (1960).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), N.L.Bor, *Grasses of Burma, Ceylon, India and Pakistan* (1960).

TYPE from India. **Basionym or Replaced Name:** *Avena micans* Hook. f., *Fl. Brit. India* 7(22): 279 (1897 [1896]). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: India, Garhwal: Duthie.

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

Derivation (Clifford & Bostock 2007): *L. mico*, tremble. The racemes are borne on slender pedicels and so readily shake in the breeze.

Classification. Subfamily Pooideae. Tribe: Poeae.

Habit, Vegetative Morphology. Perennial, caespitose. Culms 40–50 cm long. Ligule an eciliate membrane. Leaf-blades 10–15 cm long, 2–4 mm wide, stiff. Leaf-blade surface glabrous. Leaf-blade apex attenuate.

Inflorescence. Inflorescence a panicle. Peduncle pubescent above. Panicle contracted or spiciform, linear or lanceolate, 6–12 cm long. Panicle axis pubescent. Panicle branches pubescent. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 3–5 fertile florets, with a barren rhachilla extension. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets cuneate, laterally compressed, 6–7 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes 1 mm long, pilose. Floret callus pubescent.

Glumes. Glumes persistent, similar, shorter than spikelet or reaching apex of florets, thinner than fertile lemma, shiny, gaping. Lower glume lanceolate, 4–5.5 mm long, 0.75–0.8 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume lateral veins absent. Lower glume apex acute. Upper glume elliptic, 5–6.5 mm long, 1–1.3 length of adjacent fertile lemma, membranous, 1-keeled, 3 -veined. Upper glume apex acute.

Florets. Fertile lemma elliptic, 5 mm long, membranous, shiny, keeled, 5 -veined, more than 3-veined. Lemma apex dentate, 2 -fid, awned, 3 -awned. Principal lemma awn dorsal, arising 0.75 way up back of lemma, straight, 5 mm long overall. Lateral lemma awns present, arising on apex of lobes, 0.5 mm long. Palea gaping, hyaline. Palea keels scaberulous.

Flower and Fruit. Anthers 3. Ovary glabrous. Caryopsis with adherent pericarp. Hilum punctiform.

Distribution (TDWG). Continent. Tropical Asia.

Country /Province /State. Indian Subcontinent. India.

TDWG4. Uttah Pradesh.

Trisetum montanum Vasey. *Bull. Torrey Bot. Club*, xiii. 118. (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. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: IT: G.R. Vasey s.n.; Jul 1881; USA: New Mexico: San Miguel Co.: Las Vegas (NY-232365, NY-232368, NY-232369, US-81777, US-156883, US-868271).

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

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

Classification. Subfamily Pooideae. Tribe: Poeae.

Habit, Vegetative Morphology. Perennial, caespitose. Culms erect or geniculately ascending, 50–100 cm long. Culm-internodes distally glabrous. Leaf-sheaths smooth or scaberulous, glabrous on surface or puberulous. Ligule an eciliate membrane, 2–3 mm long, erose, truncate. Leaf-blades 10–20 cm long, 2–4 mm wide. Leaf-blade surface scabrous.

Inflorescence. Inflorescence a panicle. Panicle contracted, linear, 10–15 cm long, 1–2.5 cm wide. Primary panicle branches appressed, bearing spikelets almost to the base. Panicle axis scaberulous. Panicle branches scabrous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 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. Rhachilla internodes pilose. Floret callus pubescent. Floret callus hairs 1 mm long.

Glumes. Glumes persistent, similar, shorter than spikelet, thinner than fertile lemma, shiny. Lower glume lanceolate, 2.5 mm long, 0.66 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume lateral veins absent. Lower glume apex acute. Upper glume elliptic, 4 mm long, 0.8 length of adjacent fertile lemma, membranous, 1-keeled, 3 -veined. Upper glume apex acute.

Florets. Fertile lemma oblong, 5 mm long, membranous, keeled, 5 -veined, more than 3-veined. Lemma surface scaberulous. Lemma apex dentate, 2 -fid, awned, 1 -awned. Principal lemma awn dorsal, arising 0.66 way up back of lemma, geniculate, spreading, 5 mm long overall, with twisted column. Palea gaping, hyaline. Rhachilla extension pilose.

Flower and Fruit. Anthers 3. Caryopsis with adherent pericarp. Hilum punctiform. Endosperm soft.

Distribution (TDWG). Continent. North America.

Country /Province /State. Northwest USA, Southwestern USA, South-central USA. New Mexico.

Trisetum nancaguense Finot. *Ann. Missouri Bot. Gard.* 92(4): 553 (fig. 2) (2005).

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

TYPE from Chile. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Chile, Cardenal Caro, Pichilemu: Lammers, Baeza & Penailillo 7894 (CONC holo, F).

Illustrations (Journals): *Ann. Missouri Bot. Gard.* (92: 554: Fig.2 (2005)).

Classification. Subfamily Pooideae. Tribe: Poeae.

Habit, Vegetative Morphology. Perennial, caespitose. Culms 40–75 cm long, 2–4 -noded. Culm-internodes distally glabrous. Culm-nodes glabrous or pubescent. Leaf-sheaths 15–20 cm long, mostly shorter than adjacent culm internode, pubescent. Ligule an eciliate membrane, 2–3 mm long, erose, truncate. Leaf-blades 4–15 cm long, 2–5 mm wide. Leaf-blade surface puberulous (beneath) or pilose (above), hairy on both sides. Leaf-blade apex acuminate.

Inflorescence. Inflorescence a panicle. Panicle contracted, linear or lanceolate, continuous or interrupted, 6.5–9 cm long, 0.8–2 cm wide. Panicle axis scaberulous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, 2–3.5 mm long, pubescent.

Fertile Spikelets. Spikelets comprising 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, 5.5–8 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes 1 mm long, pilose. Floret callus pubescent, obtuse.

Glumes. Glumes persistent, similar, shorter than spikelet, thinner than fertile lemma, shiny, gaping. Lower glume linear, 3.5–6 mm long, 0.66–0.75 length of upper glume, membranous, much thinner on margins, mid-green and purple, 1-keeled, 1 -veined. Lower glume primary vein scabrous. Lower glume lateral veins absent. Lower glume apex acute, muticous or awned, 1 -awned, awn 0.5–1 mm long. Upper glume lanceolate, 5.3–7.6 mm long, 0.8–0.9 length of adjacent fertile lemma, membranous, with hyaline margins, mid-green and purple, 1-keeled, 3 -veined. Upper glume primary vein scabrous. Upper glume apex acute, awned, 1 -awned, awn 0.5–1 mm long.

Florets. Fertile lemma elliptic, 6.5–7.5 mm long, membranous, much thinner above, much thinner on margins, mid-green and purple, tipped with last colour, shiny, keeled, 5 -veined, more than 3-veined. Lemma surface hirsute. Lemma apex dentate, 2 -fid, awned, 3 -awned. Principal lemma awn dorsal, arising 0.66 way up back of lemma, geniculate, 6–9 mm long overall, with a straight or slightly twisted column. Lateral lemma awns present, arising on apex of lobes, exserted. Palea gaping, 4–5 mm long, hyaline. Palea keels scaberulous. Palea apex with excurrent keel veins.

Flower and Fruit. Lodicules 2, 0.8–1 mm long. Anthers 3, 1.5 mm long, yellow. Ovary glabrous. Caryopsis with adherent pericarp, 2.5–3 mm long, glabrous. Endosperm liquid.

Distribution (TDWG). Continent. South America.

Country /Province /State. Southern South America. Chile Central. Santiago, O'Higgins, Maule, Biobio.

Trisetum oreophilum Louis-Marie. *Rhodora*, . 221. (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 Peru. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: A.S. Hitchcock 22535; 5 Dec 1923; Peru: Cuzco: high up ravine above Olloutaytambo (US-1164163).

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

Derivation (Clifford & Bostock 2007): Gk. oros, mountain; phileo, love. Mountain species.

Classification. Subfamily Pooideae. Tribe: Poeae.

Habit, Vegetative Morphology. Perennial. Culms geniculately ascending, robust, 50–80 cm long. Leaf-sheaths pubescent, outer margin hairy. Ligule an eciliate membrane, 3–4 mm long, lacerate. Leaf-blades 10–16 cm long, 2–4 mm wide. Leaf-blade surface scabrous, glabrous. Leaf-blade margins ciliate, hairy at base.

Inflorescence. Inflorescence a panicle. Peduncle pilose above. Panicle spiciform, oblong, continuous or interrupted, 8–15 cm long, 1.5–2 cm wide. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, ciliate.

Fertile Spikelets. Spikelets comprising 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, 6–7 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus pilose.

Glumes. Glumes persistent, similar, shorter than spikelet, thinner than fertile lemma, shiny, gaping. Lower glume lanceolate, 2.6–3.6 mm long, 75 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume lateral veins absent. Lower glume surface scabrous, rough above. Lower glume apex acute. Upper glume lanceolate, 2.6–4.2 mm long, 0.75–0.85 length of adjacent fertile lemma, membranous, 1-keeled, 3 -veined. Upper glume surface scabrous, rough above. Upper glume apex acute.

Florets. Fertile lemma lanceolate, 5 mm long, membranous, shiny, keeled, 5 -veined, more than 3-veined. Lemma lateral veins obscure. Lemma surface pilose. Lemma apex dentate, 2 -fid, awned, 1 -awned. Principal lemma awn dorsal, arising 0.66 way up back of lemma, flexuous, 3 mm long overall. Palea gaping, 4 mm long, hyaline. Palea keels scaberulous, ciliolate. Palea apex dentate, 2 -fid.

Flower and Fruit. Lodicules 2, 1.2–1.6 mm long. Anthers 3. Caryopsis with adherent pericarp.

Distribution (TDWG). Continent. South America.

Country /Province /State. Western South America, Southern South America. Bolivia, Ecuador, Peru. Chile North, Chile Central.

TDWG4. Mendoza, San Juan. Neuquén. Atacama. Coquimbo, Santiago.

Trisetum orthochaetum Hitchcock. *Am. Journ. Bot.* xxi. 134. (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 Synonymy Database: USA, Montana, Bitterroot Mts.: Chase 5129 (US holo).

Illustrations (Books): M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 24 *Poaceae*, part 1 (2007) (747).

Derivation (Clifford & Bostock 2007): Gk. orthos, straight; chaete, bristle. Lemma awn straight or nearly so.

Classification. Subfamily Pooideae. Tribe: Poeae.

Habit, Vegetative Morphology. Perennial, caespitose. Culms 110 cm long. Ligule an eciliate membrane, 3–5 mm long, pubescent on abaxial surface, entire, obtuse. Leaf-blades 8–20 cm long, 4–7 mm wide.

Inflorescence. Inflorescence a panicle. Panicle open, lanceolate, 15–18 cm long. Primary panicle branches ascending, 4–8 cm long. Panicle branches capillary. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 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, 8–9 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes pilose, with 1 mm long hairs. Floret callus pubescent.

Glumes. Glumes persistent, similar, shorter than spikelet, thinner than fertile lemma, shiny. Lower glume lanceolate, 5.5 mm long, 0.9 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume lateral veins absent. Lower glume apex acuminate. Upper glume lanceolate, 6.3 mm long, 1 length of adjacent fertile lemma, membranous, 1-keeled, 3 -veined. Upper glume apex acute.

Florets. Fertile lemma oblong, 6 mm long, membranous, keeled, 5 -veined, more than 3-veined. Lemma apex dentate, 2 -fid, awned, 1 -awned. Principal lemma awn dorsal, arising 0.75–0.8 way up back of lemma, straight or curved, 5–6 mm long overall. Palea gaping, hyaline. Rhachilla extension pilose.

Flower and Fruit. Anthers 3, 1 mm long. Caryopsis with adherent pericarp. Hilum punctiform. Endosperm soft.

Distribution (TDWG). Continent. North America.

Country /Province /State. Northwest USA. Montana.

Trisetum palmeri Hitchcock. *Contrib. US. Nat. Herb.* xvii. 325 (1913).

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

TYPE from Mexico. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *E.O. Palmer* 342, 25 Jul - 5 Aug 1906, Mexico: Durango: Otinapa (US-571365; IT: GH, MO-3056877).

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

Derivation (Clifford & Bostock 2007): in honor of Edward Palmer (1831–1911) United States botanist.

Classification. Subfamily Pooideae. Tribe: Poeae.

Habit, Vegetative Morphology. Perennial, caespitose. Culms slender, 60–100 cm long, 1–2 mm diam. Lateral branches lacking. Leaf-sheaths smooth or scaberulous, glabrous on surface. Ligule an eciliate membrane, 3–4 mm long. Leaf-blades 10–20 cm long, 1–3 mm wide. Leaf-blade surface scabrous.

Inflorescence. Inflorescence a panicle. Panicle open, lanceolate, 10–20 cm long. Primary panicle branches ascending, whorled at most nodes, 2–5 cm long. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

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, 5–6 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes 1 mm long, pilose, with 1 mm long hairs. Floret callus pubescent.

Glumes. Glumes persistent, similar, shorter than spikelet, thinner than fertile lemma, shiny, gaping. Lower glume lanceolate, 4–5 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. Upper glume lanceolate, 4–5 mm long, 1 length of adjacent fertile lemma, membranous, 1-keeled, 3 -veined. Upper glume primary vein scabrous. Upper glume apex acute.

Florets. Fertile lemma lanceolate, (4–)5 mm long, membranous, much thinner above, keeled, 5 -veined, more than 3-veined. Lemma surface asperulous. Lemma apex dentate, 2 -fid, obtuse, awned, 1 -awned. Principal lemma awn dorsal, arising 0.5 way up back of lemma, geniculate, 5–6 mm long overall, with twisted column. Palea gaping, 1 length of lemma, hyaline. Rhachilla extension 1.5 mm long, pilose.

Flower and Fruit. Anthers 3, 2.5 mm long. Ovary glabrous. Caryopsis with adherent pericarp. Hilum punctiform. Endosperm liquid.

Distribution (TDWG). Continent. North America.

Country /Province /State. Mexico. Northeast Mexico, Northwest Mexico, Southwest Mexico.

TDWG4. Coahuila, Chihuahua, Durango, Neuvo Leon. Sinaloa, Sonora. Jalisco.

Trisetum pauciflorum Keng. *Fl. Tsinling*. 1(1): 122, 441 (1976).

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

TYPE from China. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: China, Shensi, Yang Hsien: Fu 5281.

Illustrations (Books): S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 448).

Derivation (Clifford & Bostock 2007): *L. paucus*, few; *flos*, flower. With few florets per spikelet or few spikelets per inflorescence.

Classification. Subfamily Pooideae. Tribe: Poeae.

Habit, Vegetative Morphology. Perennial. Rhizomes short. Culms erect or geniculately ascending, 50–100 cm long, 2–2.5 mm diam., 4–7 -noded. Culm-internodes distally glabrous. Leaf-sheaths with 0.5 of their length closed, glabrous on surface, outer margin glabrous or hairy. Leaf-sheath oral hairs scanty or lacking. Ligule an eciliate membrane, 1 mm long, brown. Leaf-blades 15–30 cm long, 5–8 mm wide. Leaf-blade surface smooth or scaberulous.

Inflorescence. Inflorescence a panicle. Panicle open, lanceolate or oblong, 15 cm long. Primary panicle branches whorled at most nodes, 2–5 cm long. Panicle branches pubescent. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 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, 4.5–5.5 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes pilose, with 1.5 mm long hairs.

Glumes. Glumes persistent, similar, reaching apex of florets, thinner than fertile lemma, gaping. Lower glume lanceolate, 2.5–3 mm long, 0.66 length of upper glume, membranous, 1-keeled, 3 -veined. Lower glume apex acuminate. Upper glume elliptic or oblong, 4–4.5 mm long, 0.9 length of adjacent fertile lemma, membranous, 1-keeled, 3 -veined. Upper glume apex acute.

Florets. Fertile lemma elliptic, 4.5–5 mm long, membranous, shiny, keeled, 5 -veined, more than 3-veined. Lemma surface scabrous. Lemma apex entire, awned, 1 -awned. Principal lemma awn dorsal, arising 0.66 way up back of lemma, curved or geniculate, with a straight or slightly twisted column. Palea gaping, hyaline. Palea keels scaberulous.

Flower and Fruit. Anthers 3, 2.5 mm long.

Distribution (TDWG). Continent. Temperate Asia.

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

TDWG4. Shaanxi. Henan. Sichuan.

Trisetum persicum Chrtk. *Acta Univ. Carol., Praha, Biol.*, 1967: 98 (1968).

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

TYPE from Iran. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Iran, Kellal Mt.: Haussknecht (BM holo, K).

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

Classification. Subfamily Pooideae. Tribe: Poeae.

Habit, Vegetative Morphology. Perennial. Culms 30–50 cm long. Culm-internodes distally glabrous. Leaf-sheaths glabrous on surface or pubescent. Ligule an eciliate membrane, 3–4.5 mm long. Leaf-blades 2.2–8 cm long, 1.2–4 mm wide. Leaf-blade surface glabrous or pilose, sparsely hairy.

Inflorescence. Inflorescence a panicle. Panicle contracted, elliptic or oblong, 3.5–12 cm long, 1–2.5 cm wide. Primary panicle branches appressed. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 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, 6.5–10 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes villous, with 3.5–4 mm long hairs. Floret callus glabrous.

Glumes. Glumes persistent, similar, shorter than spikelet, thinner than fertile lemma, shiny, gaping. Lower glume lanceolate, 0.75 length of upper glume, membranous. Upper glume elliptic, 1–1.2 length of adjacent fertile lemma, membranous.

Florets. Fertile lemma elliptic, 7.5–8.5 mm long, membranous, much thinner above, much thinner on margins, shiny, keeled, 5 -veined, more than 3-veined. Lemma apex dentate, 2 -fid, awned, 1 -awned. Principal lemma awn dorsal, geniculate, 5.5–7.5 mm long overall, with twisted column. Palea gaping, hyaline.

Flower and Fruit. Anthers 3, 2.3–2.9 mm long.

Distribution (TDWG). Continent. Temperate Asia.

Country /Province /State. Western Asia. Iran.

Trisetum phleoides (D'Urv.) Kunth. *Rev. Gram.* i. 101 (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 Falkland Islands. **Basionym or Replaced Name:** *Avena phleoides* d'Urv., *Fl. Iles Malouin.* 30, 19 (1825). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: d'Urville 3; ; Falkland Islands: Soledad (P; IT: BAA-3411, US (fragm. ex P)).

Recent Synonyms: *Trisetum hirsutum* Phil., *Anal. Univ. Chil.* 565. (1873).

Illustrations (Books): M.N.Correa, *Flora Patagonica* Parte III, Gramineae (1978) (247, Fig. 161).

Derivation (Clifford & Bostock 2007): Gk. -oides, like. Inflorescence a spike-like panicle as for *Phleum*.

Classification. Subfamily Pooideae. Tribe: Poeae.

Habit, Vegetative Morphology. Perennial, caespitose. Culms erect, 15–60 cm long. Culm-internodes distally pubescent. Leaf-sheaths pubescent. Ligule an eciliate membrane, 2–3.5 mm long. Leaf-blades 2–3 mm wide, stiff. Leaf-blade surface pubescent, hairy on both sides. Leaf-blade margins ciliate. Leaf-blade apex acute.

Inflorescence. Inflorescence a panicle. Panicle spiciform, linear, 4–9 cm long. Panicle axis pubescent. Panicle branches pubescent. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, pubescent.

Fertile Spikelets. Spikelets comprising 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, 6–7.5 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes pilose. Floret callus pubescent. Floret callus hairs 0.5 mm long.

Glumes. Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma, shiny, gaping. Lower glume lanceolate, 4.5–7 mm long, 0.75 length of upper glume, membranous, 1-keeled, 1–3 -veined. Lower glume primary vein ciliate. Lower glume lateral veins absent or distinct. Lower glume apex setaceously acuminate. Upper glume lanceolate, 6–7.5 mm long, 1.2–1.5 length of adjacent fertile lemma, membranous, 1-keeled, 3 -veined. Upper glume primary vein ciliate. Upper glume apex setaceously acuminate.

Florets. Fertile lemma oblong, 4–6.5 mm long, membranous, shiny, keeled, 5 -veined, more than 3-veined. Lemma apex dentate, 2 -fid, awned, 3 -awned. Principal lemma awn dorsal, arising 0.66 way up back of lemma, geniculate, 5.5–6.5 mm long overall, with twisted column. Lateral lemma awns present, 0.5–1 mm long. Palea gaping, hyaline. Palea apex with excurrent keel veins.

Flower and Fruit. Lodicules 2, ciliate. Anthers 3, 1–1.3 mm long. Ovary glabrous. Caryopsis with adherent pericarp, 2–2.5 mm long. Hilum punctiform. Endosperm liquid.

Distribution (TDWG). Continent. South America.

Country /Province /State. Southern South America. Argentina South, Chile South. Falkland Is (Malvinas).

TDWG4. Santa Cruz, Tierra del Fuego. Chiloe, Aisen, Magallanes. Aisen, Magallanes.

Trisetum preslii (Kunth) E.Desv. C. Gay, *Fl. Chil.* vi. 347 (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. **Basionym or Replaced Name:** *Avena pilosa* J. Presl, *Reliq. Haenk.* 1(4–5): 253 (1830). T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: HT: *T. Haenke s.n.*, Chile (PR-198805; IT: BAA-3413 (fragm.), LE-TRIN-1933.02, MO-2106485, MO-(line drawing) US-81803).

Illustrations (Books): M.N.Correa, *Flora Patagonica* Parte III, Gramineae (1978) (262, Fig. 169).

Derivation (Clifford & Bostock 2007): in honor of Karel Borivoj Presl (1794–1852) Bohemian botanist.

Classification. Subfamily Pooideae. Tribe: Poeae.

Habit, Vegetative Morphology. Perennial, caespitose. Culms 10–20 cm long, 1 -noded. Culm-internodes distally pubescent. Culm-nodes pubescent. Leaf-sheaths smooth, glabrous on surface or pilose. Ligule a ciliate membrane, 0.5 mm long. Leaf-blades flat or conduplicate, 2–7 cm long, 2–3 mm wide. Leaf-blade surface scabrous, rough adaxially, glabrous or pubescent.

Inflorescence. Inflorescence a panicle. Panicle contracted, oblong, 2.5–5 cm long. Panicle axis pubescent. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 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, 6 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes pilose. Floret callus pubescent.

Glumes. Glumes persistent, similar, reaching apex of florets, thinner than fertile lemma, shiny, gaping. Lower glume lanceolate, 3.5–5.5 mm long, 0.75 length of upper glume, membranous, 1-keeled, 1–3 -veined. Lower glume primary vein scabrous, ciliate. Lower glume lateral veins absent or distinct. Lower glume apex acute. Upper glume lanceolate, 5–6 mm long, 1.2 length of adjacent fertile lemma, membranous, 1-keeled, 3 -veined. Upper glume primary vein scabrous, ciliate. Upper glume apex acute.

Florets. Fertile lemma oblong, 4.5–5 mm long, membranous, shiny, keeled, 5 -veined, more than 3-veined. Lemma surface pubescent. Lemma apex dentate, 2 -fid, awned, 1 -awned. Principal lemma awn dorsal, arising 0.66 way up back of lemma, geniculate, 3.5–5 mm long overall, with twisted column. Column of lemma awn puberulous, hairy on lower part. Palea gaping, 3.5 mm long, 0.75 length of lemma, hyaline. Palea keels ciliate.

Flower and Fruit. Anthers 3, 1 mm long. Caryopsis with adherent pericarp, glabrous. Hilum punctiform.

Distribution (TDWG). Continent. South America.

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

TDWG4. Mendoza, San Juan. Chubut, Neuquén. Tarapaca, Antofagasta, Atacama, Coquimbo, Rest of Chile- Biobio, La Araucania, Maule, O'Higgins, Santado, Valpariso. Coquimbo, Valparaiso, Santiago, Biobio, La Araucania. Aisen, Magellanes.

Trisetum pringlei (Scribn. ex Beal) Hitchc. *Proc. Biol. Soc. Wash.* xl. 82 (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 Mexico. **Basionym or Replaced Name:** *Grapphephorum pringlei* Scribn. ex Beal, *Grass. N. Amer.* 2: 561 (1896). T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: HT: *C.G. Pringle* 4765, 4 Aug 1894, Mexico: Oaxaca: summit of Sierra de San Felipe, 10000 ft (US-822340; IT: CM, ENCB, MO, P, US-749287, US-251958).

Recent Synonyms: *Grapphephorum pringlei* Scribn. ex Beal, *Grasses N. Amer.* 561 (1896).

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

Derivation (Clifford & Bostock 2007): in honor of Cyrus Guernsey Pringle (1838–1911) United States botanist.

Classification. Subfamily Pooideae. Tribe: Poeae.

Habit, Vegetative Morphology. Perennial, caespitose. Culms erect, slender, 30–80 cm long, 2 -noded. Culm-internodes thin-walled. Culm-nodes constricted, brown. Lateral branches lacking. Leaf-sheaths glabrous on surface or pubescent. Ligule an eciliate membrane, 1–2 mm long, erose. Leaf-blades flat or involute, 1–12 cm long, 2–5 mm wide. Leaf-blade surface ribbed, scabrous, rough adaxially, puberulous, hairy adaxially.

Inflorescence. Inflorescence a panicle. Peduncle 5–15 cm long. Panicle open or contracted, lanceolate or ovate, 10–20 cm long. Primary panicle branches whorled at most nodes, 4–8 cm long. Panicle branches scaberulous. Spikelets appressed, solitary. Fertile spikelets pedicelled. Pedicels present, oblong.

Fertile Spikelets. Spikelets comprising 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, 4.5–6.5 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes 1.5 mm long, pubescent. Floret callus pubescent.

Glumes. Glumes persistent, shorter than spikelet, thinner than fertile lemma. Lower glume ovate, 1.5–2.6 mm long, 0.4–0.6 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume lateral veins absent. Lower glume apex acute. Upper glume oblong or ovate, 3.5–4.5 mm long, 1–1.1 length of adjacent fertile lemma, membranous, 1-keeled, 3 -veined. Upper glume apex acute.

Florets. Fertile lemma elliptic, 3.6–4 mm long, membranous, much thinner on margins, keeled, 5 -veined, more than 3-veined. Lemma surface scaberulous, rough below, glabrous or pubescent, hairy below. Lemma apex acute, mucicous or mucronate. Principal lemma awn subapical. Palea embraced by lemma, 0.75 length of lemma. Palea keels scaberulous. Rhachilla extension pubescent.

Flower and Fruit. Anthers 3, 0.7–1.2 mm long. Ovary glabrous.
 $2n = 28$ (1 ref TROPICOS).

Distribution (TDWG). Continent. North America, South America.

Country /Province /State. **Mexico.** Northeast Mexico, Southwest Mexico, Southeast Mexico. **Mesoamerica, Western South America.** Costa Rica, Guatemala, Panama. Chihuahua. Oaxaca. Chiapas.

Trisetum projectum Louis-Marie. *Rhodora* . 217. (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 Synonymy Database: HT: H.P. Chandler & H.M. Hall 359; 25 Jun 1900; USA: California: Fresno Co. (UC; IT: GH, NY, US-390573).

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

Derivation (Clifford & Bostock 2007): L. proicio, stretch out. Panicle interrupted.

Classification. Subfamily Pooideae. Tribe: Poeae.

Habit, Vegetative Morphology. Perennial, caespitose. Culms erect, 30–90 cm long. Leaf-sheaths loose, pilose. Ligule an eciliate membrane. Leaf-blades flat or involute, 4–10 cm long, 2–2.5 mm wide. Leaf-blade surface pubescent.

Inflorescence. Inflorescence a panicle. Panicle spiciform, linear, 10–15 cm long, 1–2 cm wide. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

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, 6–7 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes pilose.

Glumes. Glumes persistent, similar, shorter than spikelet, thinner than fertile lemma, shiny, gaping. Lower glume lanceolate, 5–5.2 mm long, 0.8 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume primary vein ciliolate. Lower glume lateral veins absent. Lower glume apex acute. Upper glume lanceolate, 6–6.5 mm long, 1 length of adjacent fertile lemma, membranous, 1-keeled, 3 -veined. Upper glume primary vein ciliolate. Upper glume apex acute.

Florets. Fertile lemma lanceolate, 6 mm long, membranous, shiny, keeled, 5 -veined, more than 3-veined. Lemma apex dentate, 2 -fid, awned, 3 -awned. Principal lemma awn dorsal, arising 0.66 way up back of lemma, geniculate, 5–6 mm long overall, with a straight or slightly twisted column. Lateral lemma awns present, arising on apex of lobes, 0.5–1 mm long. Palea gaping, 5 mm long, hyaline. Palea keels scaberulous. Palea apex erose.

Flower and Fruit. Anthers 3, 1.4–1.6 mm long. Ovary glabrous. Caryopsis with adherent pericarp.

Distribution (TDWG). Continent. North America.

Country /Province /State. **Southwestern USA.** California.

Trisetum pyramidatum Louis-Marie ex Finot. *Ann. Missouri Bot. Gard.* 92(4): 558–560, f. 3 (2005).

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

TYPE from Chile. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Chile, Punta Arenas: Barros 5706 (US holo).

Illustrations (Journals): *Ann. Missouri Bot. Gard.* (92: 559: Fig.3 (2005)).

Derivation (Clifford & Bostock 2007): L. like a pyramid. Panicle pyramid-shaped.

Classification. Subfamily Pooideae. Tribe: Poeae.

Habit, Vegetative Morphology. Perennial. Rhizomes short. Culms 37–50 cm long, 2 -noded. Leaf-sheaths glabrous on surface or pubescent. Ligule an eciliate membrane, 2–3 mm long, glabrous on abaxial surface, erose, obtuse. Leaf-blades 4–7 cm long, 2–2.5 mm wide.

Inflorescence. Inflorescence a panicle. Peduncle pubescent above. Panicle contracted, lanceolate, interrupted, 7–11 cm long, 2–3 cm wide. Primary panicle branches 3 -nate, 3 cm long, bearing spikelets almost to the base. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 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, 6–6.5 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes 1 mm long, pilose, with 1.5 mm long hairs. Floret callus pubescent, truncate.

Glumes. Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma, shiny, gaping. Lower glume lanceolate, 5.5–7.5 mm long, 0.75 length of upper glume, membranous, much thinner on margins, purple, 1-keeled, 1 -veined. Lower glume primary vein ciliate. Lower glume lateral veins absent. Lower glume apex setaceously acuminate. Upper glume lanceolate, 6.5–9 mm long, 1 length of adjacent fertile lemma, membranous, with hyaline margins, purple, 1-keeled, 3 -veined. Upper glume apex setaceously acuminate.

Florets. Fertile lemma oblong, 6.5–7 mm long, membranous, shiny, keeled, 5 -veined, more than 3-veined. Lemma apex awned, 1 -awned. Principal lemma awn dorsal, arising 0.66 way up back of lemma, curved or geniculate, 6–7 mm long overall, with a straight or slightly twisted column. Palea gaping, 4–5 mm long, hyaline. Palea keels scabrous. Palea apex with excurrent keel veins.

Flower and Fruit. Lodicules 2, 0.8 mm long, 2-toothed. Anthers 3, 0.8 mm long. Ovary glabrous. Caryopsis with adherent pericarp, 2.5 mm long. Endosperm farinose.

Distribution (TDWG). Continent. South America.

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

TDWG4. Río Negro. Aisen, Magellanes.

Trisetum rigidum (Bieb.) Roem. & Schult. *Syst.* ii. 662. (1817).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), N.Tsvelev, *Grasses of the Soviet Union* (1983).

TYPE from Russia. **Basionym or Replaced Name:** *Avena rigida* M. Bieb., *Fl. Taur.-Caucas.* 1: 77 (1808). T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: Russia, Caucasus: Bieberstein (LE holo).

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

Derivation (Clifford & Bostock 2007): L. stiff. Culms, spikelets or inflorescence branches held stiffly erect.

Classification. Subfamily Pooideae. Tribe: Poeae.

Habit, Vegetative Morphology. Perennial, caespitose, clumped loosely. Rhizomes elongated. Culms erect or geniculately ascending, 30–45 cm long, 2–5 -noded. Culm-nodes pubescent. Leaf-sheaths glabrous on surface. Ligule an eciliate membrane, 1.6–3 mm long, lacerate. Leaf-blades 2–6 cm long, 2–4 mm wide, stiff, glaucous. Leaf-blade surface glabrous. Leaf-blade apex acuminate.

Inflorescence. Inflorescence a panicle. Panicle contracted, elliptic or oblong, 2.5–8 cm long, 1.5–2.5 cm wide. Primary panicle branches appressed. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, 2.5–7 mm long, glabrous.

Fertile Spikelets. Spikelets comprising 2–4 fertile florets, with a barren rhachilla extension. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets oblong, laterally compressed, 8–11 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes villous, with 5–7 mm long hairs. Floret callus bearded.

Glumes. Glumes persistent, similar, shorter than spikelet, thinner than fertile lemma, shiny, gaping. Lower glume lanceolate, 3.8–4.8 mm long, 0.66–0.75 length of upper glume, membranous, purple, 1-keeled, 1 -veined. Lower glume lateral veins absent. Lower glume apex acute. Upper glume elliptic, 6–7.7 mm long, 1–1.2 length of adjacent fertile lemma, membranous, purple, 1-keeled, 3 -veined. Upper glume apex acute.

Florets. Fertile lemma elliptic, 5–7.5 mm long, membranous, much thinner above, much thinner on margins, purple, shiny, keeled, 5 -veined, more than 3-veined. Lemma apex dentate, 2 -fid, awned, 1 -awned. Principal lemma awn dorsal, geniculate, 4–8 mm long overall, with twisted column. Palea gaping, 4–4.8 mm long, hyaline. Palea keels scaberulous.

Flower and Fruit. Anthers 3, 2.2–2.7 mm long. Ovary glabrous. Caryopsis with adherent pericarp. Hilum punctiform.

$2n = 28$ (1 ref TROPICOS).

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

Region. Eastern Europe.

Country /Province /State. Krym. Caucasus, Western Asia. Iran.

TDWG4.

Trisetum rosei Scribn. & Merrill. *U.S. Dept. Agric. Contrib. Nat. Herb.* viii. 289. (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.

TYPE from Mexico. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Mexico, Mt. Popocatepetl: Rose 6016 (US holo, ENCB, MEXU).

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

Derivation (Clifford & Bostock 2007): in honor of Joseph Nelson Rose (1862–1928) who collected widely in the Americas.

Classification. Subfamily Pooideae. Tribe: Poeae.

Habit, Vegetative Morphology. Perennial, caespitose, clumped densely. Culms geniculately ascending, 20–40 cm long. Culm-internodes distally pubescent. Leaf-sheaths longer than adjacent culm internode, puberulous. Ligule an eciliate membrane, 2 mm long, truncate. Leaf-blades flat or involute, 5–12 cm long, 3–5 mm wide. Leaf-blade surface puberulous, hairy adaxially.

Inflorescence. Inflorescence a panicle. Panicle spiciform, linear, 6–10 cm long, 1–1.5 cm wide. Primary panicle branches 1–3 cm long. Panicle branches pubescent. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

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

Glumes. Glumes persistent, similar, shorter than spikelet, thinner than fertile lemma, shiny, gaping. Lower glume lanceolate, 4 mm long, 0.75 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume lateral veins absent. Lower glume margins ciliate (above). Lower glume apex acute. Upper glume lanceolate, 5 mm long, 1–1.1 length of adjacent fertile lemma, membranous, 1-keeled, 3 -veined. Upper glume margins ciliate (above). Upper glume apex acute.

Florets. Fertile lemma lanceolate, 4.5–5 mm long, membranous, shiny, keeled, 5 -veined, more than 3-veined. Lemma surface pilose. Lemma apex dentate, 2 -fid, awned, 1 -awned. Principal lemma awn dorsal, arising 0.5 way up back of lemma, curved, 4 mm long overall, limb ciliate. Palea gaping, 1 length of lemma, hyaline. Palea keels scaberulous. Palea surface pilose, hairy on margins.

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

Distribution (TDWG), Continent. North America, South America.

Country /Province /State. Mexico. Central Mexico, Northeast Mexico, Gulf (Mexico). **Mesoamerica.** Guatemala.

Mexico State, Puebla. Hidalgo. Veracruz.

Trisetum scitulum Bor. *Kew Bull.* 1956. 212 (1956).

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. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: India, Sikkim: Hoker (K holo).

Illustrations (Books): H.J.Noltie, *The Grasses of Bhutan* (2000) (583, Fig. 22), S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 448).

Derivation (Clifford & Bostock 2007): L. pretty. The spikelets are colored thereby making the inflorescence attractive.

Classification. Subfamily Pooideae. Tribe: Poeae.

Habit, Vegetative Morphology. Perennial, caespitose. Culms 30–50 cm long. Ligule an eciliate membrane. Leaf-blades 8–15 cm long, 3–8 mm wide. Leaf-blade apex acuminate.

Inflorescence. Inflorescence a panicle. Peduncle glabrous. Panicle open, elliptic, dense, 7–10 cm long. Panicle axis glabrous. Panicle branches glabrous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

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 cuneate, laterally compressed, 7–8 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes pubescent. Floret callus pubescent.

Glumes. Glumes persistent, similar, shorter than spikelet or reaching apex of florets, thinner than fertile lemma, shiny, gaping. Lower glume lanceolate, 4.5–6 mm long, 0.75–0.8 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume lateral veins absent. Lower glume apex acuminate. Upper glume elliptic, 6.5–8 mm long, 1 length of adjacent fertile lemma, membranous, 1-keeled, 3 -veined. Upper glume apex acute.

Florets. Fertile lemma elliptic, 6.5–8 mm long, membranous, shiny, keeled, 5 -veined, more than 3-veined. Lemma apex dentate, 2 -fid, awned, 3 -awned. Principal lemma awn dorsal, arising 0.75 way up back of lemma, geniculate, 10–11 mm long overall, with twisted column. Lateral lemma awns present, arising on apex of lobes, 1 mm long. Palea gaping, hyaline.

Flower and Fruit. Anthers 3. Ovary glabrous. Caryopsis with adherent pericarp. Hilum punctiform.

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

Country /Province /State. China. China South Central, Tibet. **Indian Subcontinent.** Eastern Himalaya, India, Nepal.

TDWG4. Sichuan, Yunnan. Bhutan, Sikkim.

Trisetum sclerophyllum Hack. *An. Mus. Nac. Buenos Aires.* xxi. 10 (1911).

Regarded by K as a synonym (*T. barbinode*).

TYPE from Argentina. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: N. Illin 148; 20 Jan 1902; Argentina: Chubut: Dpto. Languiñeo, región del río Corcovado (W ex Stuckert herb arg. 17991; IT: BAA-3414, US-91365 (fragm.)).

Illustrations (Books): E.G.Nicora, *Los Generos de Gramineas de America Austral* (1987) (245, Fig. 77), M.N.Correa, *Flora Patagónica Parte III, Gramineae* (1978) (256, Fig. 167).

Derivation (Clifford & Bostock 2007): Gk. skleros, hard; phyllon, leaf. Leaf-blades indurate or coriaceous.

Classification. Subfamily Pooideae. Tribe: Poeae.

Habit, Vegetative Morphology. Perennial. Culms erect, 10–20 cm long, 1–2 -noded. Leaf-sheaths smooth. Ligule a ciliate membrane, 1 mm long, truncate. Leaf-blades flat or convolute, 2.5–6 cm long, 2–2.5 mm wide. Leaf-blade surface scabrous, rough adaxially. Leaf-blade margins scabrous.

Inflorescence. Inflorescence a panicle, embraced at base by subtending leaf. Peduncle pubescent above. Panicle contracted, linear or oblong, 4–6 cm long, 1–1.5 cm wide. Panicle axis pilose. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, ciliate.

Fertile Spikelets. Spikelets comprising 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, 8 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes pilose. Floret callus pilose. Floret callus hairs 2–3 mm long.

Glumes. Glumes persistent, similar, reaching apex of florets, thinner than fertile lemma, shiny, gaping. Lower glume lanceolate, 6–6.5 mm long, 0.9 length of upper glume, membranous, 1-keeled, 1–3 -veined. Lower glume primary vein scabrous. Lower glume lateral veins absent or distinct. Lower glume apex setaceously acuminate. Upper glume lanceolate, 7–8 mm long, 1.1 length of adjacent fertile lemma, membranous, 1-keeled, 3 -veined. Upper glume primary vein scabrous. Upper glume apex setaceously acuminate.

Florets. Fertile lemma oblong, 6–7 mm long, membranous, shiny, keeled, 5 -veined, more than 3-veined. Lemma surface pilose. Lemma hairs 1–2 mm long. Lemma apex dentate, 2 -fid, awned, 1 -awned. Principal lemma awn dorsal, arising 0.5–0.66 way up back of lemma, straight, 7–8 mm long overall, limb pubescent, glabrescent towards tip. Palea gaping, 1 length of lemma, hyaline. Palea keels scabrous.

Flower and Fruit. Anthers 3, 1.2–1.5 mm long. Caryopsis with adherent pericarp, 3–3.2 mm long, glabrous. Hilum punctiform. Endosperm farinose.

Distribution (TDWG). Continent. South America.

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

TDWG4. Neuquén, Río Negro.

Trisetum serpentinum E.Edgar & A.P.Druce. *New Zealand J. Bot.*, 36(4): 554 (1998).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, E.Edgar, & H.Connor, *Flora of New Zealand Gramineae* 5 (2000).

TYPE from New Zealand. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: New Zealand, Motueka R.: Druce (CHR holo).

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

Derivation (Clifford & Bostock 2007): Growing on soils derived from serpentine rocks.

Classification. Subfamily Pooideae. Tribe: Poeae.

Habit, Vegetative Morphology. Perennial, caespitose, clumped loosely. Culms 25–50 cm long. Leaf-sheaths 1–3 cm long, pubescent. Ligule a ciliate membrane, 0.4–0.8 mm long, erose. Leaf-blades involute, 2–16 cm long, 0.5–1 mm wide, dark green. Leaf-blade surface smooth or scaberulous, rough abaxially or on both sides. Leaf-blade margins scabrous.

Inflorescence. Inflorescence a panicle. Peduncle smooth, glabrous. Panicle open, linear or lanceolate, 2–10 cm long, 0.5–2 cm wide, contracted about primary branches. Primary panicle branches ascending or spreading, bearing spikelets almost to the base. Panicle axis scaberulous. Panicle branches scaberulous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 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, 4–6.5 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes pubescent, with 0.2–0.8 mm long hairs. Floret callus pubescent. Floret callus hairs 0.2 mm long.

Glumes. Glumes persistent, similar, shorter than spikelet or reaching apex of florets, thinner than fertile lemma, shiny, gaping. Lower glume lanceolate or oblong, 0.66–0.75 length of upper glume, membranous, 1-keeled. Lower glume apex acute or acuminate. Upper glume lanceolate or elliptic, membranous, 1-keeled. Upper glume apex acute or acuminate.

Florets. Fertile lemma elliptic, 3–4.5 mm long, membranous, shiny, keeled, 5 -veined, more than 3-veined. Lemma surface papillose. Lemma apex dentate, 2 -fid, awned, 1 -awned. Principal lemma awn dorsal, arising 0.75 way up back of lemma, curved, 3–4 mm long overall. Palea gaping, hyaline. Palea keels scaberulous.

Flower and Fruit. Lodicules 2, 1 mm long. Anthers 3, 1.5 mm long. Caryopsis with adherent pericarp.

Distribution (TDWG). Continent. Australasia.

Country /Province /State. New Zealand. New Zealand North I, New Zealand South I.

Trisetum sibiricum Rupr. *Beitr. Pfl. Russ. Reich.* ii. 65 (1846).

Accepted by: R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), S-L Chen et al, *Flora of China* 22 (Poaceae) (2006), T.G.Tutin et al, *Flora Europaea* 5 (1980), N.Tsvelev, *Grasses of the Soviet Union* (1983).

TYPE from Malaysia. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: LT: Anonymous s.n.; ; Malaya: Zemlya tundra (LE) LT designated by Tsvelev, *Grasses of the Soviet Union* [Zlaki SSSR] 384 (1983).

Illustrations (Books): M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 24 *Poaceae*, part 1 (2007) (752), S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 448).

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

Classification. Subfamily Pooideae. Tribe: Poeae.

Habit, Vegetative Morphology. Perennial, caespitose, clumped loosely. Butt sheaths glabrous. Culms erect, 60–130 cm long, 3–4 -noded. Leaf-sheaths glabrous on surface. Ligule an eciliate membrane, 2.5–3.5 mm long, lacerate. Leaf-blades 8–24 cm long, 3–8 mm wide. Leaf-blade surface pilose, hairy adaxially. Leaf-blade apex acuminate.

Inflorescence. Inflorescence a panicle. Panicle open, ovate, 8–16 cm long, 2–4.5 cm wide. Primary panicle branches 3–5.5 cm long. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, 0.8–4 mm long, scaberulous.

Fertile Spikelets. Spikelets comprising 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, 6.3–8.5 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes 1.8 mm long, pubescent, with 0.5–1 mm long hairs. Floret callus pubescent.

Glumes. Glumes persistent, similar, shorter than spikelet, thinner than fertile lemma, shiny, gaping. Lower glume lanceolate, 3.5–4.5 mm long, 0.66 length of upper glume, hyaline, 1-keeled, 1 -veined. Lower glume primary vein scaberulous. Lower glume lateral veins absent. Lower glume apex acute. Upper glume elliptic, 5.5–7.2 mm long, 1.1–1.2 length of adjacent fertile lemma, hyaline, 1-keeled, 3 -veined. Upper glume primary vein scaberulous. Upper glume apex acute.

Florets. Fertile lemma elliptic, 4.5–6.6 mm long, membranous, much thinner above, much thinner on margins, shiny, keeled, 5 -veined, more than 3-veined. Lemma apex dentate, 2 -fid, awned, 1 -awned. Principal lemma awn dorsal, curved, briefly coiled at base of limb, 6.5–9 mm long overall. Palea gaping, 5.4–6 mm long, hyaline. Palea keels scaberulous.

Flower and Fruit. Anthers 3, 2–3 mm long. Ovary glabrous. Caryopsis with adherent pericarp. Hilum punctiform.

$2n = 14$ (2 refs TROPICOS).

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

Region. Southeastern Europe, Eastern Europe, Middle Europe.

Country /Province /State. : Poland. : Romania, Yugoslavia. Belarus, Baltic States, Central European Russia, East European Russia, North European Russia, South European Russia, Northwest European Russia, Ukraine. Siberia, Russian far east, **Middle Asia, Caucasus, China, Mongolia, Eastern Asia, Russia.** Altay, Buryatiya, Chita, Irkutsk, Krasnoyarsk, Tuva. Amur, Kamchatka, Khabarovsk, Kuril Is, Magadan, Primorye, Sakhalin. Kazakhstan, Kirgizistan. China South Central, Inner Mongolia, Manchuria, China North-Central, Qinghai, China Southeast, Tibet, Xinjiang. Mongolia. Japan, Korea. **Subarctic America.** Alaska, Yukon.

TDWG4. Gansu, Hebei, Shaanxi, Shanxi. Henan. Hubei, Sichuan.

Trisetum spellenbergii Soreng, Finot & P.M.Peterson. *Ann. Missouri Bot. Gard.* 91(1): 23 (-25; fig. 4). 2004 (2004).

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

TYPE from Mexico. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: Mexico, Cascada: Spellenberg et al. 8654 (US holo, ESAHE, ID, K, MEXU, MO, NMC, RSA, SI, TAES).

Illustrations (Journals): *Ann. Missouri Bot. Gard.* (91: 24: Fig.4 (2004)).

Derivation (Clifford & Bostock 2007): In honor of Richard William Spellenberg (1940-) United States botanist.

Classification. Subfamily Pooideae. Tribe: Poeae.

Habit, Vegetative Morphology. Perennial. Rhizomes short. Culms geniculately ascending, 40–60 cm long, 2–4 -noded. Culm-internodes distally glabrous. Leaf-sheaths loose, longer than adjacent culm internode. Ligule an eciliate membrane, 4.5–6 mm long, scaberulous on abaxial surface, lacerate. Leaf-blades 20–30 cm long, 2–3.5 mm wide, 10–20 cm long at summit of culm. Leaf-blade surface scabrous, rough adaxially.

Inflorescence. Inflorescence a panicle. Panicle open, ovate, loose, 9–14 cm long, 2–8 cm wide. Primary panicle branches 2–5 -nate, whorled at most nodes, 3.5–5 cm long, bearing spikelets almost to the base. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising (4–)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 oblong, laterally compressed, 7–9 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes 1.5 mm long, pubescent. Floret callus pubescent.

Glumes. Glumes persistent, similar, shorter than spikelet, thinner than fertile lemma, shiny, gaping. Lower glume lanceolate, 5.5–6.5 mm long, 0.8–0.9 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume primary vein smooth or scaberulous. Lower glume lateral veins absent. Lower glume apex acute. Upper glume lanceolate, 6.5–7.5 mm long, 1.1–1.5 length of adjacent fertile lemma, membranous, 1-keeled, 3 -veined. Upper glume primary vein smooth or scaberulous. Upper glume apex acute.

Florets. Fertile lemma lanceolate, 4–6.5 mm long, membranous, shiny, keeled, 5 -veined, more than 3-veined. Lemma lateral veins prominent. Lemma apex dentate, 2 -fid, with lobes 2 mm long, awned, 1 -awned. Principal lemma awn dorsal, arising 0.5 way up back of lemma, geniculate, 8–12 mm long overall, with twisted column. Palea gaping, 3.5–5 mm long, hyaline. Palea keels scaberulous, ciliolate.

Flower and Fruit. Lodicules 2, 1–1.5 mm long, entire or 2-toothed. Anthers 3, 1.2–2.5 mm long. Ovary glabrous. Caryopsis with adherent pericarp.

Distribution (TDWG). Continent. North America.

Country /Province /State. Mexico. Northeast Mexico, Northwest Mexico. Chihuahua. Sonora.

Trisetum spicatum (L.) Richt. *Pl. Europ.* i. 59 (1890).

Accepted by: R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), D.Sharp, D. & B.K.Simon, *AusGrass* (2002), E.Edgar, & H.Connor, *Flora of New Zealand Gramineae* 5 (2000), S-L Chen et al, *Flora of China* 22 (Poaceae) (2006), J.F.Veldkamp, Poaceae ms (*Flora Malesiana*), N.L.Bor, Grasses of Burma, Ceylon, India and Pakistan (1960), T.G.Tutin et al, *Flora Europaea* 5 (1980), N.Tsvelev, *Grasses of the Soviet Union* (1983), T.Koyama, *Grasses of Japan and its neighboring regions* (1987).

TYPE from Sweden. **Basionym or Replaced Name:** *Aira spicata* L., *Sp. Pl.* 1: 64 (1753). T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: LT: ; ; (LINN-85.7; ILT: S) LT designated (as holotype) by Edgar, New Zealand J. Bot. 36: 556 (1998), superfluous later designation LT: J. Scheuchzer, *Agrostogr. Helv.* (1708) t. 6; ; LT designated by Louis-Marie, *Rhodora* 30: 238 (1928).

Recent Synonyms: *Trisetum variabile* E.Desv. in C. Gay, *Fl. Chil.* 6: 351. (1853).

Illustrations (Books): T.Koyama, *Grasses of Japan and its neighbouring regions* (1987) (156, Fig. 52), C-C Hsu, *Flora of Taiwan*, Vol 5 (1978) (288), C-C Hsu, *Taiwan Grasses* (1975) (as var. *formosanum*), T.A.Cope, *Flora of Pakistan* 143: *Poaceae* (1982), H.J.Noltie, *The Grasses of Bhutan* (2000) (583, Fig. 22 as ssp. *himalaicum* & ssp. *mongolicum*), N.Walsh & T.Entwistle, *Flora of Victoria* Vol 2 (1994) (453, Fig. 88 as subsp. *australiense*), S.W.L.Jacobs, R.D.B.Whalley & D.J.B.Wheeler., *Grasses of New South Wales*, 4th edn (2008) (391), J.C.Tothill, & J.B.Hacker. *The grasses of southern Queensland* (1983) (420), T.D.Stanley & E.Ross, *Flora of South East Queensland, Gramineae* (1989) (123, Fig. 19 as subsp. *australiense*), A.Wilson (ed.), *Flora of Australia*, Vol 44A. *Poaceae* (2009) (162, Fig. 24 subsp. *australiense*), D.Sharp & B.K.Simon, *AusGrass*. Grasses of Australia. CD-Rom Version 1.0. (2002) (as subsp. *australiense*), K.F.Best, et al, *Prairie Grasses* (1971) (235), M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 24 *Poaceae*, part 1 (2007) (751), A.S.Hitchcock, *Manual of the Grasses of the West Indies* (1936) (66, Fig. 36), S.A.Rennoize, *Gramineas*

de Bolivia (1998) (163, Fig 39), M.N. Correa, *Flora Patagonica* Parte III, Gramineae (1978) (247, Fig. 160), S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 447 as *Trisetum spicatum* ssp. *spicatum*).

Illustrations (Journals): *Ruizia* (13:160, Fig 17a-c (1993)).

Images: D. Sharp & B.K. Simon, *AusGrass*. Grasses of Australia. CD-Rom Version 1.0. (2002); (as subsp. *australiense*).

Derivation (Clifford & Bostock 2007): *L. spica*, thorn; -ata, possessing; Inflorescence a spike or spicate panicle.

Classification. Subfamily Pooideae. Tribe: Poeae.

Habit, Vegetative Morphology. Perennial, caespitose. Rhizomes elongated. Culms erect or geniculately ascending, 8–50 cm long, 2–5 -noded. Leaf-sheaths glabrous on surface or pubescent. Ligule an eciliate membrane. Leaf-blades flat or involute, 4–10 cm long, 1–3.5 mm wide. Leaf-blade surface glabrous to hirsute. Leaf-blade apex acuminate.

Inflorescence. Inflorescence a panicle. Peduncle pubescent above. Panicle spiciform, linear or ovate, 1.5–7.5 cm long, 1–2 cm wide. Panicle axis puberulous. Panicle branches puberulous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 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, 4–7.5 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes pubescent. Floret callus pubescent.

Glumes. Glumes persistent, similar, reaching apex of florets, thinner than fertile lemma, shiny, gaping. Lower glume elliptic, 3.5–5 mm long, 0.75–0.9 length of upper glume, membranous, 1-keeled, 1–3 -veined. Lower glume lateral veins absent or obscure. Lower glume apex acute. Upper glume elliptic, 4–6.5 mm long, 1–1.2 length of adjacent fertile lemma, membranous, 1-keeled, 3 -veined. Upper glume apex acute.

Florets. Fertile lemma elliptic, 4–5.5 mm long, membranous, much thinner above, much thinner on margins, shiny, keeled, 5 -veined, more than 3-veined. Lemma surface glabrous or puberulous. Lemma apex dentate, 2 -fid, awned, 1 -awned. Principal lemma awn dorsal, arising 0.66 way up back of lemma, geniculate, reflexed, 2.5–6.5 mm long overall, with twisted column. Palea gaping, hyaline. Palea keels scaberulous.

Flower and Fruit. Anthers 3. Ovary glabrous. Caryopsis with adherent pericarp. Hilum punctiform.

$N = 14$ (3 refs TROPICOS). $2n = 28$ (6 refs TROPICOS), or 42 (1 ref TROPICOS).

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

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

Country /Province /State. : Finland, GB Aliens (Ryves et al), Iceland, Norway, Svalbard, Sweden. : Austria, Germany, Switzerland. : France, Spain. : Italy. North European Russia. Siberia, Russian far east, **Middle Asia, Caucasus, Western Asia, China, Mongolia, Eastern Asia, Russia.** Altay, Buryatiya, Chita, Irkutsk, Krasnoyarsk. Amur, Kamchatka, Khabarovsk, Kuril Is, Magadan, Sakhalin. Kazakhstan, Kirgizistan, Turkmenistan, Tadzhikistan, Uzbekistan. Afghanistan, Iran. China South Central, Inner Mongolia, Manchuria, China North-Central, Qinghai, Tibet, Xinjiang. Mongolia. Japan, Korea, Taiwan. Japan Hokkaido, or Honshu. **Indian Subcontinent, Malasia, Papuasias.** Eastern Himalaya, India, Nepal, Pakistan, West Himalaya. Borneo. New Guinea. **Australia, New Zealand.** Queensland, New South Wales, A.C.T., Victoria, Tasmania. New Zealand South I. **Subarctic America, Western Canada, Eastern Canada, Northwest USA, Northeast USA, Southwestern USA, South-central USA, Southeastern USA, Mexico.** Greenland. Alberta, British Columbia, Manitoba, Saskatchewan. Labrador, New Brunswick, Newfoundland, Nova Scotia, Ontario, Prince Edward I, Quebec. Colorado, Idaho, Montana, Oregon, Washington, Wyoming. Connecticut, Maine, Massachusetts, Michigan, Ohio, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island. Arizona, California, Nevada, Utah. New Mexico. Virginia. Central Mexico, Northeast Mexico, Gulf (Mexico), Southwest Mexico, Southeast Mexico. **Mesoamerica, Caribbean, Western South America, Southern South America.** Dominican Republic, Haiti. Bolivia, Colombia, Ecuador, Peru. Argentina South, Chile North, Chile Central, Chile South. Falkland Is (Malvinas).

TDWG4. Gansu, Hebei, Shaanxi, Shanxi. Hubei, Sichuan, Yunnan. Bhutan, Sikkim. Uttah Pradesh, West Bengal. Himachal Pradesh, Jammu Kashmir. South East. Tablelands. Cordoba. Chubut, Neuquén, Río Negro, Santa Cruz, Tierra del Fuego. Rest of Chile- Biobio, La Auracania, Maule, O'Higgins, Santado, Valpariso. Antofagasta. Valparaiso, Santiago, Maule, Biobio. Los Lagos, Magellanes. Distrito Federal, Mexico State, Puebla. Coahuila, Chihuahua, Durango, Hidalgo, Neuvo Leon, Queretaro, San Luis Potosi. Veracruz. Jalisco, Michoacan. Chiapas.

Trisetum tenellum (Petrie) Allan & Zotov ex Laing & Gourlay. *Trans. & Proc. Roy. Soc. N. Z.* lxiv. 3 (1934).

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).

TYPE from New Zealand. **Basionym or Replaced Name:** *Trisetum antarcticum* subsp. *tenellum* Petrie, *Trans. Proc. New Zeal. Inst.* 44:187 (1912). T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: New Zealand, Mt. Cook: Petrie (WELT lecto).

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

Derivation (Clifford & Bostock 2007): L. slender. Culms or inflorescence branches slender.

Classification. Subfamily Pooideae. Tribe: Poeae.

Habit, Vegetative Morphology. Perennial, caespitose. Culms weak, 2–35(–55) cm long. Leaf-sheaths 0.5–2 cm long, smooth or scaberulous, glabrous on surface to pubescent. Ligule a ciliolate membrane, 0.2–1 mm long, truncate or obtuse. Leaf-blades 1–12(–18) cm long, 0.3–1.5(–2) mm wide, grey-green. Leaf-blade surface smooth or scaberulous, rough abaxially or on both sides, glabrous or puberulous, hairy adaxially or abaxially or on both sides. Leaf-blade margins scaberulous.

Inflorescence. Inflorescence a panicle. Peduncle glabrous to hirsute above. Panicle spiciform, linear, 0.5–8.5 cm long, 0.5–1.2 cm wide. Panicle axis glabrous or puberulous. Panicle branches scaberulous, glabrous or puberulous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 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, (3.5–)4–5.5 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes pubescent, with 0.8 mm long hairs. Floret callus pubescent. Floret callus hairs 0.2 mm long.

Glumes. Glumes persistent, similar, shorter than spikelet or reaching apex of florets, thinner than fertile lemma, shiny, gaping. Lower glume elliptic, 0.75–1 length of upper glume, membranous, light green, 1-keeled. Lower glume apex obtuse or acute. Upper glume elliptic, membranous, light green, 1-keeled. Upper glume apex obtuse or acute.

Florets. Fertile lemma elliptic, 3.5–5 mm long, membranous, shiny, keeled, 5 -veined, more than 3-veined. Lemma surface papillose. Lemma apex dentate, 2 -fid, awned, 1 -awned. Principal lemma awn dorsal, arising 0.75 way up back of lemma, straight or curved, 2–3(–4) mm long overall. Palea gaping, hyaline. Palea keels scaberulous.

Flower and Fruit. Lodicules 2, 0.7 mm long. Anthers 3, 0.6–1.3 mm long. Caryopsis with adherent pericarp, 2 mm long.

Distribution (TDWG). Continent. Australasia.

Country /Province /State. New Zealand. New Zealand South I.

Trisetum tenuiforme B.Jonsell. *Bot. J. Linn. Soc.*, 76(4): 320, (1978).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, T.G.Tutin et al, *Flora Europaea* 5 (1980).

T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: : Based on *T. flavescens* var. *tenuis*.

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

Classification. Subfamily Pooideae. Tribe: Poeae.

Habit, Vegetative Morphology. Perennial, caespitose, clumped loosely. Butt sheaths pubescent. Culms slender, 15–40 cm long. Culm-internodes distally glabrous. Ligule an eciliate membrane. Leaf-blades convolute, 3–6 cm long, 1 mm wide. Leaf-blade surface glabrous or pubescent.

Inflorescence. Inflorescence a panicle. Panicle open, lanceolate or oblong, 3–6 cm long, 0.5–1.5 cm wide. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, glabrous.

Fertile Spikelets. Spikelets comprising 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, 4–6 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes pubescent, with 0.5 mm long hairs. Floret callus pubescent. Floret callus hairs 0.3 mm long.

Glumes. Glumes persistent, similar, shorter than spikelet, thinner than fertile lemma, shiny, gaping. Lower glume lanceolate, 0.75 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume lateral veins absent. Lower glume apex acute. Upper glume lanceolate, 0.9 length of adjacent fertile lemma, membranous, 1-keeled, 3 -veined. Upper glume apex acute.

Florets. Fertile lemma oblong, 4–5.5 mm long, membranous, shiny, keeled, 5 -veined, more than 3-veined. Lemma apex dentate, 2 -fid, awned, 1 -awned. Principal lemma awn dorsal, arising 0.5–0.6 way up back of lemma, curved, 2–2.5 mm long overall. Palea gaping, hyaline.

Flower and Fruit. Anthers 3, 2–2.5 mm long. Caryopsis with adherent pericarp. Hilum punctiform.

Distribution (TDWG). Continent. Europe.

Region. Southeastern Europe.

Country /Province /State. : Albania, Greece.

Trisetum thospiticum Chrtek. *Bot. Notiser*, 119: 489 (1966).

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

TYPE from Turkey. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: Turkey, Suphan Dag; Stileman 17.

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

Derivation (Clifford & Bostock 2007): L. -icum, belonging to. From lacus Thospetis, now Van Gvl, Turkey.

Classification. Subfamily Pooideae. Tribe: Poeae.

Habit, Vegetative Morphology. Perennial, caespitose, clumped densely. Butt sheaths papery, glabrous. Culms erect, 20–50 cm long, 2–5 -noded. Culm-internodes distally pubescent. Ligule an eciliate membrane, 0.5–1 mm long, lacerate, obtuse. Leaf-blades 3–11 cm long, 2.3–4 mm wide. Leaf-blade surface pilose. Leaf-blade apex acuminate.

Inflorescence. Inflorescence a panicle. Panicle contracted, oblong, 3.6–10 cm long, 1.3–3.5 cm wide. Primary panicle branches appressed, 1–2.5 cm long. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, 1.5–4 mm long, scabrous.

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, 5.5–9.5 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes 1.5–2 mm long, pubescent, with 0.6–0.8 mm long hairs. Floret callus pubescent.

Glumes. Glumes persistent, similar, shorter than spikelet, thinner than fertile lemma, shiny, gaping. Lower glume lanceolate, 3.5–6.3 mm long, 0.75 length of upper glume, membranous, much thinner on margins, 1-keeled, 1 -veined. Lower glume lateral veins absent. Lower glume apex acute. Upper glume elliptic, 5–8 mm long, 0.8–1 length of adjacent fertile lemma, membranous, with hyaline margins, 1-keeled, 3 -veined. Upper glume apex acute.

Florets. Fertile lemma elliptic, 6–8 mm long, membranous, much thinner above, much thinner on margins, shiny, keeled, 5 -veined, more than 3-veined. Lemma apex dentate, 2 -fid, awned, 1 -awned. Principal lemma awn dorsal, geniculate, 6–10 mm long overall, with twisted column. Palea gaping, hyaline. Palea keels scaberulous.

Flower and Fruit. Anthers 3, 2.2–3.7 mm long. Ovary glabrous. Caryopsis with adherent pericarp. Hilum punctiform.

Distribution (TDWG). Continent. Temperate Asia.

Country /Province /State. Western Asia. Turkey.

Trisetum tibeticum P.C. Kuo & Z.L. Wu. *Fl. Xizangica*, 5: 188 (1987).

TYPE from China. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: China: Xizang: 4800–5500 m.,

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

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

Classification. Subfamily Pooideae. Tribe: Poeae.

Habit, Vegetative Morphology. Perennial, caespitose. Culms 3–9 cm long. Leaf-sheaths pilose. Ligule an eciliate membrane. Leaf-blades 1–4 cm long, 1–2 mm wide. Leaf-blade surface pilose, densely hairy. Leaf-blade apex acuminate.

Inflorescence. Inflorescence a panicle. Peduncle pilose above. Panicle contracted to spiciform, oblong, 1.5–4 cm long. Panicle axis pilose. Panicle branches pilose. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 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, 4–7.5 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes pubescent. Floret callus pubescent.

Glumes. Glumes persistent, similar, reaching apex of florets, thinner than fertile lemma, shiny, gaping. Lower glume elliptic, 3.5–5 mm long, 0.75–0.9 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume lateral veins absent. Lower glume apex acute. Upper glume elliptic, 4–6.5 mm long, 1–1.2 length of adjacent fertile lemma, membranous, 1-keeled, 3 -veined. Upper glume apex acute.

Florets. Fertile lemma elliptic, 4–5.5 mm long, membranous, keeled, 5 -veined, more than 3-veined. Lemma surface pubescent. Lemma hairs 0.5 mm long. Lemma apex dentate, 2 -fid, awned, 1 -awned. Principal lemma awn dorsal, arising 0.5 way up back of lemma, geniculate, 4–5 mm long overall, with twisted column. Palea gaping, hyaline. Palea keels scaberulous. Rhachilla extension 0.25 length of fertile floret, pilose.

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

Distribution (TDWG). Continent. Temperate Asia.

Country /Province /State. China. Tibet.

Trisetum tonduzii Hitchcock. *N. Am. Fl.* xvii. 558 (1939).

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

TYPE from Costa Rica. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: HT: A. Tonduz 10749; Nov 1896; Costa Rica: Mount Poás (US-358711).

Illustrations (Books): W.Burger, *Flora Costaricensis* 15, Gramineae: *Fieldiana Botany New Series* 4 (1980) (578, Fig. 217).

Derivation (Clifford & Bostock 2007): in honor of Adolpheo Tonduz (1862–1921) Swiss-born cleric and Central American botanist.

Classification. Subfamily Pooideae. Tribe: Poeae.

Habit, Vegetative Morphology. Perennial. Culms erect, 45–85 cm long. Ligule an eciliate membrane, 1.5–3 mm long. Leaf-blades 10–20 cm long, 4–6 mm wide. Leaf-blade surface glabrous or pubescent, hairy adaxially.

Inflorescence. Inflorescence a panicle. Panicle open, pyramidal, 15–20 cm long. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, filiform.

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, 4–6.5 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes pilose. Floret callus bearded. Floret callus hairs 0.25–0.5 length of lemma.

Glumes. Glumes persistent, similar, reaching apex of florets, gaping. Lower glume lanceolate, 4–6.5 mm long, 1 length of upper glume, membranous, purple, 1-keeled, 1–3 -veined. Lower glume apex acute. Upper glume lanceolate, 4–6.5 mm long, 1.1–1.5 length of adjacent fertile lemma, membranous, purple, 1-keeled, 3 -veined. Upper glume apex acute.

Florets. Fertile lemma obovate, 2.8–6 mm long, chartaceous, keeled, 5 -veined, more than 3-veined. Lemma lateral veins excurrent. Lemma surface scaberulous. Lemma apex lobed, 2 -fid, incised 0.33 of lemma length, awned, 5 -awned. Principal lemma awn dorsal, arising 0.5–0.6 way up back of lemma, geniculate, 7–13 mm long overall, with a straight or slightly twisted column. Lateral lemma awns present, arising on apex of lobes or on inner edge of lobes, 1 mm long, shorter than principal. Palea gaping, 0.8 length of lemma, hyaline. Rhachilla extension 0.3–0.5 length of fertile floret.

Flower and Fruit. Lodicules 2, membranous. Anthers 3, 1.7–2 mm long. Ovary glabrous. Caryopsis with adherent pericarp. Hilum punctiform.

$2n = 28$ (1 ref TROPICOS).

Distribution (TDWG). Continent. South America.

Country /Province /State. Mesoamerica. Costa Rica, Panama.

Trisetum transcaucasicum Seredin. *Not. Syst. Herb. Inst. Bot. Acad. Sci. URSS*, xxi. 54 (1961).

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>: *vide* TROPICOS and Kew Synonymy Database: Russia, Tufandag Mt.: Karyagin (LE holo).

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

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 pilose. Culms 7–14 cm long. Leaves mostly basal. Ligule an eciliate membrane, 1.5–1.7 mm long, lacerate. Leaf-blades flat or convolute, 1.5–2.6 cm long, 2.5 mm wide, glaucous. Leaf-blade surface pubescent, hairy on both sides. Leaf-blade margins ciliate. Leaf-blade apex acuminate.

Inflorescence. Inflorescence a panicle. Panicle open, oblong or ovate, continuous or interrupted, dense, 2–3 cm long, 0.8–1.5 cm wide. Primary panicle branches 1-nate, bearing spikelets almost to the base. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 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, 6–8 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes pilose, with 3–4 mm long hairs.

Glumes. Glumes persistent, similar, shorter than spikelet, thinner than fertile lemma, shiny, gaping. Lower glume elliptic, 2–3 mm long, 0.5 length of upper glume, membranous, much thinner above, 1-keeled, 1-veined. Lower glume lateral veins absent. Lower glume apex acute. Upper glume elliptic, 4–6 mm long, 0.9 length of adjacent fertile lemma, membranous, much thinner above, 1-keeled, 3-veined. Upper glume apex acute.

Florets. Fertile lemma oblong, 5–6 mm long, membranous, shiny, keeled, 5-veined, more than 3-veined. Lemma apex dentate, 2-fid, awned, 1-awned. Principal lemma awn dorsal, arising 0.66 way up back of lemma, geniculate, 5–6 mm long overall, with a straight or slightly twisted column. Palea gaping, hyaline.

Flower and Fruit. Anthers 3. Ovary glabrous. Caryopsis with adherent pericarp. Hilum punctiform.

Distribution (TDWG). Continent. Temperate Asia.

Country /Province /State. Caucasus. North Caucasus.

TDWG4.

Trisetum turcicum Chrtk. *Bot. Notiser*, cxix. 487 (1966).

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>: *vide* TROPICOS and Kew Synonymy Database: Turkey, Djimil Lazistan: Ballansa 1551 (PRC holo, E, K).

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

Derivation (Clifford & Bostock 2007): L. -ica, belonging to. From Turcia, now Turkey.

Classification. Subfamily Pooideae. Tribe: Poeae.

Habit, Vegetative Morphology. Perennial, caespitose, clumped loosely. Basal innovations extravaginal. Culms geniculately ascending, 40–50 cm long, 2–5-noded. Culm-nodes pubescent. Leaf-sheaths pubescent. Ligule an eciliate membrane, 1.6–3 mm long, lacerate. Leaf-blades 7.5–13 cm long, 3–5 mm wide. Leaf-blade surface glabrous. Leaf-blade apex acuminate.

Inflorescence. Inflorescence a panicle. Panicle contracted, linear, 5.2–8.6 cm long, 0.6–0.8 cm wide. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, 2.5–4.5 mm long, scabrous.

Fertile Spikelets. Spikelets comprising 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, 5.4–8 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes 1.5–2 mm long, glabrous or sparsely hairy. Floret callus pubescent.

Glumes. Glumes persistent, similar, shorter than spikelet or reaching apex of florets or exceeding apex of florets, thinner than fertile lemma, shiny, gaping. Lower glume lanceolate, 4.5–6 mm long, 0.7–0.9 length of upper glume, membranous, much thinner on margins, 1-keeled, 1-veined. Lower glume lateral veins absent. Lower glume apex acute. Upper glume elliptic, 6.3–6.5 mm long, 1–1.2 length of adjacent fertile lemma, membranous, with hyaline margins, 1-keeled, 3-veined. Upper glume apex acute.

Florets. Fertile lemma elliptic, 5.3–6.5 mm long, membranous, much thinner above, much thinner on margins, shiny, keeled, 5-veined, more than 3-veined. Lemma apex dentate, 2-fid, awned, 1-awned. Principal lemma awn dorsal, geniculate, 9.5–10 mm long overall, with twisted column. Palea gaping, 5–7 mm long, hyaline. Palea keels scaberulous.

Flower and Fruit. Anthers 3, 3–4.5 mm long. Ovary glabrous. Caryopsis with adherent pericarp. Hilum punctiform.

Distribution (TDWG). Continent. Temperate Asia.

Country /Province /State. Caucasus, Western Asia. North Caucasus, Transcaucasus. Turkey.

TDWG4.

Trisetum umbratile (Kit.) Kitagawa. *Journ. Jap. Bot.* i. 302 (1956).

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:** *Trisetum sibiricum* var. *umbratile* Kitagawa, *Rep. Inst. Sci. Res. Manch.* 4:77 (1940). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: China, Manchuria, Chi-lin, Lake Ching-yueh-tan: Kitagawa.

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

Derivation (Clifford & Bostock 2007): *L. umbra*, any shady place; -atile, place of growth. Growing on wet, shaded river-banks.

Classification. Subfamily Pooideae. Tribe: Poeae.

Habit, Vegetative Morphology. Perennial, caespitose. Culms 50–90 cm long. Leaf-sheaths mostly shorter than adjacent culm internode, striately veined, glabrous on surface, outer margin hairy. Ligule an eciliate membrane, 2 mm long, lacerate, truncate. Leaf-blades 15–30 cm long, 3–7 mm wide. Leaf-blade surface scabrous, rough on both sides. Leaf-blade margins scabrous. Leaf-blade apex attenuate.

Inflorescence. Inflorescence a panicle. Panicle open, lanceolate, 10–22 cm long. Panicle axis glabrous. Panicle branches scabrous, rough distally. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 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, 4–5.5 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, shiny, gaping. Lower glume lanceolate or oblong, 2.5 mm long, 0.66 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume primary vein scaberulous. Lower glume lateral veins absent. Lower glume margins ciliolate. Lower glume apex acute. Upper glume oblong, 4 mm long, 0.9 length of adjacent fertile lemma, membranous, 1-keeled, 3 -veined. Upper glume margins ciliolate. Upper glume apex acute.

Florets. Fertile lemma oblong or ovate, 4.5 mm long, membranous, keeled, 5 -veined, more than 3-veined. Lemma surface papillose. Lemma apex dentate, 2 -fid, with lobes 1.5 mm long, awned, 1 -awned. Principal lemma awn dorsal, arising 0.5–0.6 way up back of lemma, straight or curved, 4–6.5 mm long overall. Palea gaping, 3.5 mm long, hyaline. Palea keels smooth or scaberulous. Palea surface pubescent, hairy on margins. Palea apex dentate, 2 -fid. Rhachilla extension 1.4 mm long, pilose.

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

N = 14 (1 ref TROPICOS).

Distribution (TDWG). Continent. Temperate Asia.

Country /Province /State. China, Eastern Asia, Russia. Primorye. Inner Mongolia, Manchuria. Japan, Korea.

TDWG4.

Trisetum velutinum Boiss. *Elench.* 88. (1838).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, T.G.Tutin et al, *Flora Europaea* 5 (1980).

TYPE from Spain. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Spain, Sierra Nevada: Boissier 187 (K iso).

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

Derivation (Clifford & Bostock 2007): *L. velvety*. Plant in whole or in part covered with dense short hairs.

Classification. Subfamily Pooideae. Tribe: Poeae.

Habit, Vegetative Morphology. Perennial. Rhizomes elongated. Stolons present. Culms 25–40 cm long. Culm-internodes distally glabrous or pubescent. Leaves mostly basal, distichous. Leaf-sheaths pubescent. Ligule an eciliate membrane. Leaf-blades involute, 4–8 cm long, 0.4 mm wide. Leaf-blade surface pubescent.

Inflorescence. Inflorescence a panicle. Panicle open, lanceolate, 5–11 cm long, 1–3 cm wide. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 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, 4.8–8 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes pubescent, with 1.2–2 mm long hairs. Floret callus pubescent.

Glumes. Glumes persistent, similar, reaching apex of florets, thinner than fertile lemma, shiny, gaping. Lower glume lanceolate, 0.75 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume lateral veins absent. Lower glume apex acute. Upper glume lanceolate, 1 length of adjacent fertile lemma, membranous, 1-keeled, 3 -veined. Upper glume apex acute.

Florets. Fertile lemma oblong, 4.5–6.4 mm long, membranous, shiny, keeled, 5 -veined, more than 3-veined. Lemma apex dentate, 2 -fid, awned, 1 -awned. Principal lemma awn dorsal, arising 0.75 way up back of lemma, geniculate, 4.5–7.5 mm long overall, with twisted column. Palea gaping, hyaline.

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

N = 14 (1 ref TROPICOS).

Distribution (TDWG). Continent. Europe, Africa.

Region. Southwestern Europe.

Country /Province /State. : Spain. Northern Africa. Algeria (*).

Trisetum viride (Kunth) Kunth. *Rev. Gram.* i. 101 (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:** *Avena viridis* Kunth, *Nov. Gen. Sp. (quarto ed.)* 1: 147 (1815 [1816]). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: Humboldt & Bonpland s.n.; Sep; Mexico: crescit in alta planitie mexicana, inter Salamanca et Queretaro, 900 hexap. (P; IT: US-865584 (fragm. ex P)).

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

Derivation (Clifford & Bostock 2007): L. green. Widely applied but especially to species with green spikelets.

Classification. Subfamily Pooideae. Tribe: Poeae.

Habit, Vegetative Morphology. Perennial, caespitose. Rootstock evident. Culms 80–150 cm long, 1–2 mm diam. Lateral branches lacking. Leaf-sheaths pilose. Ligule an eciliate membrane, 2–4 mm long, truncate. Leaf-blades 20 cm long, 5–9 mm wide. Leaf-blade surface glabrous or pilose, hairy adaxially.

Inflorescence. Inflorescence a panicle. Panicle open, lanceolate or elliptic, dense, equilateral or nodding, 20–30 cm long. Panicle axis scabrous. Panicle branches scabrous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, flexuous, 4–5 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 oblong, laterally compressed, 5.5–6 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes 0.7 mm long, pilose, with 1.5–2 mm long hairs. Floret callus pubescent.

Glumes. Glumes persistent, similar, reaching apex of florets, thinner than fertile lemma, shiny, gaping. Lower glume elliptic, 5–5.5 mm long, 0.9 length of upper glume, membranous, much thinner above, 1-keeled, 1 -veined. Lower glume primary vein scabrous. Lower glume lateral veins absent. Lower glume apex acute. Upper glume elliptic, 5.5–6 mm long, 1.2 length of adjacent fertile lemma, membranous, much thinner above, 1-keeled, 3 -veined. Upper glume primary vein scabrous. Upper glume apex acute.

Florets. Fertile lemma lanceolate, 4.5–5 mm long, membranous, much thinner above, keeled, 5 -veined, more than 3-veined. Lemma surface asperulous. Lemma apex dentate, 2 -fid, awned, 1 -awned. Principal lemma awn dorsal, arising 0.66 way up back of lemma, geniculate, 7–9 mm long overall, with twisted column. Palea gaping, 4–4.5 mm long, hyaline. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Anthers 3, 1.7–3 mm long. Ovary glabrous. Caryopsis with adherent pericarp. Hilum punctiform. Endosperm liquid.

Distribution (TDWG). Continent. North America, South America.

Country /Province /State. Mexico. Northeast Mexico, Southwest Mexico. **Mesoamerica.** Guatemala.

TDWG4. Guanajuato, Queretaro, Zacatecas. Guerrero, Jalisco, Oaxaca.

Trisetum virletii Fourn. *Mex. Pl. Enum., Gram.* 108 (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.

TYPE from Mexico. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Mexico, San Luis Potosi: Virlet 1384 (P lecto).

Illustrations (Books): R.McVaugh, *Flora Nova-Galiciana* Vol.14 *Gramineae* (1983).

Derivation (Clifford & Bostock 2007): in honor of Virlet D'Aoust (-) who collected in Mexico.

Classification. Subfamily Pooideae. Tribe: Poeae.

Habit, Vegetative Morphology. Perennial. Rhizomes elongated. Culms erect or rambling, 200–300 cm long, 5–10 mm diam. Lateral branches ample, extravaginal. Ligule a ciliolate membrane, 2–5 mm long, truncate. Leaf-blades 30–45 cm long, 8–13 mm wide. Leaf-blade surface glabrous, hairless except near base.

Inflorescence. Inflorescence a panicle. Panicle open, elliptic, loose or effuse, nodding, 20–45 cm long. Primary panicle branches ascending or drooping, 10–15 cm long. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, flexuous, 1.5–2 mm long.

Fertile Spikelets. Spikelets comprising 3–5 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets oblong, laterally compressed, 6–7.5 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes 1 mm long, pilose, with 3 mm long hairs. Floret callus pubescent.

Glumes. Glumes persistent, similar, shorter than spikelet, thinner than fertile lemma, shiny, gaping. Lower glume elliptic, 4–5 mm long, 0.8 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume lateral veins absent. Lower glume apex acute or setaceously acuminate. Upper glume elliptic, 5–6.5 mm long, 1.1 length of adjacent fertile lemma, membranous, 1-keeled, 3 -veined. Upper glume apex acute or setaceously acuminate.

Florets. Fertile lemma lanceolate, 4.5–6 mm long, membranous, keeled, 5 -veined, more than 3-veined. Lemma surface asperulous. Lemma apex entire, obtuse or acute, awned, 1 -awned. Principal lemma awn dorsal, arising 0.66 way up back of lemma, geniculate, 2–4 mm long overall, with twisted column. Palea gaping, 4–5 mm long, hyaline. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Anthers 3, 2.5–3 mm long. Ovary glabrous. Caryopsis with adherent pericarp. Hilum punctiform. Endosperm liquid.

Distribution (TDWG). Continent. North America.

Country /Province /State. Mexico. Central Mexico, Northeast Mexico, Gulf (Mexico), Southwest Mexico, Southeast Mexico.

TDWG4. Distrito Federal, Mexico State, Morelos, Puebla. Durango, Guanajuato, Hidalgo, Queretaro, San Luis Potosi. Veracruz. Jalisco, Michoacan. Chiapas.

Trisetum wolfii (Vasey) Coult. *Man. Rocky Mount. Bot.* 423. (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>: *vide* TROPICOS and Kew Synonymy Database: USA, Colorado, Twin Lakes: Wolfe (K iso, NY, US).

Recent Synonyms: *Grapphephorum wolfii* (Vasey) Coult., *Man. Rocky Mount. Bot.* 423. (1885).

Illustrations (Books): M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 24 *Poaceae*, part 1 (2007) (747).

Derivation (Clifford & Bostock 2007): in honor of John Wolf (1820–1897) United States botanist.

Classification. Subfamily Pooideae. Tribe: Poeae.

Habit, Vegetative Morphology. Perennial, caespitose. Rhizomes absent or short. Culms erect, 50–100 cm long. Leaf-sheaths antrorsely scabrous. Ligule an eciliate membrane. Leaf-blades 7–30 cm long, 2–4 mm wide. Leaf-blade surface scabrous, glabrous or pilose, hairy adaxially.

Inflorescence. Inflorescence a panicle. Panicle contracted, linear, 8–15 cm long. Panicle branches scaberulous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, linear or oblong.

Fertile Spikelets. Spikelets comprising 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, 5–7 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes 2 mm long, pilose. Floret callus pubescent.

Glumes. Glumes persistent, reaching apex of florets, thinner than fertile lemma. Lower glume elliptic, 5–6 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. Upper glume elliptic, 5–6 mm long, 1 length of adjacent fertile lemma, membranous, 1-keeled, 3 -veined. Upper glume primary vein scaberulous. Upper glume apex acuminate.

Florets. Fertile lemma elliptic, 5–6 mm long, cartilaginous, much thinner above, keeled, 5 -veined, more than 3-veined. Lemma surface asperulous. Lemma apex obtuse, muticous or mucronate. Principal lemma awn subapical. Palea embraced by lemma. Palea keels scaberulous. Rhachilla extension glabrous.

Flower and Fruit. Ovary glabrous.

Distribution (TDWG). Continent. North America.

Country /Province /State. Western Canada, Northwest USA, Southwestern USA, South-central USA. Alberta, Saskatchewan. Colorado, Idaho, Montana, Oregon, Washington, Wyoming. California, Nevada, Utah. New Mexico.

Trisetum youngii Hook. f. *Handb. N. Zeal. Fl.* 335. (1853).

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).

TYPE from New Zealand. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: LT: J. Haast 672; 1862; New Zealand: Canterbury (K) LT designated by Edgar & Connor, *New Zealand J. Bot.* 36: 560–562 (1998).

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

Derivation (Clifford & Bostock 2007): in honor of William Spearman Young (1842–1912) New Zealand surveyor.

Classification. Subfamily Pooideae. Tribe: Poeae.

Habit, Vegetative Morphology. Perennial, caespitose. Culms erect, 30–90 cm long. Culm-internodes distally glabrous or pilose. Leaves mostly basal. Leaf-sheaths glabrous on surface or pilose. Ligule an eciliate membrane, lacerate, truncate. Leaf-blades 1–3 mm wide. Leaf-blade surface smooth, pilose.

Inflorescence. Inflorescence a panicle. Panicle contracted, linear or lanceolate, 5–20 cm long. Primary panicle branches appressed. Panicle axis pilose. Panicle branches pilose. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 1–3 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, 5 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes glabrous.

Glumes. Glumes persistent, similar, shorter than spikelet, thinner than fertile lemma, shiny, gaping. Lower glume elliptic, 0.75–1 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume primary vein scabrous. Lower glume lateral veins absent. Lower glume apex acuminate. Upper glume elliptic, 0.75 length of adjacent fertile lemma, membranous, 1-keeled, 3 -veined. Upper glume apex acuminate.

Florets. Fertile lemma oblong, 3.5 mm long, membranous, shiny, keeled, 5 -veined, more than 3-veined. Lemma surface asperulous. Lemma apex dentate, 2 -fid, awned, 1 -awned. Principal lemma awn dorsal, arising 0.66 way up back of lemma, curved, 3–4 mm long overall. Palea gaping, hyaline.

Flower and Fruit. Anthers 3. Ovary glabrous. Caryopsis with adherent pericarp. Hilum punctiform.

Distribution (TDWG). Continent. Australasia.

Country /Province /State. New Zealand. New Zealand North I, New Zealand South I.

Trisetum yunnanense Chrtk. *Folia Geobot. Phytotax.* 25 : 334 (1990).

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

TYPE from China. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: China: Yunnan: dry meadows, ca. 3000 m.

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

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

Classification. Subfamily Pooideae. Tribe: Poeae.

Habit, Vegetative Morphology. Perennial, caespitose. Stolons present. Culms 26–35 cm long, 1.5 mm diam., 2–3 -noded. Culm-internodes smooth, distally glabrous. Leaf-sheaths 9–14 cm long, pubescent, outer margin hairy. Ligule a ciliolate membrane, 1.5–3 mm long. Leaf-blades 4–10 cm long, 2–3 mm wide. Leaf-blade surface glabrous or puberulous. Leaf-blade margins ciliate. Leaf-blade apex attenuate.

Inflorescence. Inflorescence a panicle. Panicle open, lanceolate, 7–9 cm long, 1.5–3 cm wide. Panicle branches scabrous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, 2–6 mm long, scabrous.

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 or cuneate, laterally compressed, 6.5–9 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes pubescent. Floret callus pubescent. Floret callus hairs 0.8 length of lemma.

Glumes. Glumes persistent, dissimilar, shorter than spikelet, thinner than fertile lemma, gaping. Lower glume lanceolate, 4–5 mm long, 0.75 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume primary vein scaberulous. Lower glume lateral veins absent. Lower glume apex acuminate, mucronate. Upper glume elliptic, 5–6.5 mm long, 0.9 length of adjacent fertile lemma, membranous, 1-keeled, 3 -veined. Upper glume primary vein scaberulous. Upper glume apex acuminate, mucronate.

Florets. Fertile lemma lanceolate, 6.5–7 mm long, chartaceous, keeled, 5 -veined, more than 3-veined. Lemma midvein scaberulous. Lemma apex dentate, 2 -fid, awned, 1 -awned. Principal lemma awn dorsal, arising 0.5–0.66 way up back of lemma, curved or geniculate, 12–16 mm long overall, without a column or with

a straight or slightly twisted column. Palea 6.5 mm long, hyaline. Palea keels scaberulous, adorned above, with 0.66 of their length adorned. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Anthers 3, 1.8–2.2 mm long. Ovary pubescent on apex.

Distribution (TDWG). Continent. Temperate Asia.

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

TDWG4. Yunnan.

Tristachya angustifolia Hitchcock. *Contrib. US. Nat. Herb.* xvii. 328 (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>: *vide* TROPICOS and Kew Synonymy Database: HT: *J.N. Rose 2229*, 13 Aug 1897, Mexico: Sierra Madre, near Santa Teresa, top of Sierra Madre, Tepic (US-301143; IT: B, MEXU).

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

Derivation (Clifford & Bostock 2007): *L. angustus*, narrow; folium, leaf. Leaf-blades narrow.

Classification. Subfamily Panicoideae. Tribe: Tristachyideae.

Habit, Vegetative Morphology. Perennial, caespitose. Culms erect, 60–100 cm long. Leaf-sheaths glabrous on surface. Ligule a fringe of hairs. Leaf-blades 20–25 cm long, 3–4 mm wide. Leaf-blade surface scabrous, rough adaxially, glabrous.

Inflorescence. Inflorescence a panicle. Panicle open, lanceolate, 10–15 cm long. Primary panicle branches indistinct the panicle almost racemose, 3–6 cm long. Spikelets in threes. Fertile spikelets pedicelled, 3 in the cluster. Pedicels present, free, unequal.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets lanceolate, laterally compressed, compressed slightly, 20 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus elongated, pubescent, pungent.

Glumes. Glumes persistent, dissimilar, exceeding apex of florets. Lower glume lanceolate, 12–15 mm long, 0.66–0.75 length of spikelet, chartaceous, dark brown, without keels, 3 -veined. Lower glume surface smooth or asperulous, rough on veins, glabrous. Lower glume apex acute. Upper glume lanceolate, 1 length of spikelet, chartaceous, without keels, 3 -veined. Upper glume surface glabrous. Upper glume apex obtuse.

Florets. Basal sterile florets 1, male, with palea, separately deciduous. Lemma of lower sterile floret similar to upper glume, lanceolate, 1 length of spikelet, chartaceous, 5–7 -veined, acute. Fertile lemma oblong, 8 mm long, coriaceous, without keel, more than 3-veined. Lemma surface pubescent. Lemma margins involute, interlocking with palea keels. Lemma apex lobed, 2 -fid, with lanceolate lobes, with lobes 1 mm long, awned, 1 -awned. Principal lemma awn from a sinus, geniculate, subterete below, 32–35 mm long overall, with twisted column, deciduous, abscissing from top of lemma. Palea 2 -veined. Palea keels approximate, thickened, winged, narrowly winged.

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

Distribution (TDWG). Continent. North America.

Country /Province /State. Mexico. Southwest Mexico.

TDWG4. Nayarit.

Tristachya auronitens Duvign. *Bull. Soc. Roy. Bot. Belg.* xc. 187 (1958).

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

TYPE from DRC. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: HT: *Divigneaud & Timperman 2473 T1*, Zaire (BRLU; IT: UWO).

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

Derivation (Clifford & Bostock 2007): *L. aurum*, gold; *niteo*, shine. Spikelets shining golden to olive-brown.

Classification. Subfamily Panicoideae. Tribe: Tristachyideae.

Habit, Vegetative Morphology. Perennial, caespitose, clumped densely. Butt sheaths pubescent, persistent and investing base of culm, with compacted dead sheaths. Culms erect, 45 cm long, 2 -noded. Culm-nodes pubescent. Ligule a fringe of hairs. Leaf-blade apex hardened.

Inflorescence. Inflorescence a panicle, comprising 3 fertile spikelets or 6 fertile spikelets (1–2 triads). Spikelets in threes. Fertile spikelets pedicelled, 3 in the cluster. Pedicels present, fused to each other, united wholly.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret

male or barren, the upper fertile. Spikelets lanceolate, laterally compressed, compressed slightly, 33 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus elongated, pungent.

Glumes. Glumes persistent, dissimilar, reaching apex of florets. Lower glume lanceolate, 0.66 length of spikelet, chartaceous, light brown or dark brown, without keels, 3 -veined. Lower glume surface glabrous. Lower glume apex acute. Upper glume lanceolate, 1 length of spikelet, chartaceous, light brown or dark brown, without keels, 3 -veined. Upper glume surface glabrous.

Florets. Basal sterile florets 1, male, with palea, separately deciduous. Lemma of lower sterile floret similar to upper glume, lanceolate, 0.8 length of spikelet, chartaceous, 3 -veined, acute. Fertile lemma oblong, 11 mm long, coriaceous, without keel, 9 -veined, more than 3-veined. Lemma surface glabrous. Lemma margins involute, interlocking with palea keels. Lemma apex lobed, 2 -fid, with lobes 3–5 mm long, awned, 1 -awned. Principal lemma awn from a sinus, geniculate, 70 mm long overall, with twisted column, deciduous, abscissing from top of lemma. Column of lemma awn 35 mm long. Palea 2 -veined. Palea keels approximate.

Flower and Fruit. Ovary pubescent on apex.

Distribution (TDWG). Continent. Africa.

Country /Province /State. West-central tropical Africa. DRC.

Tristachya avenacea (J. Presl) Scribn. & Merr. *Bulletin, Division of Agrostology United States Department of Agriculture* 24: 23. 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 Mexico. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *Haenke s.n.*, Mexico (PR; IT: MO-1837471).

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

Derivation (Clifford & Bostock 2007): L. -acea, resembling. With inflorescences and/or spikelets similar to those of *Avena*.

Classification. Subfamily Panicoideae. Tribe: Tristachyideae.

Habit, Vegetative Morphology. Perennial, caespitose. Rhizomes short. Culms erect, 90–120 cm long. Ligule a fringe of hairs. Leaf-blades 15–50 cm long, 3–6 mm wide.

Inflorescence. Inflorescence a panicle. Panicle contracted, linear, 10–20 cm long. Primary panicle branches appressed, 1–3(–7) cm long. Spikelets in threes. Fertile spikelets pedicelled, 3 in the cluster. Pedicels present, free, unequal, 1.5–3 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, laterally compressed, compressed slightly, 25–30 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus elongated, 2–2.5 mm long, bearded (rufously), pungent. Floret callus hairs 2.5 mm long.

Glumes. Glumes persistent, dissimilar, exceeding apex of florets. Lower glume lanceolate, 16–18 mm long, 0.66 length of spikelet, chartaceous, dark brown, without keels, 3 -veined. Lower glume surface glabrous. Lower glume apex acute. Upper glume lanceolate, 1 length of spikelet, chartaceous, without keels, 3 -veined. Upper glume surface glabrous. Upper glume apex obtuse.

Florets. Basal sterile florets 1, male, with palea, separately deciduous. Lemma of lower sterile floret similar to upper glume, lanceolate, 1 length of spikelet, chartaceous, 5–7 -veined, acute. Fertile lemma oblong, (8–)10–11 mm long, coriaceous, without keel, more than 3-veined. Lemma surface pilose. Lemma margins involute, interlocking with palea keels. Lemma apex lobed, 2 -fid, with lanceolate lobes, with lobes 1–1.5 mm long, awned, 1 -awned. Principal lemma awn from a sinus, geniculate, subterete below, 40–60 mm long overall, with twisted column, deciduous, abscissing from top of lemma. Palea 2 -veined. Palea keels approximate, thickened, winged, narrowly winged.

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

Distribution (TDWG). Continent. North America, South America.

Country /Province /State. Mexico. Central Mexico, Southwest Mexico, Southeast Mexico. **Mesoamerica.** El Salvador, Guatemala, Nicaragua.

TDWG4. Mexico State. Guerrero, Jalisco, Michoacan, Nayarit, Oaxaca. Chiapas.

Tristachya bequaertii DeWild. *Bulletin du Jardin Botanique de l'Etat* 6: 46. (1919).

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

TYPE from Zaire. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: T: Bequaert 318; ; Zaire: Elisabethville.

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

Derivation (Clifford & Bostock 2007): in honor of Joseph Charles Corneille Bequa(e)rt (1886-) Belgian botanist.

Classification. Subfamily Panicoideae. Tribe: Tristachyideae.

Habit, Vegetative Morphology. Perennial, caespitose. Butt sheaths pubescent or woolly. Culms erect, 60–150 cm long, 1–3 -noded. Ligule a fringe of hairs. Leaf-blades 10–40 cm long, 2–5 mm wide.

Inflorescence. Inflorescence a panicle, comprising 15–90 fertile spikelets. Panicle open, ovate, 8–25 cm long. Panicle branches straight or flexuous. Spikelets in threes. Fertile spikelets pedicelled, 3 in the cluster. Pedicels present, fused to each other, united wholly.

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, compressed slightly, 16–30 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus elongated, 2 mm long, pubescent, pungent.

Glumes. Glumes persistent, dissimilar, exceeding apex of florets. Lower glume lanceolate, 1 length of spikelet, chartaceous, yellow or dark brown, without keels, 3 -veined. Lower glume surface glabrous or setose, hairy on veins, with tubercle-based hairs. Lower glume apex setaceously acuminate. Upper glume lanceolate, 0.9 length of spikelet, chartaceous, yellow or dark brown, without keels, 3 -veined. Upper glume apex acute.

Florets. Basal sterile florets 1, male, with palea, separately deciduous. Lemma of lower sterile floret similar to upper glume, lanceolate, 0.8–0.9 length of spikelet, chartaceous, 5–7 -veined, acute. Fertile lemma oblong, 6–8 mm long, coriaceous, without keel, 7 -veined, more than 3-veined. Lemma surface pubescent. Lemma margins involute, interlocking with palea keels. Lemma apex lobed, 2 -fid, with lanceolate lobes, incised 0.25 of lemma length, awned, 3 -awned. Principal lemma awn from a sinus, geniculate, 35–50 mm long overall, with twisted column, deciduous, abscissing across body of lemma. Lateral lemma awns present, arising on apex of lobes, deciduous with the principal, 7–15 mm long, shorter than principal. Palea 2 -veined. Palea keels approximate, thickened.

Flower and Fruit. Anthers 3. Ovary pubescent on apex. Caryopsis with adherent pericarp, hairy at apex.

Distribution (TDWG). Continent. Africa.

Country /Province /State. West-central tropical Africa, East tropical Africa, South tropical Africa. Burundi, DRC. Tanzania. Angola, Zambia.

Tristachya betsileensis A.Camus. *Bull. Soc. Bot. France*, civ. 160 (1957).

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

TYPE from Madagascar. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Madagascar, Betsileo: Humbert 30085 (P holotype).

Recent Synonyms: *Isalus betsileensis* (A. Camus) Phipps, *Kirkia* 5: 233 (1966).

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

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

Classification. Subfamily Panicoideae. Tribe: Tristachyideae.

Habit, Vegetative Morphology. Perennial, caespitose. Rhizomes elongated. Culms erect or geniculately ascending, 50–60 cm long, 5–6 -noded. Lateral branches lacking. Leaf-sheaths pilose. Ligule a fringe of hairs. Leaf-blades filiform, convolute, 10–15 cm long, 3–7 mm wide, stiff. Leaf-blade surface glabrous. Leaf-blade apex acuminate.

Inflorescence. Inflorescence a panicle. Peduncle 9 cm long. Panicle open, oblong, 4–5 cm long, bearing few spikelets (3–6 triads). Primary panicle branches simple. Panicle branches capillary. Spikelets in threes. Fertile spikelets pedicelled, 3 in the cluster. Pedicels present, fused to each other, united wholly, subequal.

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, compressed slightly, 13 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus elongated, 1 mm long, pilose, pungent. Floret callus hairs 0.8–1 mm long.

Glumes. Glumes persistent, dissimilar, exceeding apex of florets. Lower glume lanceolate, 9–10 mm long, 0.66 length of spikelet, chartaceous, dark brown, without keels, 3 -veined. Lower glume surface hispidulous, hairy generally. Lower glume hairs 4–5 mm long. Lower glume apex acuminate. Upper glume lanceolate, 1 length of spikelet, chartaceous, without keels, 3 -veined. Upper glume surface glabrous. Upper glume apex acuminate.

Florets. Basal sterile florets 1, male, with palea, separately deciduous. Lemma of lower sterile floret similar to upper glume, lanceolate, 1 length of spikelet, chartaceous, 5–7 -veined, acute or acuminate. Fertile lemma oblong, 8 mm long, coriaceous, without keel, more than 3-veined. Lemma surface pubescent. Lemma margins

involute, interlocking with palea keels. Lemma apex lobed, 2 -fid, with lanceolate lobes, with lobes 2 mm long, awned, 3 -awned. Principal lemma awn from a sinus, geniculate, subterete below, 12–13 mm long overall, with twisted column, deciduous, abscissing from top of lemma. Column of lemma awn 2.5–3 mm long. Lateral lemma awns present, arising on apex of lobes, 2–2.5 mm long. Palea 2 -veined. Palea keels approximate, thickened, winged, narrowly winged.

Flower and Fruit. Anthers 3. Ovary pubescent on apex. Caryopsis with adherent pericarp, hairy at apex.

Distribution (TDWG). Continent. Africa.

Country /Province /State. Western Indian ocean. Madagascar.

Tristachya bicrinita (Phipps) Clayton. *Kew Bull.* xxi. 124 (1967).

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:** *Dolichochaete bicrinita* Phipps, *Kirkia*, 4: 112 (1964). T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: Tanzania, Kawa: McCallum-Webster T202 (K iso).

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

Derivation (Clifford & Bostock 2007): L. bis, twice; crinis, hair of the head; -ata, possessing. There are lateral tufts of hairs on the lemma.

Classification. Subfamily Panicoideae. Tribe: Tristachyideae.

Habit, Vegetative Morphology. Perennial, caespitose. Butt sheaths pubescent. Culms erect, 60–90 cm long. Ligule a fringe of hairs. Leaf-blades 15–40 cm long, 2–7 mm wide.

Inflorescence. Inflorescence a panicle, comprising 15–90 fertile spikelets. Panicle open, lanceolate, 5–17 cm long. Spikelets in threes. Fertile spikelets pedicelled, 3 in the cluster. Pedicels present, fused to each other, united wholly.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets lanceolate, laterally compressed, compressed slightly, 14–23 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus elongated, 1 mm long, pubescent, pungent.

Glumes. Glumes persistent, dissimilar, exceeding apex of florets or shorter than spikelet. Lower glume lanceolate, 1 length of spikelet, chartaceous, dark brown, without keels, 3 -veined. Lower glume surface setose, hairy on veins, with tubercle-based hairs. Lower glume apex acute. Upper glume lanceolate, 0.9–1 length of spikelet, chartaceous, yellow, without keels, 3 -veined. Upper glume apex obtuse.

Florets. Basal sterile florets 1, male, with palea, separately deciduous. Lemma of lower sterile floret similar to upper glume, lanceolate, 0.9 length of spikelet, chartaceous, 5–7 -veined, acute. Fertile lemma oblong, 7–9 mm long, coriaceous, without keel, 5 -veined, more than 3-veined. Lemma surface pubescent, with a transverse row of hair tufts, bearing 2 hair tufts in all. Lemma margins involute, interlocking with palea keels. Lemma apex lobed, 2 -fid, with lanceolate lobes, incised 0.25 of lemma length, awned, 3 -awned. Principal lemma awn from a sinus, geniculate, flat below, 15–25 mm long overall, with twisted column, persistent. Lateral lemma awns present, arising on apex of lobes, 3–7 mm long, shorter than principal. Palea 2 -veined. Palea keels approximate, thickened.

Flower and Fruit. Anthers 3. Ovary pubescent on apex. Caryopsis with adherent pericarp, hairy at apex.

Distribution (TDWG). Continent. Africa.

Country /Province /State. East tropical Africa, South tropical Africa. Tanzania. Zambia.

Tristachya biseriata Stapf. *Kew Bull.* 1897, 295. (1897).

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

TYPE from Lesotho. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: Lesotho, Leribe: Buchanan 220 (K holo).

Illustrations (Books): L.K.A. Chippindall, *Grasses and Pastures of South Africa* (1955) (277, Fig. 248).

Derivation (Clifford & Bostock 2007): L. bis, twice; series, row; -ata, possessing. Spikelets conspicuously two-rowed.

Classification. Subfamily Panicoideae. Tribe: Tristachyideae.

Habit, Vegetative Morphology. Perennial, caespitose. Culms erect, 30–90 cm long, 1–2 -noded. Lateral branches lacking. Ligule a fringe of hairs. Leaf-blades filiform, involute, 30–40 cm long, 1–2 mm wide.

Inflorescence. Inflorescence a panicle, comprising 6–7 fertile spikelets. Panicle open, lanceolate, 6–7 cm long. Spikelets in threes. Fertile spikelets pedicelled, 3 in the cluster. Pedicels present, fused to each other, united wholly.

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, compressed slightly, 20–25 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus elongated, 1.5 mm long, pubescent, pungent.

Glumes. Glumes persistent, similar, exceeding apex of florets. Lower glume lanceolate, 20–25 mm long, 1 length of spikelet, chartaceous, without keels, 3 -veined. Lower glume surface glabrous. Lower glume margins tuberculately ciliate. Lower glume apex acute. Upper glume lanceolate, 20–25 mm long, 1 length of spikelet, chartaceous, without keels, 3 -veined. Upper glume margins tuberculate, ciliate. Upper glume apex acute.

Florets. Basal sterile florets 1, male, with palea, separately deciduous. Lemma of lower sterile floret similar to upper glume, lanceolate, 20–25 mm long, 1 length of spikelet, chartaceous, acute. Fertile lemma oblong, 9–10 mm long, coriaceous, without keel, 7 -veined, more than 3-veined. Lemma surface pubescent. Lemma margins involute, interlocking with palea keels. Lemma apex lobed, 2 -fid, awned, 3 -awned. Principal lemma awn from a sinus, geniculate, 30–50 mm long overall, with twisted column, deciduous, abscising across body of lemma. Lateral lemma awns present, arising on apex of lobes, deciduous with the principal, (10–)12(–14) mm long, shorter than principal. Palea 2 -veined. Palea keels approximate, thickened.

Flower and Fruit. Anthers 3. Ovary pubescent on apex. Caryopsis with adherent pericarp, hairy at apex.

Distribution (TDWG). Continent. Africa.

Country /Province /State. Southern Africa. Limpopo, North-West, Gauteng, Mpumalanga.

Tristachya contrerasii R. Guzman. *Phytologia*, 51(7): 463 (1982).

Regarded by K as a synonym (*Loudetiopsis*).

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

TYPE from Mexico. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: Puente de Camotlan: Guzman 4899 (IBUG holo) ; Mexico, Puente de Camotlan: Guzman 4899 (IBUG holo).

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

Derivation (Clifford & Bostock 2007): In honor of Elias Contreras (fl. 1962) who collected in Guatemala.

Classification. Subfamily Panicoideae. Tribe: Tristachyideae.

Habit, Vegetative Morphology. Perennial. Culms erect, 200 cm long, 4–5 mm diam. Culm-internodes distally glabrous. Culm-nodes brown, glabrous. Lateral branches lacking or sparse. Leaf-sheaths outer margin hairy. Leaf-sheath oral hairs ciliate, 5 mm long. Ligule a fringe of hairs, 1–1.5 mm long. Leaf-blades 40–60 cm long, 5–10 mm wide. Leaf-blade surface pilose, hairy adaxially.

Inflorescence. Inflorescence a panicle. Panicle open, oblong, 40–60 cm long. Panicle axis scabrous. Spikelets in threes. Fertile spikelets pedicelled, 3 in the cluster. Pedicels present, filiform, subequal.

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, compressed slightly, 16–17 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus evident.

Glumes. Glumes persistent, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 0.5–0.6 length of upper glume, chartaceous, dark brown, without keels. Lower glume surface setose, hairy on veins, with tubercle-based hairs. Lower glume apex acuminate. Upper glume lanceolate, chartaceous, dark brown, without keels. Upper glume surface pubescent. Upper glume apex acuminate.

Florets. Basal sterile florets 1, male, with palea, separately deciduous. Lemma of lower sterile floret similar to upper glume, lanceolate, chartaceous, acuminate. Fertile lemma elliptic, 8.5–9 mm long, 1 mm wide, coriaceous, without keel, more than 3-veined. Lemma surface pilose. Lemma margins involute, interlocking with palea keels. Lemma apex lobed, 2 -fid, with lobes 2 mm long, awned, 1 -awned. Principal lemma awn from a sinus, geniculate, 20 mm long overall, with 8.5–11 mm long limb, with twisted column, deciduous, abscising from top of lemma. Column of lemma awn 14–34 mm long, hispidulous. Palea 2 -veined. Palea keels approximate, thickened.

Flower and Fruit. Anthers 2, 4–6 mm long. Caryopsis with adherent pericarp, glabrous.

Distribution (TDWG). Continent. North America.

Country /Province /State. Mexico. Southwest Mexico.

TDWG4. Jalisco.

Tristachya hubbardiana Conert. *Engl. Bot. Jahrb.* lxxvii. 299 (1957).

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

TYPE from Zaire. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: : Based on *Trichopteryx bequaertii* ; Zaire, Elizabethville: Bequaert 324 (BR holo).

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

Derivation (Clifford & Bostock 2007): L. -ana, indicating connection. In honor of Charles Edward Hubbard (1900–1980) English agrostologist.

Classification. Subfamily Panicoideae. Tribe: Tristachyideae.

Habit, Vegetative Morphology. Perennial, caespitose. Butt sheaths herbaceous, pubescent. Culms erect, 100–270 cm long. Ligule a fringe of hairs. Collar pubescent. Leaf-blades 20–40 cm long, 3–6 mm wide, glaucous.

Inflorescence. Inflorescence a panicle. Panicle open, ovate, loose, 12–30 cm long. Spikelets in pairs. Fertile spikelets pedicelled, 2 in the cluster. Pedicels present, free, filiform, unequal, 10–40 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, laterally compressed, compressed slightly, 20–27 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus elongated, 3 mm long, pubescent (rufously), pungent.

Glumes. Glumes persistent, dissimilar, exceeding apex of florets. Lower glume elliptic, 0.33 length of spikelet, chartaceous, dark brown, without keels, 3 -veined. Lower glume surface glabrous. Lower glume apex acuminate. Upper glume lanceolate, 1 length of spikelet, chartaceous, dark brown, without keels, 3 -veined. Upper glume surface glabrous. Upper glume apex acute.

Florets. Basal sterile florets 1, male, with palea, separately deciduous. Lemma of lower sterile floret similar to upper glume, lanceolate, 1 length of spikelet, chartaceous, 5–7 -veined, acute. Fertile lemma oblong, 11–12 mm long, coriaceous, without keel, 7 -veined, more than 3-veined. Lemma surface pubescent. Lemma margins involute, interlocking with palea keels. Lemma apex lobed, 2 -fid, with lanceolate lobes, incised 0.3 of lemma length, acute, awned, 1 -awned. Principal lemma awn from a sinus, geniculate, subterete below, 50–100 mm long overall, with twisted column, deciduous, abscissing from top of lemma. Palea 2 -veined. Palea keels approximate, thickened.

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

Distribution (TDWG). Continent. Africa.

Country /Province /State. West-central tropical Africa, East tropical Africa, South tropical Africa. DRC. Tanzania. Angola, Zambia.

Tristachya huillensis Rendle. *Cat. Welw. Afr. Pl.* ii. 217. (1899).

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

TYPE from Angola. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Angola, Lake Ivalata: Welwitsch 7501 (K iso).

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

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

Classification. Subfamily Panicoideae. Tribe: Tristachyideae.

Habit, Vegetative Morphology. Perennial, caespitose. Rhizomes short. Butt sheaths glabrous. Culms erect, 60–90 cm long. Ligule a fringe of hairs. Leaf-blades filiform, convolute, 15–30 cm long, 0.5–1 mm wide.

Inflorescence. Inflorescence a panicle, comprising 15–120 fertile spikelets. Panicle open, ovate, 5–12 cm long. Spikelets in threes. Fertile spikelets pedicelled, 3 in the cluster. Pedicels present, fused to each other, united wholly.

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, compressed slightly, 8–10 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus elongated, 2 mm long, pubescent, hairy in 2 tufts (at base), acute (narrowly) or pungent.

Glumes. Glumes persistent, dissimilar, exceeding apex of florets. Lower glume lanceolate, 0.9 length of spikelet, chartaceous, dark brown, without keels, 3 -veined. Lower glume surface setose, hairy on veins, with tubercle-based hairs. Lower glume apex acuminate. Upper glume lanceolate, 1 length of spikelet, chartaceous, dark brown, without keels, 3 -veined. Upper glume apex acute.

Florets. Basal sterile florets 1, male, with palea, separately deciduous. Lemma of lower sterile floret similar to upper glume, lanceolate, 1 length of spikelet, chartaceous, 5–7 -veined, acute. Fertile lemma oblong, 6–7 mm long, coriaceous, without keel, 7 -veined, more than 3-veined. Lemma surface glabrous. Lemma margins

involute, interlocking with palea keels. Lemma apex dentate, 2 -fid, awned, 1 -awned. Principal lemma awn from a sinus, geniculate, flat below, 5–12 mm long overall, without a column, persistent. Palea 2 -veined. Palea keels approximate, thickened.

Flower and Fruit. Anthers 3. Ovary pubescent on apex. Caryopsis with adherent pericarp, hairy at apex.

Distribution (TDWG). Continent. Africa.

Country /Province /State. West-central tropical Africa, South tropical Africa. DRC. Angola, Malawi, Zambia.

Tristachya humbertii A.Camus. *Bull. Soc. Bot. France* lxxiii. 401. (1926).

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

TYPE from Madagascar. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Madagascar, Confluence of Sakamarckely & Sambalinieto Rs.: Humbert 2851 (K iso).

Recent Synonyms: *Isalus humbertii* (A. Camus) Phipps, *Kirkia* 5: 233 (1966).

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

Derivation (Clifford & Bostock 2007): in honor of Jean Henri Humbert (1887–1967) French botanist who collected in Madagascar.

Classification. Subfamily Panicoideae. Tribe: Tristachyideae.

Habit, Vegetative Morphology. Perennial, caespitose. Rhizomes short. Culms decumbent, 90–100 cm long. Lateral branches sparse. Leaves basal and cauline. Leaf-sheaths outer margin hairy. Ligule a fringe of hairs. Leaf-blades 10–13 cm long, 4–5 mm wide, coriaceous, stiff. Leaf-blade margins scabrous, tuberculate-ciliate. Leaf-blade apex acuminate.

Inflorescence. Inflorescence a panicle. Panicle contracted, elliptic, 5–15 cm long. Primary panicle branches simple, 2–5 cm long. Panicle branches scabrous. Spikelets in threes. Fertile spikelets pedicelled, 3 in the cluster. Pedicels present, fused to each other, united wholly, subequal.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets lanceolate, laterally compressed, compressed slightly, 12–13 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus elongated, 1 mm long, bearded, pungent.

Glumes. Glumes persistent, dissimilar, exceeding apex of florets. Lower glume lanceolate, 12–13 mm long, 1 length of spikelet, chartaceous, dark brown, without keels, 3 -veined. Lower glume surface setose, hairy on veins, with tubercle-based hairs. Lower glume apex acuminate. Upper glume lanceolate, 1 length of spikelet, chartaceous, without keels, 3 -veined. Upper glume surface glabrous. Upper glume apex acute.

Florets. Basal sterile florets 1, male, with palea, separately deciduous. Lemma of lower sterile floret similar to upper glume, lanceolate, 1 length of spikelet, chartaceous, 5–7 -veined, acute. Fertile lemma oblong, 8 mm long, coriaceous, without keel, more than 3-veined. Lemma surface pilose, with a transverse row of hair tufts, bearing 9 hair tufts in all. Lemma margins involute, interlocking with palea keels. Lemma apex lobed, 2 -fid, with lanceolate lobes, awned, 3 -awned. Principal lemma awn from a sinus, geniculate, subterete below, 10 mm long overall, with twisted column, deciduous, abscissing from top of lemma. Lateral lemma awns present, arising on apex of lobes, 3–4 mm long. Palea 2 -veined. Palea keels approximate, thickened, winged, narrowly winged. Palea surface pubescent.

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

Distribution (TDWG). Continent. Africa.

Country /Province /State. Western Indian ocean. Madagascar.

Tristachya (Isalus) isalensis (A.Camus) FORSAN. (1989).

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

TYPE from Madagascar. **Basionym or Replaced Name:** *Danthoniopsis isalensis* A.Camus, *Bull. Soc. Bot. France*, 105: 245 (1958). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Madagascar, Isalo: Humbert 28663.

Recent Synonyms: *Isalus isalensis* (A. Camus) J.B. Phipps, *Kirkia* 5(2): 233 (1966).

Illustrations (Books): J.Bosser, *Graminees des Paturage et des Cultures a Madagascar* (1969) (65, Fig. 13 as *Isalus isalensis*).

Derivation (Clifford & Bostock 2007): L. -ensis, denoting origin. From the Isalo Range, Madagascar.

Classification. Subfamily Panicoideae. Tribe: Tristachyideae.

Habit, Vegetative Morphology. Perennial, caespitose. Culms erect, 40–70 cm long. Lateral branches lacking or sparse. Leaf-sheaths glabrous on surface or pilose, with tubercle-based hairs, outer margin hairy.

Ligule a fringe of hairs. Leaf-blades flat or involute, 1.5–10 cm long, 1.5–2 mm wide. Leaf-blade surface glabrous or pilose. Leaf-blade margins tuberculate-ciliate. Leaf-blade apex acuminate.

Inflorescence. Inflorescence a panicle. Panicle open, ovate, 3.5–8 cm long, bearing few spikelets. Primary panicle branches 1–4 -nate, not whorled or whorled at lower nodes, simple or sparsely divided. Spikelets in threes. Fertile spikelets pedicelled, 3 in the cluster. Pedicels present, fused to each other, united wholly, subequal.

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, compressed slightly, 9–14 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus elongated, 1 mm long, pubescent, pungent.

Glumes. Glumes persistent, exceeding apex of florets. Lower glume lanceolate, 9–14 mm long, 1 length of spikelet, chartaceous, without keels, 3 -veined. Lower glume surface glabrous or setose, hairy on veins, with tubercle-based hairs. Lower glume apex attenuate. Upper glume lanceolate, 1 length of spikelet, chartaceous, without keels, 3 -veined. Upper glume surface glabrous or setose, hairy on veins, with tubercle-based hairs. Upper glume apex attenuate.

Florets. Basal sterile florets 1, male or barren, with palea, separately deciduous. Lemma of lower sterile floret similar to upper glume, lanceolate, 1 length of spikelet, chartaceous, 5–7 -veined, glabrous or setose, hairy above, with tubercle-based hairs, acuminate. Fertile lemma oblong, 7–9 mm long, coriaceous, without keel, more than 3-veined. Lemma surface pubescent, hairy at base, with a transverse row of hair tufts, bearing 6–8 hair tufts in all. Lemma margins involute, interlocking with palea keels. Lemma apex lobed, 2 -fid, with lanceolate lobes, awned, 3 -awned. Principal lemma awn from a sinus, geniculate, subterete below, 12–15 mm long overall, with twisted column, deciduous, abscising from top of lemma. Lateral lemma awns present, arising on apex of lobes, 2 mm long. Palea 2 -veined. Palea keels approximate, thickened, winged, narrowly winged. Palea surface pubescent.

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

Distribution (TDWG). Continent. Africa.

Country /Province /State. Western Indian ocean. Madagascar.

Tristachya laxa Scribn. & Merrill. *U. S. Dept. Agric., Div. Agrost., Bull. No. 24, 24* (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 Mexico. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: HT: J.N. Rose 2334; 16 Aug 1897; Mexico: Durango (US-81767; IT: B).

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

Derivation (Clifford & Bostock 2007): L. loose. Inflorescence much branched either as a single panicle or from branching of the culms.

Classification. Subfamily Panicoideae. Tribe: Tristachyideae.

Habit, Vegetative Morphology. Perennial, caespitose. Culms erect, 150–200 cm long. Leaf-sheaths pubescent. Ligule a fringe of hairs. Leaf-blades conduplicate or convolute, 40–70 cm long, 5–10 mm wide. Leaf-blade surface scabrous, rough adaxially. Leaf-blade margins scabrous.

Inflorescence. Inflorescence a panicle, embraced at base by subtending leaf. Panicle open, ovate, effuse, 40–50 cm long. Primary panicle branches drooping, simple or sparsely divided, 10–20 cm long. Panicle branches capillary, pubescent in axils. Spikelets in threes. Fertile spikelets pedicelled, 3 in the cluster. Pedicels present, free, subequal, 1.5–2.5 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, laterally compressed, compressed slightly, 15–20 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus elongated, pubescent, pungent.

Glumes. Glumes persistent, dissimilar, exceeding apex of florets. Lower glume lanceolate, 13–18 mm long, 0.9 length of spikelet, chartaceous, dark brown, without keels, 3 -veined. Lower glume primary vein scabrous. Lower glume surface glabrous. Lower glume apex acute. Upper glume lanceolate, 1 length of spikelet, chartaceous, without keels, 3 -veined. Upper glume primary vein scabrous. Upper glume surface glabrous. Upper glume apex obtuse.

Florets. Basal sterile florets 1, male, with palea, separately deciduous. Lemma of lower sterile floret similar to upper glume, lanceolate, 1 length of spikelet, chartaceous, 5–7 -veined, acute. Fertile lemma oblong, 8–9 mm long, coriaceous, without keel, 9 -veined, more than 3-veined. Lemma surface pubescent. Lemma margins involute, interlocking with palea keels. Lemma apex lobed, 2 -fid, with lanceolate lobes, with lobes 2 mm long,

awned, 1 -awned. Principal lemma awn from a sinus, geniculate, subterete below, 20–25 mm long overall, with twisted column, deciduous, abscissing from top of lemma. Palea 2 -veined. Palea keels approximate, thickened, winged, narrowly winged.

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

Distribution (TDWG). Continent. North America.

Country /Province /State. Mexico. Northeast Mexico, Northwest Mexico, Southwest Mexico.

TDWG4. Durango, Zacatecas. Sinaloa. Nayarit.

Tristachya leiostachya Nees. *Agrost. Bras.* 459. (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 Synonymy Database: LT: F. Sellow s.n.; ; Brazil (B; ILT: US-81768) LT designated by Conert, Bot. Jahrb. Syst. 77: 302 (1957).

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

Derivation (Clifford & Bostock 2007): Gk. leios, smooth; stachys, ear of corn. Glumes glabrous.

Classification. Subfamily Panicoideae. Tribe: Tristachyideae.

Habit, Vegetative Morphology. Perennial, caespitose. Butt sheaths pubescent, persistent and investing base of culm, with fibrous dead sheaths. Culms erect, 90–110 cm long. Ligule a fringe of hairs. Leaf-blades 25–35 cm long, 4–5 mm wide, coriaceous, stiff.

Inflorescence. Inflorescence a panicle. Panicle open, lanceolate or ovate, 10–30 cm long. Spikelets in threes. Fertile spikelets pedicelled, 3 in the cluster. Pedicels present, free, unequal.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets lanceolate, laterally compressed, compressed slightly, 35–38 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus elongated, 4 mm long, bearded, pungent. Floret callus hairs 4 mm long (white).

Glumes. Glumes persistent, dissimilar, exceeding apex of florets. Lower glume lanceolate, 26–32 mm long, 0.75–0.85 length of spikelet, chartaceous, dark brown, without keels, 3 -veined. Lower glume surface glabrous. Lower glume apex acute. Upper glume lanceolate, 1 length of spikelet, chartaceous, without keels, 3 -veined. Upper glume surface glabrous. Upper glume apex acute.

Florets. Basal sterile florets 1, male, with palea, separately deciduous. Lemma of lower sterile floret similar to upper glume, lanceolate, 1 length of spikelet, chartaceous, 5–7 -veined, acute. Fertile lemma oblong, 16–19 mm long, coriaceous, without keel, more than 3-veined. Lemma surface pubescent. Lemma margins involute, interlocking with palea keels. Lemma apex lobed, 2 -fid, with lanceolate lobes, with lobes 3 mm long, awned, 1 -awned. Principal lemma awn from a sinus, geniculate, subterete below, 80–120 mm long overall, with twisted column, deciduous, abscissing from top of lemma. Palea 2 -veined. Palea keels approximate, thickened, winged, narrowly winged.

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

Distribution (TDWG). Continent. South America.

Country /Province /State. Brazil, Southern South America. Brazil West Central, Brazil Northeast, Brazil Southeast, Brazil South. Paraguay.

TDWG4. Mato Grosso, Goias, Minas Gerais, Rio de Janeiro, Espirito Santo, Sao Paulo Parana.

Tristachya leucothrix Trin. ex Nees. *Agrost. Bras.* 460. (1829).

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

TYPE from South Africa. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: LT: *Zeyher 2052*, South Africa: Zuureberge (?; ILT: MO(probable)). LT designated by Conert, Bot. Jahrb. Syst. 77: 308 (1957).

Illustrations (Books): L.K.A. Chippindall, *Grasses and Pastures of South Africa* (1955) (277, Fig. 248 & 278, Fig. 249 as *T. hispida*), G.E.Gibbs Russell et al, *Grasses of Southern Africa* (1990) (347, Fig. 228).

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

Derivation (Clifford & Bostock 2007): Gk. leukos, white; thrix, hair. Leaf-sheaths invested with long white hairs.

Classification. Subfamily Panicoideae. Tribe: Tristachyideae.

Habit, Vegetative Morphology. Perennial, caespitose. Butt sheaths pubescent or woolly, with dark brown hairs. Culms erect, 30–120 cm long. Ligule a fringe of hairs. Leaf-blades 5–40 cm long, 2–9 mm wide. Leaf-blade surface pubescent.

Inflorescence. Inflorescence a panicle, comprising 3–21 fertile spikelets. Panicle open, ovate, nodding, 7–20 cm long, bearing few spikelets. Primary panicle branches drooping. Spikelets in threes. Fertile spikelets pedicelled, 3 in the cluster. Pedicels present, fused to each other, united wholly.

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, compressed slightly, 24–45 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus elongated, 3 mm long, pubescent, pungent.

Glumes. Glumes persistent, dissimilar, shorter than spikelet. Lower glume lanceolate, 0.75 length of spikelet, chartaceous, yellow or dark brown, without keels, 3 -veined. Lower glume surface setose, hairy on veins, with tubercle-based hairs. Lower glume apex acute. Upper glume lanceolate, 0.9 length of spikelet, chartaceous, yellow or dark brown, without keels, 3 -veined. Upper glume apex obtuse.

Florets. Basal sterile florets 1, male, with palea, separately deciduous. Lemma of lower sterile floret similar to upper glume, lanceolate, 1 length of spikelet, chartaceous, 5–7 -veined, acute. Fertile lemma oblong, 9–14 mm long, coriaceous, without keel, 7 -veined, more than 3-veined. Lemma surface glabrous. Lemma margins involute, interlocking with palea keels. Lemma apex lobed, 2 -fid, awned, 1 -awned. Principal lemma awn from a sinus, geniculate, 60–100 mm long overall, with twisted column, deciduous, abscissing from top of lemma. Palea 2 -veined. Palea keels approximate, thickened.

Flower and Fruit. Anthers 3. Ovary pubescent on apex. Caryopsis with adherent pericarp, hairy at apex.

Distribution (TDWG). Continent. Africa.

Country /Province /State. West-central tropical Africa, East tropical Africa, South tropical Africa, Southern Africa. DRC. Tanzania. Angola, Malawi, Mozambique, Zambia, Zimbabwe. Limpopo, North-West, Gauteng, Mpumalanga, Swaziland, Free State, Kwazulu-Natal, Lesotho, Western Cape, Eastern Cape.

Tristachya lualabaensis (De Wild.) Phipps. *Kirkia*, iv. 104 (1964).

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

TYPE from Zaire. **Basionym or Replaced Name:** *Trichopteryx lualabaensis* DeWild., *Notes Fl. Katanga*, 5: 36 (1920). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Zaire, Lualaba: Homble 941 (BR syn) ; Zaire, Lualaba: Homble 997 (BR syn).

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

Derivation (Clifford & Bostock 2007): L. -ensis, denoting origin. From Lualaba Region, Zaire.

Classification. Subfamily Panicoideae. Tribe: Tristachyidae.

Habit, Vegetative Morphology. Perennial, caespitose. Butt sheaths herbaceous, glabrous or pubescent. Culms erect, 70–140 cm long. Ligule a fringe of hairs. Leaf-blades 6–30 cm long, 2–6 mm wide.

Inflorescence. Inflorescence a panicle. Panicle contracted, linear, 8–25 cm long. Spikelets in threes or in pairs (rarely). Fertile spikelets pedicelled, (2–)3 in the cluster. Pedicels present, free, filiform, unequal, 2–10 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, laterally compressed, compressed slightly, 10–20 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus elongated, 2 mm long, pubescent, pungent.

Glumes. Glumes persistent, dissimilar, exceeding apex of florets. Lower glume elliptic, 0.5–0.66 length of spikelet, chartaceous, dark brown, without keels, 3 -veined. Lower glume surface glabrous. Lower glume apex acute. Upper glume lanceolate, 1 length of spikelet, chartaceous, dark brown, without keels, 3 -veined. Upper glume surface glabrous. Upper glume apex acute.

Florets. Basal sterile florets 1, male, with palea, separately deciduous. Lemma of lower sterile floret similar to upper glume, lanceolate, 1 length of spikelet, chartaceous, 5–7 -veined, acute. Fertile lemma oblong, 9–13 mm long, coriaceous, without keel, 7 -veined, more than 3-veined. Lemma surface pubescent. Lemma margins involute, interlocking with palea keels. Lemma apex lobed, 2 -fid, with lanceolate lobes, incised 0.2–0.4 of lemma length, setaceously acuminate, awned, 1 -awned. Principal lemma awn from a sinus, geniculate, subterete below, 15–35 mm long overall, with twisted column, deciduous, abscissing from top of lemma. Palea 2 -veined. Palea keels approximate, thickened.

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

Distribution (TDWG). Continent. Africa.

Country /Province /State. West-central tropical Africa, East tropical Africa, South tropical Africa, Southern Africa. DRC. Tanzania. Angola, Zambia, Zimbabwe. Namibia, Botswana.

Tristachya nodiglumis K. Schum. *Engl. Jahrb.* xxiv. 334. (1897).

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

TYPE from Angola. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: Angola, Malange: Mechow 462.

Illustrations (Books): R.M.Phill, F.T.E.A., *Gramineae* (2(1974):427, Fig.115), G.V.Pope et al., *Flora Zambesiaca* 10 (3(1989):210, t. 57).

Derivation (Clifford & Bostock 2007): *L. nodus*, knot; *gluma*, husk. Culms with reduced leaves and the nodes densely hairy.

Classification. Subfamily Panicoideae. Tribe: Tristachyideae.

Habit, Vegetative Morphology. Perennial, caespitose. Butt sheaths villous. Culms erect, 60–200 cm long, 1–3 -noded. Ligule a fringe of hairs. Leaf-blades 15–60 cm long, 3–13 mm wide. Leaf-blade margins entire.

Inflorescence. Inflorescence a panicle, comprising 24–210 fertile spikelets. Panicle open or contracted, ovate, 12–30 cm long. Panicle branches glabrous or villous. Spikelets in threes. Fertile spikelets pedicelled, 3 in the cluster, subequal. Pedicels present, fused to each other, united wholly.

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, compressed slightly, 18–30 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus elongated, 1.5–2 mm long, pubescent, with longer hairs above, pungent.

Glumes. Glumes persistent, dissimilar, exceeding apex of florets. Lower glume lanceolate, 16–24 mm long, 0.6–0.8 length of spikelet, coriaceous, much thinner above, dark brown, without keels, 3 -veined. Lower glume surface glabrous or pilose, with tubercle-based hairs. Lower glume apex acute to setaceously acuminate. Upper glume lanceolate, 18–30 mm long, 1 length of spikelet, chartaceous, yellow to dark brown, without keels, 3 -veined. Upper glume apex entire or dentate, 2 -fid, obtuse or acute or acuminate.

Florets. Basal sterile florets 1, male, with palea, separately deciduous. Lemma of lower sterile floret similar to upper glume, lanceolate, 10–20 mm long, chartaceous, 5–7 -veined, acute. Fertile lemma oblong, 7–8 mm long, coriaceous, without keel, 7 -veined, more than 3-veined. Lemma surface pubescent. Lemma margins involute, interlocking with palea keels. Lemma apex lobed, 2 -fid, with lanceolate lobes, incised 0.3 of lemma length, awned, 3 -awned. Principal lemma awn from a sinus, geniculate, flat below, 30–60 mm long overall, with twisted column, deciduous, abscising across body of lemma. Lateral lemma awns present, arising on apex of lobes, 10–20 mm long, shorter than principal. Palea 2 -veined. Palea keels approximate, thickened. Palea surface pubescent.

Flower and Fruit. Anthers 3, 6 mm long. Stigmas protogynous. Ovary pubescent on apex. Caryopsis with adherent pericarp, linear, hairy at apex. Hilum linear.

Distribution (TDWG). Continent. Africa.

Country /Province /State. West-central tropical Africa, East tropical Africa, South tropical Africa, Southern Africa. DRC. Tanzania. Angola, Malawi, Mozambique, Zambia, Zimbabwe. Namibia, Botswana.

Tristachya papillosa R. Guzman. *Phytologia*, 51(7): 465 (1982).

Regarded by K as a synonym (*Loudetiopsis*).

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

TYPE from Mexico. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: HT: A. Castro S. 47; 21 Oct 1980; Mexico: Nayarit (IBUG-32996).

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

Derivation (Clifford & Bostock 2007): *L. papilla*, nipple; *-osa*, abundance. With papillae on the glumes or lemmas.

Classification. Subfamily Panicoideae. Tribe: Tristachyideae.

Habit, Vegetative Morphology. Perennial. Culms erect, 100–200 cm long. Culm-internodes distally glabrous. Culm-nodes brown, glabrous. Lateral branches lacking. Leaf-sheaths outer margin hairy. Leaf-sheath oral hairs ciliate. Ligule a fringe of hairs, 0.3 mm long. Leaf-blades 40 cm long, 5 mm wide. Leaf-blade surface glabrous. Leaf-blade margins scabrous.

Inflorescence. Inflorescence a panicle. Panicle open, oblong, 15–20 cm long. Primary panicle branches ascending. Spikelets in threes. Fertile spikelets pedicelled, 3 in the cluster. Pedicels present, filiform, subequal, 5–40 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, laterally compressed, compressed slightly, 30–35 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus evident.

Glumes. Glumes persistent, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 0.5–0.6 length of upper glume, chartaceous, dark brown, without keels. Lower glume surface setose, hairy on veins, with tubercle-based hairs. Lower glume apex acuminate. Upper glume lanceolate, chartaceous, dark brown, without keels. Upper glume surface glabrous. Upper glume apex acuminate.

Florets. Basal sterile florets 1, male, with palea, separately deciduous. Lemma of lower sterile floret similar to upper glume, lanceolate, chartaceous, acuminate. Fertile lemma elliptic, 10–10.1 mm long, 1.5 mm wide, coriaceous, without keel, more than 3-veined. Lemma surface villous. Lemma margins involute, interlocking with palea keels. Lemma apex lobed, 2 -fid, with lobes 2–2.5 mm long, awned, 1 -awned. Principal lemma awn from a sinus, geniculate, 65 mm long overall, with twisted column, deciduous, abscissing from top of lemma. Column of lemma awn 14–34 mm long, hispidulous. Palea 2 -veined. Palea keels approximate, thickened.

Flower and Fruit. Anthers 2, 4–6 mm long. Caryopsis with adherent pericarp, glabrous.

Distribution (TDWG). Continent. North America, South America.

Country /Province /State. Mexico. Southwest Mexico. **Western South America.** Colombia.

TDWG4. Nayarit.

Tristachya pedicellata Stent. *Bothalia*, i. 178 (1923).

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

TYPE from South Africa. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: ST: Burtt-Davy 1144; ; South Africa: Transvaal: Waterberg, Warmbaths (PRE) ST: Galpin 428; ; South Africa: Transvaal: Naboomspruit (PRE).

Recent Synonyms: *Loudetia pedicellata* (Stent) Chippind., Meredith, *Grasses & Pastures S. Afr.* 280 (1955).

Illustrations (Books): L.K.A. Chippindall, *Grasses and Pastures of South Africa* (1955) (280, Fig. 251, as *Loudetia*).

Derivation (Clifford & Bostock 2007): L. pes, foot; -ellus, diminutive; -ata, possessing. Spikelets shortly stalked.

Classification. Subfamily Panicoideae. Tribe: Tristachyideae.

Habit, Vegetative Morphology. Perennial, caespitose. Rhizomes elongated. Butt sheaths pubescent. Culms erect, 100–160 cm long. Lateral branches lacking. Ligule a fringe of hairs. Leaf-blades 7–15 cm long, 4–6 mm wide, stiff. Leaf-blade surface scabrous, rough adaxially. Leaf-blade margins cartilaginous, scabrous.

Inflorescence. Inflorescence a panicle. Panicle contracted, linear, 15–30 cm long. Primary panicle branches appressed, indistinct the panicle almost racemose. Spikelets in threes. Fertile spikelets pedicelled, 3 in the cluster. Pedicels present, free, unequal, 2–4 mm long.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets lanceolate, laterally compressed, compressed slightly, 20–28 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus elongated, 3.5–4 mm long, bearded, pungent.

Glumes. Glumes persistent, dissimilar, exceeding apex of florets. Lower glume ovate, 0.25 length of spikelet, chartaceous, dark brown, without keels, 3 -veined. Lower glume surface glabrous. Lower glume apex acute. Upper glume lanceolate, 1 length of spikelet, chartaceous, without keels, 3 -veined. Upper glume surface glabrous. Upper glume apex obtuse.

Florets. Basal sterile florets 1, male, with palea, separately deciduous. Lemma of lower sterile floret similar to upper glume, lanceolate, 1 length of spikelet, chartaceous, 5–7 -veined, acute. Fertile lemma oblong, 8 mm long, coriaceous, without keel, 9 -veined, more than 3-veined. Lemma surface pubescent. Lemma margins involute, interlocking with palea keels. Lemma apex lobed, 2 -fid, with lanceolate lobes, awned, 3 -awned. Principal lemma awn from a sinus, geniculate, subterete below, 50–70 mm long overall, with twisted column, deciduous, abscissing from top of lemma. Lateral lemma awns present, arising on apex of lobes, 4–5 mm long. Palea 2 -veined. Palea keels approximate, thickened, winged, narrowly winged.

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

Distribution (TDWG). Continent. Africa.

Country /Province /State. Southern Africa. Limpopo, North-West.

Tristachya rehmannii Hack. ex Schinz. *Bull. Herb. Boiss.* iii. 384. (1895).

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

TYPE from South Africa. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: South Africa: Transvaal: Makapansberge, Steydboort, *Rehmann 5884*.

Illustrations (Books): L.K.A. Chippindall, *Grasses and Pastures of South Africa* (1955) (277, Fig. 248 & 279, Fig. 250).

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

Derivation (Clifford & Bostock 2007): in honor of Anton Rehmann (1840–1917) Polish botanist and geographer who collected in South Africa.

Classification. Subfamily Panicoideae. Tribe: Tristachyideae.

Habit, Vegetative Morphology. Perennial, caespitose. Butt sheaths villous. Culms erect, 20–90 cm long. Lateral branches lacking. Ligule a fringe of hairs. Leaf-blades 10–20 cm long, 1–3 mm wide.

Inflorescence. Inflorescence a panicle, comprising 3–18(–24) fertile spikelets. Peduncle smooth or antrorsely scabrous above, glabrous or pilose above. Panicle open, lanceolate, 5–15 cm long, bearing few spikelets. Spikelets in threes. Fertile spikelets pedicelled, 3 in the cluster. Pedicels present, fused to each other, united wholly.

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, compressed slightly, 25–33 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus elongated, 2–3 mm long, pubescent, pungent.

Glumes. Glumes persistent, dissimilar, exceeding apex of florets. Lower glume lanceolate, 0.5–0.75 length of spikelet, chartaceous, dark brown or purple, without keels, 3 -veined. Lower glume surface glabrous or setose, hairy on veins, with tubercle-based hairs. Lower glume apex acute. Upper glume lanceolate, 1 length of spikelet, chartaceous, yellow, without keels, 3 -veined. Upper glume apex obtuse.

Florets. Basal sterile florets 1, male, with palea, separately deciduous. Lemma of lower sterile floret similar to upper glume, lanceolate, 0.9 length of spikelet, chartaceous, 5–7 -veined, acute. Fertile lemma oblong, 6–9 mm long, coriaceous, without keel, 7 -veined, more than 3-veined. Lemma surface pubescent. Lemma margins involute, interlocking with palea keels. Lemma apex lobed, 2 -fid, awned, 3 -awned. Principal lemma awn from a sinus, geniculate, 60–90 mm long overall, with twisted column, deciduous, abscising across body of lemma. Lateral lemma awns present, arising on apex of lobes, deciduous with the principal, 14–20 mm long, shorter than principal. Palea 2 -veined. Palea keels approximate, thickened.

Flower and Fruit. Anthers 3. Ovary pubescent on apex. Caryopsis with adherent pericarp, hairy at apex.

Distribution (TDWG). Continent. Africa.

Country /Province /State. West-central tropical Africa, East tropical Africa, South tropical Africa, Southern Africa. DRC. Tanzania. Angola, Malawi, Mozambique, Zambia. Namibia, Botswana, Limpopo, North-West, Gauteng, Mpumalanga, Free State, Kwazulu-Natal.

Tristachya superba (De. Not.) Schweinf. & Aschers. *Beitrag zur Flora Aethiopiens ...* 302. (1867).

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

TYPE from Sudan. **Basionym or Replaced Name:** *Loudetia superba* De Not., *Index Sem. Hort. Genuens.* 24 (1852). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: Figari s.n.; ; Sudan (FI).

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

Derivation (Clifford & Bostock 2007): extra. Plants large in some respect and especially with tall culms or long leaf-blades.

Classification. Subfamily Panicoideae. Tribe: Tristachyideae.

Habit, Vegetative Morphology. Perennial, caespitose. Rhizomes short. Butt sheaths thickened and forming a bulb, pubescent or woolly. Culms erect, 120–240 cm long. Ligule a fringe of hairs. Leaf-blades 30–60 cm long, 5–12 mm wide, glaucous.

Inflorescence. Inflorescence a panicle. Panicle contracted, linear, 20–40 cm long. Panicle branches glabrous or villous. Spikelets in threes or in pairs (rarely). Fertile spikelets pedicelled, (2–)3 in the cluster. Pedicels present, free, filiform or linear, unequal, 2–60 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, laterally compressed, compressed slightly, 25–35 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus elongated, 3 mm long, pubescent (rufously), pungent.

Glumes. Glumes persistent, dissimilar, exceeding apex of florets. Lower glume elliptic, 0.5 length of spikelet, chartaceous, dark brown, without keels, 3 -veined. Lower glume surface glabrous or pilose (rarely).

Lower glume apex acute. Upper glume lanceolate, 1 length of spikelet, chartaceous, dark brown, without keels, 3 -veined. Upper glume surface glabrous. Upper glume apex acute.

Florets. Basal sterile florets 1, male, with palea, separately deciduous. Lemma of lower sterile floret similar to upper glume, lanceolate, 1 length of spikelet, chartaceous, 5–7 -veined, acute. Fertile lemma oblong, 10–13 mm long, coriaceous, without keel, 7 -veined, more than 3-veined. Lemma surface pubescent. Lemma margins involute, interlocking with palea keels. Lemma apex lobed, 2 -fid, with lanceolate lobes, incised 0.2–0.3 of lemma length, acute, awned, 1 -awned. Principal lemma awn from a sinus, geniculate, subterete below, 40–120 mm long overall, with twisted column, deciduous, abscissing from top of lemma. Palea 2 -veined. Palea keels approximate, thickened.

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

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, Mali, Nigeria. Burundi, Central African Republic, DRC. Chad, Sudan. Tanzania, Uganda. Angola, Malawi, Mozambique, Zambia, Zimbabwe. Namibia, Botswana.

Tristachya thollonii Franch. *Bull. Soc. Autun*, viii. 374. (1895).

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

TYPE from Gabon. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Gabon, Ogooue: Thollon 784 (K iso).

Illustrations (Books): H.Jacques-Felix, *Les Graminees d'Afrique tropicale* (1962) (159, Fig. 84).

Derivation (Clifford & Bostock 2007): in honor of Francois-Romain Thollon (1855–1896) who collected in the Congo.

Classification. Subfamily Panicoideae. Tribe: Tristachyidae.

Habit, Vegetative Morphology. Perennial, caespitose. Butt sheaths pubescent. Culms erect, 30–150 cm long. Ligule a fringe of hairs. Leaf-blades flat or involute, 5–30 cm long, 2–4 mm wide. Leaf-blade margins entire.

Inflorescence. Inflorescence composed of racemes. Racemes 1, single, bilateral, 4–20 cm long, bearing few fertile spikelets, bearing 3–24 fertile spikelets on each. Rhachis angular. Spikelets appressed, in threes. Fertile spikelets pedicelled, 3 in the cluster, subequal. Pedicels present, fused to each other, united wholly, subequal, 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, laterally compressed, compressed slightly, 22–37 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus elongated, 4 mm long, bearded, with longer hairs above, pungent. Floret callus hairs 0.2 length of lemma.

Glumes. Glumes persistent, shorter than spikelet. Lower glume lanceolate, 14–18 mm long, 0.6–0.7 length of spikelet, coriaceous, without keels, 3 -veined. Lower glume surface setose, hairy on veins, with tubercle-based hairs. Lower glume apex acuminate to setaceously acuminate. Upper glume lanceolate, 20–35 mm long, 1 length of spikelet, chartaceous, without keels, 3 -veined. Upper glume apex acuminate.

Florets. Basal sterile florets 1, male, with palea, separately deciduous. Lemma of lower sterile floret similar to upper glume, lanceolate, 22–37 mm long, chartaceous, 5–7 -veined, acuminate. Fertile lemma elliptic, 10–12 mm long, coriaceous, without keel, 7 -veined, more than 3-veined. Lemma margins involute, interlocking with palea keels. Lemma apex lobed, 2 -fid, incised 0.2 of lemma length, acute, awned, 1 -awned. Principal lemma awn from a sinus, geniculate, subterete below, 50–160 mm long overall, with twisted column, deciduous, abscissing from top of lemma. Palea coriaceous, 2 -veined. Palea keels approximate. Palea surface scaberulous.

Flower and Fruit. Anthers 3, 5 mm long. Ovary pubescent on apex. Caryopsis with adherent pericarp, linear, hairy at apex. Hilum linear.

Distribution (TDWG). Continent. Africa.

Country /Province /State. West tropical Africa, West-central tropical Africa, East tropical Africa, South tropical Africa. Nigeria. Cameroon, Congo, Gabon, DRC. Tanzania. Angola, Malawi, Mozambique, Zambia.

Tristachya viridearistata (Phipps) Clayton. *Kew Bull.* xxi. 124 (1967).

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:** *Veseyochloa viridearistata* Phipps, *Kirkia*, 4: 107 (1964). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Zambia, Mporokoso District: Phipps & Vesey-FitzGerald 3153 (SRGH holo).

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

Derivation (Clifford & Bostock 2007): *L. viridis*, green; arista, bristle; -ata, possessing. The tips of the awns are pale-green.

Classification. Subfamily Panicoideae. Tribe: Tristachyideae.

Habit, Vegetative Morphology. Annual, caespitose. Butt sheaths villous. Culms erect, 50–80 cm long. Ligule a fringe of hairs. Leaf-blades 15–40 cm long, 2–7 mm wide.

Inflorescence. Inflorescence a panicle, comprising 6–45 fertile spikelets. Panicle open, linear, secund, 5–15 cm long. Panicle branches abruptly recurved near tip (below triads). Spikelets in threes. Fertile spikelets pedicelled, 3 in the cluster. Pedicels present, fused to each other, united wholly.

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, turbinate, laterally compressed, compressed slightly, 20–33 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus elongated, 1–1.5 mm long, pubescent, pungent.

Glumes. Glumes persistent, dissimilar, exceeding apex of florets. Lower glume lanceolate, 0.5–0.66 length of spikelet, chartaceous, yellow, without keels, 3 -veined. Lower glume surface setose, hairy on veins, with tubercle-based hairs. Lower glume apex acute. Upper glume lanceolate, 1 length of spikelet, chartaceous, yellow, without keels, 3 -veined. Upper glume apex acute.

Florets. Basal sterile florets 1, male, with palea, separately deciduous. Lemma of lower sterile floret similar to upper glume, lanceolate, 0.33–0.5 length of spikelet, chartaceous, 5–7 -veined, acute. Fertile lemma oblong, 7 mm long, coriaceous, without keel, 7 -veined, more than 3-veined. Lemma surface pubescent, hairy in lines. Lemma margins involute, interlocking with palea keels. Lemma hairs red. Lemma apex dentate, 2 -fid, awned, 3 -awned. Principal lemma awn from a sinus, geniculate, flat below, 35–65 mm long overall, with twisted column, deciduous, abscissing from top of lemma. Lateral lemma awns present, arising on apex of lobes, 5–10 mm long, shorter than principal. Palea 2 -veined. Palea keels approximate, thickened. Palea surface papillose.

Flower and Fruit. Anthers 3. Ovary pubescent on apex. Caryopsis with adherent pericarp, hairy at apex.

Distribution (TDWG). Continent. Africa.

Country /Province /State. West-central tropical Africa, East tropical Africa, South tropical Africa. Burundi. Tanzania. Zambia.

xTriticale rimpau (Wittm.) Muntz. *Zuchter* 8:188 (1936).

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

Derivation (Clifford & Bostock 2007): In honor of Wilhelm Rimpau (1842-?) German plant breeder.

Classification. Subfamily Pooideae. Tribe: Triticeae.

Triticum aestivum L. *Sp. Pl.* 85 (1753).

Accepted by: R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), D.Sharp, D. & B.K.Simon, *AusGrass* (2002), E.Edgar, & H.Connor, *Flora of New Zealand Gramineae* 5 (2000), S-L Chen et al, *Flora of China* 22 (Poaceae) (2006), J.F.Veldkamp, Poaceae ms (*Flora Malesiana*), N.L.Bor, Grasses of Burma, Ceylon, India and Pakistan (1960), T.G.Tutin et al, *Flora Europaea* 5 (1980), N.Tsvelev, *Grasses of the Soviet Union* (1983) (& as *T. vavilovii*), T.Koyama, *Grasses of Japan and its neighboring regions* (1987), W.D.Clayton & N.Snow, *Key to Pacific Grasses* (2010).

TYPE from Europe. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: LT: "*Triticum 3*" *Herb. Clifford no. 24*, (BM). LT designated by Bowden, *Canad. J. Bot.* 37: 674 (1959).

Illustrations (Books): C.E.Hubbard, *Grasses* (1968), N.N.Tsvelev, *Grasses of the Soviet Union* (1983) (199 (139), Pl.2), H.Jacques-Felix, *Les Graminees d'Afrique tropicale* (1962) (181, Fig. 103), L.K.A. Chippindall, *Grasses and Pastures of South Africa* (1955) (70, Fig. 42), L.Boulos, *Flora of Egypt* 4 (2005) (215, Pl. 61), N.L.Bor, *Gramineae in Flora of Iraq* (1968) (199, Pl. 67), C-C Hsu, *Flora of Taiwan*, Vol 5 (1978) (364), C-C Hsu, *Taiwan Grasses* (1975), K.M.Matthew, *Flora Palni Hills* (1996) (880, Pl. 880), T.A.Cope, *Flora of Pakistan* 143: *Poaceae* (1982) (599, Fig. 69), H.J.Noltie, *The Grasses of Bhutan* (2000) (637, Fig. 30), J.P.Jessop, G.R.M. Dashorst & F.M.James, *Grasses of South Australia* (2006) (280, Fig. 217), C.A.Gardner, *Flora of Western Australia*, Vol 1, Part 1, *Gramineae* (1952) (199, Pl. 59 as *T. vulgare*), S.W.L.Jacobs, R.D.B.Whalley & D.J.B.Wheeler., *Grasses of New South Wales*, 4th edn (2008) (391), J.C.Tothill,& J.B.Hacker. *The grasses of southern Queensland* (1983) (422), T.D.Stanley & E.Ross, *Flora of South East*

Queensland, *Gramineae* (1989) (137, Fig. 21), A.Wilson (ed.), *Flora of Australia*, Vol 44A. *Poaceae* (2009) (106, Fig. 15), 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), F.W.Gould, *The Grasses of Texas* (1975) (174, Fig. 87), E.G.Nicora, *Los Generos de Gramineas de America Austral* (1987) (257, Fig. 82), L.B. Smith, D.C. Wasshausen, R.M. Klein *Flora Illustrada Catarinensis Gramineas* (1981–1982) (301, Fig. 67 & 303, Fig. 68), A.Burkat, *Flora Illustrada de Entre Rios (Argentina)*, Pt II, Gramineas (1969) (108, Fig. 34), A.L.Cabrera, *Flora de la Provincia de Buenos Aires, IV Pt 2 Gramineas* (1970), B.Rosengurt, *Gramineas Uruguayas I* (1970) (148, Fig. 57), S-L Chen et al, *Flora of China*, Illustrations, *Poaceae* (2007) (Fig. 619).

Illustrations (Journals): *Ruizia* (13:214, Fig 23h-i (1993)).

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

Derivation (Clifford & Bostock 2007): *L. aestas*, summer; -ivum, property of. Grown in the summer by sowing in the spring.

Classification. Subfamily Pooideae. Tribe: Triticeae.

Habit, Vegetative Morphology. Annual, caespitose. Culms 60–100 cm long. Culm-internodes thin-walled. Leaf-sheaths glabrous on surface or pubescent. Leaf-sheath oral hairs ciliate. Leaf-sheath auricles falcate. Ligule an eciliate membrane, 1 mm long. Leaf-blades 10–60 cm long, 10–15 mm wide. Leaf-blade surface pubescent.

Inflorescence. Inflorescence composed of racemes. Racemes 1, single, linear or oblong, bilateral, 5–18 cm long. Rhachis tough, flattened, glabrous on surface, ciliate on margins. Spikelet packing broadside to rhachis. Rhachis internodes oblong, 2–3 mm long. Spikelets ascending, solitary. Fertile spikelets sessile.

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, 10–15 mm long, 9–18 mm wide, persistent on plant. Rhachilla internodes 1–1.2 mm long.

Glumes. Glumes similar, shorter than spikelet. Lower glume ovate, 6–11 mm long, 1 length of upper glume, coriaceous, 2-keeled, keeled above, winged on keel, winged above, 5–9 -veined. Lower glume surface glabrous or puberulous or villous. Lower glume apex with a unilateral tooth, truncate, muticous or awned, 1 -awned, awn 0–40 mm long. Upper glume ovate, 6–11 mm long, 0.5–0.7 length of adjacent fertile lemma, coriaceous, 2-keeled, keeled above, 5–9 -veined. Upper glume lateral veins divergent at apex. Upper glume surface glabrous or pubescent or villous. Upper glume apex with a unilateral tooth, truncate, muticous or awned, 1 -awned, awn 0–40 mm long.

Florets. Fertile lemma ovate, 12–15 mm long, chartaceous, keeled, keeled above, 5–9 -veined, more than 3-veined. Lemma apex acute, muticous or awned, 1 -awned. Principal lemma awn 0–150 mm long overall, limb scabrous. Palea 2 -veined. Palea keels winged, conspicuously winged, ciliate. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Anthers 3. Ovary with a fleshy appendage below style insertion, pubescent on apex. Caryopsis with adherent pericarp, oblong, sulcate on hilar side, 5–7 mm long, hairy at apex. Hilum linear.

$N = 21$ (7 refs TROPICOS). $2n = 14$ (1 ref TROPICOS), or 42 (41 refs TROPICOS).

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

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

Country /Province /State. : Denmark, Great Britain (*). Belarus, Estonia, Latvia, Lithuania, Central European Russia, East European Russia, North European Russia, South European Russia, Northwest European Russia, Ukraine. **Northern Africa, Macaronesia, West tropical Africa, West-central tropical Africa, Northeast tropical Africa, East tropical Africa, South tropical Africa.** Algeria, Egypt, Libya. Madeira. Mali, Niger. DRC. Ethiopia (inc. Eritrea), Somalia (+). Siberia, Russian far east, **Middle Asia, Caucasus, Western Asia, Arabian Peninsula, China, Mongolia, Eastern Asia.** Buryatiya, Chita, Irkutsk, Tuva. Amur, Kamchatka, Khabarovsk, Kuril Is, Magadan, Primorye, Sakhalin. Kazakhstan, Kirgizistan, Turkmenistan, Tadjikistan, Uzbekistan. Iran. Gulf States, Kuwait. Japan, Nansei-Shoto, Taiwan. Japan Hokkaido, or Honshu, or Shikoku, or Kyushu. **Indian Subcontinent, Indo-China, Malesia.** Bangladesh, Eastern Himalaya, Sri Lanka, West Himalaya. Vietnam. Java, Lesser Sunda Is, Malaya, Philippines, Sumatra. **Australia, New Zealand.** Western Australia (*), South Australia (*), Queensland (*), New South Wales (*), A.C.T. (*), Victoria (*), Tasmania (*). Fiji (*), New Caledonia (+). Hawaii (*). **Subarctic America, Western Canada, Eastern Canada, Northwest USA, North-central USA, Northeast USA, Southwestern USA, South-central USA, Southeastern USA, Mexico.** Alaska, Yukon, Northwest Territories, Greenland. Alberta, British Columbia, Manitoba, Saskatchewan. Labrador, New Brunswick, Newfoundland, Nova Scotia, Ontario, Prince Edward I, Quebec. Colorado, Idaho, Montana, Oregon, Washington, Wyoming. Illinois, Iowa, Kansas, Minnesota, Missouri, North Dakota, Nebraska, Oklahoma, South Dakota, Wisconsin. Connecticut, Indiana, Maine,

Massachusetts, Michigan, Ohio, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, Vermont, West Virginia. Arizona, California, Nevada, Utah. New Mexico, Texas. Alabama, Arkansas, Delaware, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, North Carolina, South Carolina, Tennessee, Virginia, District of Columbia. Central Mexico, Northeast Mexico, Gulf (Mexico), Northwest Mexico, Southwest Mexico, Southeast Mexico. **Mesoamerica, Caribbean, Northern South America, Western South America, Brazil, Southern South America.** El Salvador, Guatemala, Honduras. Haiti. Venezuela. Bolivia, Colombia, Ecuador, Peru. Brazil West Central, Brazil Southeast, Brazil South. Argentina Northeast, Chile South, Uruguay.

TDWG4. Darjeeling, Bhutan, Sikkim. South-West. Southern. South East. Coast, Tablelands, Western Slopes. Buenos Aires, Entre Rios. Distrito Federal, Mexico State, Morelos, Puebla, Tlaxcala. Aguascalientes, Coahuila, Chihuahua, Durango, Guanajuato, Hidalgo, Neuvo Leon, Queretaro, San Luis Potosi, Tamaulipas, Zacatecas. Veracruz. Baja California, Baja California Sur, Sinaloa, Sonora. Colima, Guerrero, Jalisco, Michoacan, Nayarit, Oaxaca. Campeche, Chiapas, Quintana Roo, Tabasco, Yucatan.

Triticum aethiopicum Jakubz. *Sel. Seed-Gr., Mosc., No. 5* :46 (1947).

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:** *Triticum durum* subsp. *abyssinicum* Vav., *Bull. Appl. Bot.*, Suppl. 51:26 (1931). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: : Based on *Triticum durum* subsp. *abyssinicum* ; Ethiopia: Coll?.

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

Derivation (Clifford & Bostock 2007): L. -ica, belonging to. In classical usage Aethiopia was south of the Sudan and widely used in that sense.

Classification. Subfamily Pooideae. Tribe: Triticeae.

Habit, Vegetative Morphology. Annual, caespitose. Culms 60–100 cm long. Culm-internodes thin-walled. Leaf-sheath oral hairs ciliate. Leaf-sheath auricles falcate. Ligule an eciliate membrane. Leaf-blades 10–60 cm long, 10–15 mm wide.

Inflorescence. Inflorescence composed of racemes. Racemes 1, single, linear, bilateral, 5–18 cm long. Rhachis tough, flattened, glabrous on surface. Spikelet packing broadside to rhachis, crowded or contiguous or lax. Spikelets solitary. Fertile spikelets sessile.

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, 10–15 mm long, persistent on plant.

Glumes. Glumes similar, shorter than spikelet. Lower glume ovate, 1 length of upper glume, coriaceous, 2-keeled, keeled all along, winged on keel, winged above, 5–9 -veined. Lower glume apex with a unilateral tooth, acute, muticous or awned, 1 -awned. Upper glume ovate, 0.5–0.7 length of adjacent fertile lemma, coriaceous, 2-keeled, keeled all along, 5–9 -veined. Upper glume lateral veins divergent at apex. Upper glume apex with a unilateral tooth, acute, muticous or awned, 1 -awned.

Florets. Fertile lemma ovate, 12–15 mm long, chartaceous, keeled, keeled above, 5–9 -veined, more than 3-veined. Lemma apex acute, awned, 1 -awned. Palea 2 -veined. Palea keels winged, conspicuously winged. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Anthers 3. Ovary with a fleshy appendage below style insertion, pubescent on apex. Caryopsis with adherent pericarp, oblong, sulcate on hilar side, hairy at apex. Hilum linear. Endosperm flinty.

Distribution (TDWG). Continent. Africa.

Country /Province /State. Northeast tropical Africa. Ethiopia (inc. Eritrea).

Triticum boeoticum Boiss. *Diagn. Ser. 1.* xiii. 69 (1854).

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).

Illustrations (Books): N.L.Bor, *Gramineae in Flora of Iraq* (1968) (201, Pl. 68), M.E.Barkworth et al, *Flora of North America north of Mexico Vol 24 Poaceae*, part 1 (2007) (271).

Derivation (Clifford & Bostock 2007): L. -icum, belonging to. From Baeotia, Greece.

Classification. Subfamily Pooideae. Tribe: Triticeae.

Habit, Vegetative Morphology. Annual, caespitose. Culms 30–80 cm long. Culm-nodes pubescent. Leaf-sheath oral hairs ciliate. Leaf-sheath auricles falcate. Ligule an eciliate membrane. Leaf-blades 2–4 mm wide. Leaf-blade surface pilose. Leaf-blade margins scaberulous.

Inflorescence. Inflorescence composed of racemes. Racemes 1, single, bilateral, 3–9 cm long. Rhachis fragile at the nodes, flattened, ciliate on margins. Spikelet packing broadside to rhachis. Rhachis internodes oblong, 3–4 mm long, falling with spikelet above. Spikelets ascending, solitary. Fertile spikelets sessile.

Fertile Spikelets. Spikelets comprising 1–2 fertile florets, without rhachilla extension or 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, 10–12 mm long, falling entire, deciduous with accessory branch structures. Spikelet callus pilose.

Glumes. Glumes similar, shorter than spikelet. Lower glume oblong, (4–)6–10 mm long, coriaceous, 2-keeled, 5–7 -veined. Lower glume surface glabrous or pilose. Lower glume apex dentate, 2 -fid. Upper glume oblong, (4–)6–10 mm long, 0.8–0.9 length of adjacent fertile lemma, coriaceous, 2-keeled, 5–7 -veined. Upper glume lateral veins divergent at apex. Upper glume surface glabrous or pilose. Upper glume apex dentate, 2 -fid.

Florets. Fertile lemma elliptic, 10–12 mm long, coriaceous, keeled, 5 -veined, more than 3-veined. Lemma apex dentate, 2 -fid, acute, awned, 1 -awned. Principal lemma awn from a sinus, 30–60 mm long overall, limb scabrous. Palea readily splitting down midline, 2 -veined. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Anthers 3, 4 mm long. Ovary with a fleshy appendage below style insertion, pubescent on apex. Caryopsis with adherent pericarp, ellipsoid, 6.5–8 mm long, hairy at apex. Embryo 0.2–0.3 length of caryopsis. Hilum linear, 1 length of caryopsis.

$2n = 14$ (3 refs TROPICOS).

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

Region. Southeastern Europe, Eastern Europe.

Country /Province /State. : Albania, Bulgaria, Greece, Turkey Europe, Yugoslavia. Krym, Ukraine. Caucasus, Western Asia. Transcaucasus. Iran, Iraq.

TDWG4.

Triticum carthlicum Nevski. *Komarov, Fl. URSS*, ii. 685 (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), N.Tsvelev, *Grasses of the Soviet Union* (1983).

TYPE from Russia. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Russia, Transcaucasia: Zhukovsky (LE holo).

Illustrations (Books): M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 24 *Poaceae*, part 1 (2007) (276).

Derivation (Clifford & Bostock 2007): L. -icum, belonging to. From Kartalino-Kakhetin mountains on the border of Georgia and Azerbaijan.

Classification. Subfamily Pooideae. Tribe: Triticeae.

Habit, Vegetative Morphology. Annual. Culms 60–100 cm long. Culm-internodes solid. Culm-nodes pubescent. Leaf-sheath oral hairs ciliate. Leaf-sheath auricles falcate. Ligule an eciliate membrane. Leaf-blades 5–10 mm wide. Leaf-blade surface glabrous or pilose.

Inflorescence. Inflorescence composed of racemes. Racemes 1, single, bilateral, 8–15 cm long, 10 mm wide. Rhachis tough, flattened. Spikelet packing broadside to rhachis. Rhachis internodes oblong. Spikelets solitary. Fertile spikelets sessile.

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, persistent on plant.

Glumes. Glumes similar, shorter than spikelet. Lower glume oblong, 7–9 mm long, 1 length of upper glume, coriaceous, 1-keeled, keeled above, 5–9 -veined. Lower glume apex awned, 1 -awned, awn 10–30 mm long. Upper glume oblong, 7–9 mm long, 0.9–1 length of adjacent fertile lemma, coriaceous, 1-keeled, keeled above, 5–9 -veined. Upper glume lateral veins divergent at apex. Upper glume awned, 1 -awned, awn 10–30 mm long.

Florets. Fertile lemma elliptic, 7–9 mm long, coriaceous, without keel, 9–11 -veined, more than 3-veined. Lemma apex awned, 1 -awned. Principal lemma awn 30–50(–100) mm long overall. Palea 2 -veined. Palea keels ciliolate. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Anthers 3. Ovary with a fleshy appendage below style insertion, pubescent on apex. Caryopsis with adherent pericarp, hairy at apex. Hilum linear. Endosperm flinty.

Distribution (TDWG). Continent. Temperate Asia.

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

TDWG4.

Triticum compactum Host. *Gram. Austr.* iv. 4. t. 7 (1809).

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), T.G.Tutin et al, *Flora Europaea* 5 (1980), N.Tsvelev, *Grasses of the Soviet Union* (1983).

TYPE from Austria. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Seritur in Styria sub nomine Binkelwaigen, *Host s.n.* (HT: W).

Illustrations (Books): M.N.Correa, *Flora Patagonica* Parte III, Gramineae (1978) (*Fl. Pat.* 3: 454, Fig. 303 (1978)).

Derivation (Clifford & Bostock 2007): *L. compact.* Inflorescence a short spike.

Classification. Subfamily Pooideae. Tribe: Triticeae.

Habit, Vegetative Morphology. Annual. Culms 70–140 cm long. Leaf-sheath oral hairs ciliate. Leaf-sheath auricles falcate. Ligule an eciliate membrane. Leaf-blades 10 mm wide. Leaf-blade surface pilose, sparsely hairy.

Inflorescence. Inflorescence composed of racemes. Racemes 1, single, oblong, bilateral, 3–5 cm long, 10–15 mm wide. Rhachis tough, flattened, ciliate on margins. Spikelet packing broadside to rhachis, crowded. Rhachis internodes oblong. Spikelets solitary. Fertile spikelets sessile.

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 to ovate, laterally compressed, 10–13 mm long, 13–15 mm wide, persistent on plant.

Glumes. Glumes similar, shorter than spikelet. Lower glume oblong, 8–9 mm long, 1 length of upper glume, coriaceous, 1-keeled, keeled above, 5–9 -veined. Lower glume surface glabrous or pilose. Lower glume apex dentate, 2 -fid. Upper glume oblong, 8–9 mm long, 0.9–1 length of adjacent fertile lemma, coriaceous, 1-keeled, keeled above, 5–9 -veined. Upper glume lateral veins divergent at apex. Upper glume surface glabrous or pilose. Upper glume apex dentate, 2 -fid.

Florets. Fertile lemma elliptic, 10 mm long, coriaceous, without keel, 9–11 -veined, more than 3-veined. Lemma apex muticous or awned, 1 -awned. Principal lemma awn 50–90 mm long overall. Palea 2 -veined. Palea keels ciliate. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Anthers 3. Ovary with a fleshy appendage below style insertion, pubescent on apex. Caryopsis with adherent pericarp, ellipsoid, 5–7 mm long, hairy at apex. Hilum linear.

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

Region. Southwestern Europe, Southeastern Europe, Eastern Europe.

Country /Province /State. Central European Russia, East European Russia, Northwest European Russia, Ukraine. **Northern Africa, Macaronesia.** Libya. Madeira. Siberia, Russian far east, **Middle Asia, Caucasus, Western Asia, China.** Altay. Amur, Primorye. Kirgizistan, Turkmenistan, Tadjikistan, Uzbekistan. Iran, Iraq. TDWG4.

Triticum dicoccoides (Koern. ex Asch. & Graebn.) G. Schweinfurth. *Ber. Deutsch. Bot. Ges.*, 26a(4): 309, 311, 315: (1908).

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

TYPE from Lebanon. **Basionym or Replaced Name:** *Triticum dicoccon* var. *dicoccoides* Asch. & Graebn., *Syn. Mitteleur. Fl.* 2:679 (1901). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Lebanon: Kotschy.

Illustrations (Books): N.Feinbrun-Dothan, *Flora Palaestina* 4 (1986) (Pl. 219), K.M.Matthew, Further Illustrations on the *Flora of Tamilnadu Carnatic* (1988) (as *T. dicocum*), M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 24 *Poaceae*, part 1 (2007) (271).

Derivation (Clifford & Bostock 2007): Gk *-oides*, resembling. Resembling *Triticum dicocum*.

Classification. Subfamily Pooideae. Tribe: Triticeae.

Habit, Vegetative Morphology. Annual. Culms 80–130 cm long. Culm-nodes pubescent. Leaf-sheaths pilose. Leaf-sheath oral hairs ciliate. Leaf-sheath auricles falcate. Ligule an eciliate membrane. Leaf-blades 3–10 mm wide. Leaf-blade surface puberulous, hairy adaxially or abaxially or on both sides.

Inflorescence. Inflorescence composed of racemes. Racemes 1, single, bilateral, 4–6(–10) cm long, 7–15 mm wide. Rhachis fragile at the nodes, flattened, pilose on surface, ciliate on margins. Rhachis hairs mainly at internode tip, 3–5 mm long. Spikelet packing broadside to rhachis. Rhachis internodes oblong, (3–)4–5 mm long, falling with spikelet above. Spikelets solitary. Fertile spikelets sessile.

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, 12–17 mm long, falling entire, deciduous with accessory branch structures.

Glumes. Glumes similar, shorter than spikelet. Lower glume lanceolate, 10–15 mm long, 1 length of upper glume, coriaceous, 2-keeled, keeled all along, 5–9 -veined. Lower glume surface glabrous or pubescent. Lower glume apex with a unilateral tooth. Upper glume oblong, 10–15 mm long, 0.9–1 length of adjacent fertile lemma, coriaceous, 2-keeled, keeled all along, 5–9 -veined. Upper glume lateral veins divergent at apex. Upper glume surface glabrous or pubescent. Upper glume apex with a unilateral tooth.

Florets. Fertile lemma elliptic, 10–15 mm long, coriaceous, without keel, 9–11 -veined, more than 3-veined. Lemma apex awned, 1 -awned. Principal lemma awn 100–120(–150) mm long overall. Palea 2 -veined. Palea keels ciliolate. Apical sterile florets resembling fertile though underdeveloped, 1 in number.

Flower and Fruit. Anthers 3. Ovary with a fleshy appendage below style insertion, pubescent on apex. Caryopsis with adherent pericarp, 9–11 mm long, hairy at apex. Hilum linear.

$2n = 28$ (1 ref TROPICOS).

Distribution (TDWG). Continent. Temperate Asia.

Country /Province /State. Western Asia. Iran.

Triticum dicoccon (Schrank) Schuebl. *Char. Descr. Cer. Hort. Tub.* :29 (1818).

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), T.G.Tutin et al, *Flora Europaea* 5 (1980), N.Tsvelev, *Grasses of the Soviet Union* (1983) (& as *T. karamyshevii*).

TYPE from Germany. **Basionym or Replaced Name:** *Triticum spelta* var. *dicoccon* Schrank, *Baier. Fl.* 1: 389 (1789). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Germany, Stuttgart: Kerner.

Illustrations (Books): K.M.Matthew, *Further Illustrations on the Flora of Tamilnadu Carnatic* (1988) (Pls 832 & 833), M.E.Barkworth et al, *Flora of North America north of Mexico Vol 24 Poaceae*, part 1 (2007) (273).

Derivation (Clifford & Bostock 2007): Gk *dis*, twice; *kokkos*, a kernel. Mature spikelets mostly two-grained.

Classification. Subfamily Pooideae. Tribe: Triticeae.

Habit, Vegetative Morphology. Annual. Culms 80–100 cm long. Culm-nodes glabrous or pubescent. Leaf-sheaths glabrous on surface or pilose, outer margin hairy. Leaf-sheath oral hairs ciliate. Leaf-sheath auricles falcate. Ligule an eciliate membrane. Leaf-blades 30–60 cm long, 10–20 mm wide. Leaf-blade surface scaberulous.

Inflorescence. Inflorescence composed of racemes. Racemes 1, single, bilateral, 3–10 cm long, 10–13 mm wide. Rhachis fragile at the nodes, flattened, glabrous on surface or pubescent on surface, glabrous on margins or pubescent on margins. Rhachis hairs mainly at internode tip, 1–2 mm long. Spikelet packing broadside to rhachis. Rhachis internodes oblong, 3 mm long, falling with spikelet above. Spikelets solitary. Fertile spikelets sessile.

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, 9–12 mm long, falling entire, deciduous with accessory branch structures.

Glumes. Glumes similar, shorter than spikelet. Lower glume oblong, 7–10 mm long, 1 length of upper glume, coriaceous, 1-keeled, keeled all along, 5–9 -veined. Lower glume apex emarginate. Upper glume oblong, 7–10 mm long, 0.9–1 length of adjacent fertile lemma, coriaceous, 1-keeled, keeled all along, 5–9 -veined. Upper glume lateral veins divergent at apex. Upper glume apex emarginate.

Florets. Fertile lemma elliptic, 9–12 mm long, coriaceous, without keel, 9–11 -veined, more than 3-veined. Lemma apex awned, 1 -awned. Principal lemma awn 100–150 mm long overall. Palea 2 -veined. Palea keels ciliolate. Apical sterile florets resembling fertile though underdeveloped, 1–2 in number.

Flower and Fruit. Anthers 3. Ovary with a fleshy appendage below style insertion, pubescent on apex. Caryopsis with adherent pericarp, 7–9 mm long, hairy at apex. Hilum linear.

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

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

Country /Province /State. : GB Aliens (Ryves et al). Central European Russia, East European Russia, North European Russia, Ukraine. **Northern Africa, Northeast tropical Africa.** Algeria, Egypt, Morocco. Ethiopia (inc. Eritrea). **Caucasus, Western Asia, Arabian Peninsula.** Iran. **Indian Subcontinent.** India.

TDWG4. Madhya Pradesh, Tamilnadu.

Triticum durum Desf. *Fl. Atlant.* i. 114 (1798).

Accepted by: R.J.Soreng et al., *Catalogue of 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), T.G.Tutin et al, *Flora Europaea* 5 (1980), N.Tsvelev, *Grasses of the Soviet Union* (1983).

TYPE from Africa. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: CT: (Desfontaines); ; N.Africa: ble'duv de Barbarie (LE) (desfontainesD) 1807. Herb.Walne.

Illustrations (Books): K.M.Matthew, *Flora Palni Hills* (1996) (881, Pl. 881), M.E.Barkworth et al, *Flora of North America north of Mexico Vol 24 Poaceae*, part 1 (2007) (275), B.Rosengurt, *Gramineas Uruguayas I* (1970) (148, Fig. 57).

Derivation (Clifford & Bostock 2007): L. hard. Grain flinty.

Classification. Subfamily Pooideae. Tribe: Triticeae.

Habit, Vegetative Morphology. Annual, caespitose. Culms 60–150 cm long. Culm-internodes thin-walled or solid. Leaf-sheath oral hairs ciliate. Leaf-sheath auricles falcate. Ligule an eciliate membrane. Leaf-blades 30–60 cm long, 10–20 mm wide. Leaf-blade surface glabrous or pilose, sparsely hairy, hairy abaxially. Leaf-blade margins smooth.

Inflorescence. Inflorescence composed of racemes. Racemes 1, single, bilateral, 4–11 cm long. Rhachis tough, flattened, glabrous on surface (as an apical tuft), ciliate on margins. Spikelet packing broadside to rhachis. Rhachis internodes oblong, 3–4 mm long. Spikelets ascending, solitary. Fertile spikelets sessile.

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, 10–15 mm long, 8–15 mm wide, persistent on plant.

Glumes. Glumes similar, shorter than spikelet. Lower glume ovate, 8–12 mm long, 1 length of upper glume, coriaceous, 2-keeled, keeled all along, 5–9 -veined. Lower glume surface glabrous or pubescent. Lower glume apex with a unilateral tooth, truncate. Upper glume ovate, 8–12 mm long, 0.9–1 length of adjacent fertile lemma, coriaceous, 2-keeled, keeled all along, winged on keel, winged above, 5–9 -veined. Upper glume lateral veins divergent at apex. Upper glume surface glabrous or pubescent. Upper glume apex with a unilateral tooth, truncate.

Florets. Fertile lemma elliptic, 10–12 mm long, coriaceous, without keel, 9–15 -veined, more than 3-veined. Lemma apex acute, awned, 1 -awned. Principal lemma awn 80–150 mm long overall, limb scabrous. Palea 2 -veined. Palea keels ciliate. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Anthers 3, 4 mm long. Ovary with a fleshy appendage below style insertion, pubescent on apex. Caryopsis with adherent pericarp, 8 mm long, hairy at apex. Hilum linear.

$N = 14$ (1 ref TROPICOS). $2n = 28$ (6 refs TROPICOS).

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

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

Country /Province /State. : Great Britain (*). Central European Russia, East European Russia, South European Russia, Ukraine. **Northern Africa** (as *T. pyramidale*), **Macaronesia**, **Northeast tropical Africa**. Algeria, Egypt, Libya, Morocco, Tunisia. Canary Is. Ethiopia (inc. Eritrea). Siberia, **Middle Asia**, **Caucasus**, **Western Asia**, **Arabian Peninsula**. Altay, Irkutsk, Tuva. Kazakhstan, Kirgizistan, Turkmenistan. Iran, Iraq, Oman. **Indian Subcontinent**, **Indo-China**. Myanmar. **Southern South America**. Uruguay.

TDWG4.

Triticum macha Dekaprel.& Menabde. *Bull. AppliedBot., Leningrad*, Ser. V. No. 1, pp. 14, 38 (1932).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), N.Tsvelev, *Grasses of the Soviet Union* (1983).

TYPE from Russia. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Russia, Lechkhumi: Coll?.

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

Derivation (Clifford & Bostock 2007): from makha, the vernacular name of the species in western part of the Republic of Georgia.

Classification. Subfamily Pooideae. Tribe: Triticeae.

Habit, Vegetative Morphology. Annual, caespitose. Culms 60–100 cm long. Culm-internodes thin-walled. Leaf-sheath oral hairs ciliate. Leaf-sheath auricles falcate. Ligule an eciliate membrane. Leaf-blades 10–60 cm long, 10–15 mm wide. Leaf-blade surface scabrous, glabrous or pubescent, sparsely hairy.

Inflorescence. Inflorescence composed of racemes. Racemes 1, single, bilateral, 10–12.5 cm long, 8–10 mm wide. Rhachis fragile at the nodes, flattened, ciliate on margins. Spikelet packing broadside to rhachis, crowded. Rhachis internodes oblong, 3–5 mm long, falling with spikelet alongside. Spikelets solitary. Fertile spikelets sessile.

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, 15–18 mm long, falling entire, deciduous with accessory branch structures.

Glumes. Glumes similar, shorter than spikelet. Lower glume lanceolate or elliptic, 10–11 mm long, 1 length of upper glume, coriaceous, 2-keeled, keeled all along. Lower glume primary vein scabrous. Lower glume surface pubescent. Lower glume apex with a unilateral tooth, truncate. Upper glume lanceolate or elliptic, 10–11 mm long, coriaceous, 2-keeled, keeled all along. Upper glume primary vein scabrous. Upper glume lateral veins divergent at apex. Upper glume surface pubescent. Upper glume apex with a unilateral tooth, truncate.

Florets. Fertile lemma ovate, 11–13 mm long, chartaceous, keeled, keeled above, more than 3-veined. Lemma surface pubescent. Lemma apex acute, awned, 1 -awned. Principal lemma awn 40–65 mm long overall. Palea 2 -veined. Palea keels winged, conspicuously winged, ciliolate. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Anthers 3. Ovary with a fleshy appendage below style insertion, pubescent on apex. Caryopsis with adherent pericarp, hairy at apex. Hilum linear.

Distribution (TDWG). Continent. Temperate Asia.

Country /Province /State. Caucasus. Transcaucasus.

TDWG4.

Triticum monococcum L. *Sp. Pl.* 86. (1753).

Accepted by: R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), S-L Chen et al, *Flora of China* 22 (Poaceae) (2006), N.L.Bor, *Grasses of Burma, Ceylon, India and Pakistan* (1960), T.G.Tutin et al, *Flora Europaea* 5 (1980), N.Tsvelev, *Grasses of the Soviet Union* (1983).

TYPE from Europe. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: LT: ; ; (LINN-104.4) LT designated by Bowden, *Canad. J. Bot.* 37: 664 (1959).

Illustrations (Books): M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 24 *Poaceae*, part 1 (2007) (273), S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 619).

Derivation (Clifford & Bostock 2007): Gk. monos, one; kokkos, kernal. Matured spikelets commonly producing a single grain.

Classification. Subfamily Pooideae. Tribe: Triticeae.

Habit, Vegetative Morphology. Annual, culms solitary or caespitose. Culms 45–80 cm long. Culm-nodes bearded. Leaf-sheath oral hairs ciliate. Leaf-sheath auricles falcate. Ligule an eciliate membrane. Leaf-blades 2–5 mm wide. Leaf-blade surface puberulous. Leaf-blade margins smooth or scaberulous.

Inflorescence. Inflorescence composed of racemes. Racemes 1, single, bilateral, (2.5–)3–4 cm long. Rhachis fragile at the nodes (tardily), flattened, glabrous on margins or pubescent on margins. Spikelet packing broadside to rhachis. Rhachis internodes oblong, 2–2.5 mm long, falling with spikelet above. Spikelets solitary. Fertile spikelets sessile.

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, 10 mm long, falling entire, deciduous with accessory branch structures.

Glumes. Glumes similar, shorter than spikelet. Lower glume oblong, 6–8 mm long, 1 length of upper glume, coriaceous, 2-keeled, keeled all along, 5–9 -veined. Lower glume apex dentate, 2 -fid. Upper glume oblong, 6–8 mm long, 0.9–1 length of adjacent fertile lemma, coriaceous, 2-keeled, keeled all along, 5–9 -veined. Upper glume lateral veins divergent at apex. Upper glume apex dentate, 2 -fid.

Florets. Fertile lemma elliptic, 8–10 mm long, coriaceous, keeled, 9–11 -veined, more than 3-veined. Lemma apex dentate, 2 -fid, awned, 1 -awned. Principal lemma awn (30–)60–80 mm long overall. Palea 2 -veined. Palea keels ciliolate. Apical sterile florets resembling fertile though underdeveloped, 1 in number.

Flower and Fruit. Anthers 3. Ovary with a fleshy appendage below style insertion, pubescent on apex. Caryopsis with adherent pericarp, hairy at apex. Hilum linear.

$N = 7$ (1 ref TROPICOS). $2n = 14$ (10 refs TROPICOS).

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

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

Country /Province /State. : Great Britain (*). Belarus, Central European Russia, East European Russia, Northwest European Russia, Ukraine. **Northern Africa, Northeast tropical Africa.** Morocco. Ethiopia (inc. Eritrea). **Caucasus, Western Asia, China.** Iran.

TDWG4. Madhya Pradesh, Uttah Pradesh.

Triticum polonicum L. *Sp. Pl.* ed. II. 127. (1762).

Accepted by: R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), N.L.Bor, *Grasses of Burma, Ceylon, India and Pakistan* (1960), T.G.Tutin et al, *Flora Europaea* 5 (1980), N.Tsvelev, *Grasses of the Soviet Union* (1983).

TYPE from Ethiopia. **Basionym or Replaced Name:** *Triticum abyssinicum* Steud., *Syn. Pl. Gram.* 342 (1854). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Ethiopia: Schimper.

Illustrations (Books): N.L.Bor, *Gramineae* in K.H.Rechinger, *Flora Iranica*. No. 70/30 (1970) (Tab. 31), N.L.Bor, *Gramineae* in *Flora of Iraq* (1968) (209, Pl. 69), M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 24 *Poaceae*, part 1 (2007) (275).

Derivation (Clifford & Bostock 2007): L. -ica, belonging to. From Polonia, now Poland.

Classification. Subfamily Pooideae. Tribe: Triticeae.

Habit, Vegetative Morphology. Annual. Culms 100–150 cm long. Culm-internodes solid. Culm-nodes glabrous or pubescent. Leaf-sheath oral hairs ciliate. Leaf-sheath auricles falcate. Ligule an eciliate membrane. Leaf-blades 10–20 mm wide. Leaf-blade surface glabrous or pubescent, sparsely hairy.

Inflorescence. Inflorescence composed of racemes. Racemes 1, single, bilateral, 7–15 cm long, bearing 19–23 fertile spikelets on each. Rhachis tough, flattened, pilose on surface, ciliate on margins. Rhachis hairs mainly at internode tip. Spikelet packing broadside to rhachis. Rhachis internodes oblong. 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 oblong, laterally compressed, 25–30 mm long, persistent on plant.

Glumes. Glumes similar, exceeding apex of florets. Lower glume lanceolate, 25–35 mm long, 1.2 length of upper glume, membranous, 1-keeled, keeled all along, 5–9 -veined. Lower glume surface glabrous or pubescent. Lower glume apex acute. Upper glume lanceolate, 20–30 mm long, 1.3 length of adjacent fertile lemma, membranous, 1-keeled, keeled all along, 5–9 -veined. Upper glume lateral veins divergent at apex. Upper glume surface glabrous or pubescent. Upper glume apex dentate, 2 -fid.

Florets. Fertile lemma elliptic, 15–25 mm long, membranous, without keel, 9–11 -veined, more than 3-veined. Lemma apex muticous or awned, 1 -awned. Principal lemma awn 70–150 mm long overall. Palea 2 -veined. Palea keels ciliolate. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Anthers 3. Ovary with a fleshy appendage below style insertion, pubescent on apex. Caryopsis with adherent pericarp, hairy at apex. Hilum linear.

$2n = 28$ (1 ref TROPICOS).

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

Region. Southwestern Europe, Eastern Europe.

Country /Province /State. Ukraine. **Northern Africa, Northeast tropical Africa.** Algeria, Libya, Morocco. Ethiopia (inc. Eritrea). Siberia, **Middle Asia, Caucasus, Western Asia, China.** Altay. Kirgizistan, Tadjikistan. Iran, Iraq. Tibet. **Indian Subcontinent.** Assam.

TDWG4. Assam, Meghalaya. Tamilnadu, Uttah Pradesh.

Triticum spelta L. *Sp. Pl.* 86. (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), N.L.Bor, *Grasses of Burma, Ceylon, India and Pakistan* (1960), T.G.Tutin et al, *Flora Europaea* 5 (1980), N.Tsvelev, *Grasses of the Soviet Union* (1983).

TYPE from Europe. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: LT: ; ; (LINN-1004.1) LT designated by Morrison, *Taxon* 47: 709 (1998).

Illustrations (Books): M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 24 *Poaceae*, part 1 (2007) (276).

Derivation (Clifford & Bostock 2007): Old Saxon for a species of wheat formerly widely cultivated in southern Europe.

Classification. Subfamily Pooideae. Tribe: Triticeae.

Habit, Vegetative Morphology. Annual. Culms 60–120 cm long. Leaf-sheath oral hairs ciliate. Leaf-sheath auricles falcate. Ligule an eciliate membrane. Leaf-blades 30–60 cm long, 10–15 mm wide. Leaf-blade surface glabrous or pilose, sparsely hairy.

Inflorescence. Inflorescence composed of racemes. Racemes 1, single, bilateral, 10–15 cm long. Rhachis fragile at the nodes, flattened, ciliate on margins. Spikelet packing broadside to rhachis. Rhachis internodes clavate, 5–6 mm long, falling with spikelet above. Spikelets solitary. Fertile spikelets sessile.

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, 12–15 mm long, falling entire, deciduous with accessory branch structures.

Glumes. Glumes similar, shorter than spikelet. Lower glume oblong, 8–12 mm long, 1 length of upper glume, coriaceous, 2-keeled, keeled all along, 5–9 -veined. Lower glume surface glabrous or pilose. Lower glume apex dentate, 2 -fid, truncate. Upper glume oblong, 8–12 mm long, 0.9–1 length of adjacent fertile lemma, coriaceous, 2-keeled, keeled all along, 5–9 -veined. Upper glume lateral veins divergent at apex. Upper glume surface glabrous or pubescent. Upper glume apex dentate, 2 -fid, truncate.

Florets. Fertile lemma elliptic, 7 mm long, coriaceous, keeled, keeled above, 9–11 -veined, more than 3-veined. Lemma surface pubescent, hairy above. Lemma apex awned, 1 -awned. Principal lemma awn 6–60 mm long overall. Palea 2 -veined. Palea keels ciliolate. Apical sterile florets resembling fertile though underdeveloped, 2–3 in number.

Flower and Fruit. Anthers 3. Ovary with a fleshy appendage below style insertion, pubescent on apex. Caryopsis with adherent pericarp, ellipsoid, 7–10 mm long, hairy at apex. Hilum linear.

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

Region. Northern Europe, Middle Europe, Eastern Europe.

Country /Province /State. : GB Aliens (Ryves et al). Belarus, Central European Russia, East European Russia, Northwest European Russia, Ukraine. **Northern Africa, Northeast tropical Africa.** Libya, Morocco. Ethiopia (inc. Eritrea). **Middle Asia, Caucasus, Western Asia.** Turkmenistan, Tadjikistan. Iran.

TDWG4.

Triticum sphaerococcum Percival. *Wheat Plant*, 157, 321 (1921).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, N.L.Bor, *Grasses of Burma*, Ceylon, India and Pakistan (1960).

TYPE from Iran. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Iran: Percival.

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

Derivation (Clifford & Bostock 2007): Gk. sphaera, ball; kokkos, grain. Grain spherical.

Classification. Subfamily Pooideae. Tribe: Triticeae.

Habit, Vegetative Morphology. Annual. Culms 70–100 cm long. Leaf-sheath oral hairs ciliate. Leaf-sheath auricles falcate. Ligule an eciliate membrane. Leaf-blades 10–16 cm long, 12–15 mm wide. Leaf-blade surface scabrous, rough adaxially.

Inflorescence. Inflorescence composed of racemes. Racemes 1, single, oblong, bilateral, 4–6 cm long. Rhachis tough, flattened, ciliate on margins. Spikelet packing broadside to rhachis. Rhachis internodes oblong. Spikelets solitary. Fertile spikelets sessile.

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, 10 mm long, persistent on plant.

Glumes. Glumes similar, shorter than spikelet. Lower glume ovate, 8–12 mm long, 1 length of upper glume, coriaceous, 2-keeled, keeled above, 5–9 -veined. Lower glume apex with a unilateral tooth. Upper glume ovate, 8–12 mm long, 0.9–1 length of adjacent fertile lemma, coriaceous, 2-keeled, keeled above, 5–9 -veined. Upper glume lateral veins divergent at apex. Upper glume apex with a unilateral tooth.

Florets. Fertile lemma ovate, 8 mm long, coriaceous, without keel, 9–11 -veined, more than 3-veined. Lemma apex awned, 1 -awned. Principal lemma awn 3–20 mm long overall. Palea 2 -veined. Palea keels ciliolate. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Anthers 3. Ovary with a fleshy appendage below style insertion, pubescent on apex. Caryopsis with adherent pericarp, ovoid or orbicular, 4–5.5 mm long, hairy at apex. Hilum linear.

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

Country /Province /State. **Western Asia.** Afghanistan, Iran, Iraq. **Indian Subcontinent.** India, Pakistan.

TDWG4. Madhya Pradesh, Punjab.

Triticum timopheevii (Zhuk.) Zhuk. *Bull. Applied Bot., Leningrad*, xix. No. 2, 64. (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), N.Tsvelev, *Grasses of the Soviet Union* (1983) (& as *T. militinae*).

TYPE from Russia. **Basionym or Replaced Name:** *Triticum dicoccon* var. *timopheevii* Zhuk., *Zap. Nauchno Prikl. Otd. Tifl. Bot. Sada* 3:1 (1923). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Russia, Georgia: Zhukovsky.

Illustrations (Books): M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 24 *Poaceae*, part 1 (2007) (273).

Derivation (Clifford & Bostock 2007): in honor of Timopheev.

Classification. Subfamily Pooideae. Tribe: Triticeae.

Habit, Vegetative Morphology. Annual, caespitose. Culms erect, 71–90 cm long. Culm-internodes distally pilose. Leaf-sheaths pilose. Leaf-sheath oral hairs ciliate. Leaf-sheath auricles falcate. Ligule an eciliate membrane, 1 mm long. Leaf-blades 20–45 cm long, 2–5 mm wide. Leaf-blade surface smooth or scaberulous, pilose, hairy on both sides.

Inflorescence. Inflorescence composed of racemes. Peduncle pubescent above. Racemes 1, single, bilateral, (3.5–)5–6.5 cm long, 10–15 mm wide. Rhachis fragile at the nodes, flattened, ciliate on margins. Spikelet packing broadside to rhachis. Rhachis internodes oblong, 1.5–1.75 mm long, falling with spikelet above. Spikelets solitary. Fertile spikelets sessile.

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, 10–12 mm long, falling entire, deciduous with accessory branch structures.

Glumes. Glumes similar, shorter than spikelet. Lower glume oblong, asymmetrical, 7–10 mm long, 1 length of upper glume, coriaceous, 2-keeled, keeled all along, winged on keel (1 keel), winged near apex or above, 5–9 -veined. Lower glume surface pubescent. Lower glume apex with a unilateral tooth. Upper glume oblong, asymmetrical, 7–10 mm long, 0.9–1 length of adjacent fertile lemma, coriaceous, 2-keeled, keeled all along, winged on keel (1 keel), winged near apex or above, 5–9 -veined. Upper glume lateral veins divergent at apex. Upper glume surface pubescent. Upper glume apex with a unilateral tooth.

Florets. Fertile lemma elliptic, 10–12 mm long, coriaceous, without keel, 9–11 -veined, more than 3-veined. Lemma surface pubescent. Lemma apex dentate, 2 -fid, awned, 1 -awned. Principal lemma awn 50–60(–90) mm long overall. Palea 2 -veined. Palea keels ciliolate. Apical sterile florets resembling fertile though underdeveloped, 1 in number.

Flower and Fruit. Anthers 3. Ovary with a fleshy appendage below style insertion, pubescent on apex. Caryopsis with adherent pericarp, hairy at apex. Hilum linear.

$2n = 28$ (2 refs TROPICOS).

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

Country /Province /State. Caucasus, Western Asia, China. Iran. Northwest USA. Oregon.

TDWG4.

Triticum turanicum Jakubz. *Sel. Seed-Gr., Mosc., No. 5* : 46 (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), S-L Chen et al, *Flora of China* 22 (Poaceae) (2006), N.Tsvelev, *Grasses of the Soviet Union* (1983).

TYPE from Iran. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Iran, Horosan: Coll?.

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

Classification. Subfamily Pooideae. Tribe: Triticeae.

Habit, Vegetative Morphology. Annual, caespitose. Culms 66–110 cm long. Culm-internodes thick-walled or solid. Leaf-sheath auricles falcate. Ligule an eciliate membrane. Leaf-blades 10–15 mm wide. Leaf-blade surface pubescent.

Inflorescence. Inflorescence composed of racemes. Racemes 1, single, oblong, bilateral, 9–15 cm long, 10–11 mm wide. Rhachis tough, flattened, 1.3–3 mm wide, ciliate on margins. Spikelet packing broadside to rhachis, lax. Rhachis internodes cuneate, 5–6.5 mm long. Spikelets ascending, solitary. Fertile spikelets sessile.

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, 12–15 mm long, persistent on plant. Floret callus pubescent.

Glumes. Glumes similar, reaching apex of florets. Lower glume ovate, 12–15 mm long, 1 length of upper glume, coriaceous, pallid, 2-keeled, keeled all along, 5–9 -veined. Lower glume lateral veins prominent. Lower glume surface pubescent. Lower glume apex with a unilateral tooth, truncate. Upper glume ovate, 12–15 mm long, 1 length of adjacent fertile lemma, coriaceous, pallid, 2-keeled, keeled all along, 5–9 -veined. Upper glume lateral veins prominent, divergent at apex. Upper glume surface pubescent. Upper glume apex with a unilateral tooth, truncate.

Florets. Fertile lemma elliptic, 12–15 mm long, coriaceous, without keel, 5–9 -veined, more than 3-veined. Lemma apex acute, awned, 1 -awned. Principal lemma awn 140–160 mm long overall, limb scabrous. Palea

embraced by lemma, coriaceous, 2 -veined. Palea keels winged, conspicuously winged, ciliolate. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Anthers 3. Ovary with a fleshy appendage below style insertion, pubescent on apex. Caryopsis with adherent pericarp, ellipsoid, 10.5–12 mm long, hairy at apex. Hilum linear.

Distribution (TDWG). Continent. Temperate Asia.

Country /Province /State. Middle Asia, Caucasus, Western Asia, China, Russia. Kazakhstan, Kirgizistan, Turkmenistan, Uzbekistan. Iran. Xinjiang.

TDWG4.

Triticum turgidum L. *Sp. Pl.* 86 (1753).

Accepted by: R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), S-L Chen et al, *Flora of China* 22 (Poaceae) (2006), N.L.Bor, *Grasses of Burma, Ceylon, India and Pakistan* (1960), T.G.Tutin et al, *Flora Europaea* 5 (1980), N.Tsvelev, *Grasses of the Soviet Union* (1983).

TYPE from Europe. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: LT: Herb. A. van Royen s.n.; ; (L-913.62–257) LT designated by Morrison, *Taxon* 47: 707 (1998).

Illustrations (Books): M.E.Barkworth et al, *Flora of North America north of Mexico Vol 24 Poaceae*, part 1 (2007) (275), S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 620 as *Triticum turgidum* ssp. *turgidum* & as *T. turgidum* ssp. *polonicum*).

Derivation (Clifford & Bostock 2007): L. swollen. With swollen spikelets.

Classification. Subfamily Pooideae. Tribe: Triticeae.

Habit, Vegetative Morphology. Annual, caespitose. Culms 90–160 cm long. Culm-internodes thick-walled or solid. Leaf-sheaths glabrous on surface. Leaf-sheath oral hairs ciliate. Leaf-sheath auricles falcate. Ligule an eciliate membrane. Leaf-blades 10–60 cm long, 10–15 mm wide, glaucous. Leaf-blade surface pubescent.

Inflorescence. Inflorescence composed of racemes. Racemes 1, single, oblong or ovate, arcuate, bilateral, 7–10 cm long, simple or secondarily branched. Rhachis tough, flattened, puberulous on surface (as an apical tuft), ciliate on margins. Spikelet packing broadside to rhachis. Rhachis internodes oblong, 3.5–4 mm long. Spikelets ascending, solitary. Fertile spikelets sessile.

Fertile Spikelets. Spikelets comprising 3–5 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets oblong, laterally compressed, 10–13 mm long, 8–15 mm wide, persistent on plant.

Glumes. Glumes similar, shorter than spikelet. Lower glume ovate, 8–11 mm long, 1 length of upper glume, coriaceous, 2-keeled, keeled all along, 5–9 -veined. Lower glume surface glabrous or pubescent. Lower glume apex with a unilateral tooth, truncate. Upper glume ovate, 8–11 mm long, 0.6–0.7 length of adjacent fertile lemma, coriaceous, 2-keeled, keeled all along, 5–9 -veined. Upper glume lateral veins divergent at apex. Upper glume surface glabrous or pubescent. Upper glume apex with a unilateral tooth, truncate.

Florets. Fertile lemma elliptic, 10–13 mm long, coriaceous, without keel, 5–9 -veined, more than 3-veined. Lemma apex acute, awned, 1 -awned. Principal lemma awn 80–160 mm long overall, limb scabrous. Palea 2 -veined. Palea keels ciliolate. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Anthers 3. Ovary with a fleshy appendage below style insertion, pubescent on apex. Caryopsis with adherent pericarp, 8 mm long, hairy at apex. Hilum linear.

$2n = 14$ (1 ref TROPICOS), or 21 (1 ref TROPICOS), or 28 (3 refs TROPICOS), or 38 (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 (*). Belarus, Central European Russia, East European Russia, Northwest European Russia, Ukraine. **Northern Africa, Northeast tropical Africa.** Algeria, Egypt. Ethiopia (inc. Eritrea). Siberia, **Caucasus, Western Asia, China.** Iran, Iraq. China South Central, China North-Central, China Southeast, Tibet, Xinjiang. **Western Canada, Eastern Canada, Northwest USA.** Oregon.

TDWG4. Beijing, Gansu, Shaanxi. Henan. Sichuan, Yunnan. Himachal Pradesh, Jammu Kashmir, Uttaranchal.

Triticum urartu Thumanjan ex Gandilyan. *Bot. Zhurn.*, 57 (2): 176 (1972).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), N.Tsvelev, *Grasses of the Soviet Union* (1983).

TYPE from Russia, Caucasus. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: IT: ; ; (LE) LT: P. Gandilyan s. n.; 30 Jun 1968; [Caucasus: Armenia]: Yerevan: Vakhchaberd-Gegadir (LE) Orig. label: Yugo-vostochnaya okraina g. Erevana, okolo sel. Vokhchaberd-Gegadir.

Illustrations (Books): M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 24 *Poaceae*, part 1 (2007) (271).

Derivation (Clifford & Bostock 2007): Assyrian name for Mt. Ararat in Armenia.

Classification. Subfamily Pooideae. Tribe: Triticeae.

Habit, Vegetative Morphology. Annual. Culms geniculately ascending, 60–90 cm long. Culm-internodes distally glabrous. Leaf-sheaths pubescent. Leaf-sheath oral hairs ciliate. Leaf-sheath auricles falcate. Ligule an eciliate membrane. Leaf-blades 30–45 cm long, 7–10 mm wide. Leaf-blade surface puberulous.

Inflorescence. Inflorescence composed of racemes. Racemes 1, single, bilateral, 7–9 cm long, 6–7 mm wide. Rhachis fragile at the nodes, flattened, ciliate on margins. Spikelet packing broadside to rhachis. Rhachis internodes oblong, falling with spikelet above. Spikelets solitary. Fertile spikelets sessile.

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, 17–20 mm long, falling entire, deciduous with accessory branch structures.

Glumes. Glumes similar, shorter than spikelet. Lower glume oblong, 8–11 mm long, 1 length of upper glume, coriaceous, 2-keeled, keeled all along, 3–5 -veined. Lower glume apex dentate, 2 -fid. Upper glume oblong, 8–11 mm long, coriaceous, 2-keeled, keeled all along, 3–5 -veined. Upper glume lateral veins divergent at apex. Upper glume apex dentate, 2 -fid.

Florets. Fertile lemma elliptic, 15 mm long, coriaceous, keeled, more than 3-veined. Lemma apex dentate, 2 -fid, with lobes 1.5–2.5 mm long, awned, 1 -awned. Principal lemma awn from a sinus, 60–80 mm long overall. Palea 2 -veined. Palea keels wingless. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Anthers 3. Ovary with a fleshy appendage below style insertion, pubescent on apex. Caryopsis with adherent pericarp, hairy at apex. Hilum linear.

$N = 7$ (1 ref TROPICOS). $2n = 14$ (1 ref TROPICOS).

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

Country /Province /State. Caucasus. Transcaucasus. **Northwest USA.** Oregon.

TDWG4.

Triticum x zhukovskii Menabde & Erizin. *Comm. Georg. Br. Acad. Sci. U.S.S.R. (Mitt. Georgisch. Abt. Akad. Wiss.)* No.16, p.? (1958) (1959).

Accepted by: U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), N.Tsvelev, *Grasses of the Soviet Union* (1983).

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

Derivation (Clifford & Bostock 2007): In honor of Pyotr Mykhailovich Zhukovskii (1888–1975) Russian botanist.

Classification. Subfamily Pooideae. Tribe: Triticeae.

Country /Province /State. TDWG4.

Tuctoria fragilis (Swallen) J.R. Reeder. *Amer. J. Bot.*, 69(7): 1090 (1982).

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:** *Orcuttia fragilis* Swallen, *J. Wash. Acad. Sci.* 34(9): 308 (1944). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *H.S. Gentry 4192*, 7 Jan 1939, Mexico: Baja California Sur: Magdalena Plain, Llano Dirai, sandy clay, an abundant forage grass over the great flood plain following rain stoage; reported excellent for cattle (US-1865489; IT: ARIZ, DS, MO, UC, US-2209357). Reeder, *Madroño* 30: 308 (1981), reports the actual locality to be: Llanos de Hiray, a few miles south of El Refugio..

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

Derivation (Clifford & Bostock 2007): L. weak. Inflorescences readily disarticulating.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Annual, caespitose. Culms geniculately ascending or decumbent, 25–50 cm long, disarticulating at the nodes. Culm-internodes solid. Leaves without demarcation between sheath and blade. Leaf-sheaths viscid. Ligule absent. Leaf-blades deciduous at the ligule, flat or involute, 4–8 cm long, 11–12 mm wide, viscid, aromatic. Leaf-blade surface pubescent or pilose.

Inflorescence. Inflorescence composed of racemes, embraced at base by subtending leaf. Racemes 1, single, multilateral, 4–5 cm long. Rhachis angular. Spikelet packing broadside to rhachis. Spikelets solitary. Fertile spikelets sessile.

Fertile Spikelets. Spikelets comprising 7–10 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets oblong, laterally compressed, 10–13 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, similar, shorter than spikelet. Lower glume ovate, 5–6 mm long, 1 length of upper glume, chartaceous, much thinner on margins, without keels, 7 -veined. Lower glume apex acute. Upper glume oblong, 5–6 mm long, 1 length of adjacent fertile lemma, chartaceous, with hyaline margins, without keels, 7–9 -veined. Upper glume apex acute.

Florets. Fertile lemma oblong, 5–6 mm long, chartaceous, much thinner on margins, keeled, 5 -veined, more than 3-veined. Lemma lateral veins ribbed. Lemma apex entire or erose, acute, mucronate. Palea 1 length of lemma, 2 -veined. Palea keels scaberulous. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, adnate to palea, cuneate, 0.2 mm long, fleshy, truncate. Anthers 3, 3 mm long, yellow or purple. Stigmas 2, sparsely hairy. Caryopsis with adherent pericarp, obovoid, laterally compressed, 2–2.5 mm long, rugose. Embryo 0.75 length of caryopsis.

Distribution (TDWG). Continent. North America.

Country /Province /State. Mexico. Northwest Mexico.

TDWG4. Baja California Sur.

Tuctoria greenei (Vasey) J.R. Reeder. *Amer. J. Bot.*, 69(7): 1091 (1982).

Accepted by: R.J.Soreng et al., *Catalogue of New World 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:** *Orcuttia greenei* Vasey, *Bull. Torrey Bot. Club*, 16: 146 (1891). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: Greene s.n.; Jun 1890; USA: California: Butte Co.: near Chico (US-81385).

Illustrations (Books): M.E.Barkworth et al, *Flora of North America north of Mexico Vol 25 Poaceae*, part 2 (2003) (295).

Derivation (Clifford & Bostock 2007): in honor of Edward Lee Greene (1843–1915) United States botanist.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Annual, caespitose. Culms erect or decumbent, 5–15(–30) cm long. Leaves without demarcation between sheath and blade. Leaf-sheaths viscid. Ligule absent. Leaf-blades 2–12 cm long, 2–5 mm wide, viscid, aromatic. Leaf-blade surface pilose, sparsely hairy.

Inflorescence. Inflorescence composed of racemes, exserted. Racemes 1, single, multilateral, 4–8 cm long. Rhachis angular. Spikelet packing broadside to rhachis, distant (below). Spikelets solitary. Fertile spikelets sessile.

Fertile Spikelets. Spikelets comprising 10–40 fertile florets, with diminished florets at 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, 12–23 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, similar, shorter than spikelet. Lower glume ovate, 3–5 mm long, 1 length of upper glume, chartaceous, without keels, 7 -veined. Lower glume apex erose. Upper glume oblong, 3–5 mm long, 0.75–1 length of adjacent fertile lemma, chartaceous, without keels, 7–9 -veined. Upper glume apex erose.

Florets. Fertile lemma oblong, 4–5 mm long, chartaceous, keeled, 9–13 -veined, more than 3-veined. Lemma lateral veins ribbed. Lemma apex erose, truncate, mucronate, 1 -awned. Palea 1 length of lemma, 2 -veined. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, cuneate, 0.2 mm long, fleshy, truncate. Anthers 3, 3 mm long. Stigmas 2, sparsely hairy. Caryopsis with adherent pericarp, oblong, laterally compressed, 2–2.5 mm long, dark brown, rugose. Embryo 0.75–1 length of caryopsis.

Distribution (TDWG). Continent. North America.

Country /Province /State. Southwestern USA. California.

Tuctoria mucronata (Crampton) J.R. Reeder. *Amer. J. Bot.*, 69(7): 1091 (1982).

Accepted by: R.J.Soreng et al., *Catalogue of New World 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:** *Orcuttia mucronata* Crampton, *Madrone* 15(4): 107–108, f. 2–3 (1959). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: B. Crampton 5077; 1 Aug 1958; USA: California: Solano Co.: 12 mi S of Dixon (AHUC; IT: CAS, DS, JEPS, UC, US-2241392).

Illustrations (Books): M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 25 *Poaceae*, part 2 (2003) (295).

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 Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Annual, caespitose. Culms geniculately ascending or decumbent, 6–12 cm long, disarticulating at the nodes. Culm-internodes solid. Leaves without demarcation between sheath and blade. Leaf-sheaths viscid. Ligule absent. Leaf-blades involute, 2–4 cm long, 1–2 mm wide, viscid, aromatic. Leaf-blade surface pubescent or pilose.

Inflorescence. Inflorescence composed of racemes, embraced at base by subtending leaf. Racemes 1, single, multilateral, 1.5–6 cm long. Rhachis angular. Spikelet packing broadside to rhachis. Spikelets solitary. Fertile spikelets sessile.

Fertile Spikelets. Spikelets comprising 5–10 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets oblong, laterally compressed, 10–12 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, similar, shorter than spikelet. Lower glume ovate, 4–7 mm long, 1 length of upper glume, chartaceous, without keels, 7 -veined. Lower glume apex entire or with a unilateral tooth or dentate, 1–2 -fid, acute, mucronate. Upper glume oblong, 4–7 mm long, 1 length of adjacent fertile lemma, chartaceous, without keels, 7–9 -veined. Upper glume apex entire or with a unilateral tooth or dentate, 1–2 -fid, acute, mucronate.

Florets. Fertile lemma oblong, 5–7 mm long, chartaceous, keeled, 11–15 -veined, more than 3-veined. Lemma lateral veins ribbed. Lemma surface scaberulous, rough on veins. Lemma apex erose, acute, mucronate. Palea 1 length of lemma, 2 -veined. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, adnate to palea, cuneate, 0.5 mm long, fleshy, truncate. Anthers 3, 3 mm long, yellow. Stigmas 2, sparsely hairy. Caryopsis with adherent pericarp, oblong, laterally compressed, 3 mm long, dark brown, smooth. Embryo 0.75 length of caryopsis.

Distribution (TDWG). Continent. North America.

Country /Province /State. Southwestern USA. California.