

**Saccharum alopecuroides** (L.) Nutt. *Gen. Am.* i. 60 (1818).

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

**TYPE** from USA. **Basionym or Replaced Name:** *Andropogon alopecuroides* L., *Sp. Pl.* 2: 1045 (1753). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: LT: *J. Clayton 601*, USA: Virginia (LINN-1211.9; ILT: US-76441 (fragm. ex BM)). LT designated by Hitchcock, *Contr. U.S. Natl. Herb.* 12: 125 (1908).

**Illustrations (Books):** M.E.Barkworth et al, *Flora of North America north of Mexico Vol 25 Poaceae*, part 2 (2003) (613).

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

**Derivation** (Clifford & Bostock 2007): Gk. -oides, resembling. Similar to *Alopecurus*, usually in respect of the inflorescence.

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

**Habit, Vegetative Morphology.** Perennial. Culms erect, robust, 150–300 cm long. Culm-nodes bearded. Leaf-sheath oral hairs ciliate. Ligule a ciliolate membrane. Leaf-blades 40–80 cm long, 12–20 mm wide. Leaf-blade surface scabrous, glabrous, hairless except near base.

**Inflorescence.** Inflorescence a panicle with branches tipped by a raceme. Peduncle hirsute above. Panicle open, elliptic, dense, 20–30 cm long. Panicle axis pilose. Rhachis fragile at the nodes, subterete, villous on surface. Rhachis internodes linear. Spikelets in pairs. Fertile spikelets sessile and pedicelled, 2 in the cluster, subequal. Pedicels present, linear, villous.

**Fertile Spikelets.** Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets lanceolate, dorsally compressed, 5–6 mm long, falling entire, deciduous from the base or with accessory branch structures. Spikelet callus bearded, base truncate. Spikelet callus hairs white, 10–15 mm long, 2 length of spikelet.

**Glumes.** Glumes similar, firmer than fertile lemma. Lower glume lanceolate, 1 length of spikelet, coriaceous, much thinner above, pallid, 2-keeled. Lower glume surface flat, pilose. Lower glume apex acuminate. Upper glume lanceolate, 1 length of spikelet, coriaceous, much thinner above, pallid, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume surface pilose. Upper glume apex acute.

**Florets.** Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret lanceolate, hyaline, 0 -veined, without midvein, without lateral veins, acute. Fertile lemma linear, hyaline, 0 -veined, 0–3 -veined, without veins. Lemma apex awned, 1 -awned. Principal lemma awn geniculate, flat below, 10–15 mm long overall, with a straight or slightly twisted column. Palea absent or minute.

**Flower and Fruit.** Lodicules 2, cuneate. Anthers 3.

$2n = 30$  (1 ref TROPICOS).

**Distribution (TDWG).** **Continent.** North America.

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

**Saccharum angustifolium** (Nees) Trin. *Mem. Acad. Petersb. Ser.* 6,4: 92 (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 Brazil. **Basionym or Replaced Name:** *Erianthus angustifolius* Nees, *Fl. Bras. Enum. Pl.* 2(1): 316–317 (1829). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: IT: *F. Sellow*, "Brasilia" (BAA (fragm.), LE-TRIN-0029.01 (ex hb. Chamiso), US-79569 (fragm. ex B)).

**Illustrations (Books):** S.A.Renvoize, *Gramineas de Bolivia* (1998) (567, Fig 132), L.B. Smith, D.C. Wasshausen, R.M. Klein *Flora Illustrada Catarinensis Gramineas* (1981–1982) (1151, Fig. 225 as *Erianthus biaristatus*), B.Rosengurt, *Gramineas Uruguayas I* (1970) (176, Fig. 70 as *Erianthus angustifolius*).

**Derivation** (Clifford & Bostock 2007): L. angustus, narrow; folium, leaf. Leaf-blades narrow.

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

**Habit, Vegetative Morphology.** Perennial, caespitose. Rhizomes short. Culms erect, robust, 90–200 cm long. Culm-nodes glabrous. Lateral branches lacking. Leaves mostly basal. Leaf-sheaths glabrous on surface or pubescent. Ligule an eciliate membrane, 3–4 mm long, truncate. Leaf-blades erect, 30–40 cm long, 4–6 mm wide, glaucous. Leaf-blade surface scabrous, rough adaxially, glabrous.

**Inflorescence.** Inflorescence a panicle with branches tipped by a raceme, exerted or embraced at base by subtending leaf. Peduncle glabrous. Panicle open, oblong, dense, 20–25 cm long. Rhachis fragile at the nodes,

subterete, pilose on surface. Rhachis internodes linear, 4.5–6 mm long. Spikelets in pairs. Fertile spikelets sessile and pedicelled, 2 in the cluster, subequal. Pedicels present, linear, 5–6 mm long, ciliate.

**Fertile Spikelets.** Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets lanceolate, dorsally compressed, 6–8 mm long, 1–1.25 mm wide, falling entire, deciduous from the base or with accessory branch structures. Spikelet callus bearded, base truncate. Spikelet callus hairs 6–8 mm long, 1 length of spikelet.

**Glumes.** Glumes similar, firmer than fertile lemma. Lower glume lanceolate, 1 length of spikelet, chartaceous, 2-keeled. Lower glume surface flat, pilose. Lower glume apex dentate, 2 -fid. Upper glume lanceolate, 1 length of spikelet, chartaceous, 1-keeled, 1 -veined. Upper glume lateral veins absent. Upper glume surface pilose. Upper glume apex acute.

**Florets.** Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret lanceolate, 4 mm long, hyaline, acute. Fertile lemma lanceolate, hyaline, 0–3 -veined. Lemma apex acute, awned, 1 -awned. Principal lemma awn straight, 12–15 mm long overall. Palea 2.5–3 length of lemma.

**Flower and Fruit.** Lodicules 2, cuneate. Anthers 3. Caryopsis with adherent pericarp, oblong, 2.8–3.3 mm long.

**Distribution (TDWG). Continent.** South America.

**Country /Province /State.** Northern South America, Western South America, Brazil, Southern South America. Venezuela. Bolivia, Colombia. Brazil West Central, Brazil Southeast, Brazil South. Uruguay.

**TDWG4.** Goias, Minas Gerais, Rio de Janeiro, Espirito Santo, Sao Paulo Parana, Catarina, Rio Grande do Sul. Chaco, Cordoba, Formosa, Misiones, Santa Fe.

## **Saccharum arundinaceum** Retz. *Obs.* iv. 14. (1786).

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

**TYPE** from India. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: India: 'Colitur juxta sepes et ad stagnorum margines prope Tranquebar, alibi rarius. Inde misit honor.' Konig.,.

**Recent Synonyms:** *Saccharum arundinaceum* var. *trichophyllum* (Hand.-Mazz.) S.M.Phillips & S.L.Chen (2005), *Novon* 15 (3): 469 (2005).

**Illustrations (Books):** C-C Hsu, *Flora of Taiwan*, Vol 5 (1978) (682 as *Erianthus arundinaceus*), C-C Hsu, *Taiwan Grasses* (1975) (as *Erianthus arundinaceus*), H.J.Noltie, *The Grasses of Bhutan* (2000) (763, Fig. 50), H.Duistermaat, *Field Guide to the Grasses of Singapore* (2005) (117, Fig. 119), S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 807).

**Images:** H.Duistermaat, *Field Guide to the Grasses of Singapore* (2005);, H.B.Gilliland et al., *Flora of Malaya Vol. 3 Grasses* (1971);, R.Darke, *Ornamental Grasses* (2004);, R.Darke, *The Encyclopaedia of Grasses for Liveable Landscapes* (2007);.

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

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

**Habit, Vegetative Morphology.** Perennial, caespitose. Culms erect, robust, 200–400 cm long, 20 mm diam. Culm-internodes solid. Ligule an eciliate membrane. Leaf-blades 50–100 cm long, 25–50 mm wide. Leaf-blade midrib conspicuous. Leaf-blade apex acuminate.

**Inflorescence.** Inflorescence a panicle with branches tipped by a raceme. Peduncle glabrous. Panicle open, ovate, 30–80 cm long, 15 cm wide. Primary panicle branches whorled at most nodes. Panicle branches glabrous. Rhachis fragile at the nodes, subterete, villous on surface. Rhachis internodes filiform, 3.5–4 mm long. Spikelets in pairs. Fertile spikelets sessile and pedicelled, 2 in the cluster, subequal. Pedicels present, filiform, 2–2.5 mm long, villous.

**Fertile Spikelets.** Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets lanceolate, dorsally compressed, 2.5–2.7 mm long, falling entire, deciduous from the base or with accessory branch structures. Spikelet callus bearded, base truncate. Spikelet callus hairs white, 1.5 length of spikelet.

**Glumes.** Glumes similar, firmer than fertile lemma. Lower glume lanceolate, 1 length of spikelet, membranous, much thinner above, 2-keeled. Lower glume primary vein scabrous. Lower glume surface flat, villous. Lower glume margins ciliate. Lower glume hairs 5.4 mm long. Lower glume apex acuminate. Upper glume lanceolate, 1 length of spikelet, membranous, much thinner above, without keels, 3 -veined. Upper glume margins ciliate. Upper glume apex acute.

**Florets.** Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret linear, 2.4–2.6 mm long, hyaline, 1 -veined, without lateral veins, ciliate on margins, acute. Fertile lemma linear, 2.4–2.5 mm long, hyaline, 1 -veined, 0–3 -veined, without veins. Palea absent or minute.

**Flower and Fruit.** Lodicules 2, cuneate, ciliate. Anthers 3.

$N = 30$  (1 ref TROPICOS).  $2n = 40$  (1 ref TROPICOS), or  $60$  (1 ref TROPICOS).

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

**Country /Province /State.** **China, Eastern Asia.** China South Central, Hainan, China North-Central, China Southeast, Tibet. Nansei-Shoto, Ogosawara-shoto, Taiwan. **Indian Subcontinent, Indo-China, Malesia, Papuasia.** Eastern Himalaya, India, Sri Lanka. Andaman Is, Laos, Myanmar, Thailand, Vietnam. Borneo, Java, Lesser Sunda Is, Malaya, Singapore, Moluccas, Philippines. New Guinea. Hawaii (\*).

**TDWG4.** Gansu, Hebei, Shaanxi. Anhui, Fujian, Guangdong, Guangxi, Henan, Jiangxi, Zhejiang. Guizhou, Hubei, Sichuan, Yunnan. Darjeeling, Bhutan, Sikkim. Assam, Tripura. Bihar, Karnataka. Punjab, Rajasthan, Tamilnadu, Uttah Pradesh. Himachal Pradesh.

### **Saccharum asperum** (Nees) Steud. *Syn. Pl. Gram.* 407 (1854).

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

**TYPE** from Brazil. **Basionym or Replaced Name:** *Erianthus asper* Nees, *Fl. Bras. Enum. Pl.* 2(1): 315–316 (1829). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *Martius s.n.*, Sep, Brazil: Minas Gerais: in ripa fluminis S. Francisci pone Salgado, et alibi (?; IT: BAA (fragm.), BAB (fragm., photo), US (fragm.)).

**Illustrations (Books):** L.B. Smith, D.C. Wasshausen, R.M. Klein *Flora Illustrada Catarinensis Gramineas* (1981–1982) (1151, Fig. 225 as *Erianthus asper*), B.Rosengurt, *Gramineas Uruguayas I* (1970) (176, Fig. 70 as *Erianthus asper*).

**Derivation** (Clifford & Bostock 2007): L. rough. Plants with rough pedicles or leaf-blades.

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

**Habit, Vegetative Morphology.** Perennial, caespitose. Culms erect, robust, 120–300 cm long, 10–15 mm diam. Culm-internodes distally glabrous. Culm-nodes bearded. Leaf-sheaths glabrous on surface or pilose, with tubercle-based hairs. Ligule a ciliate membrane. Leaf-blades 50–75 cm long, 15–35 mm wide. Leaf-blade surface glabrous.

**Inflorescence.** Inflorescence a panicle with branches tipped by a raceme. Peduncle 20 cm long, hirsute above. Panicle open, ovate, dense, 17–25 cm long, 7–12 cm wide. Racemes 3–8 cm long. Rhachis fragile at the nodes, subterete, ciliate on margins. Rhachis internodes linear, 2.5 mm long. Spikelets in pairs. Fertile spikelets sessile and pedicelled, 2 in the cluster, subequal. Pedicels present, linear, 2.5 mm long, ciliate.

**Fertile Spikelets.** Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets lanceolate, dorsally compressed, 4–5 mm long, falling entire, deciduous from the base or with accessory branch structures. Spikelet callus bearded, base truncate. Spikelet callus hairs white, 5–7 mm long, 1.2–1.4 length of spikelet.

**Glumes.** Glumes similar, firmer than fertile lemma. Lower glume lanceolate, 1 length of spikelet, cartilaginous, 2-keeled, 2–3 -veined. Lower glume surface flat, scabrous, rough on flanks, glabrous. Lower glume apex entire or dentate, 2 -fid, acute. Upper glume lanceolate, 1 length of spikelet, cartilaginous, 1-keeled, 1 -veined. Upper glume lateral veins absent. Upper glume apex acute.

**Florets.** Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret lanceolate, hyaline, acute. Fertile lemma lanceolate, 3 mm long, hyaline, 0–3 -veined. Lemma apex acute, awned, 1 -awned. Principal lemma awn straight, 5–7 mm long overall.

**Flower and Fruit.** Lodicules 2, cuneate. Anthers 3.

**Distribution (TDWG). Continent.** South America.

**Country /Province /State.** **Northern South America, Brazil, Southern South America.** Venezuela. Brazil West Central, Brazil Northeast, Brazil Southeast, Brazil South. Paraguay.

**TDWG4.** Goias, Minas Gerais, Rio de Janeiro, Espirito Santo, Sao Paulo Parana, Catarina, Rio Grande do Sul. Entre Rios, Misiones.

### **Saccharum balansae** (Hack.) Roberty. *Monogr. Syst. Andropog. du Globe* :357 (1960).

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

**TYPE** from Paraguay. **Basionym or Replaced Name:** *Erianthus balansae* Hack., *Monogr. Phan.* 6: 133 (1889). T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: HT: *B. Balansa* 301, 11 Nov 1874, Paraguay: Caaguazú: dans les prairies macrécyennes (W; IT: BAA (fragm.), BAB (fragm.), SI).

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

**Derivation** (Clifford & Bostock 2007): in honor of Benjamin Balansa (1825–1892) French botanist.

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

**Habit, Vegetative Morphology.** Perennial, caespitose. Rhizomes short. Culms erect, 75–100 cm long, 4-noded. Culm-internodes distally pruinose. Culm-nodes pubescent. Lateral branches lacking. Leaf-sheaths pubescent. Ligule an eciliate membrane, 4–5 mm long, lacerate, truncate. Leaf-blades 37 cm long, 7 mm wide. Leaf-blade surface pubescent, hairy on both sides. Leaf-blade apex acuminate, filiform.

**Inflorescence.** Inflorescence a panicle with branches tipped by a raceme, exerted or embraced at base by subtending leaf. Peduncle pubescent above. Panicle open, lanceolate, 10–18 cm long, 2–3.5 cm wide. Panicle axis pubescent. Racemes bearing few fertile spikelets, 3–5 fertile spikelets on each. Rhachis fragile at the nodes, angular, villous on margins. Rhachis hairs on 3 margins. Rhachis internodes linear, 3–4 mm long. Spikelets in pairs. Fertile spikelets sessile and pedicelled, 2 in the cluster, subequal. Pedicels present, linear, 3–4 mm long, ciliate.

**Fertile Spikelets.** Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets lanceolate, dorsally compressed, 7–8 mm long, falling entire, deciduous from the base or with accessory branch structures. Spikelet callus bearded, base truncate. Spikelet callus hairs 9–10 mm long, 0.9–1 length of spikelet.

**Glumes.** Glumes similar, firmer than fertile lemma. Lower glume lanceolate, 1 length of spikelet, coriaceous, much thinner on margins, 2-keeled, 1–7 -veined. Lower glume surface convex or flat, pilose, hairy above. Lower glume apex dentate, 2 -fid, mucronate. Upper glume lanceolate, 1 length of spikelet, chartaceous, with hyaline margins, 1-keeled, 3–7 -veined. Upper glume surface pubescent or pilose, hairy above. Upper glume mucronate.

**Florets.** Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret lanceolate, 5–6.5 mm long, hyaline, purple, 5–9 -veined, ciliolate on margins, fringed above, acute, mucicous or awned. Awn of lower sterile floret 2–7 mm long. Fertile lemma lanceolate, 3–4.5 mm long, hyaline, pallid or purple, 3 -veined, 0–3 -veined. Lemma margins ciliolate, hairy above. Lemma apex dentate, 2 -fid, awned, 1 -awned. Principal lemma awn from a sinus, flexuous, 15–17 mm long overall. Palea lanceolate, 3–4 mm long, hyaline, 0 -veined. Palea surface pubescent, hairy on margins. Palea apex entire or dentate, 2 -fid.

**Flower and Fruit.** Lodicules 2, cuneate, 0.5–1.5 mm long, veined, glabrous or ciliate, truncate. Anthers 2 or 3, 2–3.2 mm long. Caryopsis with adherent pericarp, 2.5–3 mm long.

**Distribution (TDWG). Continent.** South America.

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

## **Saccharum baldwinii** Spreng., nom superfl. *Syst. i.* 282 (1825).

Regarded by K as a synonym (*S. strictum*).

**Accepted by:** R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

**Illustrations (Books):** M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 25 *Poaceae*, part 2 (2003) (615).

**Derivation** (Clifford & Bostock 2007): in honor of William Baldwin (1779–1819) United States botanist.

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

**Flower and Fruit.**  $2n = 30$  (1 ref TROPICOS).

**Distribution (TDWG). Continent.** North America.

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

## **Saccharum barberi** Jeswiet. *Archeif voor de Suikerindustrie in Nederland en Nederlandsch-Indie* 12: 396(obs.). 1925.

Regarded by K as a synonym (*S. sinense*).

**Accepted by:** U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), S-L Chen et al, *Flora of China* 22 (Poaceae) (2006), J.F.Veldkamp, *Poaceae* ms (*Flora Malesiana*).

T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: Britsch-Indie (c.a. chunnee-riet),.

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

**Derivation** (Clifford & Bostock 2007): in honor of Charles Alfred Barber (1860–1933) South African-born English botanist.

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

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

**Country /Province /State.** **Western Indian ocean.** Mauritius (+). **China** (+), **Eastern Asia.** China South Central, China Southeast. Taiwan (+). **Indian Subcontinent, Malesia** (+). India. Java.

**TDWG4.** Guangxi. Yunnan.

**Saccharum beccarii** (Stapf) T.A. Cope. *Kew Bull.*, 35(3): 703 (1980).

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

**TYPE** from Indonesia. **Basionym or Replaced Name:** *Erianthus beccarii*, *Spodiopogon beccarii* Stapf, *Bull. Misc. Inform. Kew* 1898: 228 (1898). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *Beccari 398*, Sumatra: Padang Highlands (FI).

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

**Derivation** (Clifford & Bostock 2007): in honor of Odoardo Beccari (1843–1920) Italian botanist.

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

**Habit, Vegetative Morphology.** Perennial. Culms erect, robust, 150–300 cm long, 4–8 mm diam. Culm-internodes solid. Ligule an eciliate membrane. Leaf-blades lanceolate, 10–30 cm long, 20–40 mm wide.

**Inflorescence.** Inflorescence a panicle with branches tipped by a raceme. Panicle open, ovate, 20–40 cm long. Racemes 1–2 cm long, bearing 7–17 fertile spikelets on each. Rhachis fragile at the nodes, subterete. Rhachis internodes filiform, 2–3.5 mm long. Rhachis internode tip clavate. Spikelets in pairs. Fertile spikelets sessile and pedicelled, 2 in the cluster, subequal. Pedicels present, filiform, 1.3–2.3 mm long, tip widened.

**Fertile Spikelets.** Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets lanceolate, dorsally compressed, 3–4 mm long, falling entire, deciduous from the base or with accessory branch structures. Spikelet callus bearded, base truncate. Spikelet callus hairs red, 6 mm long, 1.5–2 length of spikelet.

**Glumes.** Glumes reaching apex of florets, firmer than fertile lemma. Lower glume oblong, 1 length of spikelet, membranous, without keels, 7 -veined. Lower glume lateral veins ribbed. Lower glume margins ciliate (above). Lower glume apex obtuse. Upper glume lanceolate, 1 length of spikelet, membranous, 1-keeled, 7 -veined. Upper glume lateral veins ribbed. Upper glume margins ciliate. Upper glume apex acute.

**Florets.** Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret oblong, 1 length of spikelet, membranous, 3 -veined, distinctly veined, truncate. Fertile lemma oblong, 3–4 mm long, hyaline. Lemma apex lobed, 2 -fid, incised 0.5 of lemma length, awned, 1 -awned. Principal lemma awn from a sinus, flexuous, 8–12 mm long overall, with a straight or slightly twisted column. Palea 1 length of lemma, hyaline.

**Flower and Fruit.** Anthers 3.

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

**Country /Province /State.** **Malesia.** Sumatra.

**Saccharum bengalense** Retz. *Obs.* v. 16 (1789).

**Accepted by:** R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), J.F.Veldkamp, Poaceae ms (*Flora Malesiana*) (as *S. elegans*), 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: Bengal, *Konig s.n.* (HT: LINN?).

**Illustrations (Books):** M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 25 *Poaceae*, part 2 (2003) (615).

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

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

**Habit, Vegetative Morphology.** Perennial, caespitose. Culms erect, robust, 200–400 cm long. Ligule an eciliate membrane. Leaf-blades 45–90 cm long, 3–10 mm wide, glaucous. Leaf-blade midrib widened. Leaf-blade apex acuminate.

**Inflorescence.** Inflorescence a panicle with branches tipped by a raceme. Peduncle glabrous. Panicle open, linear or oblong, 20–75 cm long, 10 cm wide. Racemes 2–4(–5) cm long. Rhachis fragile at the nodes, subterete, pilose on surface. Rhachis hairs 5–7 mm long. Rhachis internodes linear. Spikelets in pairs. Fertile spikelets

sessile and pedicelled, 2 in the cluster, heteromorphic (upper glume of pedicelled spikelet villous), subequal. Pedicels present, linear, ciliate, with 5–7 mm long hairs.

**Fertile Spikelets.** Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets lanceolate, dorsally compressed, 3.8–5.5 mm long, falling entire, deciduous from the base or with accessory branch structures. Spikelet callus bearded, base truncate. Spikelet callus hairs white, 4–9 mm long, 1.1–1.6 length of spikelet.

**Glumes.** Glumes dissimilar, firmer than fertile lemma. Lower glume lanceolate, 1 length of spikelet, membranous, much thinner above, 2-keeled. Lower glume surface flat, villous. Lower glume margins ciliate. Lower glume hairs 4–9 mm long. Lower glume apex acuminate. Upper glume lanceolate, 1 length of spikelet, membranous, much thinner above, without keels. Upper glume surface glabrous (sessile) or villous (pedicelled). Upper glume margins ciliate. Upper glume apex acute.

**Florets.** Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret elliptic or oblong, hyaline, pilose, ciliolate on margins, acute. Fertile lemma lanceolate or ovate, hyaline, 0–3 -veined. Lemma margins ciliate. Lemma apex acute, muticous or mucronate. Palea absent or minute.

**Flower and Fruit.** Lodicules 2, cuneate, ciliate. Anthers 3.

*N* = 10 (5 refs TROPICOS).

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

**Country /Province /State. Western Indian ocean.** Mauritius (\*), Madagascar (\*). **Western Asia.** Iran. **Indian Subcontinent, Indo-China, Malesia** (cult), **Papuasiasia.** India, Pakistan. Andaman Is. Java. **Caribbean.**

**TDWG4.** Meghalaya. Bihar. Orissa, Rajasthan, Uttah Pradesh, West Bengal.

Comments Recognised in *Tripidium* by Soreng et al (2012).

## **Saccharum brevibarbe** (Michx.) Pers. *Syn.* i. 103 (1805).

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

**TYPE** from USA. **Basionym or Replaced Name:** *Erianthus brevibarbis* Michx., *Fl. Bor.-Amer.* 1: 55 (1803). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *Michaux s.n.*, USA: in collibus desertis ab amnio Wabash ad Ostium Missouri 5 diebus distantibus (P).

**Illustrations (Books):** M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 25 *Poaceae*, part 2 (2003) (613 as varieties *brevibarbe* & *contortum*).

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

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

**Habit, Vegetative Morphology.** Perennial. Culms erect, robust, 150–200 cm long, 9–10 -noded. Culm-internodes distally glabrous. Culm-nodes pubescent. Leaf-sheaths glabrous on surface or pubescent. Ligule a ciliolate membrane. Leaf-blades 30–60 cm long, 10–15 mm wide, 20–30 cm long at summit of culm. Leaf-blade surface scabrous, rough adaxially.

**Inflorescence.** Inflorescence a panicle with branches tipped by a raceme. Peduncle glabrous. Panicle open, lanceolate, dense, 20–35 cm long. Racemes 3–4 cm long. Rhachis fragile at the nodes, subterete, pilose on surface. Rhachis internodes linear, 4 mm long. Spikelets in pairs. Fertile spikelets sessile and pedicelled, 2 in the cluster, subequal. Pedicels present, linear, 4 mm long, ciliate.

**Fertile Spikelets.** Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets lanceolate, dorsally compressed, 6–7 mm long, falling entire, deciduous from the base or with accessory branch structures. Spikelet callus bearded, base truncate. Spikelet callus hairs 0.66 length of spikelet.

**Glumes.** Glumes similar, firmer than fertile lemma. Lower glume lanceolate, 1 length of spikelet, cartilaginous, 2-keeled, 5 -veined. Lower glume surface flat, glabrous. Lower glume margins eciliate or ciliolate. Lower glume apex acuminate. Upper glume lanceolate, 1 length of spikelet, cartilaginous, 1-keeled, 1 -veined. Upper glume lateral veins absent. Upper glume apex acute.

**Florets.** Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret lanceolate, hyaline, acute. Fertile lemma lanceolate, 4 mm long, hyaline, 3 -veined, 0–3 -veined. Lemma apex acute, awned, 1 -awned. Principal lemma awn straight, subterete below, 15–16 mm long overall.

**Flower and Fruit.** Lodicules 2, cuneate. Anthers 3.

**Distribution (TDWG). Continent.** North America.

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

**Saccharum coarctatum** (Fernald) R.D. Webster. *Sida*, 16(3): 572: (1995).

**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:** *Erianthus coarctatus* Fernald, *Rhodora* 45(534): 246, pl. 758 (1943). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: IT: *M.L. Fernald & B.H. Long 7301*, 20 Sep 1937, USA: Virginia: Sussex Co. (US-1761137). CS.

**Illustrations (Books):** M.E.Barkworth et al, *Flora of North America north of Mexico Vol 25 Poaceae*, part 2 (2003) (613).

**Derivation** (Clifford & Bostock 2007): L. *coarcto*, compress; -*ata*, possessing; Panicles spicate-spiciform.

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

**Habit, Vegetative Morphology.** Perennial. Culms erect, 35–150 cm long. Culm-nodes glabrous or pubescent or bearded. Leaf-sheaths keeled, glabrous on surface. Ligule a ciliolate membrane. Leaf-blades 3–10 mm wide, 2–3 cm long at summit of culm. Leaf-blade surface scaberulous.

**Inflorescence.** Inflorescence a panicle with branches tipped by a raceme. Panicle open, elliptic, 20–27 cm long, 2.5–4 cm wide. Rhachis fragile at the nodes, angular, pubescent on surface. Rhachis internodes linear, 4 mm long. Spikelets in pairs. Fertile spikelets sessile and pedicelled, 2 in the cluster, subequal. Pedicels present, linear, angular, 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 lanceolate, dorsally compressed, 7–8 mm long, falling entire, deciduous from the base or with accessory branch structures. Spikelet callus bearded, base truncate. Spikelet callus hairs 0.5 length of spikelet.

**Glumes.** Glumes similar, exceeding apex of florets, firmer than fertile lemma. Lower glume lanceolate, 1 length of spikelet, cartilaginous, 2-keeled, 5 -veined. Lower glume surface flat, asperulous, glabrous or hirsute (sparsely). Lower glume apex acuminate. Upper glume lanceolate, 1 length of spikelet, cartilaginous, 1-keeled, 1 -veined. Upper glume lateral veins absent. Upper glume surface asperulous, glabrous. Upper glume apex acute.

**Florets.** Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret lanceolate, hyaline, acute. Fertile lemma lanceolate, 4–5 mm long, hyaline, 3 -veined, 0–3 -veined. Lemma apex acute, awned, 1 -awned. Principal lemma awn straight, subterete below, 15–23 mm long overall.

**Flower and Fruit.** Lodicules 2, cuneate. Anthers 3.

$2n = 60$  (1 ref TROPICOS).

**Distribution (TDWG). Continent.** North America.

**Country /Province /State.** South-central USA, Southeastern USA. Texas. Alabama, Florida, Georgia, Louisiana, North Carolina, South Carolina, Virginia.

**Saccharum contortum** (Ell.) Nutt. *Gen. Am.* i. 60 (1818).

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

**TYPE** from USA. **Basionym or Replaced Name:** *Erianthus contortus* Elliott, *Sketch Bot. S. Carolina* 1(1): 40 (1816). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *Baldwin s.n.*, USA: Georgia: Savannah (CHARL).

**Illustrations (Books):** F.W.Gould, *The Grasses of Texas* (1975) (573, Fig. 301 as *Erianthus contortus*).

**Images:** R.Darke, *Ornamental Grasses* (2004);, R.Darke, *The Encyclopaedia of Grasses for Liveable Landscapes* (2007);.

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

**Habit, Vegetative Morphology.** Perennial. Rootstock evident. Culms erect, robust, 150–250 cm long. Culm-nodes glabrous or pubescent. Leaf-sheath oral hairs scanty or ciliate. Ligule a ciliolate membrane, 1–3 mm long. Leaf-blades 40–80 cm long, 8–18 mm wide. Leaf-blade surface scabrous.

**Inflorescence.** Inflorescence a panicle with branches tipped by a raceme. Peduncle glabrous. Panicle open, lanceolate, dense, 20–50 cm long, 3–6 cm wide. Primary panicle branches ascending. Panicle axis pilose. Rhachis fragile at the nodes, subterete, pilose on surface. Rhachis internodes linear. Spikelets in pairs. Fertile spikelets sessile and pedicelled, 2 in the cluster, subequal. Pedicels present, linear, ciliate.

**Fertile Spikelets.** Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets lanceolate, dorsally compressed, 6–8 mm long, falling entire, deciduous from the base or with accessory branch structures. Spikelet callus bearded, base truncate. Spikelet callus hairs white, 5–8 mm long, 0.9–1 length of spikelet.

**Glumes.** Glumes similar, firmer than fertile lemma. Lower glume lanceolate, 1 length of spikelet, coriaceous, much thinner above, light brown, 2-keeled. Lower glume surface flat. Lower glume margins eciliate

or ciliate. Lower glume apex acuminate. Upper glume lanceolate, 1 length of spikelet, coriaceous, much thinner above, light brown, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume apex acute.

**Florets.** Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret lanceolate, hyaline, 0 -veined, without midvein, without lateral veins, acute. Fertile lemma linear, hyaline, 0 -veined, 0–3 -veined, without veins. Lemma apex awned, 1 -awned. Principal lemma awn geniculate, flat below, 15–22 mm long overall, with a straight or slightly twisted column. Palea absent or minute.

**Flower and Fruit.** Lodicules 2, cuneate. Anthers 3.

**Distribution (TDWG). Continent.** North America, South America.

**Country /Province /State.** North-central USA, South-central USA, Southeastern USA. Western South America. Colombia.

### **Saccharum exaltatum** Roxb., *appl. incert. Fl. Ind.* i. 245 (1820).

**TYPE** from India. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: A very high beautiful species, a native of valleys; .....

**Recent Synonyms:** *Imperata exaltata* (Roxb.) Brongn., *Voy. Monde* 2(2): 101 (1829) [1831].

**Illustrations (Books):** T.Koyama, *Grasses of Japan and its neighbouring regions* (1987) (as *Imperata*).

**Derivation** (Clifford & Bostock 2007): L. lofty. Culms tall.

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

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

**Country /Province /State.** Eastern Asia. Taiwan. **Indian Subcontinent, Malaysia.** India. Malaya, Philippines.

### **Saccharum fallax** Balansa. *Morot, Journ. de Bot.* iv. 80. (1890).

**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 *Narenga*).

**TYPE** from Vietnam. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: Vietnam: hills and valleys of Tu-Phap, 400–1000 m.

**Illustrations (Books):** S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 810).

**Derivation** (Clifford & Bostock 2007): L. deceptive. Closely resembling another species.

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

**Habit, Vegetative Morphology.** Perennial, caespitose. Culms erect, 100–150 cm long. Leaf-sheaths outer margin hairy. Ligule an eciliate membrane. Leaf-blades 40–80 cm long, 10–15 mm wide, stiff. Leaf-blade surface glabrous or hirsute, sparsely hairy. Leaf-blade margins scabrous. Leaf-blade apex attenuate.

**Inflorescence.** Inflorescence a panicle with branches tipped by a raceme. Peduncle pubescent above. Panicle open, oblong, dense, 30–40 cm long. Primary panicle branches appressed. Racemes 8–10 cm long. Rhachis fragile at the nodes, subterete, pilose on surface. Rhachis hairs tawny. Rhachis internodes linear. Spikelets in pairs. Fertile spikelets sessile and pedicelled, 2 in the cluster, subequal. Pedicels present, linear, ciliate, with tawny hairs.

**Fertile Spikelets.** Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets linear or oblong, dorsally compressed, 4–5 mm long, falling entire, deciduous from the base or with accessory branch structures. Spikelet callus bearded, base truncate. Spikelet callus hairs tawny, 2 mm long, 0.5 length of spikelet.

**Glumes.** Glumes dissimilar, firmer than fertile lemma. Lower glume lanceolate, 1 length of spikelet, chartaceous, much thinner above, 2-keeled, 2 -veined. Lower glume surface flat, pubescent, hairy generally. Lower glume margins ciliate. Lower glume hairs tawny. Lower glume apex truncate. Upper glume lanceolate, 1 length of spikelet, chartaceous, much thinner above, 1-keeled, 3 -veined. Upper glume apex truncate.

**Florets.** Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret lanceolate, 2.5 mm long, hyaline, ciliolate on margins, acute. Fertile lemma linear or oblong, 2 mm long, hyaline, 0–3 -veined. Lemma apex dentate, 2 -fid, mucicous or awned, 1 -awned. Principal lemma awn from a sinus, 3–7 mm long overall. Palea absent or minute.

**Flower and Fruit.** Lodicules 2, cuneate, ciliate. Anthers 3, 2 mm long.

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

**Country /Province /State.** China. China South Central, Hainan, China Southeast. **Indian Subcontinent, Indo-China, Malaysia.** India. Laos, Myanmar, Vietnam. Borneo, Sumatra.

**TDWG4.** Guangdong, Guangxi. Guizhou, Yunnan. Sikkim. Assam, Manipur, Meghalaya, Tripura.

Comments Recognised in *Narenga* by Soreng et al (2012).



## **Saccharum filifolium** Steud. *Syn. Pl. Gram.* 409 (1854).

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

**TYPE** from Nepal. **Basionym or Replaced Name:** *Saccharum macratherum*, *Erianthus filifolius*. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: Nepal:.,

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

**Derivation** (Clifford & Bostock 2007): L. filum, thread; folium, leaf. Leaf-blades very narrow.

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

**Habit, Vegetative Morphology.** Perennial, caespitose. Butt sheaths coriaceous, persistent and investing base of culm, with compacted dead sheaths. Culms erect, robust, 100–200 cm long, woody. Culm-nodes bearded. Ligule an eciliate membrane. Leaf-blades flexuous, terete, 25–50 cm long, 1–3 mm wide, stiff. Leaf-blade apex attenuate, filiform.

**Inflorescence.** Inflorescence a panicle with branches tipped by a raceme. Peduncle hirsute above. Panicle open, lanceolate, 13–20 cm long, 3 cm wide. Primary panicle branches simple. Racemes 4–8 cm long. Rhachis fragile at the nodes, subterete, pilose on surface. Rhachis hairs 4–6 mm long. Rhachis internodes linear. Spikelets in pairs. Fertile spikelets sessile and pedicelled, 2 in the cluster, subequal. Pedicels present, linear, ciliate, with 4–6 mm long hairs.

**Fertile Spikelets.** Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets lanceolate, dorsally compressed, 5–8 mm long, falling entire, deciduous from the base or with accessory branch structures. Spikelet callus bearded, base truncate. Spikelet callus hairs white, 4–8 mm long, 0.9–1 length of spikelet.

**Glumes.** Glumes similar, firmer than fertile lemma. Lower glume lanceolate, 1 length of spikelet, membranous, much thinner above, 2-keeled. Lower glume surface flat. Lower glume margins ciliate. Lower glume apex acuminate. Upper glume lanceolate, 1 length of spikelet, membranous, much thinner above, without keels. Upper glume margins ciliate. Upper glume apex acute.

**Florets.** Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret lanceolate, hyaline, ciliate on margins, acute. Fertile lemma lanceolate, hyaline, 0–3 -veined. Lemma apex dentate or lobed, 2 -fid, awned, 1 -awned. Principal lemma awn from a sinus, 10–30 mm long overall. Palea absent or minute.

**Flower and Fruit.** Lodicules 2, cuneate, ciliate. Anthers 3.

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

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

**TDWG4.** Uttah Pradesh. Himachal Pradesh, Jammu Kashmir.

## **Saccharum formosanum** (Stapf) Ohwi. *Acta Phytotax. & Geobot., Kyoto*, xi. 152 (1942).

**Accepted by:** S-L Chen et al, *Flora of China* 22 (Poaceae) (2006), T.Koyama, *Grasses of Japan and its neighboring regions* (1987).

**TYPE** from China. **Basionym or Replaced Name:** *Erianthus formosanus* Stapf, *Bull. Misc. Inform. Kew* 1898(141): 228 (1898). T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: China: Taiwan: Ape's Hill, *Playfair* 314 (HT: K).

**Illustrations (Books):** T.Koyama, *Grasses of Japan and its neighbouring regions* (1987) (412, Fig 162), C-C Hsu, *Flora of Taiwan*, Vol 5 (1978) (684 as *Erianthus formosanum* var. *pollinoides*), C-C Hsu, *Taiwan Grasses* (1975) (649, Pl. 1464 as *Erianthus formosanum* var. *pollinoides*), S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 803).

**Derivation** (Clifford & Bostock 2007): L. -ana, indicating location. For Formosa, now Taiwan.

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

**Habit, Vegetative Morphology.** Perennial, culms solitary. Rhizomes short. Butt sheaths persistent and investing base of culm, with fibrous dead sheaths. Culms erect, 90–150 cm long, 2.5–4 mm diam. Culm-internodes terete, solid, smooth, distally glabrous. Lateral branches lacking. Leaf-sheaths glabrous on surface. Leaf-sheath oral hairs ciliate. Ligule a ciliolate membrane, 0.5–1 mm long. Leaf-blades tapering towards tip and sheath, 35–90 cm long, 3–6 mm wide, indurate. Leaf-blade surface smooth or scaberulous, glabrous, hairless except near base. Leaf-blade apex acuminate.

**Inflorescence.** Inflorescence a panicle with branches tipped by a raceme. Peduncle pilose above. Panicle open, ovate, dense, 12–15 cm long, 6–9 cm wide. Panicle axis with lower internodes 4–7 cm long. Racemes flexuous, 6–13 cm long. Rhachis fragile at the nodes, subterete, hirsute on surface. Rhachis hairs 5–6 mm long. Rhachis internodes linear, 2.5–3 mm long. Spikelets in pairs. Fertile spikelets sessile and pedicelled, 2 in the cluster, subequal. Pedicels present, linear, 2.5–3 mm long, villous.

**Fertile Spikelets.** Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets lanceolate, dorsally compressed, 3–4 mm long, falling entire, deciduous from the base or with accessory branch structures. Spikelet callus bearded, base truncate. Spikelet callus hairs 3 mm long, 0.75 length of spikelet.

**Glumes.** Glumes similar, firmer than fertile lemma. Lower glume lanceolate, 1 length of spikelet, coriaceous, much thinner above, 2-keeled, 4 -veined. Lower glume surface flat, hirsute. Lower glume apex dentate, 2 -fid. Upper glume lanceolate, 1 length of spikelet, coriaceous, much thinner above, without keels, 3 -veined. Upper glume surface glabrous (sessile) or hirsute (pedicelled). Upper glume margins ciliate. Upper glume apex acute.

**Florets.** Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret lanceolate, 3–4 mm long, hyaline, pilose, hairy at apex, obtuse. Fertile lemma linear or lanceolate, hyaline, 1 -veined, 0–3 -veined, one-veined. Lemma margins ciliate, hairy above. Lemma apex dentate, 2 -fid, awned, 1 -awned. Principal lemma awn from a sinus, geniculate, 8–10 mm long overall, with twisted column. Palea lanceolate, 1 mm long, hyaline. Palea surface pilose, hairy on margins, hairy above.

**Flower and Fruit.** Anthers 2, 2 mm long.

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

**Country /Province /State.** China, Eastern Asia. China South Central, Hainan, China Southeast. Taiwan.

**TDWG4.** Fujian, Guangdong, Jiangxi, Zhejiang. Guizhou, Yunnan.

## **Saccharum giganteum** (Walt.) Pers. *Syn.* i. 103 (1805).

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

**TYPE** from USA. **Basionym or Replaced Name:** *Anthoxanthum giganteum* Walter, *Fl. Carol.* 65 (1788). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *Walter s.n.*, USA: Carolina (BM).

**Illustrations (Books):** M.E.Barkworth et al, *Flora of North America north of Mexico Vol 25 Poaceae*, part 2 (2003) (613), F.W.Gould, *The Grasses of Texas* (1975) (572, Fig. 300 as *Erianthus giganteus*), A.S.Hitchcock, *Manual of the Grasses of the West Indies* (1936) (383, Fig. 347 as *Erianthus*).

**Images:** R.Darke, *Ornamental Grasses* (2004);, R.Darke, *The Encyclopaedia of Grasses for Liveable Landscapes* (2007);.

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

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

**Habit, Vegetative Morphology.** Perennial. Rootstock evident. Culms erect, robust, 130–300 cm long. Culm-nodes bearded (2–6mm hairs). Leaf-sheaths hispid. Leaf-sheath oral hairs bearded. Ligule a ciliate membrane. Leaf-blades 50–100 cm long, 18–20 mm wide. Leaf-blade surface hispid, hairy on both sides.

**Inflorescence.** Inflorescence a panicle with branches tipped by a raceme. Peduncle hirsute above. Panicle open, oblong, dense, 15–50 cm long, 4–8 cm wide. Panicle axis villous. Rhachis fragile at the nodes, subterete, pilose on surface. Rhachis internodes linear. Spikelets in pairs. Fertile spikelets sessile and pedicelled, 2 in the cluster, subequal. Pedicels present, linear, ciliate.

**Fertile Spikelets.** Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets lanceolate, dorsally compressed, 6–8 mm long, falling entire, deciduous from the base or with accessory branch structures. Spikelet callus bearded, base truncate. Spikelet callus hairs white, 6–10 mm long, 1–1.2 length of spikelet.

**Glumes.** Glumes similar, firmer than fertile lemma. Lower glume lanceolate, 1 length of spikelet, coriaceous, much thinner above, light brown, 2-keeled. Lower glume surface flat, pilose, hairy above. Lower glume apex acuminate. Upper glume lanceolate, 1 length of spikelet, coriaceous, much thinner above, light brown, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume surface pilose, hairy above. Upper glume apex acute.

**Florets.** Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret lanceolate, hyaline, 0 -veined, without midvein, without lateral veins, acute. Fertile lemma linear, hyaline, 0 -veined, 0–3 -veined, without veins. Lemma apex awned, 1 -awned. Principal lemma awn straight or curved, subterete below, 12–25 mm long overall. Palea absent or minute.

**Flower and Fruit.** Lodicules 2, cuneate. Anthers 3.

$2n = 30$  (1 ref TROPICOS).

**Distribution (TDWG). Continent.** North America, South America.

**Country /Province /State.** North-central USA, Northeast USA, South-central USA, Southeastern USA. Oklahoma. Connecticut, New Jersey, Rhode Island. Texas. Alabama, Arkansas, Delaware, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, North Carolina, South Carolina, Tennessee, Virginia, District of

Columbia. **Caribbean, Brazil, Southern South America.** Cuba (& as *Erianthus giganteus*), Dominican Republic (& as *Erianthus giganteus*), Haiti (as *Erianthus giganteus*), Jamaica (& as *Erianthus giganteus*). Misiones.

**Saccharum griffithii** Munro ex Aitch. *Journ. Linn. Soc.* xix. 191 (1882).

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

**TYPE** from Afghanistan. **Basionym or Replaced Name:** *Erianthus griffithii* (Munro ex Boiss.) Hook. f., *Fl. Brit. Ind.* 7: 122 (1896). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Afghanistan: Schah Bilawal, *Aitchison 507* (HT: ?) not *S. griffithii* Munro ex Aitch. 1882.

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

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

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

**Habit, Vegetative Morphology.** Perennial, caespitose. Culms erect, robust, 100–200 cm long. Ligule a ciliate membrane. Leaf-blade base tapering to the midrib. Leaf-blades flat or involute, 30–60 cm long, 4–6 mm wide, glaucous. Leaf-blade midrib widened.

**Inflorescence.** Inflorescence a panicle with branches tipped by a raceme. Peduncle glabrous. Panicle open, oblong, 20–35 cm long, 4–5 cm wide. Panicle axis glabrous. Racemes 1.5–2.5 cm long, bearing few fertile spikelets, bearing 4–8 fertile spikelets on each. Rhachis fragile at the nodes, subterete, pilose on surface. Rhachis hairs 4–6 mm long. Rhachis internodes linear. Spikelets in pairs. Fertile spikelets sessile and pedicelled, 2 in the cluster, subequal. Pedicels present, linear, ciliate, with 4–6 mm long hairs.

**Fertile Spikelets.** Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets lanceolate, dorsally compressed, 4–5 mm long, falling entire, deciduous from the base or with accessory branch structures. Spikelet callus bearded, base truncate. Spikelet callus hairs yellow, 2–4 mm long, 0.5–0.9 length of spikelet.

**Glumes.** Glumes similar, firmer than fertile lemma. Lower glume lanceolate, 1 length of spikelet, membranous, much thinner above, pallid or red (at tip), 2-keeled. Lower glume surface flat, pubescent to villous. Lower glume margins ciliate. Lower glume apex acuminate. Upper glume lanceolate, 1 length of spikelet, membranous, much thinner above, without keels. Upper glume surface pubescent to villous. Upper glume margins ciliate. Upper glume apex acute.

**Florets.** Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret lanceolate, hyaline, ciliolate on margins, acute. Fertile lemma lanceolate, hyaline, 0–3 -veined. Lemma apex mucous or awned. Principal lemma awn 0–4 mm long overall. Palea absent or minute.

**Flower and Fruit.** Lodicules 2, cuneate, ciliate. Anthers 3.

*N* = 10 (1 ref TROPICOS).

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

**Country /Province /State. Western Asia, Arabian Peninsula.** Afghanistan, Iran. Gulf States, Oman.

**Indian Subcontinent.** Pakistan.

**TDWG4.** Punjab, Uttah Pradesh.

**Saccharum hildebrandtii** (Hack.) Clayton. *Kew Bull.*, 35(4): 818 (1981).

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

**TYPE** from Madagascar. **Basionym or Replaced Name:** *Andropogon hildebrandtii* Hack., *Flora* 68(8): 141 (1885). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *J.M. Hildebrandt 3755*, no date, Madagascar: Imerina Prov., in collibus apricis pr. Andrangoloaka (W; IT: K, US-76571, US-1612167 (ex B)).

**Illustrations (Journals):** *Hooker's Icones Plantarum* (t.3124 (1927), as *Lasiorrhachis*).

**Derivation** (Clifford & Bostock 2007): in honor of Johann Maria Hildebrandt (1847–1881) German-born traveller and plant collector.

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

**Habit, Vegetative Morphology.** Perennial, caespitose. Rhizomes short. Culms erect, 90–120 cm long, 2–3 -noded. Culm-internodes solid. Culm-nodes pubescent. Leaves mostly basal. Ligule an eciliate membrane, 3 mm long. Leaf-blade base with a false petiole. Leaf-blades 20–40 cm long, 8–15 mm wide. Leaf-blade margins scaberulous. Leaf-blade apex acuminate.

**Inflorescence.** Inflorescence a panicle with branches tipped by a raceme. Panicle open, oblong or ovate, 15–25 cm long. Panicle branches pubescent. Racemes 1.5–8 cm long, bearing 10–30 fertile spikelets on each.

Rhachis fragile at the nodes, subterete, ciliate on margins. Rhachis internodes filiform, 4–5 mm long. Spikelets in pairs. Fertile spikelets sessile and pedicelled or sessile, 1–2 in the cluster, subequal or the upper smaller. Companion sterile spikelets pedicelled, 0–1 in the cluster. Pedicels present, filiform, 4–5 mm long, ciliate.

**Sterile Spikelets.** Companion sterile spikelets rudimentary or well-developed, containing empty lemmas or male.

**Fertile Spikelets.** Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. 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, 5–6 mm long, falling entire, deciduous from the base or with accessory branch structures. Spikelet callus pilose, base truncate.

**Glumes.** Glumes reaching apex of florets, firmer than fertile lemma. Lower glume oblong, 1 length of spikelet, chartaceous, without keels, 7 -veined. Lower glume surface pilose. Lower glume apex acute. Upper glume lanceolate, 1 length of spikelet, chartaceous, 1-keeled, 7 -veined. Upper glume primary vein ciliate. Upper glume apex acute.

**Florets.** Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret lanceolate, 1 length of spikelet, hyaline, 2 -veined, ciliolate on margins, acute. Fertile lemma lanceolate, 2 mm long, hyaline, 3 -veined, 0–3 -veined. Lemma margins ciliolate. Lemma apex dentate, 2 -fid, awned, 1 -awned. Principal lemma awn from a sinus, flexuous, 1.5–2 mm long overall. Palea 0.25–0.5 length of lemma, hyaline.

**Flower and Fruit.** Anthers 3, 2 mm long.

**Distribution (TDWG). Continent.** Africa.

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

### **Saccharum kajkaiense** (Melderis) Melderis. *K. H. Rechinger, Fl. Iran., Lief. 70, 515 (1970).*

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

**TYPE** from Afghanistan. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Afghanistan: Kajakai, 1000 m, 29 May 1948, *M. Koeie 2159a* (HT: K; IT: BM, C) and 2159.

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

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

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

**Habit, Vegetative Morphology.** Perennial, caespitose. Culms erect, 75–125 cm long. Ligule an eciliate membrane. Leaf-blades flat or convolute, 30–60 cm long, 3–4 mm wide, glaucous. Leaf-blade midrib conspicuous. Leaf-blade surface scaberulous, rough adaxially.

**Inflorescence.** Inflorescence a panicle with branches tipped by a raceme. Peduncle hirsute above. Panicle open, lanceolate, 10–20 cm long, 2–3 cm wide. Racemes 1.5–7.5 cm long. Rhachis fragile at the nodes, subterete, villous on surface. Rhachis internodes filiform. Spikelets in pairs. Fertile spikelets sessile and pedicelled, 2 in the cluster, subequal. Pedicels present, filiform, villous.

**Fertile Spikelets.** Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets lanceolate, dorsally compressed, 4.5–8 mm long, falling entire, deciduous from the base or with accessory branch structures. Spikelet callus bearded, base truncate. Spikelet callus hairs white, 4.5–5.5 mm long, 0.75–1 length of spikelet.

**Glumes.** Glumes similar, firmer than fertile lemma. Lower glume elliptic or oblong, 4–6 mm long, 0.75–0.9 length of spikelet, coriaceous, much thinner above, 2-keeled. Lower glume surface flat. Lower glume margins ciliate. Lower glume apex acute or acuminate. Upper glume lanceolate, 5–8 mm long, 1 length of spikelet, coriaceous, much thinner above, without keels. Upper glume margins ciliate. Upper glume apex setaceously acuminate or caudate.

**Florets.** Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret elliptic, hyaline, 0–1 -veined, without midvein or with evident midvein, without lateral veins, ciliolate on margins, acute, muticous or mucronate. Fertile lemma linear or lanceolate, hyaline, 0–3 -veined. Lemma margins ciliate. Palea absent or minute.

**Flower and Fruit.** Lodicules 2, cuneate, ciliate. Anthers 3, 2.75 mm long, purple.

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

**Country /Province /State.** Western Asia, Arabian Peninsula. Afghanistan, Iran. Oman. **Indian Subcontinent.** Pakistan.

### **Saccharum kanashiroi** (Ohwi) Ohwi. *Acta Phytotax. & Geobot., Kyoto, xi. 152 (1942).*

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), T.Koyama, *Grasses of Japan and its neighboring regions* (1987).

**TYPE** from Japan. **Basionym or Replaced Name:** *Erianthus kanashiroi* Ohwi, *Acta Phytotax. Geobot.* 7: 37 (1938). T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: Hab. Riukiu: Udo, Ogimi, ins. Okinawa, *T. Kanashiro 146* (HT: Herb. Imp. Univ. Kyoto).

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

**Derivation** (Clifford & Bostock 2007): in honor of Tetsuo Kanashiro (fl. 1912) Japanese botanist, also known as Tetsuo Amano.

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

**Habit, Vegetative Morphology.** Perennial, culms solitary. Rhizomes short. Culms erect, 70–100 cm long, 5–10 mm diam., 7–9 -noded. Culm-internodes terete, solid, 15–17 cm long, smooth, distally glabrous. Leaf-sheaths longer than adjacent culm internode, wider than blade at the collar, glabrous on surface. Leaf-sheath oral hairs ciliate. Ligule a ciliolate membrane, 1–1.5 mm long. Leaf-blades tapering towards tip and sheath, 70–100 cm long, 6–10(–15) mm wide, herbaceous, stiff. Leaf-blade midrib conspicuous. Leaf-blade surface smooth, glabrous, hairless except near base. Leaf-blade margins scabrous. Leaf-blade apex attenuate.

**Inflorescence.** Inflorescence a panicle with branches tipped by a raceme. Peduncle scaberulous above. Panicle open, lanceolate or elliptic, dense, 25–35 cm long, 6–15 cm wide. Primary panicle branches 1–4 cm long. Racemes 3–10 cm long. Rhachis fragile at the nodes, subterete, hirsute on surface. Rhachis hairs 3–6 mm long. Rhachis internodes linear, 4–5 mm long. Spikelets in pairs. Fertile spikelets sessile and pedicelled, 2 in the cluster, subequal. Pedicels present, linear, 2–3 mm long, villous.

**Fertile Spikelets.** Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets lanceolate, dorsally compressed, 4–4.5 mm long, falling entire, deciduous from the base or with accessory branch structures. Spikelet callus bearded, base truncate. Spikelet callus hairs 3–6 mm long, 1–1.5 length of spikelet.

**Glumes.** Glumes similar, firmer than fertile lemma. Lower glume lanceolate, 1 length of spikelet, chartaceous, much thinner above, 2-keeled, 3–4 -veined. Lower glume surface flat, hirsute. Lower glume hairs 4–7 mm long. Lower glume apex acute. Upper glume lanceolate, 1 length of spikelet, coriaceous, much thinner above, without keels, 1(–3) -veined. Upper glume lateral veins absent or obscure. Upper glume surface glabrous (sessile) or hirsute (pedicelled). Upper glume apex acuminate.

**Florets.** Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret lanceolate, 3 mm long, hyaline, 3 -veined, acute. Fertile lemma lanceolate, 2.2–2.5 mm long, hyaline, 1 -veined, 0–3 -veined, one-veined. Lemma apex awned, 1 -awned. Principal lemma awn straight, 3–5 mm long overall. Palea absent or minute.

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

**Country /Province /State.** Eastern Asia. Nansei-Shoto.

**Saccharum longisetosum** (Anderss.) Nayar. ex Bor. *Fl. Assam*, v. App. 1. 461 (1940).

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

**TYPE** from India. **Basionym or Replaced Name:** *Erianthus longisetosus* (Anderss.) Nayar. ex Bor, *Fl. Assam*, 5. App. 1. 461 (1940). T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: ST: *Sillet s.n.*, India: *Sillet ST: F. de Silva s.n.*, India ST: *Wallich 8846*, India.

**Illustrations (Books):** H.J.Noltie, *The Grasses of Bhutan* (2000) (767, Fig. 51 as var. *hookeri*), S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 805).

**Derivation** (Clifford & Bostock 2007): *L. longus*, long; seta, bristle; -osa, abundance. Lemma long-awned.

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

**Habit, Vegetative Morphology.** Perennial, caespitose. Rhizomes elongated. Culms erect, robust, 200–250 cm long. Culm-internodes solid. Leaf-sheaths pilose, with tubercle-based hairs. Ligule a ciliolate membrane. Leaf-blades 30–100 cm long, 7–15 mm wide. Leaf-blade surface smooth, glabrous or puberulous. Leaf-blade margins scabrous. Leaf-blade apex attenuate.

**Inflorescence.** Inflorescence a panicle with branches tipped by a raceme. Peduncle glabrous. Panicle open, elliptic, dense, 15–45 cm long. Rhachis fragile at the nodes, subterete, villous on surface. Rhachis hairs tawny, 3–8 mm long. Rhachis internodes linear. Spikelets in pairs. Fertile spikelets sessile and pedicelled, 2 in the cluster, heteromorphic (pedicelled spikelet villous), subequal. Pedicels present, linear, villous, with tawny hairs, with 3–8 mm long hairs.

**Fertile Spikelets.** Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets lanceolate or oblong, dorsally compressed, 4.5–5 mm long, falling

entire, deciduous from the base or with accessory branch structures. Spikelet callus bearded, base truncate. Spikelet callus hairs tawny, 8 mm long, 2 length of spikelet.

**Glumes.** Glumes dissimilar, firmer than fertile lemma. Lower glume lanceolate, 1 length of spikelet, chartaceous, much thinner above, 2-keeled, 2–6 -veined. Lower glume surface flat, glabrous (sessile) or villous (pedicelled), hairy below. Lower glume apex emarginate or truncate. Upper glume lanceolate, 1 length of spikelet, chartaceous, much thinner above, 1-keeled, 1 -veined. Upper glume lateral veins absent. Upper glume margins ciliate. Upper glume apex acuminate.

**Florets.** Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret oblong, hyaline, ciliolate on margins, acute. Fertile lemma linear, 3.5 mm long, hyaline, 0–3 -veined. Lemma apex dentate, 2 -fid, awned, 1 -awned. Principal lemma awn from a sinus, 10–20 mm long overall. Palea absent or minute.

**Flower and Fruit.** Lodicules 2, cuneate, ciliate. Anthers 3.

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

**Country /Province /State.** **China.** China South Central, China Southeast, Tibet. **Indian Subcontinent, Indo-China.** Eastern Himalaya, India, Myanmar, Thailand.

**TDWG4.** Guangxi, Guizhou, Sichuan, Yunnan. Darjeeling, Bhutan, Sikkim. Assam, Manipur, Meghalaya, Nagaland, Tripura. Bihar. West Bengal.

### **Saccharum maximum** (Brong.) Trin. *Mem. Acad. Petersb. Ser. VI. iv.* 92 (1838).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online, J.F.Veldkamp, Poaceae ms (*Flora Malesiana*), W.D.Clayton & N.Snow, Key to Pacific Grasses (2010).

**TYPE** from Tahiti. **Basionym or Replaced Name:** *Erianthus maximus* Brongn., *Voy. Monde* 2(2): 97 (1831). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Ile de Taiti,.

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

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

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

**Habit, Vegetative Morphology.** Perennial. Culms erect, robust, 200–500 cm long. Ligule a ciliolate membrane. Leaf-blades 35–70 cm long, 20–30 mm wide.

**Inflorescence.** Inflorescence a panicle with branches tipped by a raceme. Panicle open, ovate, 30–40 cm long. Rhachis fragile at the nodes, subterete, pilose on surface. Rhachis internodes linear, 1.1–1.2 length of fertile spikelet. Spikelets in pairs. Fertile spikelets sessile and pedicelled, 2 in the cluster, subequal. Pedicels present, linear, 0.5 length of internode, ciliate.

**Fertile Spikelets.** Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets lanceolate, dorsally compressed, 4–4.5 mm long, falling entire, deciduous from the base or with accessory branch structures. Spikelet callus bearded, base truncate. Spikelet callus hairs white, 1.5–2 length of spikelet.

**Glumes.** Glumes similar, firmer than fertile lemma. Lower glume lanceolate, 1 length of spikelet, coriaceous, much thinner above, 2-keeled. Lower glume primary vein scabrous. Lower glume surface flat, glabrous. Lower glume apex acuminate. Upper glume lanceolate, 1 length of spikelet, coriaceous, much thinner above, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume apex acute.

**Florets.** Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret lanceolate, hyaline, acute, mucronate. Fertile lemma linear, hyaline, 1 -veined, 0–3 -veined, one-veined. Lemma apex awned, 1 -awned. Principal lemma awn curved, 0.5–4 mm long overall. Palea 0.5 length of lemma. Palea keels ciliolate.

**Flower and Fruit.** Lodicules 2, cuneate. Anthers 3.

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

**Country /Province /State.** **Papuasias.** Solomon Is. **Southwestern Pacific, South-central Pacific.** Fiji, New Caledonia, Samoa, Vanuatu. Cook Is, Easter Is, Marquesas, Society Is, Tubuai Is.

### **Saccharum narenga** (Nees ex Steud.) Hack. *DC., Monogr. Phan.* 6:19 (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) (as *Narenga porphyrocoma*), T.Koyama, *Grasses of Japan and its neighboring regions* (1987).

**TYPE** from Himalaya, India. **Basionym or Replaced Name:** *Narenga porphyrocoma*, *Eriochrysis narenga* Nees ex Steud., *Syn. Pl. Glumac.* 1: 411 (1855 [1854]). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: India: *Saccharum narenga* Wallich *Cat. nr.* 8856. B..

**Illustrations (Books):** C-C Hsu, *Flora of Taiwan*, Vol 5 (1978) (748 as *Narenga porphyrocoma*), C-C Hsu, *Taiwan Grasses* (1975) (as *Narenga porphyrocoma*), T.A.Cope, *Flora of Pakistan* 143: *Poaceae* (1982) (262, Fig. 27), H.J.Noltie, *The Grasses of Bhutan* (2000) (763, Fig. 50), S-L Chen et al, *Flora of China*, Illustrations, *Poaceae* (2007) (Fig. 808).

**Derivation** (Clifford & Bostock 2007): resembling *Narenga*. Origin unclear, possibly a vernacular name for the species in Bengal.

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

**Habit, Vegetative Morphology.** Perennial. Culms erect, robust, 150–350 cm long. Culm-internodes solid. Culm-nodes bearded. Leaf-sheaths hirsute. Ligule an eciliate membrane. Leaf-blade base tapering to the midrib. Leaf-blades flat or conduplicate, 50–100 cm long, 4–30 mm wide. Leaf-blade surface pilose, with tubercle-based hairs. Leaf-blade apex attenuate.

**Inflorescence.** Inflorescence a panicle with branches tipped by a raceme. Peduncle hirsute above. Panicle open, linear, dense, 20–55 cm long. Primary panicle branches 5–10 cm long. Racemes 1–2.5 cm long. Rhachis fragile at the nodes, subterete. Rhachis internodes filiform. Spikelets in pairs. Fertile spikelets sessile and pedicelled, 2 in the cluster, subequal. Pedicels present, filiform, villous, with 3–6 mm long hairs.

**Fertile Spikelets.** Spikelets comprising 1 basal sterile florets, 1 fertile floret, 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, obtuse, 2–3 mm long, falling entire, deciduous from the base or with accessory branch structures. Spikelet callus bearded, base truncate. Spikelet callus hairs white, 0.5 length of spikelet.

**Glumes.** Glumes reaching apex of florets, firmer than fertile lemma. Lower glume oblong, 1 length of spikelet, coriaceous, dark brown or red, without keels. Lower glume surface pilose. Lower glume apex obtuse. Upper glume oblong, 1 length of spikelet, coriaceous, dark brown or red, without keels. Upper glume surface pilose. Upper glume apex obtuse.

**Florets.** Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret oblong, 1 length of spikelet, hyaline, 0 -veined, without midvein, without lateral veins, ciliate on margins, obtuse. Fertile lemma oblong, 2–3 mm long, hyaline. Lemma margins ciliolate, hairy above. Lemma apex entire, muticous. Palea hyaline.

**Flower and Fruit.** Anthers 3.

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

**Country /Province /State.** **Northeast tropical Africa.** Ethiopia (inc. Eritrea). **China, Eastern Asia.** China South Central, China Southeast. Taiwan. **Indian Subcontinent, Indo-China.** Bangladesh, Eastern Himalaya, Nepal, Pakistan. Myanmar, Thailand, Vietnam.

**TDWG4.** Anhui, Fujian, Guangdong, Henan, Jiangsu, Zhejiang. Guizhou, Sichuan, Yunnan. Darjeeling, Sikkim. Assam, Meghalaya. Bihar. Madhya Pradesh, Maharashtra, Uttah Pradesh, West Bengal.

Comments Recognised in *Narenga* by Soreng et al (2012).

## **Saccharum officinarum** L. *Sp. Pl.* 54. (1753).

**Accepted by:** R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), D.Sharp, D. & B.K.Simon, *AusGrass* (2002), S-L Chen et al, *Flora of China* 22 (*Poaceae*) (2006), 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), T.Koyama, *Grasses of Japan and its neighboring regions* (1987), W.D.Clayton & N.Snow, *Key to Pacific Grasses* (2010).

T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: LT: Sloane, *Voy. Jamaica* 1: pl. 66 (1707) LT designated by Reveal et al., *Taxon* 38: 98 (1989).

**Illustrations (Books):** C-C Hsu, *Flora of Taiwan*, Vol 5 (1978) (758), C-C Hsu, *Taiwan Grasses* (1975), K.M.Matthew, *Flora Palni Hills* (1996) (861, Pl. 861), H.Duistermaat, *Field Guide to the Grasses of Singapore* (2005) (120, Fig. 121), M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 25 *Poaceae*, part 2 (2003) (615), S.W.L.Jacobs, R.D.B.Whalley & D.J.B.Wheeler., *Grasses of New South Wales*, 4th edn (2008) (363), A.S.Hitchcock, *Manual of the Grasses of the West Indies* (1936) (381, Fig. 345), E.G.Nicora, *Los Generos de Gramineas de America Austral* (1987) (512, Fig. 183), L.B. Smith, D.C. Wasshausen, R.M. Klein *Flora Illustrada Catarinensis Gramineas* (1981–1982) (1177, Fig. 229a), W.Burger, *Flora Costaricensis* 15, *Gramineae: Fieldiana Botany New Series* 4 (1980) (514, Fig 194), B.Rosengurt, *Gramineas Uruguayas I* (1970) (183, Fig. 73), R.Pilger, *Die Natürlichen Pflanzenfamilien* 14e (1940) (115, Fig. 66).

**Illustrations (Journals):** *Baileya* (23: 119, fig.2 (1991)), *Ruizia* (13:422 Fig 56c-d (1993)).

**Images:** D.Sharp & B.K.Simon, *AusGrass*. *Grasses of Australia*. CD-Rom Version 1.0. (2002);, L.Boulos, *Flora of Egypt* 4 (2005);, H.Duistermaat, *Field Guide to the Grasses of Singapore* (2005);, R.Darke, *Ornamental Grasses* (2004);, R.Darke, *The Encyclopaedia of Grasses for Liveable Landscapes* (2007);,

**Derivation** (Clifford & Bostock 2007): *L. officina*, drug shop; -arum, pertaining to. Used medicinally.

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

**Habit, Vegetative Morphology.** Perennial. Culms erect, robust, 200–600 cm long. Culm-internodes solid, distally pruinose (below nodes). Ligule a ciliolate membrane. Leaf-blades linear or lanceolate, 70–150 cm long, 30–60 mm wide, glaucous. Leaf-blade surface scaberulous, rough adaxially. Leaf-blade margins scaberulous. Leaf-blade apex acuminate.

**Inflorescence.** Inflorescence a panicle with branches tipped by a raceme. Peduncle glabrous or pubescent above. Panicle open, pyramidal, dense, 50–100 cm long. Primary panicle branches whorled at most nodes, 5–10 cm long. Panicle branches glabrous, bearded in axils. Racemes 5–10 cm long. Rhachis fragile at the nodes, subterete, glabrous on margins or ciliate on margins. Rhachis internodes filiform. Spikelets in pairs. Fertile spikelets sessile and pedicelled, 2 in the cluster, subequal. Pedicels present, filiform, 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, dorsally compressed, 3.5–4 mm long, falling entire, deciduous from the base or with accessory branch structures. Spikelet callus bearded, base truncate. Spikelet callus hairs white, 7–12 mm long, 2–3 length of spikelet.

**Glumes.** Glumes similar, firmer than fertile lemma. Lower glume lanceolate, 1 length of spikelet, membranous, much thinner above, 2-keeled, 2–4 -veined. Lower glume surface flat. Lower glume apex acute. Upper glume lanceolate, 1 length of spikelet, membranous, much thinner above, without keels, 1–3 -veined. Upper glume margins eciliate or ciliolate. Upper glume apex acute.

**Florets.** Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret lanceolate, 1 length of spikelet, hyaline, 0 -veined, without midvein, without lateral veins, ciliate on margins, acute. Fertile lemma linear, 3.5–5 mm long, hyaline, 0 -veined, 0–3 -veined, without veins. Lemma margins ciliate. Palea absent or minute.

**Flower and Fruit.** Lodicules 2, cuneate, ciliate. Anthers 3, 1.5 mm long. Caryopsis with adherent pericarp, oblong, isodiametric, 1.5 mm long. Embryo 0.15 length of caryopsis.

$N = 40$  (1 ref TROPICOS).  $2n = 30$  (1 ref TROPICOS), or 40 (1 ref TROPICOS), or 80 (1 ref TROPICOS).

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

**Region.** Southwestern Europe.

**Country /Province /State.** : Spain. **Northern Africa, Macaronesia, West tropical Africa, West-central tropical Africa, Northeast tropical Africa, East tropical Africa, South tropical Africa, Southern Africa, Western Indian ocean.** Egypt (+), Libya. Angola (\*). Mauritius (+), Madagascar (+), Rodrigues (+), Seychelles. **Western Asia, Arabian Peninsula, China (+), Eastern Asia.** Afghanistan, Iran, Iraq. China South Central, Hainan, China Southeast, Tibet. Japan, Nansei-Shoto, Ogosawara-shoto, Taiwan (+). Japan Honshu, or Shikoku, or Kyushu. **Indian Subcontinent, Indo-China, Malesia, Papuasia.** Bangladesh, India, Sri Lanka. Andaman Is, Myanmar, Vietnam. Borneo, Java, Lesser Sunda Is, Malaya, Philippines, Sulawesi, Sumatra. New Guinea, Solomon Is (\*). **Australia.** Western Australia (\*), Queensland (\*), New South Wales (\*). **Southwestern Pacific, South-central Pacific, Northwestern Pacific, North-central Pacific.** Fiji (\*), Gilbert Is (\*), Niue (\*), New Caledonia (\*), Samoa (\*), Tonga (\*), Vanuatu (\*). Cook Is (\*), Marquesas (\*), Pitcairn Is (\*), Tubuai Is (\*). Marianas (\*), Marshall Is (\*). Hawaii (\*). **South-central USA, Southeastern USA, Mexico.** Texas. Florida, Louisiana. Central Mexico, Northeast Mexico, Gulf (Mexico), Northwest Mexico, Southwest Mexico, Southeast Mexico. **Mesoamerica, Caribbean, Western South America, Brazil, Southern South America.** Bahamas, Bermuda, Cayman Is, Cuba, Dominican Republic, Haiti, Jamaica, Leeward Is, Windward Islands, Puerto Rico, Trinidad-Tobago. Colombia, Ecuador, Galapagos. Brazil Southeast.

**TDWG4.** Fujian, Guangdong, Guangxi. Sichuan, Yunnan. Bhutan. South-West. North, Central, South East. Coast. Distrito Federal, Mexico State, Morelos, Puebla. San Luis Potosi, Tamaulipas, Zacatecas. Veracruz. Sinaloa. Colima, Guerrero, Jalisco, Michoacan, Nayarit. Campeche, Chiapas, Quintana Roo, Tabasco, Yucatan.

**Saccharum perrieri** (A. Camus) Clayton. *Kew Bull.*, 35(4): 818 (1981).

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

**TYPE** from Madagascar. **Basionym or Replaced Name:** *Erianthus perrieri* A. Camus, *Bull. Soc. Bot. France* 71: 1182 (1924). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *Perrier de la Bathie 10723*, Madagascar (P).

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



**Derivation** (Clifford & Bostock 2007): in honor of Joseph Marie Henri Alfred Perrier de la Bbthie (1872–1958) French botanist.

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

**Habit, Vegetative Morphology.** Perennial. Culms erect, robust, 120–200 cm long. Culm-internodes distally glabrous. Lateral branches lacking. Leaves mostly basal. Leaf-sheaths as wide as blade at the collar, pubescent, outer margin hairy. Ligule a fringe of hairs. Leaf-blades 80 cm long, 10 mm wide, firm. Leaf-blade midrib widened. Leaf-blade surface glabrous, hairless throughout or except near base. Leaf-blade margins cartilaginous, scabrous. Leaf-blade apex attenuate.

**Inflorescence.** Inflorescence a panicle with branches tipped by a raceme. Panicle 20–25 cm long. Primary panicle branches 3–6 cm long. Rhachis fragile at the nodes, subterete, ciliate on margins. Rhachis internodes filiform, 0.5 length of fertile spikelet. Spikelets in pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, filiform, 0.75 length of fertile spikelet, ciliate.

**Sterile Spikelets.** Companion sterile spikelets well-developed, male, lanceolate, 4.5–5 mm long, as long as fertile. Companion sterile spikelet glumes 7 -veined. Companion sterile spikelet lemmas 1-awned.

**Fertile Spikelets.** Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets lanceolate, dorsally compressed, 4.5–5 mm long, falling entire, deciduous with accessory branch structures. Spikelet callus bearded, base truncate.

**Glumes.** Glumes reaching apex of florets, firmer than fertile lemma, shiny. Lower glume lanceolate, 1 length of spikelet, chartaceous, yellow, 2-keeled, 1–5 -veined. Lower glume lateral veins absent or distinct. Lower glume surface glabrous or pubescent. Lower glume apex emarginate or obtuse. Upper glume lanceolate, 1 length of spikelet, chartaceous, 1-keeled, keeled above. Upper glume margins scaberulous. Upper glume apex acute.

**Florets.** Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret lanceolate, 4.3–4.8 mm long, hyaline, ciliate on margins, acute. Fertile lemma oblong, 1.5 mm long, hyaline. Lemma margins ciliolate, hairy above. Lemma apex lobed, 2 -fid, awned, 1 -awned. Principal lemma awn from a sinus, geniculate, 9–10 mm long overall, with twisted column.

**Distribution (TDWG), Continent.** Africa.

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

## **Saccharum procerum** Roxb. *Fl. Ind.* i. 243 (1820).

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

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

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

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

**Habit, Vegetative Morphology.** Perennial, caespitose. Culms erect, robust, 400–600 cm long. Culm-internodes solid. Ligule an eciliate membrane. Leaf-blade base tapering to the midrib. Leaf-blades 75–150 cm long, 20–60 mm wide. Leaf-blade midrib conspicuous. Leaf-blade margins scabrous. Leaf-blade apex acuminate.

**Inflorescence.** Inflorescence a panicle with branches tipped by a raceme. Peduncle glabrous. Panicle open, ovate, 30–80 cm long, 15 cm wide. Primary panicle branches whorled at most nodes. Panicle axis glabrous. Panicle branches glabrous. Rhachis fragile at the nodes, subterete, villous on surface. Rhachis internodes filiform, 6–7 mm long. Spikelets in pairs. Fertile spikelets sessile and pedicelled, 2 in the cluster, subequal. Pedicels present, filiform, 2.5–3.5 mm long, villous.

**Fertile Spikelets.** Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets lanceolate, dorsally compressed, 3–4 mm long, falling entire, deciduous from the base or with accessory branch structures. Spikelet callus bearded, base truncate. Spikelet callus hairs white, 1.5 length of spikelet.

**Glumes.** Glumes similar, firmer than fertile lemma. Lower glume lanceolate, 1 length of spikelet, membranous, much thinner above, 2-keeled. Lower glume primary vein scabrous. Lower glume surface flat, villous. Lower glume margins ciliate. Lower glume apex acuminate. Upper glume lanceolate, 1 length of spikelet, membranous, much thinner above, without keels, 3 -veined. Upper glume margins ciliate. Upper glume apex acute.

**Florets.** Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret linear, 3–4 mm long, hyaline, 1 -veined, without lateral veins, ciliolate on margins, acute. Fertile lemma linear, 3–4 mm long, hyaline, 1 -veined, 0–3 -veined, without veins. Palea absent or minute.

**Flower and Fruit.** Lodicules 2, cuneate, ciliate. Anthers 3.

*N* = 20 (1 ref TROPICOS).

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

**Country /Province /State.** **China.** China Southeast, Tibet. **Indian Subcontinent, Indo-China.** Bangladesh, India, Nepal. Myanmar, Thailand.

**TDWG4.** Fujian, Guangdong, Guangxi, Hunan. Guizhou, Hubei, Yunnan. Arunachal Pradesh, Sikkim. Assam, Manipur, Meghalaya, Nagaland. West Bengal.

## **Saccharum ravennae** (L.) Murr. *Syst. ed.* XIII. 88 (1774).

**Accepted by:** R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), S-L Chen et al, *Flora of China* 22 (Poaceae) (2006), N.L.Bor, *Grasses of Burma, Ceylon, India and Pakistan* (1960) (& as *Erianthus*), T.G.Tutin et al, *Flora Europaea* 5 (1980), N.Tsvelev, *Grasses of the Soviet Union* (1983) (as *Erianthus*).

**Basionym or Replaced Name:** *Erianthus ravennae*, *Andropogon ravennae* L., *Sp. Pl. (ed. 2)* 2: 1481 (1763). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: LT: (LINN-77.4). LT cited by Cope in Cafferty et al., *Taxon* 49(2): 246 (2000); the earlier citation by Sherif & Siddiqui, *Fl. Libya* 145: 325 (1988) was ineffective as they cited another original element (see Cafferty, *Taxon* 49(2): 246 (2000)).

**Illustrations (Books):** N.N.Tsvelev, *Grasses of the Soviet Union* (1983) (1039 (689), Pl.16 as *Erianthus*), H.Jacques-Felix, *Les Graminees d'Afrique tropicale* (1962) (271, Fig. 203 as *Erianthus parviflorus*), N.Feinbrun-Dothan, *Flora Palaestina* 4 (1986) (Pl. 425), N.L.Bor, *Gramineae in Flora of Iraq* (1968) (541, Pl. 207), T.A.Cope, *Flora of Pakistan* 143: *Poaceae* (1982) (267, Fig. 28), M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 25 *Poaceae*, part 2 (2003) (615), R.Pilger, *Die Naturlichen Pflanzenfamilien* 14e (1940) (118, Fig. 68 as *Erianthus*).

**Images:** R.Darke, *Ornamental Grasses* (2004);, R.Darke, *The Encyclopaedia of Grasses for Liveable Landscapes* (2007);.

**Derivation** (Clifford & Bostock 2007): from the valley of Ravenna, Italy.

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

**Habit, Vegetative Morphology.** Perennial, caespitose. Culms erect, 100–450 cm long. Culm-internodes solid. Leaf-sheaths hirsute. Ligule a ciliate membrane. Leaf-blade base tapering to the midrib. Leaf-blades 30–100 cm long, 3–20 mm wide.

**Inflorescence.** Inflorescence a panicle with branches tipped by a raceme. Peduncle glabrous. Panicle open, elliptic, 25–70 cm long. Primary panicle branches 10–20 cm long. Racemes 1.5–3 cm long. Rhachis fragile at the nodes, subterete, villous on margins. Rhachis hairs 3–6 mm long. Rhachis internodes filiform. Spikelets in pairs. Fertile spikelets sessile and pedicelled, 2 in the cluster, subequal. 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, acuminate, 3–6(–6.5) mm long, falling entire, deciduous from the base or with accessory branch structures. Spikelet callus bearded, base truncate. Spikelet callus hairs white, 2–4 mm long, 0.5–1 length of spikelet.

**Glumes.** Glumes exceeding apex of florets, firmer than fertile lemma. Lower glume elliptic, 1 length of spikelet, membranous, 2-keeled, keeled above. Lower glume surface glabrous (sessile) or pilose (pedicelled). Lower glume apex acute. Upper glume lanceolate, 1 length of spikelet, membranous, 1-keeled, 3 -veined. Upper glume surface glabrous (sessile) or pilose (pedicelled). Upper glume apex acute.

**Florets.** Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret lanceolate, 3 mm long, 0.5–1 length of spikelet, hyaline, 1–3 -veined, ciliate on margins, acute. Fertile lemma lanceolate, 2–3 mm long, hyaline, 3 -veined, 0–3 -veined. Lemma margins eciliate or ciliolate, hairy above. Lemma apex entire, awned, 1 -awned. Principal lemma awn apical, flexuous, 2.5–10 mm long overall, clearly exerted from spikelet. Palea 0.75 length of lemma, hyaline.

**Flower and Fruit.** Anthers 3, 3 mm long.

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

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

**Country /Province /State.** : Baleares, Corsica, France, Spain. : Albania, Bulgaria, Greece, Italy, Crete, Sicily, Turkey Europe, Yugoslavia. **Northern Africa, Northeast tropical Africa.** Algeria, Libya, Morocco, Tunisia. Somalia. **Middle Asia, Caucasus, Western Asia, Arabian Peninsula, China.** Kazakhstan,

Kirgizistan, Turkmenistan, Tadjikistan, Uzbekistan. Afghanistan, Iraq. Oman. Xinjiang. **Indian Subcontinent, Indo-China.** India, Pakistan, West Himalaya. Myanmar.

**TDWG4.** Assam, Meghalaya. Bihar. Orissa, Uttah Pradesh, West Bengal.

Comments Recognised in *Tripidium* by Soreng et al (2012).

**Saccharum robustum** Brandes & Jesw. ex Grassl. *Journ. Arn. Arb.* xxvii. 234 (1946). (1946).

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

**TYPE** from Papua New Guinea. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *Jeswiet III A-E*, June 1928, Papua New Guinea: bank of the Laloki River, 27 km from Port Moresby, clone 28-NG-251 (WAG; IT: US-1817507, US-1817508, US-1817509, US-1817510, US-1817511).

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

**Derivation** (Clifford & Bostock 2007): *L. robustum*. Culms tall, or leaf-blades or spikelets large.

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

**Habit, Vegetative Morphology.** Perennial. Rhizomes elongated. Culms erect or geniculately ascending, robust, 500–1000 cm long, 20–30 mm diam. Culm-internodes solid, yellow or mid-green or purple. Culm-nodes swollen. Ligule a ciliolate membrane. Leaf-blades 120–200 cm long, 25–70 mm wide. Leaf-blade surface glabrous or puberulous.

**Inflorescence.** Inflorescence a panicle with branches tipped by a raceme. Panicle open, ovate, dense, 50–90 cm long. Panicle axis glabrous or puberulous. Panicle branches glabrous or puberulous. Rhachis fragile at the nodes, subterete. Rhachis internodes filiform, 4–7 mm long. Spikelets in pairs. Fertile spikelets sessile and pedicelled, 2 in the cluster, subequal. 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 lanceolate, dorsally compressed, 3–3.5 mm long, falling entire, deciduous from the base or with accessory branch structures. Spikelet callus bearded, base truncate. Spikelet callus hairs white, 2–3 length of spikelet.

**Glumes.** Glumes similar, firmer than fertile lemma. Lower glume lanceolate, 1 length of spikelet, membranous, 2-keeled, 2 -veined. Lower glume surface flat. Lower glume apex acuminate. Upper glume lanceolate, 1 length of spikelet, membranous, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume apex acute.

**Florets.** Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret lanceolate, hyaline, 0 -veined, without midvein, without lateral veins, acute. Fertile lemma absent. Palea absent or minute.

**Flower and Fruit.** Lodicules 2, cuneate, glabrous. Anthers 3.

*N* = 30 (1 ref TROPICOS).

**Distribution (TDWG).** Continent. Tropical Asia and Pacific.

**Country /Province /State.** **Malesia, Papuaasia.** Borneo, Sulawesi. New Guinea. **Southwestern Pacific.** Vanuatu. Hawaii (\*).

**Saccharum rufipilum** Steud. *Syn. Pl. Gram.* 409 (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) (& as *Erianthus*).

**TYPE** from Nepal. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Nepal; *Wallich 8849* (HT: K) "*Erianthus fulvus* Nees mpt. Wall Cat. 8849. Nepal."

**Illustrations (Books):** H.J.Noltie, *The Grasses of Bhutan* (2000) (767, Fig. 51), S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 806).

**Derivation** (Clifford & Bostock 2007): *L. rufus*, reddish; pilus, a hair. Spikelets surrounded by mauve-colored long hairs.

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

**Habit, Vegetative Morphology.** Perennial, caespitose. Culms erect, robust, 200–350 cm long, woody. Culm-nodes glabrous or bearded. Ligule an eciliate membrane. Leaf-blades flat or convolute, 30–60 cm long, 3–20 mm wide, stiff. Leaf-blade apex attenuate, filiform.

**Inflorescence.** Inflorescence a panicle with branches tipped by a raceme. Peduncle hirsute above. Panicle open, linear or oblong, 15–40 cm long, 4–5 cm wide. Primary panicle branches simple. Panicle axis villous. Racemes 2.5–5 cm long. Rhachis fragile at the nodes, subterete, pilose on surface. Rhachis internodes linear. Spikelets in pairs. Fertile spikelets sessile and pedicelled, 2 in the cluster, subequal. Pedicels present, linear, ciliate.

**Fertile Spikelets.** Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets lanceolate, dorsally compressed, 2.5–3.5 mm long, falling entire, deciduous from the base or with accessory branch structures. Spikelet callus bearded, base truncate. Spikelet callus hairs yellow or red, 5–10 mm long, 2–3 length of spikelet.

**Glumes.** Glumes similar, firmer than fertile lemma. Lower glume lanceolate, 1 length of spikelet, membranous, much thinner above, pallid or red (at tip), 2-keeled. Lower glume surface flat, pilose. Lower glume margins ciliate. Lower glume apex acuminate. Upper glume lanceolate, 1 length of spikelet, membranous, much thinner above, without keels. Upper glume margins ciliate. Upper glume apex acute.

**Florets.** Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret lanceolate, hyaline, ciliate on margins, acute. Fertile lemma linear, hyaline, 0–3 -veined. Lemma apex entire, awned, 1 -awned. Principal lemma awn apical, 10–20 mm long overall. Palea absent or minute.

**Flower and Fruit.** Lodicules 2, cuneate, ciliate. Anthers 3.

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

**Country /Province /State. Western Asia, China.** China South Central, China North-Central, China Southeast. **Indian Subcontinent, Indo-China.** Assam, Eastern Himalaya, India, Nepal, Pakistan, West Himalaya. Myanmar.

**TDWG4.** Gansu, Shaanxi. Henan. Guizhou, Hubei, Sichuan, Yunnan. Darjeeling, Bhutan, Sikkim. Assam, Meghalaya, Nagaland. Bihar. Madhya Pradesh, Uttah Pradesh, West Bengal. Himachal Pradesh, Jammu Kashmir.

**Saccharum sikkimense** (Hook. f.) Nayar. ex Bor. *Fl. Assam*, v. App. 1. 462 (1940).

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

**TYPE** from India. **Basionym or Replaced Name:** *Erianthus sikkimensis* Hook. f., *Fl. Brit. India* 7(21): 123 (1897 [1896]). T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: T: *Hooker s.n.*, India: Himalaya: Sikkim: Lachen Valley, 6000 ft (K).

**Illustrations (Books):** H.J.Noltie, *The Grasses of Bhutan* (2000) (767, Fig. 51).

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

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

**Habit, Vegetative Morphology.** Perennial, caespitose. Culms erect, 30–60 cm long. Ligule a ciliate membrane. Leaf-blade base tapering to the midrib. Leaf-blades 20–30 cm long, 4 mm wide, stiff. Leaf-blade midrib widened.

**Inflorescence.** Inflorescence a panicle with branches tipped by a raceme. Peduncle hirsute above. Panicle open, linear, 10–20 cm long. Primary panicle branches appressed. Panicle axis villous. Rhachis fragile at the nodes, subterete, pilose on surface. Rhachis internodes linear. Spikelets in pairs. Fertile spikelets sessile and pedicelled, 2 in the cluster, subequal. Pedicels present, linear, ciliate.

**Fertile Spikelets.** Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets lanceolate, dorsally compressed, 5 mm long, falling entire, deciduous from the base or with accessory branch structures. Spikelet callus bearded, base truncate. Spikelet callus hairs purple, 2–3 mm long, 0.5 length of spikelet.

**Glumes.** Glumes dissimilar, firmer than fertile lemma. Lower glume lanceolate, 1 length of spikelet, coriaceous, much thinner above, 2-keeled. Lower glume surface flat, pubescent, hairy generally. Lower glume apex emarginate. Upper glume lanceolate, 1 length of spikelet, chartaceous, much thinner above, 1-keeled, 3 -veined. Upper glume apex acute.

**Florets.** Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret lanceolate, hyaline, ciliolate on margins, acute. Fertile lemma linear or lanceolate, hyaline, 1 -veined, 0–3 -veined, one-veined. Lemma margins ciliolate. Lemma apex entire, awned, 1 -awned. Principal lemma awn apical, curved, 3 mm long overall. Palea absent or minute.

**Flower and Fruit.** Lodicules 2, cuneate, ciliate. Anthers 3.

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

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

**TDWG4.** Bhutan, Sikkim.

**Saccharum sinense** Roxb. *Pl. Coromand.* 3: t232 (1819).

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

al, *Flora of China* 22 (Poaceae) (2006), J.F.Veldkamp, Poaceae ms (*Flora Malesiana*), T.Koyama, *Grasses of Japan and its neighboring regions* (1987).

**Illustrations (Books):** C-C Hsu, *Flora of Taiwan*, Vol 5 (1978) (760), C-C Hsu, *Taiwan Grasses* (1975) (as *S. sinensis*).

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

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

**Habit, Vegetative Morphology.** Perennial, caespitose. Rhizomes absent. Culms robust, 150–500 cm long, 15–30 mm diam. Culm-internodes solid, white or yellow or mid-green. Culm-nodes flush with internodes or swollen. Leaf-sheaths deciduous. Ligule a ciliolate membrane. Leaf-blades 100–180 cm long, 25–60 mm wide.

**Inflorescence.** Inflorescence a panicle with branches tipped by a raceme. Panicle open, ovate, dense, 25–50 cm long. Panicle axis hirsute. Panicle branches hirsute. Rhachis fragile at the nodes, subterete. Rhachis internodes filiform. Spikelets in pairs. Fertile spikelets sessile and pedicelled, 2 in the cluster, subequal. 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 lanceolate, dorsally compressed, 3–3.5 mm long, falling entire, deciduous from the base or with accessory branch structures. Spikelet callus bearded, base truncate. Spikelet callus hairs white, 2–3 length of spikelet.

**Glumes.** Glumes similar, firmer than fertile lemma. Lower glume lanceolate, 1 length of spikelet, membranous, 2-keeled, 2 -veined. Lower glume surface flat. Lower glume apex acuminate. Upper glume lanceolate, 1 length of spikelet, membranous, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume apex acute.

**Florets.** Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret lanceolate, hyaline, 0 -veined, without midvein, without lateral veins, acute. Fertile lemma linear, hyaline, 0 -veined, without veins. Palea absent or minute.

**Flower and Fruit.** Lodicules 2, cuneate, glabrous. Anthers 3.

$2n = 110$  (1 ref TROPICOS).

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

**Country /Province /State.** **Western Indian ocean.** Mauritius (+), Madagascar (+). **China** (+), **Eastern Asia.** China South Central, Hainan, China North-Central, China Southeast. Taiwan (+). **Indian Subcontinent, Malesia, Papuasia.** Java, Malaya, Moluccas. New Guinea West Papua (Irian Jaya). New Guinea.

**TDWG4.** Shaanxi, Anhui, Fujian, Guangdong, Guangxi, Henan, Hunan, Jiangxi, Zhejiang. Guizhou, Hubei, Sichuan, Yunnan.

## **Saccharum spontaneum** L. *Mant.* ii. 183. (1771).

**Accepted by:** R.J.Soreng et al., *Catalogue of 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*) (& as *S. edule*), 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), W.D.Clayton & N.Snow, *Key to Pacific Grasses* (2010).

**TYPE** from India, Malabar. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: T: *Koenig s.n.*, ST: *van Rogen s.n.*, (L).

**Recent Synonyms:** *Saccharum edule* Hack., *Flora*, 25 II. Beibl. 3 (1842).

**Illustrations (Books):** H.Jacques-Felix, *Les Graminees d'Afrique tropicale* (1962) (270, Fig. 202), R.M.Phillip, F.T.E.A., *Gramineae* (3(1982):705, Fig. 161 as subsp. *aegypticum*), G.V.Pope et al., *Flora Zambesiaca* 10 (subsp. *aegypticum*), S.Phillips, *Poaceae* (Gramineae) in I.Hedberg & S.Edwards, *Flora of Ethiopia and Eritrea* (1995) (294, Fig. 117), L.Boulos, *Flora of Egypt* 4 (2005) (325, Pl. 96), T.A.Cope, in M.Thulin, *Poaceae* (Gramineae). *Flora of Somalia* (1995) (251, Fig. 146 as subsp. *aegypticum*), T.Koyama, *Grasses of Japan and its neighbouring regions* (1987) (415, Fig 163), C-C Hsu, *Flora of Taiwan*, Vol 5 (1978) (762), C-C Hsu, *Taiwan Grasses* (1975) (690, Pl. 1477), K.M.Matthew, *Illustrations on the Flora of Tamilnadu Carnatic* (1982) (Pl. 928 & 929), H.J.Noltie, *The Grasses of Bhutan* (2000) (763, Fig. 50), H.B.Gilliland, *Grasses of Malaya* (1971) (225, Fig. 49), H.Duistermaat, *Field Guide to the Grasses of Singapore* (2005) (117, Fig. 120), 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) (615), N.Feinbrun-Dothan, *Flora Palaestina* 4 (1986), S-L Chen et al, *Flora of China*, *Illustrations, Poaceae* (2007) (Fig. 804).

**Images:** L.Boulos, *Flora of Egypt* 4 (2005); (as subsp. *aegypticum*), H.B.Gilliland et al., *Flora of Malaya* Vol. 3 *Grasses* (1971);

**Derivation** (Clifford & Bostock 2007): L. naturally growing wild. Growing in the wild but closely related to species known in cultivation.

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

**Habit, Vegetative Morphology.** Perennial. Rhizomes elongated. Culms erect, robust, 200–400 cm long. Culm-internodes solid. Ligule a ciliolate membrane. Leaf-blade base simple or tapering to the midrib. Leaf-blades 50–90 cm long, 5–15(–40) mm wide.

**Inflorescence.** Inflorescence a panicle with branches tipped by a raceme. Peduncle hirsute above. Panicle open, ovate, dense, 25–60 cm long. Panicle axis pilose. Racemes 3–15 cm long. Rhachis fragile at the nodes, subterete, pilose on surface. Rhachis internodes linear. Spikelets in pairs. Fertile spikelets sessile and pedicelled, 2 in the cluster, subequal. Pedicels present, linear, ciliate.

**Fertile Spikelets.** Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets lanceolate, dorsally compressed, 3.5–7 mm long, falling entire, deciduous from the base or with accessory branch structures. Spikelet callus bearded, base truncate. Spikelet callus hairs white, 2–3 length of spikelet.

**Glumes.** Glumes similar, firmer than fertile lemma. Lower glume lanceolate, 1 length of spikelet, coriaceous, much thinner above, 2-keeled. Lower glume surface flat. Lower glume margins ciliate. Lower glume apex acuminate. Upper glume lanceolate, 1 length of spikelet, coriaceous, much thinner above, without keels, 1-veined. Upper glume lateral veins absent. Upper glume margins ciliate. Upper glume apex acute, mucronate.

**Florets.** Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret lanceolate, 0.5 length of spikelet, hyaline, 0-veined, without midvein, without lateral veins, acute. Fertile lemma linear, 1–2 mm long, hyaline, 0-veined, 0–3-veined, without veins. Palea absent or minute.

**Flower and Fruit.** Lodicules 2, cuneate, ciliate. Anthers 3.

$N = 27$  (1 ref TROPICOS).  $2n = 60$  (1 ref TROPICOS), or  $72$  (1 ref TROPICOS).

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

**Region. Southeastern Europe.**

**Country /Province /State.** : Sicily. **Northern Africa, West tropical Africa, West-central tropical Africa, Northeast tropical Africa, East tropical Africa, South tropical Africa, Western Indian ocean.** Egypt, Libya, Tunisia. Burkina, Ghana, Nigeria. Chad, Ethiopia (inc. Eritrea), Somalia, Sudan. Kenya, Tanzania, Uganda. Malawi. Mauritius (\*), Madagascar (\*). **Middle Asia, Western Asia, Arabian Peninsula, China, Eastern Asia.** Kirgizistan, Turkmenistan, Tadjikistan, Uzbekistan. Afghanistan, Lebanon-Syria. China South Central, Hainan, China North-Central, China Southeast, Tibet, Xinjiang. Japan, Nansei-Shoto, Ogosawara-shoto, Taiwan. Japan Honshu, or Kyushu. **Indian Subcontinent, Indo-China, Malesia, Papuasias.** Bangladesh, Eastern Himalaya, India, Pakistan, Sri Lanka, West Himalaya. Andaman Is, Cambodia, Laos, Myanmar, Thailand, Vietnam. Borneo, Java, Lesser Sunda Is, Malaya, Singapore, Moluccas, Philippines, Sumatra, Christmas I. New Guinea West Papua (Irian Jaya). New Guinea, Solomon Is. **Australia.** Northern Territory, Queensland. **Southwestern Pacific, Northwestern Pacific, North-central Pacific.** Fiji, New Caledonia, Samoa, Tonga, Vanuatu. Society Is. Caroline Is, Marianas. Hawaii (\*). **Mesoamerica, Caribbean.** Costa Rica, Panama.

**TDWG4.** Shaanxi. Anhui, Fujian, Guangdong, Guangxi, Henan, Hunan, Jiangsu, Jiangxi, Zhejiang. Guizhou, Hubei, Sichuan, Yunnan. Darjeeling, Bhutan, Sikkim. Darwin & Gulf. North.

**Saccharum strictum** (Host) Spreng. *Pugill.* 2: 16 (1815).

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

**Region. Southeastern Europe.**

**Country /Province /State.** : Albania, Bulgaria, Greece, Italy, Romania, Turkey Europe, Yugoslavia. **Western Asia.** Iran, Lebanon-Syria, Palestine, Israel & Jordan, Turkey.

Comments Recognised in *Tripidium* by Soreng et al (2012).

**Saccharum stewartii** S. Rajeshwari, R.R. Rao & A. Garg. *Sida*, 16(1): 33 (1994).

**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, Kashmir, Rupal to Gurikot: Stewart 18893 (DD holo).

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

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

**Habit, Vegetative Morphology.** Perennial, caespitose. Culms erect, robust, 200–300 cm long. Ligule a ciliate membrane. Leaf-blades 25–50 cm long, 4–6 mm wide. Leaf-blade apex attenuate.

**Inflorescence.** Inflorescence a panicle with branches tipped by a raceme. Peduncle hirsute above. Panicle open, oblong, 20 cm long. Racemes 6–7.5 cm long, bearing few fertile spikelets. Rhachis fragile at the nodes, subterete, villous on surface. Rhachis hairs 6 mm long. Rhachis internodes linear. Spikelets in pairs. Fertile spikelets sessile and pedicelled, 2 in the cluster, subequal. Pedicels present, linear, ciliate.

**Fertile Spikelets.** Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets lanceolate, dorsally compressed, 8 mm long, falling entire, deciduous from the base or with accessory branch structures. Spikelet callus bearded, base truncate. Spikelet callus hairs 6.8 mm long, 0.8–0.9 length of spikelet.

**Glumes.** Glumes similar, firmer than fertile lemma. Lower glume lanceolate, 1 length of spikelet, membranous, 2-keeled, 1–3 -veined. Lower glume primary vein scabrous. Lower glume lateral veins obscure. Lower glume surface flat, glabrous or pilose. Lower glume apex acuminate. Upper glume lanceolate, 1 length of spikelet, membranous, 1-keeled, 1–3 -veined. Upper glume primary vein scabrous. Upper glume lateral veins absent or obscure. Upper glume surface glabrous or pilose. Upper glume apex acute.

**Florets.** Basal sterile florets 1, barren, with palea. Lemma of lower sterile floret lanceolate, 3 mm long, hyaline, 3 -veined, ciliolate on margins, acute. Palea of lower sterile floret 3 mm long. Fertile lemma lanceolate, 2 mm long, hyaline, 0–3 -veined. Lemma margins ciliate. Lemma apex entire, awned. Principal lemma awn straight, 3 mm long overall. Palea absent or minute.

**Flower and Fruit.** Lodicules 2, cuneate, ciliate. Anthers 3, 2 mm long.

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

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

**Saccharum viguieri** (A. Camus) Clayton. *Kew Bull.*, 35(4): 818 (1981).

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

**TYPE** from Madagascar. **Basionym or Replaced Name:** *Erianthus viguieri* A. Camus, *Bull. Soc. Bot. France* 71: 1182 (1924). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *Viguier & Humbert 1721*, Madagascar (P).

**Illustrations (Books):** J.Bosser, *Graminees des Paturage et des Cultures a Madagascar* (1969) (as *Lasiorrhachis*).

**Derivation** (Clifford & Bostock 2007): in honor of Reni Viguier (1880–1931) French botanist who collected on Madagascar.

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

**Habit, Vegetative Morphology.** Perennial, caespitose. Rhizomes short. Butt sheaths hirsute, persistent and investing base of culm, with fibrous dead sheaths. Culms erect, 50–100 cm long. Culm-nodes pubescent. Lateral branches lacking. Leaves mostly basal. Leaf-sheaths keeled, hirsute. Ligule an eciliate membrane, 0.7–1 mm long, truncate. Leaf-blades filiform, terete, 30–70 cm long, 1–2 mm wide. Leaf-blade surface glabrous, hairless throughout or except near base.

**Inflorescence.** Inflorescence a panicle with branches tipped by a raceme. Panicle 4–12 cm long. Primary panicle branches 5–7 in number, 1.5–8 cm long. Rhachis fragile at the nodes, subterete, ciliate on margins. Rhachis internodes filiform. Spikelets in pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, filiform, ciliate.

**Sterile Spikelets.** Companion sterile spikelets rudimentary or well-developed, comprising 2 subequal glumes without lemmas or male, oblong, 2–8 mm long. Companion sterile spikelet lemmas 1-awned.

**Fertile Spikelets.** Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets oblong, dorsally compressed, 7–9.5 mm long, falling entire, deciduous with accessory branch structures. Spikelet callus pilose, base truncate.

**Glumes.** Glumes reaching apex of florets, firmer than fertile lemma. Lower glume oblong, 1 length of spikelet, chartaceous, 2-keeled, 9–11 -veined. Lower glume surface pilose. Lower glume apex truncate. Upper glume lanceolate, 1 length of spikelet, chartaceous, 1-keeled, 7 -veined. Upper glume primary vein eciliate or ciliate. Upper glume margins ciliate. Upper glume apex acute.

**Florets.** Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret lanceolate, hyaline, acute. Fertile lemma oblong, hyaline, 3 -veined, 0–3 -veined. Lemma margins ciliolate. Lemma apex lobed, 2 -fid, incised 0.33 of lemma length, awned, 1 -awned. Principal lemma awn from a sinus, geniculate, 10–15 mm long overall, with twisted column.

**Distribution (TDWG). Continent.** Africa.

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

**Saccharum villosum** Steud. *Syn. Pl. Gram.* 408 (1854).

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

**TYPE** from Brazil. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Ins. St. Catharinae, Brasil, *Urville s.n.*.

**Recent Synonyms:** *Saccharum trinii* (Hack.) S.A. Renvoize, *Kew Bull.*, 39(1): 184: (1984). *Erianthus purpureus* Swallen, *Phytologia* 14(2): 92 (1966).

**Illustrations (Books):** S.A.Renvoize, *The Grasses of Bahia*, 1984 (264, Fig. 99 as *S. trinii*), E.G.Nicora, *Los Generos de Gramineas de America Austral* (1987) (515, Fig. 184 as *Erianthus trinii*), L.B. Smith, D.C. Wasshausen, R.M. Klein *Flora Illustrada Catarinensis Gramineas* (1981–1982) (1151, Fig. 225 as *Erianthus glabrinodis* & *E. trinii*), A.L.Cabrera, *Flora de la Provincia de Buenos Aires, IV Pt 2 Gramineas* (1970) (as *Saccharum trinii*), A.Burkat, *Flora Illustrada de Entre Rios (Argentina)*, Pt II, Gramineas (1969) (452, Fig. 192 as *Erianthus trinii*).

**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 SACCHARINAE.

**Habit, Vegetative Morphology.** Perennial, caespitose. Culms erect, robust, 125–200 cm long, 5–10 mm diam. Culm-internodes solid, distally glabrous. Culm-nodes glabrous or bearded. Leaf-sheaths glabrous on surface or pilose or hispid. Ligule a ciliolate membrane, 4–7 mm long. Leaf-blades 45–75 cm long, 10–20 mm wide. Leaf-blade surface glabrous or pilose. Leaf-blade margins scabrous.

**Inflorescence.** Inflorescence a panicle with branches tipped by a raceme, embraced at base by subtending leaf. Peduncle pubescent above. Panicle open, oblong, dense, 25–35 cm long, 4–7 cm wide. Panicle axis villous. Racemes 6–12 cm long. Rhachis fragile at the nodes, subterete, ciliate on margins. Rhachis internodes linear, 4–10 mm long. Spikelets in pairs. Fertile spikelets sessile and pedicelled, 2 in the cluster, subequal. Pedicels present, linear, 2–5 mm long, ciliate.

**Fertile Spikelets.** Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets lanceolate, dorsally compressed, acuminate, 6–7 mm long, falling entire, deciduous from the base or with accessory branch structures. Spikelet callus bearded, base truncate. Spikelet callus hairs white, 8–10 mm long, 1.3–1.4 length of spikelet.

**Glumes.** Glumes similar, firmer than fertile lemma. Lower glume lanceolate, 1 length of spikelet, cartilaginous, 2-keeled, 4 -veined. Lower glume surface flat, pilose. Lower glume margins ciliate. Upper glume lanceolate, 1 length of spikelet, cartilaginous, 1-keeled, 1 -veined. Upper glume lateral veins absent. Upper glume surface pilose. Upper glume apex acute.

**Florets.** Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret lanceolate, 4.5 mm long, hyaline, acute. Fertile lemma lanceolate, 5 mm long, hyaline, 0–3 -veined. Lemma surface pubescent, hairy below. Lemma apex acute, awned, 1 -awned. Principal lemma awn straight, 6–9 mm long overall.

**Flower and Fruit.** Lodicules 2, cuneate. Anthers 3, 0.4 mm long.

**Distribution (TDWG). Continent.** North America and South America.

**Country /Province /State.** Mexico. Southeast Mexico. **Mesoamerica, Northern South America, Western South America, Brazil,** and **Southern South America.** Belize, Honduras. Guyana, Surinam, Venezuela. Bolivia, Colombia. Brazil West Central, Brazil Southeast, Brazil South. Argentina Northeast, Paraguay, Uruguay.

**TDWG4.** Bahia, Minas Gerais, Rio de Janeiro, Espirito Santo, Sao Paulo Parana, Catarina, Rio Grande do Sul. Buenos Aires, Chaco, Corrientes, Entre Rios, Formosa, Misiones, Santa Fe. Chiapas.

**Saccharum wardii** (Bor) Bor ex T.A.Cope. *Kew Bull.*, 35(3): 702 (1980).

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

**TYPE** from Myanmar. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Burma: North Triangle, kamjaw, 900 m. 2 Dec 1953, *F. Kingdon-Ward 21666* (HT: K).

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

**Derivation** (Clifford & Bostock 2007): in honor of Francis Kingdon-Ward (1885–1958) English botanist.

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

**Habit, Vegetative Morphology.** Perennial, caespitose. Culms erect, 200–300 cm long. Culm-internodes solid. Culm-nodes glabrous. Leaf-sheaths glabrous on surface or pilose. Ligule an eciliate membrane, 2 mm long, scarious. Leaf-blade base tapering to the midrib. Leaf-blades 50–100 cm long, 10–25 mm wide, glaucous. Leaf-blade surface glabrous. Leaf-blade margins scabrous. Leaf-blade apex attenuate.



**Inflorescence.** Inflorescence a panicle with branches tipped by a raceme. Panicle open, ovate, 10–20 cm long, 5–10 cm wide. Panicle axis with scattered hairs or pilose. Racemes 5–10 cm long. Rhachis fragile at the nodes, subterete, villous on margins. Rhachis internodes filiform. Spikelets in pairs. Fertile spikelets sessile and pedicelled, 2 in the cluster, subequal. Pedicels present, filiform, villous.

**Fertile Spikelets.** Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets elliptic, dorsally compressed, 4–4.5 mm long, falling entire, deciduous from the base or with accessory branch structures. Spikelet callus square, 0.5 mm long, bearded, base truncate. Spikelet callus hairs purple, 8–9 mm long, 2 length of spikelet.

**Glumes.** Glumes exceeding apex of florets, firmer than fertile lemma. Lower glume oblong, 4–4.5 mm long, 1 length of spikelet, chartaceous, 2-keeled, keeled above, 5 -veined. Lower glume margins ciliate. Lower glume apex acute. Upper glume lanceolate, 3.5 mm long, 0.75 length of spikelet, chartaceous, 1-keeled, 3 -veined. Upper glume margins ciliate. Upper glume apex acute.

**Florets.** Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret lanceolate, 3 mm long, 1 length of spikelet, hyaline, ciliate on margins, acute. Fertile lemma linear, 3 mm long, hyaline. Lemma margins ciliate. Lemma apex dentate, 2 -fid, awned, 1 -awned. Principal lemma awn from a sinus, straight, 20–25 mm long overall. Palea 0.5 mm long, 0.15 length of lemma, hyaline.

**Flower and Fruit.** Anthers 3, 2.5 mm long, purple.

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

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

**TDWG4.** Arunachal Pradesh.

**Saccharum williamsii** (Bor) Bor ex T.A.Cope. *Kew Bull.*, 35(3): 703 (1980).

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

**TYPE** from Nepal. **Basionym or Replaced Name:** *Erianthus williamsii* Bor, *Kew Bull.* 12(3): 413 (1958). T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: Nepal: NW of Gurjakhani, 2850 m, 30 Jul 1954, *Polunin, Sykes & Williams 3670* (HT: BM; IT: K).

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

**Derivation** (Clifford & Bostock 2007): in honor of Leonard Howard John Williams (1915-) British botanist.

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

**Habit, Vegetative Morphology.** Perennial, caespitose. Rhizomes short, wiry. Butt sheaths villous. Basal innovations intravaginal. Culms erect, 100–150 cm long. Culm-internodes solid. Culm-nodes glabrous. Leaf-sheath auricles erect. Ligule an eciliate membrane, 3–4 mm long. Leaf-blades 50–100 cm long, 2–5 mm wide. Leaf-blade margins scabrous. Leaf-blade apex attenuate, filiform.

**Inflorescence.** Inflorescence a panicle with branches tipped by a raceme. Peduncle glabrous. Panicle open, linear or lanceolate, 18–25 cm long. Primary panicle branches sparsely divided. Racemes 2–6 cm long. Rhachis fragile at the nodes, subterete, villous on margins. Rhachis internodes filiform, 6–7 mm long. Spikelets in pairs. Fertile spikelets sessile and pedicelled, 2 in the cluster, subequal. Pedicels present, filiform, 3 mm long, villous.

**Fertile Spikelets.** Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets elliptic or oblong, dorsally compressed, 6 mm long, falling entire, deciduous from the base or with accessory branch structures. Spikelet callus pilose, base truncate. Spikelet callus hairs white, 1–1.5 mm long, 0.15–0.33 length of spikelet.

**Glumes.** Glumes reaching apex of florets, firmer than fertile lemma. Lower glume elliptic or oblong, 1 length of spikelet, cartilaginous, 2-keeled. Lower glume surface flat, villous. Lower glume hairs dark brown (3–4mm long). Lower glume apex emarginate. Upper glume elliptic, 1 length of spikelet, membranous, 1-keeled, keeled above, 3 -veined. Upper glume surface pilose, hairy above. Upper glume apex acute, awned, 1 -awned, awn 0.5–3 mm long.

**Florets.** Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret elliptic, 5 mm long, 0.8 length of spikelet, hyaline, 0 -veined, ciliate on margins, acute. Fertile lemma elliptic or oblong, 5 mm long, hyaline. Lemma apex lobed, 2 -fid, incised 0.2–0.25 of lemma length, awned, 1 -awned. Principal lemma awn from a sinus, geniculate, 15 mm long overall, with twisted column. Column of lemma awn 4 mm long. Palea oblong, 0.6 length of lemma, hyaline.

**Flower and Fruit.** Anthers 3, 3 mm long.

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

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

**Sacciolepis africana** C.E.Hubb. & Snowden. *Kew Bull.* 1936, 294 (1936).

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

**TYPE** from Nigeria. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *Dalziel* 478, Sokoto, Nigeria (K).

**Illustrations (Books):** R.M.Phill, F.T.E.A., *Gramineae* (3:457, Fig.120), G.V.Pope et al., *Flora Zambesiaca* 10, J.Bosser, *Gramineae des Paturage et des Cultures a Madagascar* (1969) (313, Fig 116), S.Phillips, *Poaceae* (Gramineae) in I.Hedberg & S.Edwards, *Flora of Ethiopia and Eritrea* (1995) (196, Fig 81).

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

**Classification.** Subfamily Panicoideae. Tribe: Paniceae. Subtribe INCERTAE SEDIS.

**Habit, Vegetative Morphology.** Perennial. Rhizomes short. Culms decumbent, 30–180 cm long, spongy, rooting from lower nodes. Culm-internodes thin-walled. Leaf-sheaths loose. Ligule an eciliate membrane. Leaf-blades 5–40 cm long, 3–15 mm wide.

**Inflorescence.** Inflorescence a panicle. Panicle spiciform, linear, 4–30 cm long. Primary panicle branches accrescent to a central axis, with lateral stumps on axis. Panicle axis with rounded ribs. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, 1–2 mm long, tip discoid.

**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, gibbous, obtuse to subacute, 2.5–3.5 mm long, falling entire.

**Glumes.** Glumes exceeding apex of florets, thinner than fertile lemma. Lower glume orbicular, 0.3–0.4 length of spikelet, hyaline, without keels, 5–7 -veined. Lower glume apex obtuse. Upper glume elliptic, gibbous, 2.5–3.5 mm long, herbaceous, without keels, 9 -veined. Upper glume lateral veins ribbed. Upper glume apex obtuse.

**Florets.** Basal sterile florets 1, barren, with palea. Lemma of lower sterile floret similar to upper glume, elliptic, 1.1 length of fertile lemma, 1 length of spikelet, herbaceous, 9 -veined, ribbed, obtuse. Palea of lower sterile floret hyaline. Fertile lemma elliptic, dorsally compressed, 2–3 mm long, coriaceous, shiny, without keel, 5 -veined, more than 3-veined. Lemma margins involute. Lemma apex acute. Palea involute, cartilaginous.

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

**Distribution (TDWG). Continent.** Africa.

**Country /Province /State.** West tropical Africa, West-central tropical Africa, Northeast tropical Africa, East tropical Africa, South tropical Africa, Southern Africa, Western Indian ocean. Burkina, Gambia, Ghana, Ivory Coast, Liberia, Mali, Nigeria, Sierre Leone. Burundi, Central African Republic, Annobon, Principe & Sao Tome, Rwanda, DRC. Chad, Ethiopia (inc. Eritrea), Sudan. Kenya, Tanzania, Uganda. Angola, Malawi, Mozambique, Zambia, Zimbabwe. Namibia, Botswana, Kwazulu-Natal. Madagascar.

**Sacciolepis angustissima** (Hochst. ex Steud.) Kuhl. *Com. Linhas Telegr. Estr. Matto Grosso, Anexo 5, Bot.* 11:92 (1922).

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

**TYPE** from The Philippines. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: LT: *Kappler* 1499, Feb-Apr 1844, Surinam: in district Para (P; ILT: MO-3051964). LT designated by Judziewicz, *Syst. Bot.* 15: 415 (1990). ST: *H. Cuming* 1668, Phillipines: Panay (L).

**Recent Synonyms:** *Sacciolepis karsteniana* Mez, *Fedde, Repert.* 15: 123 (1913).

**Illustrations (Books):** S.A.Renvoize, *Gramineae de Bolivia* (1998) (421, Fig. 90), J.A.Steyermark et al, *Flora of the Venezuelan Guayana* Vol. 8 (2004) (261, Fig. 209), E.Judziewicz, *Flora of the Guianas*, 187. *Poaceae* (1990) (570, Fig 98).

**Illustrations (Journals):** *Systematic Botany* (15:417, Fig.2 (1990)).

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

**Classification.** Subfamily Panicoideae. Tribe: Paniceae. Subtribe INCERTAE SEDIS.

**Habit, Vegetative Morphology.** Annual, caespitose. Culms 40–60 cm long, wiry. Ligule an eciliate membrane or a ciliolate membrane, 0.2–0.4 mm long. Leaf-blades 12–16 cm long, 1.5–2.5 mm wide. Leaf-blade apex attenuate, pungent.

**Inflorescence.** Inflorescence a panicle. Peduncle 3–10 cm long. Panicle spiciform, linear, 6–12 cm long, 0.3–0.5 cm wide. Primary panicle branches accrescent to a central axis, with lateral stumps on axis. Panicle axis with rounded ribs. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, scabrous.

**Fertile Spikelets.** Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets elliptic or ovate, subterete, 1.4–1.8 mm long, falling entire.

**Glumes.** Glumes reaching apex of florets, thinner than fertile lemma. Lower glume elliptic, 1.1–1.4 mm long, 0.75 length of spikelet, hyaline, without keels, 3 -veined. Lower glume apex obtuse or acute. Upper glume lanceolate or ovate, gibbous, 1 length of spikelet, membranous, without keels, 5–7 -veined. Upper glume lateral veins ribbed. Upper glume apex acute.

**Florets.** Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret similar to upper glume, lanceolate or ovate, 1 length of spikelet, membranous, 5–7 -veined, ribbed, acute. Fertile lemma elliptic, dorsally compressed, 0.8–1 mm long, coriaceous, shiny, without keel. Lemma margins involute. Lemma apex acute. Palea involute, coriaceous.

**Distribution (TDWG). Continent.** South America.

**Country /Province /State.** Northern South America, Western South America, Brazil. French Guiana, Guyana, Surinam, Venezuela. Bolivia, Colombia. Brazil West Central, Brazil Northeast.

**TDWG4.** Roraima, Amazonas, Acre, Rondonia.

**Sacciolepis arenaria** Mimeur. *Bull. Mus. Hist. Nat. Paris*, Ser. 2, xxii. 127 (1950).

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

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

**Derivation** (Clifford & Bostock 2007): *L. arena*, sandy place; -aria, pertaining to. Of sandy habitats.

**Classification.** Subfamily Panicoideae. Tribe: Paniceae. Subtribe INCERTAE SEDIS.

**Habit, Vegetative Morphology.** Annual. Culms 20 cm long, 2–3 -noded. Culm-internodes distally pilose. Leaf-sheaths pubescent. Ligule absent. Leaf-blade surface pubescent, densely hairy.

**Inflorescence.** Inflorescence a panicle. Panicle spiciform, linear. Primary panicle branches accrescent to a central axis, with lateral stumps on axis. Panicle axis with rounded ribs. 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, laterally compressed, gibbous, 2–3 mm long, falling entire.

**Glumes.** Glumes dissimilar, reaching apex of florets, thinner than fertile lemma. Lower glume ovate, 0.33–0.5 length of spikelet, hyaline, without keels, 3–5 -veined. Lower glume surface pilose. Lower glume apex acute. Upper glume elliptic, gibbous, 1 length of spikelet, membranous, without keels, 5 -veined. Upper glume lateral veins ribbed. Upper glume surface hispidulous, hairy on veins. 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, 5 -veined, ribbed, hispidulous, hairy on veins, acute. Fertile lemma elliptic, dorsally compressed, 2–3 mm long, coriaceous, shiny, without keel. Lemma margins involute. Palea involute, coriaceous.

**Distribution (TDWG). Continent.** Africa.

**Country /Province /State.** South tropical Africa. Angola.

**Sacciolepis catumbensis** (Rendle) Stapf. *Prain, Fl. Trop. Afr.* ix. 764 (1920).

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

**TYPE** from Angola. **Basionym or Replaced Name:** *Panicum catumbense* Rendle, *Cat. Afr. Pl.* 2(1): 175 (1899). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: IT: *Welwitsch 2689*, Angola (K).

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

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

**Classification.** Subfamily Panicoideae. Tribe: Paniceae. Subtribe INCERTAE SEDIS.

**Habit, Vegetative Morphology.** Perennial, caespitose. Rhizomes short, knotty. Culms 15–70 cm long. Ligule a ciliolate membrane. Leaf-blades involute, 5–12 cm long, 2–4 mm wide.

**Inflorescence.** Inflorescence a panicle. Panicle spiciform, linear, interrupted, 2–5 cm long. Primary panicle branches accrescent to a central axis, with lateral stumps on axis. Panicle axis with rounded ribs. 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, 3–4.5 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, 7–9 -veined. Lower glume apex obtuse or acute. Upper glume ovate,

gibbous, 1 length of spikelet, chartaceous, without keels, 9 -veined. Upper glume lateral veins ribbed. Upper glume apex obtuse.

**Florets.** Basal sterile florets 1, male or barren, with palea. Lemma of lower sterile floret similar to upper glume, ovate, 1 length of spikelet, chartaceous, 9 -veined, ribbed, obtuse. Palea of lower sterile floret 0.5 length of lemma. Fertile lemma oblong, dorsally compressed, 2–2.5 mm long, coriaceous, pallid, shiny, without keel, 5 -veined, more than 3-veined. Lemma margins involute. Lemma apex acute. Palea involute, coriaceous.

**Flower and Fruit.** Anthers 3, 3 mm long.

**Distribution (TDWG). Continent.** Africa.

**Country /Province /State.** South tropical Africa. Angola, Zambia.

### **Sacciolepis chevalieri** Stapf. *Prain, Fl. Trop. Afr.* ix. 754 (1920).

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

**TYPE** from CAR, Somalia. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: ST: *Chevalier 6820*, Central African Republic: Ndellé (K, P). ST: *Chevalier 7714*, Central African Republic: Koundé (K, P). ST: *Chevalier 466*, Mali: Sanguiana to Mussaia (K, P).

**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: Paniceae. Subtribe INCERTAE SEDIS.

**Habit, Vegetative Morphology.** Perennial, caespitose. Rhizomes absent or short. Butt sheaths scarious, without ribs (or reticulation). Culms 20–100 cm long, firm. Ligule a ciliolate membrane. Leaf-blades convolute, 5–20 cm long, 1–7 mm wide.

**Inflorescence.** Inflorescence a panicle. Panicle spiciform, linear, continuous or interrupted, 2–16 cm long. Primary panicle branches accrescent to a central axis, with lateral stumps on axis. Panicle axis with rounded ribs. 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, laterally compressed, gibbous, 1.5–2.2 mm long, falling entire.

**Glumes.** Glumes reaching apex of florets, thinner than fertile lemma. Lower glume ovate, 0.5 length of spikelet, hyaline, without keels, 5 -veined. Lower glume apex obtuse. Upper glume elliptic, gibbous, 1.5–1.6 length of adjacent fertile lemma, 1 length of spikelet, membranous, without keels, 7 -veined. Upper glume lateral veins ribbed. 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, elliptic, 1 length of spikelet, membranous, 7 -veined, ribbed, pubescent, acute. Palea of lower sterile floret 1 length of lemma. Fertile lemma elliptic, dorsally compressed, 1–1.3 mm long, coriaceous, pallid, shiny, without keel, 5 -veined, more than 3-veined. Lemma margins involute. Lemma apex obtuse. Palea involute, coriaceous.

**Flower and Fruit.** Anthers 3, 1 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, Southern Africa, Western Indian ocean. Burkina, Ghana, Guinea, Mali, Nigeria, Senegal. Burundi, Central African Republic, Cameroon, DRC. Chad. Kenya, Tanzania, Uganda. Angola, Malawi, Mozambique, Zambia, Zimbabwe. Limpopo, North-West, Gauteng, Mpumalanga, Kwazulu-Natal. Madagascar.

### **Sacciolepis ciliocincta** (Pilger) Stapf. *Prain, Fl. Trop. Afr.* ix. 751 (1920).

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

**TYPE** from CAR. **Basionym or Replaced Name:** *Panicum ciliocinctum* Pilg., *Bot. Jahrb. Syst.* 33(1): 48–49 (1902). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *G.A. Schweinfurth 2420*, 1869, Central African Republic: Ghasal- Quellengebiet, im Bande der Djur, grosse Seriba-Ghattas (B; IT: K, US-1645176).

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

**Derivation** (Clifford & Bostock 2007): L. cilium, eyelid; cinctum, girdle. Lower part of leaf-sheath densely hairy.

**Classification.** Subfamily Panicoideae. Tribe: Paniceae. Subtribe INCERTAE SEDIS.

**Habit, Vegetative Morphology.** Annual. Culms erect, 20–45 cm long, spongy, 5–6 -noded. Ligule an eciliate membrane. Leaf-blades convolute, 8–20 cm long, 2–5 mm wide. Leaf-blade surface papillose.

**Inflorescence.** Inflorescence a panicle. Panicle spiciform, linear, tapering below, 2–3 cm long. Primary panicle branches accrescent to a central axis, with lateral stumps on axis. Panicle axis with rounded ribs. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Sterile Spikelets.** Basal 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 elliptic, laterally compressed, gibbous, 2.5–3.5 mm long, falling entire.

**Glumes.** Glumes reaching apex of florets, thinner than fertile lemma. Lower glume oblong, 0.5–0.6 length of spikelet, membranous, much thinner on margins, without keels, 3 -veined. Lower glume lateral veins unequally thickened (midvein thickened). Lower glume surface pubescent, hairy above. Lower glume apex acute. Upper glume oblong, gibbous, 1 length of spikelet, membranous, without keels, 7 -veined. Upper glume primary vein ciliate. Upper glume lateral veins ribbed. Upper glume margins ciliate. Upper glume apex acute.

**Florets.** Basal sterile florets 1, barren, with palea. Lemma of lower sterile floret similar to upper glume, elliptic, 1 length of spikelet, membranous, much thinner above, fenestrate (at base), 15 -veined, ribbed, with a transverse fringe of hair, acute. Fertile lemma oblong, dorsally compressed, 2 mm long, coriaceous, pallid, shiny, without keel, 5 -veined, more than 3-veined. Lemma margins involute. Lemma apex acute. Palea involute, coriaceous.

**Flower and Fruit.** Caryopsis with adherent pericarp, oblong, 1.3 mm long. Embryo 0.5–0.6 length of caryopsis. Hilum punctiform.

**Distribution (TDWG). Continent.** Africa.

**Country /Province /State.** West tropical Africa, West-central tropical Africa, Northeast tropical Africa. Burkina, Ghana, Ivory Coast, Senegal. Central African Republic, DRC. Sudan.

**Sacciolepis cingularis** Stapf. Prain, *Fl. Trop. Afr.* ix. 752 (1920).

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

**TYPE** from Chad. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: Chad, Shari, Kago Dje: *Chevalier 6658*.

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

**Derivation** (Clifford & Bostock 2007): *L. cingulum*, girdle; -aris, pertaining to. Sterile lemma with a transverse fringe of hairs.

**Classification.** Subfamily Panicoideae. Tribe: Paniceae. Subtribe INCERTAE SEDIS.

**Habit, Vegetative Morphology.** Annual. Culms geniculately ascending, 30–60 cm long, 2–4 mm diam., rooting from lower nodes. Culm-internodes 7–10 cm long, smooth, distally glabrous. Lateral branches ample. Leaf-sheaths as wide as blade at the collar, striately veined, pubescent. Ligule an eciliate membrane, 1 mm long. Leaf-blades convolute, 7–15 cm long, 2–5 mm wide. Leaf-blade venation with 4 secondary veins. Leaf-blade surface papillose, rough adaxially, puberulous. Leaf-blade apex attenuate, callose.

**Inflorescence.** Inflorescence a panicle. Panicle spiciform, linear, truncate or rounded at the ends, 1–2.5 cm long, 0.6–0.8 cm wide. Primary panicle branches accrescent to a central axis, with lateral stumps on axis. Panicle axis with rounded ribs. Spikelets solitary or in pairs. Fertile spikelets pedicelled. Pedicels present, puberulous, tip discoid.

**Sterile Spikelets.** Basal sterile spikelets 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 lanceolate, laterally compressed, gibbous, acuminate, 4 mm long, 1.5 mm wide, falling entire.

**Glumes.** Glumes reaching apex of florets, thinner than fertile lemma. Lower glume lanceolate, 0.75 length of spikelet, membranous, much thinner on margins, without keels, 3 -veined. Lower glume margins ciliate. Lower glume apex acute. Upper glume ovate, gibbous, 1 length of spikelet, membranous, without keels, 9 -veined. Upper glume lateral veins ribbed. Upper glume surface pubescent. Upper glume apex acuminate.

**Florets.** Basal sterile florets 1, male, with palea. Lemma of lower sterile floret similar to upper glume, ovate, 1 length of spikelet, membranous, 9 -veined, ribbed, with a transverse fringe of hair, bearing hairs 2 mm long, acuminate. Palea of lower sterile floret 0.75 length of lemma. Fertile lemma oblong, dorsally compressed, 2 mm long, coriaceous, pallid, shiny, without keel. Lemma margins involute. Lemma apex acute. Palea involute, coriaceous.

**Flower and Fruit.** Anthers 2, 0.8 mm long. Caryopsis with adherent pericarp.

**Distribution (TDWG). Continent.** Africa.

**Country /Province /State.** West-central tropical Africa and Northeast tropical Africa. Chad.

**Sacciolepis clatrata** Mimeur. *Bull. Soc. Bot. France*, xcv. 318 (1949).

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

**TYPE** from CAR. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: Rep. Centre Afr., Waka: *Tisserant 1713*; Rep. Centre Afr., Waka: *Tisserant 337*.

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

**Derivation** (Clifford & Bostock 2007): Hairs on upper glume and lower lemma arranged in overlapping rows.

**Classification.** Subfamily Panicoideae. Tribe: Paniceae. Subtribe INCERTAE SEDIS.

**Habit, Vegetative Morphology.** Perennial, caespitose. Culms 10–50 cm long, 2–3 -noded. Culm-internodes terete, distally glabrous. Leaf-sheaths loose. Ligule a ciliolate membrane. Leaf-blades involute.

**Inflorescence.** Inflorescence a panicle. Panicle spiciform, linear, 1–5 cm long, 0.4–0.6 cm wide. Primary panicle branches accrescent to a central axis, with lateral stumps on axis. Panicle axis with rounded ribs. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, bearing a few hairs, hairy at tip, tip discoid.

**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, laterally compressed, gibbous, 2.5 mm long, falling entire.

**Glumes.** Glumes dissimilar, reaching apex of florets, thinner than fertile lemma. Lower glume oblate, 1 mm long, 0.33 length of spikelet, hyaline, without keels, 3 -veined. Lower glume surface hirsute. Lower glume apex acute. Upper glume elliptic, gibbous, 2.5 mm long, 2 length of adjacent fertile lemma, 1 length of spikelet, membranous, much thinner above, without keels, 13 -veined. Upper glume lateral veins thickened, ribbed. Upper glume surface pubescent, hairy between veins. Upper glume margins ciliate. 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, much thinner above, 7 -veined, with thickened veins, ribbed, with veins transversely connected at apex (below) or with cross-veins (above), glabrous or pubescent, hairy between veins, acute. Fertile lemma elliptic, dorsally compressed, 1.5 mm long, coriaceous, pallid, shiny, without keel. Lemma margins involute. Palea involute, coriaceous.

**Distribution (TDWG). Continent.** Africa.

**Country /Province /State.** West-central tropical Africa. Central African Republic.

**Sacciolepis curvata** (L.) Chase. *Proc. Biol. Soc. Washington*, i. 8 (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:** *Panicum curvatum* L., *Syst. Nat. (ed. 12)* 2: 732 (1767). T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: LT: India (LINN-80.60). LT designated by Simon, *Kew Bull.* 27: 390 (1972).

**Illustrations (Books):** L.K.A. Chippindall, *Grasses and Pastures of South Africa* (1955) (357, Fig 307), J.Bosser, *Graminees des Paturage et des Cultures a Madagascar* (1969) (311, Fig 115), K.M.Mathew, *Further Illustrations on the Flora of Tamilnadu Carnatic* (1988) (pl.817).

**Illustrations (Journals):** *Hooker's Icones Plantarum* (t.3097 (1922)).

**Derivation** (Clifford & Bostock 2007): L. curved. Spikelets curved or gibbous.

**Classification.** Subfamily Panicoideae. Tribe: Paniceae. Subtribe INCERTAE SEDIS.

**Habit, Vegetative Morphology.** Perennial. Rhizomes elongated. Culms decumbent, weak, 20–75 cm long. Ligule a ciliolate membrane. Leaf-blade base broadly rounded. Leaf-blades linear or lanceolate, 3–11 cm long, 3–12 mm wide.

**Inflorescence.** Inflorescence a panicle. Panicle open or contracted, linear or lanceolate or ovate, 4–17 cm long, 1–10 cm wide. Panicle branches sinuous. 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, laterally compressed, gibbous, 2–3 mm long, falling entire.

**Glumes.** Glumes exceeding apex of florets, thinner than fertile lemma, gaping. Lower glume ovate, 0.2–0.5 mm long, 0.1–0.15 length of spikelet, hyaline, without keels, 1–3 -veined. Lower glume apex obtuse. Upper glume ovate, gibbous, 1 length of spikelet, membranous, without keels, 9–11 -veined. Upper glume lateral veins ribbed. Upper glume surface glabrous or 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, ribbed, glabrous or puberulous, acute. Palea of lower sterile floret 0.7–0.8 length of lemma. Fertile lemma elliptic, dorsally compressed, 1–1.5 mm long, indurate, yellow, shiny, without keel, 5 -veined, more than 3-veined. Lemma margins involute. Lemma apex obtuse. Palea involute, indurate.

**Flower and Fruit.** Anthers 3, 0.6–0.7 mm long. Caryopsis with adherent pericarp, ellipsoid, plano-convex, 0.8 mm long. Embryo 0.4–0.5 length of caryopsis. Hilum punctiform.

*N* = 9 (1 ref TROPICOS).

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

**Country /Province /State.** West-central tropical Africa, East tropical Africa, South tropical Africa, Southern Africa, Western Indian ocean. Kenya, Tanzania. Mozambique, Zimbabwe. Limpopo, Mpumalanga, Swaziland, Kwazulu-Natal. Madagascar, Seychelles. **Indian Subcontinent.** India, Sri Lanka.

**TDWG4.** Andhra Pradesh, Kerala. Tamilnadu, West Bengal.

### **Sacciolepis cymbiandra** Stapf. *Prain, Fl. Trob. Afr.* ix. 758 (1920).

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

**TYPE** from Guinea. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Guinee, Baffing valley: Pobeguïn 1746 (K holo).

**Illustrations (Books):** H.Jacques-Felix, *Les Graminees d'Afrique tropicale* (1962) (254, Fig. 185).

**Derivation** (Clifford & Bostock 2007): Gk. kymbe, boat; aner, man. The lower floret is male and narrowly boat-shaped.

**Classification.** Subfamily Panicoideae. Tribe: Paniceae. Subtribe INCERTAE SEDIS.

**Habit, Vegetative Morphology.** Perennial. Culms 60–100 cm long, spongy. Ligule an eciliate membrane. Leaf-blades flat or convolute, 2–15 cm long, 3–6 mm wide.

**Inflorescence.** Inflorescence a panicle. Panicle spiciform, linear, 20–40 cm long. Primary panicle branches accrescent to a central axis, with lateral stumps on axis. Panicle axis with rounded ribs. 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, compressed strongly, gibbous, 2.2–2.5 mm long, falling entire.

**Glumes.** Glumes reaching apex of florets, thinner than fertile lemma. Lower glume elliptic, 0.5 length of spikelet, membranous, without keels, 5–7 -veined. Lower glume apex obtuse. Upper glume oblong, gibbous, 1 length of spikelet, membranous, without keels, 9 -veined. Upper glume lateral veins ribbed. Upper glume apex acute.

**Florets.** Basal sterile florets 1, male, with palea. Lemma of lower sterile floret similar to upper glume, ovate, gibbous, 1 length of spikelet, membranous, 7 -veined, with thickened veins (on bulge), acuminate. Palea of lower sterile floret 1 length of lemma. Fertile lemma oblong, dorsally compressed, 1.75 mm long, coriaceous, pallid, shiny, without keel, 5 -veined, more than 3-veined. Lemma margins involute. Lemma apex acute. Palea involute, coriaceous.

**Distribution (TDWG). Continent.** Africa.

**Country /Province /State.** West tropical Africa. Ghana, Guinea-Bissau, Guinea, Ivory Coast, Nigeria, Sierre Leone.

### **Sacciolepis fenestrata** Bor. *Dansk Bot. Arkiv*, xxiii. 154 (1965).

**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, Ban Kao: *Larsen 8068* (K holo, C).

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

**Derivation** (Clifford & Bostock 2007): L. fenestra, window; -ata, possessing. The lower lemma has two hyaline patches at the base.

**Classification.** Subfamily Panicoideae. Tribe: Paniceae. Subtribe INCERTAE SEDIS.

**Habit, Vegetative Morphology.** Annual. Culms erect or geniculately ascending, 20–35 cm long. Culm-nodes glabrous. Ligule an eciliate membrane, 1 mm long. Leaf-blades 3–7 cm long, 1–2 mm wide. Leaf-blade surface glabrous. Leaf-blade margins smooth. Leaf-blade apex acuminate.

**Inflorescence.** Inflorescence a panicle. Panicle spiciform, linear or oblong, 2–3.5 cm long. Primary panicle branches accrescent to a central axis, with lateral stumps on axis. Panicle axis with rounded ribs. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, 1.5–1.75 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, laterally compressed, gibbous, 1.7 mm long, falling entire.

**Glumes.** Glumes reaching apex of florets, thinner than fertile lemma. Lower glume orbicular, 0.75 mm long, 0.5 length of spikelet, hyaline, without keels, 3 -veined. Lower glume apex obtuse. Upper glume ovate, gibbous, 1.7 mm long, 2 length of adjacent fertile lemma, 1 length of spikelet, chartaceous, much thinner above, without keels, 7 -veined. Upper glume lateral veins ribbed. Upper glume surface pubescent, hairy between veins, with tubercle-based hairs. Upper glume apex acute.

**Florets.** Basal sterile florets 1, barren, with palea. Lemma of lower sterile floret similar to upper glume, ovate, gibbous, 1 length of spikelet, chartaceous, much thinner above, fenestrate, 5–7 -veined, ribbed, pilose, hairy between veins, with tubercle-based hairs, acute. Fertile lemma elliptic, dorsally compressed, 0.9–1 mm long, chartaceous, shiny, without keel. Lemma margins involute. Lemma apex acute. Palea involute, chartaceous.

**Flower and Fruit.** Anthers 3, 0.3 mm long.

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

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

**Sacciolepis indica** (L.) Chase. *Proc. Biol. Soc. Washington*, i. 8 (1908).

**Accepted by:** R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), 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 India. **Basionym or Replaced Name:** *Aira indica* L., *Sp. Pl.* 1: 63, 1231, in errata after index (1753). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: NT: *Davidse* 7871, 22 Oct 1974, Sri Lanka: Sabaraganamuwa Province: Ratnagsura District (K; INT: MO, US). NT designated by Renvoize in Cafferty et al., *Taxon* 49(2): 244 (2000).

**Recent Synonyms:** *Sacciolepis auriculata* Stapf in Prain, *Fl. Trop. Afr.* 9: 762 (1920).

**Illustrations (Books):** J.Bosser, *Graminees des Paturage et des Cultures a Madagascar* (1969) (27, Fig. 305 & 311, Fig. 5, 112 & 115 as *S. auriculata*), T.Koyama, *Grasses of Japan and its neighbouring regions* (1987) (318, Fig 122), C-C Hsu, *Flora of Taiwan*, Vol 5 (1978) (610), C-C Hsu, *Taiwan Grasses* (1975) (599, Pl. 1445), K.M.Matthew, Further Illustrations on the *Flora of Tamilnadu Carnatic* (1988) (Pl. 818), H.J.Noltie, *The Grasses of Bhutan* (2000) (699, Fig. 39), H.B.Gilliland, *Grasses of Malaya* (1971) (153, Fig. 29 as var. *turgida*), H.Duistermaat, *Field Guide to the Grasses of Singapore* (2005) (120, Fig. 122), E.E.Henty, *A Manual of the Grasses of New Guinea* (1969), S.W.L.Jacobs, R.D.B.Whalley & D.J.B.Wheeler., *Grasses of New South Wales*, 4th edn (2008) (364), J.C.Tothill, & J.B.Hacker. *The grasses of southern Queensland* (1983) (366), T.D.Stanley & E.Ross, *Flora of South East Queensland, Gramineae* (1989) (205, Fig. 32), D.Sharp & B.K.Simon, *AusGrass*. Grasses of Australia. CD-Rom Version 1.0. (2002), W.L.Wagner et al., *Manual of the Flowering Plants of Hawai'i*, Vol. 2 (1990) (1587, Pl. 235), M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 25 *Poaceae*, part 2 (2003) (405), S.A.Renvoize, *The Grasses of Bahia*, 1984 (105, Fig. 37), G.Harling & C.Persson, *Flora of Ecuador* (2006) (78: 51, Fig. 3 (2006)), S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 718).

**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. -ica, belonging to. From India.

**Classification.** Subfamily Panicoideae. Tribe: Paniceae. Subtribe INCERTAE SEDIS.

**Habit, Vegetative Morphology.** Annual. Culms geniculately ascending or decumbent, slender, 10–100 cm long, with aerial roots from the nodes. Leaf-sheath auricles absent or erect, 0–2 mm long. Ligule a ciliate membrane. Leaf-blades 2–20 cm long, 1–7 mm wide. Leaf-blade surface ungrooved, scaberulous.

**Inflorescence.** Inflorescence a panicle. Panicle spiciform, linear or oblong, 1–13 cm long. Primary panicle branches accrescent to a central axis, with lateral stumps on axis. Panicle axis with rounded ribs. 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, 2–3 mm long, falling entire.

**Glumes.** Glumes reaching apex of florets, thinner than fertile lemma. Lower glume ovate, 0.33–0.66 length of spikelet, hyaline, without keels, 3–5 -veined. Lower glume apex acute. Upper glume elliptic, gibbous, 1.3–2 length of adjacent fertile lemma, 1 length of spikelet, membranous, without keels, 5–7 -veined. Upper glume lateral veins ribbed. Upper glume surface glabrous or pubescent. Upper glume apex acute.



**Florets.** Basal sterile florets 1, male or barren, with palea. Lemma of lower sterile floret similar to upper glume, elliptic, 1 length of spikelet, membranous, 5–7 -veined, ribbed, glabrous or pubescent, acute. Palea of lower sterile floret 0.1–0.2 length of lemma. Fertile lemma elliptic, dorsally compressed, 1–2 mm long, coriaceous, shiny, without keel, 5 -veined, more than 3-veined. Lemma margins involute. Lemma apex obtuse. Palea involute, coriaceous.

**Flower and Fruit.**  $N = 9$  (1 ref TROPICOS).

**Distribution (TDWG).** **Continent.** Africa, Temperate Asia, Tropical Asia, Australasia, Pacific, 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.** Guinea, Nigeria, Sierra Leone. Burundi, Central African Republic, DRC. Chad, Ethiopia (inc. Eritrea), Sudan. Kenya, Tanzania, Uganda. Angola, Malawi, Mozambique, Zambia, Zimbabwe. Eastern Cape. Madagascar. **China, Eastern Asia.** China South Central, Hainan, Manchuria, China North-Central, China Southeast. Japan, Korea, Nansei-Shoto, Taiwan. Japan Honshu, or Shikoku, or Kyushu. **Indian Subcontinent, Indo-China, Malesia, Papuasia.** Bangladesh, Eastern Himalaya, India, Nepal, Sri Lanka. Andaman Is, Cambodia, Laos, Myanmar, Thailand, Vietnam. Borneo, Java, Lesser Sunda Is, Malaya, Singapore, Philippines, Sulawesi, Sumatra. New Guinea. **Australia, New Zealand.** Western Australia, Northern Territory, Queensland, New South Wales. Kermadec Is, New Zealand North I. **Southwestern Pacific, South-central Pacific, Northwestern Pacific, North-central Pacific.** Fiji, New Caledonia. Marquesas, Society Is, Tubuai Is. Caroline Is, Marianas. Hawaii (\*). **South-central USA, Southeastern USA.** Texas. Florida, Georgia, Louisiana, North Carolina, South Carolina. **Mesoamerica, Caribbean, Northern South America, Brazil.** Costa Rica, Nicaragua. Trinidad-Tobago. Guyana. Brazil Southeast.

**TDWG4.** Shandong. Anhui, Fujian, Guangdong, Henan, 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. Darwin & Gulf, Victoria R & Barkly Tableland. North, Central, South East, Inland. Coast, Tablelands.

**Sacciolepis interrupta** (Willd.) Stapf. *Prain, Fl. Trop. Afr.* ix. 757 (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), 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: *Anon. s.n.*, India (B-W; IT: US-80708 (fragm. ex B-W)).

**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 (243, Pl. 42), K.M.Matthew, *Flora Palni Hills* (1996) (862, Pl. 862), K.M.Matthew, *Illustrations on the Flora of Tamilnadu Carnatic* (1982) (Pl. 930 & 931), H.J.Noltie, *The Grasses of Bhutan* (2000) (699, Fig. 39).

**Derivation** (Clifford & Bostock 2007): L. not continuous. Spikelets or inflorescence branches clustered at intervals along an axis.

**Classification.** Subfamily Panicoideae. Tribe: Paniceae. Subtribe INCERTAE SEDIS.

**Habit, Vegetative Morphology.** Perennial. Rhizomes short. Culms decumbent, 30–150 cm long, spongy, rooting from lower nodes. Culm-internodes thin-walled. Leaf-sheaths loose. Ligule an eciliate membrane. Leaf-blades 5–40 cm long, 3–15 mm wide.

**Inflorescence.** Inflorescence a panicle. Panicle spiciform, linear, 4–30 cm long. Primary panicle branches accrescent to a central axis, with lateral stumps on axis. Panicle axis with rounded ribs. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, 1–2 mm long, tip discoid.

**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, gibbous, subacute to acute, 4–4.5 mm long, falling entire.

**Glumes.** Glumes exceeding apex of florets, thinner than fertile lemma. Lower glume orbicular, 0.3–0.4 length of spikelet, hyaline, without keels, 5–7 -veined. Lower glume apex obtuse. Upper glume elliptic, gibbous, 4–4.5 mm long, herbaceous, without keels, 9 -veined. Upper glume lateral veins ribbed. Upper glume apex acute.

**Florets.** Basal sterile florets 1, barren, with palea. Lemma of lower sterile floret similar to upper glume, elliptic, 1.1 length of fertile lemma, 1 length of spikelet, herbaceous, 9 -veined, ribbed, acute. Palea of lower

sterile floret hyaline. Fertile lemma elliptic, dorsally compressed, 3–3.5 mm long, coriaceous, shiny, without keel, 5 -veined, more than 3-veined. Lemma margins involute. Lemma apex acute. Palea involute, cartilaginous.

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

$2n = 45$  (1 ref TROPICOS).

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

**Country /Province /State.** West-central tropical Africa, East tropical Africa, South tropical Africa, Southern Africa. DRC. Tanzania. Zambia, Zimbabwe. Botswana. **China.** China South Central. **Indian Subcontinent, Indo-China, Malesia.** Bangladesh, Eastern Himalaya, India, Nepal, Sri Lanka. Laos, Myanmar, Thailand, Vietnam. Borneo, Java, Malaya, Moluccas, Sumatra.

**TDWG4.** Yunnan. Sikkim. Assam, Meghalaya. Andhra Pradesh, Bihar, Kerala, Karnataka. Madhya Pradesh, Maharashtra, Orissa, Rajasthan, Tamilnadu, Uttah Pradesh, West Bengal.

**Sacciolepis leptorrhachis** Stapf. Prain, *Fl. Trop. Afr.* ix. 763 (1920).

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

**TYPE** from Angola & DRC. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Angola: *Welwitsch 2844* (BM syn); Angola, Cordo to Quisondo: *Welwitsch 7411* (BM syn); Zaire: *Vanderyst 3692* (K syn); Zaire, Kitebe: *Vanderyst 4116* (K syn).

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

**Derivation** (Clifford & Bostock 2007): Gk. leptos, narrow; rhachis, backbone; Inflorescence with a slender central axis.

**Classification.** Subfamily Panicoideae. Tribe: Paniceae. Subtribe INCERTAE SEDIS.

**Habit, Vegetative Morphology.** Perennial, caespitose. Rhizomes short. Culms 60–200 cm long. Leaf-sheath auricles erect, 1–4 mm long. Ligule a ciliolate membrane. Leaf-blades 10–40 cm long, 2–6 mm wide.

**Inflorescence.** Inflorescence a panicle. Panicle spiciform, linear, 6–20 cm long. Primary panicle branches accrescent to a central axis, with lateral stumps on axis. Panicle axis with rounded ribs. 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, 3–4.5 mm long, falling entire.

**Glumes.** Glumes reaching apex of florets, thinner than fertile lemma. Lower glume ovate, 0.5 length of spikelet, hyaline, without keels, 7 -veined. Lower glume apex acute. Upper glume oblong, gibbous, 1 length of spikelet, membranous or coriaceous, dark brown or purple, without keels, 9 -veined. Upper glume lateral veins ribbed. 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, oblong, 1 length of spikelet, hyaline or coriaceous, 9 -veined, ribbed, glabrous or pubescent, acute. Palea of lower sterile floret 1 length of lemma. Fertile lemma oblong, dorsally compressed, 2 mm long, coriaceous, pallid, shiny, without keel, 5 -veined, more than 3-veined. Lemma margins involute. Lemma apex acute. Palea involute, coriaceous.

**Distribution (TDWG).** Continent. Africa.

**Country /Province /State.** West tropical Africa, West-central tropical Africa, Northeast tropical Africa, East tropical Africa, South tropical Africa, and Southern Africa. Central African Republic, DRC.

**Sacciolepis micrococca** Mez. *Fedde, Repert.* xv. 122 (1918).

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

**TYPE** from Sudan, Nigeria, Senegal. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: ST: *Schweinfurth 2670*, Sudan: in Djurorum terra ad Seribam magnam Ghattas (B; IST: K). ST: *Barter 759*, Nigeria: ad Borgu (B; IST: K, P). ST: *Heudelot 551*, Senegal (B; IST: K, P).

**Illustrations (Books):** J.Bosser, *Graminees des Paturage et des Cultures a Madagascar* (1969) (315, Fig 117).

**Derivation** (Clifford & Bostock 2007): Gk. mikros, small; kokkos, kernel. Anthoecia very small.

**Classification.** Subfamily Panicoideae. Tribe: Paniceae. Subtribe INCERTAE SEDIS.

**Habit, Vegetative Morphology.** Annual, caespitose. Culms 15–70 cm long. Ligule a ciliolate membrane. Leaf-blades filiform, conduplicate, 4–15 cm long, 1–2 mm wide. Leaf-blade surface papillose (on veins above).

**Inflorescence.** Inflorescence a panicle. Panicle spiciform, linear, 2–15 cm long. Primary panicle branches accrescent to a central axis, with lateral stumps on axis. Panicle axis with rounded ribs. 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, laterally compressed, gibbous, 0.7–1 mm long, falling entire.

**Glumes.** Glumes reaching apex of florets, thinner than fertile lemma. Lower glume ovate, 0.33–0.66 length of spikelet, hyaline, without keels, 3 -veined. Lower glume apex acute. Upper glume elliptic, gibbous, 1 length of adjacent fertile lemma, 1 length of spikelet, membranous, without keels, 7 -veined. Upper glume lateral veins ribbed. Upper glume apex acute.

**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, 7 -veined, ribbed, acute. Palea of lower sterile floret 0–0.25 length of lemma. Fertile lemma elliptic, dorsally compressed, 0.7–1 mm long, coriaceous, pallid, shiny, without keel, 5 -veined, more than 3-veined. Lemma margins involute. Lemma apex obtuse. Palea involute, coriaceous.

**Distribution (TDWG).** Continent. Africa.

**Country /Province /State.** West tropical Africa, West-central tropical Africa, Northeast tropical Africa, East tropical Africa, South tropical Africa, Western Indian ocean. Ghana, Mali, Nigeria, Senegal, Sierre Leone. Central African Republic. Chad, Sudan. Tanzania, Uganda. Angola, Malawi, Zambia, Zimbabwe. Madagascar.

**Sacciolepis myosuroides** (R. Br.) A.Camus. Lecomte, *Fl. Gen. Indo-Chine*, vii. 460 (1922).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), D.Sharp, D. & B.K.Simon, *AusGrass* (2002), 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 Australia. **Basionym or Replaced Name:** *Panicum myosuroides* R. Br., *Prodr.* 189 (1810). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: "T" = Littora novae Hollandiae intra tropicum.", *Banks [collected on Cook's Journey by Banks]*4.

**Recent Synonyms:** *Sacciolepis huillensis* (Rendle) Stapf in Prain, *Fl. Trop. Afr.* 9. 755 (1920), p.p. *Sacciolepis delicatula* Mez, in *Fedde, Repert.* 15: 123 (1918).

**Illustrations (Books):** J.Bosser, *Graminees des Paturage et des Cultures a Madagascar* (1969) (315, Fig 117 as *S. delicatula*), K.M.Matthew, Further Illustrations on the *Flora of Tamilnadu Carnatic* (1988) (Pl. 819), H.Duistermaat, *Field Guide to the Grasses of Singapore* (2005) (120, Fig. 123), E.E.Henty, *A Manual of the Grasses of New Guinea* (1969) (164, Pl. 63), C.A.Gardner, *Flora of Western Australia*, Vol 1, Part 1, *Gramineae* (1952) (263, Pl. 76), J.R.Wheeler et al, *Flora of the Kimberley Region* (1992) (1214, Fig 344), 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. 718 as *Sacciolepis myosuroides* var. *myosuroides*).

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

**Derivation** (Clifford & Bostock 2007): Gk. mys, mouse; ourus, tail; -oides, resemblance. Inflorescence resembling the tail of a mouse.

**Classification.** Subfamily Panicoideae. Tribe: Paniceae. Subtribe INCERTAE SEDIS.

**Habit, Vegetative Morphology.** Annual, caespitose. Culms geniculately ascending or decumbent, 30–75 cm long. Culm-nodes brown. Leaf-sheaths 5.5–10 cm long, glabrous on surface. Ligule a ciliolate membrane, 0.5–1 mm long. Leaf-blades 6–15 cm long, 2–4 mm wide. Leaf-blade surface glabrous. Leaf-blade margins scaberulous.

**Inflorescence.** Inflorescence a panicle. Panicle spiciform, linear, 2–12 cm long, 0.3–0.5 cm wide. Primary panicle branches accrescent to a central axis, with lateral stumps on axis. Panicle axis with rounded ribs. 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, obtuse, 1.5–1.9 mm long, falling entire.

**Glumes.** Glumes reaching apex of florets, thinner than fertile lemma. Lower glume ovate, clasping, 0.8 mm long, 0.5 length of spikelet, membranous, without keels, 5 -veined. Lower glume apex acute. Upper glume elliptic, gibbous, 1.5 length of adjacent fertile lemma, 1 length of spikelet, membranous, with hyaline margins, without keels, 9 -veined. Upper glume lateral veins ribbed. Upper glume surface glabrous. Upper glume apex obtuse.

**Florets.** Basal sterile florets 1, barren, with palea. Lemma of lower sterile floret similar to upper glume, elliptic, 1 length of spikelet, membranous, 7 -veined, ribbed, glabrous, obtuse. Fertile lemma elliptic, dorsally compressed, 1 mm long, coriaceous, shiny, without keel, 5 -veined, more than 3-veined. Lemma margins involute. Lemma apex acute. Palea involute, coriaceous.

**Flower and Fruit.** Anthers 3, 0.6 mm long.

$N = 9$  (1 ref TROPICOS).

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

**Country /Province /State.** West-central tropical Africa, Western Indian ocean. Central African Republic, Rwanda, DRC. Madagascar. **China.** China South Central, Hainan, China Southeast, Tibet. **Indian Subcontinent, Indo-China, Malesia, Papuasia.** Bangladesh, India, Nepal, Sri Lanka. Andaman Is, Laos, Myanmar, Thailand, Vietnam. Borneo, Java, Lesser Sunda Is, Malaya, Singapore, Philippines, Sulawesi, Sumatra. New Guinea. **Australia.** Western Australia, Northern Territory, Queensland.

**TDWG4.** Fujian, Guangdong, Guangxi. Guizhou, Yunnan. Arunachal Pradesh, Sikkim. Assam, Manipur, Meghalaya. Bihar, Kerala, Karnataka. Madhya Pradesh, Orissa, Tamilnadu, Uttah Pradesh, West Bengal. Kimberley. Darwin & Gulf, Victoria R & Barkly Tableland. North.

**Sacciolepis myuros** (Lam.) Chase. *Proc. Biol. Soc. Wash.* 21:7 (1908).

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

**TYPE** from French Guiana. **Basionym or Replaced Name:** *Panicum myuros* Lam., *Tabl. Encycl.* 1: 172 (1791). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *D. LeBlond s.n.*, no date, French Guiana (P-LA; IT: B-W, US-80766 (fragm. ex P-LA & photo)). Collector published as Richard.

**Illustrations (Books):** S.A.Renvoize, *Gramineas de Bolivia* (1998) (421, Fig. 90), S.A.Renvoize, *The Grasses of Bahia*, 1984 (107, Fig. 38), W.Burger, *Flora Costaricensis* 15, Gramineae: *Fieldiana Botany New Series* 4 (1980) (515, Fig 195), E.Judziewicz, *Flora of the Guianas*, 187. *Poaceae* (1990) (Fig.98).

**Illustrations (Journals):** *Ruizia* (13:328, Fig 40g-i (1993)).

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

**Classification.** Subfamily Panicoideae. Tribe: Paniceae. Subtribe INCERTAE SEDIS.

**Habit, Vegetative Morphology.** Perennial, caespitose. Culms erect, 20–50 cm long, compressible, without nodal roots or rooting from lower nodes. Culm-nodes glabrous. Ligule an eciliate membrane, 1–2.5 mm long. Leaf-blades 15–25 cm long, 2–5 mm wide. Leaf-blade surface pubescent, sparsely hairy, hairy adaxially.

**Inflorescence.** Inflorescence a panicle. Peduncle 9–18 cm long. Panicle spiciform, linear or oblong, 4–18 cm long, 0.5–0.8 cm wide. Primary panicle branches accrescent to a central axis, with lateral stumps on axis. Panicle axis with rounded ribs. 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, 2–2.2 mm long, falling entire.

**Glumes.** Glumes exceeding apex of florets, thinner than fertile lemma. Lower glume ovate, 0.9–1.2 mm long, 0.5 length of spikelet, hyaline, without keels, 3 -veined. Lower glume apex obtuse. Upper glume ovate, gibbous, 2–2.2 length of adjacent fertile lemma, 1 length of spikelet, membranous, without keels, 7 -veined. Upper glume lateral veins ribbed. Upper glume margins ciliate (above). Upper glume apex acute.

**Florets.** Basal sterile florets 1, barren, with palea. Lemma of lower sterile floret similar to upper glume, ovate, gibbous, 1 length of spikelet, membranous, 7 -veined, ribbed, ciliate on margins, fringed above, acute. Palea of lower sterile floret 0.5 length of lemma. Fertile lemma ovate, dorsally compressed, 1–1.2 mm long, chartaceous, shiny, without keel. Lemma margins involute. Lemma apex acute. Palea involute, chartaceous.

**Flower and Fruit.** Anthers 3, 0.5–0.7 mm long, purple.

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

**Country /Province /State.** Indo-China. Vietnam. **Mexico.** Central Mexico, Gulf (Mexico), Southwest Mexico. **Mesoamerica, Caribbean, Northern South America, Western South America, Brazil, Southern South America.** Belize, Costa Rica, Guatemala, Honduras, Panama. Cuba, Dominican Republic, Trinidad-Tobago. French Guiana, Guyana, Surinam, Venezuela. Bolivia, Colombia, Peru. Brazil West Central, Brazil Northeast, Brazil Southeast, Brazil North. Paraguay.

**TDWG4.** Para, Amapa, Goias, Bahia, Maranhao, Piaui, Minas Gerais, Rio de Janeiro, Espirito Santo. Mexico State. Veracruz. Jalisco, Nayarit, Oaxaca. Chiapas.

**Sacciolepis otachyrioides** E.J.Judziewicz. *Syst. Bot.*, 15(3): 418 (1990).

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

**TYPE** from Guayana. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Guyana: Rupununi savanna, 5 km SE of Aishalton, near Lake Awakawau, on clay in white sand savanna, 230 m, 20 Nov 1982, A. L. Stoffers, A. R. A. Gorts-van Rijn, B. J. H. ter Welle & K. J. Bansen 507 (HT: US; IT: BRG, CAY, K, NY, U).

**Illustrations (Books):** S.A.Renvoize, *Gramineas de Bolivia* (1998) (421, Fig. 90), E.Judziewicz, *Flora of the Guianas*, 187. *Poaceae* (1990) (570, Fig 98).

**Illustrations (Journals):** *Systematic Botany* (15:416, Fig.1 (1990)).

**Derivation** (Clifford & Bostock 2007): Gk. -oides, resembling. The stubby spikelets resemble those of *Otachyrium*.

**Classification.** Subfamily Panicoideae. Tribe: Paniceae. Subtribe INCERTAE SEDIS.

**Habit, Vegetative Morphology.** Annual, caespitose. Culms 15–50 cm long. Ligule an eciliate membrane, 0.6–0.9 mm long. Leaf-blades flat or involute, 13–20 cm long, 2–3 mm wide.

**Inflorescence.** Inflorescence a panicle. Peduncle 2–10 cm long. Panicle spiciform, linear, 5–10 cm long, 0.3–0.5 cm wide. Primary panicle branches accrescent to a central axis, with lateral stumps on axis. Panicle axis with rounded ribs. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, scabrous.

**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, tilted on the pedicel, laterally compressed, gibbous, 1.7–2.1 mm long, falling entire.

**Glumes.** Glumes reaching apex of florets, thinner than fertile lemma. Lower glume ovate, 0.7–1 mm long, 0.33–0.5 length of spikelet, hyaline, without keels, 3–5 -veined. Lower glume apex acute. Upper glume ovate, 1 length of spikelet, coriaceous, much thinner above, without keels, 7–9 -veined. Upper glume lateral veins obscure (below) or prominent (above), ribbed. Upper glume apex obtuse.

**Florets.** Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret similar to upper glume, ovate, gibbous, 1 length of spikelet, coriaceous, much thinner above, 7 -veined, obscurely veined (below) or prominently veined (above), ribbed, acute. Fertile lemma elliptic, dorsally compressed, 1–1.1 mm long, coriaceous, shiny, without keel. Lemma margins involute. Lemma apex acute. Palea involute, coriaceous.

**Distribution (TDWG). Continent.** South America.

**Country /Province /State.** Northern South America, Western South America, Brazil. Guyana, Venezuela. Bolivia, Colombia. Brazil North.

### **Sacciolepis rigens** A.Cheval. *Rev. Bot. Appliq.* xiv. 29 (1934).

Regarded by K as a synonym (*S. leptorrhachis*).

**TYPE** from Togo. **Basionym or Replaced Name:** *Panicum rigens* Mez, *Bot. Jahrb. Syst.* 34(1): 141 (1904). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: IT: *Kersting* 595, Togo: Sokodé to Basari (K).

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

**Classification.** Subfamily Panicoideae. Tribe: Paniceae. Subtribe INCERTAE SEDIS.

**Habit, Vegetative Morphology.** Perennial, caespitose. Rhizomes short. Culms 60–200 cm long. Leaf-sheath auricles erect, 1–4 mm long. Ligule a ciliolate membrane. Leaf-blades 10–40 cm long, 2–6 mm wide.

**Inflorescence.** Inflorescence a panicle. Panicle spiciform, linear, 6–20 cm long. Primary panicle branches accrescent to a central axis, with lateral stumps on axis. Panicle axis with rounded ribs. 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, laterally compressed, gibbous, 3–4.5 mm long, falling entire.

**Glumes.** Glumes reaching apex of florets, thinner than fertile lemma. Lower glume ovate, 0.5 length of spikelet, hyaline, without keels, 7 -veined. Lower glume apex acute. Upper glume oblong, gibbous, 1 length of spikelet, membranous or coriaceous, dark brown or purple, without keels, 9 -veined. Upper glume lateral veins ribbed. 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, oblong, 1 length of spikelet, hyaline or coriaceous, 9 -veined, ribbed, glabrous or pubescent, acute. Palea of lower sterile floret 1 length of lemma. Fertile lemma oblong, dorsally compressed, 2 mm long, coriaceous, pallid, shiny, without keel, 5 -veined, more than 3-veined. Lemma margins involute. Lemma apex acute. Palea involute, coriaceous.

**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. Togo. Ethiopia (inc. Eritrea). Tanzania, Uganda. Angola, Zambia. Namibia.

**Sacciolepis seslerioides** (Rendle) Stapf. *Fl. Trop. Afr.* 9:764 (1920).

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

**TYPE** from Angola. **Basionym or Replaced Name:** *Panicum seslerioides* Rendle, *Cat. Afr. Pl.* 2(1): 174 (1899). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: IT: *Welwitsch 2636*, Angola: Nene (K).

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

**Derivation** (Clifford & Bostock 2007): Gk. -oides, resembling. Similar to *Sesleria* usually with respect to habit or inflorescence.

**Classification.** Subfamily Panicoideae. Tribe: Paniceae. Subtribe INCERTAE SEDIS.

**Habit, Vegetative Morphology.** Perennial. Rhizomes elongated. Culms 30–100 cm long. Leaf-sheath auricles absent. Ligule a ciliolate membrane. Leaf-blades 3–25 cm long, 2–13 mm wide.

**Inflorescence.** Inflorescence a panicle. Panicle spiciform, linear or oblong, continuous, 2–10 cm long. Primary panicle branches accrescent to a central axis, with lateral stumps on axis. Panicle axis with rounded ribs. 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, laterally compressed, gibbous, 3–5 mm long, falling entire.

**Glumes.** Glumes reaching apex of florets, thinner than fertile lemma. Lower glume ovate, 0.5 length of spikelet, hyaline, without keels, 5 -veined. Lower glume apex obtuse. Upper glume oblong, gibbous, 1 length of spikelet, coriaceous, pallid, without keels, 7 -veined. Upper glume lateral veins ribbed. 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, coriaceous, 9 -veined, ribbed, acute. Palea of lower sterile floret 1 length of lemma. Fertile lemma oblong, dorsally compressed, 2.5 mm long, coriaceous, pallid, shiny, without keel, 5 -veined, more than 3-veined. Lemma margins involute. Lemma apex acute. Palea involute, coriaceous.

**Flower and Fruit.** Anthers 3, 2 mm long.

**Distribution (TDWG). Continent.** Africa.

**Country /Province /State.** West-central tropical Africa, East tropical Africa, South tropical Africa. DRC. Tanzania. Angola, Zambia.

**Sacciolepis spiciformis** (Hochst. ex A. Rich.) Stapf. *Prain, Fl. Trop. Afr.* ix. 756 (1920).

Regarded by K as a synonym (*S. myosuroides*).

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

**TYPE** from Ethiopia. **Basionym or Replaced Name:** *Panicum spiciforme* Hochst. ex A. Rich., *Tent. Fl. Abyss.* 2: 359–360 (1850). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *G.H.W. Schimper 1825*, 10 Oct 1840, Ethiopia (P; IT: K, MO, US-1445705 (fragm.)).

**Recent Synonyms:** *Sacciolepis huillensis* (Rendle) Stapf in Prain, *Fl. Trop. Afr.* 9. 755 (1920), p.p.

**Illustrations (Books):** S. Phillips, *Poaceae* (Gramineae) in I. Hedberg & S. Edwards, *Flora of Ethiopia and Eritrea* (1995) (196, Fig 81).

**Derivation** (Clifford & Bostock 2007): L. spica, thorn; forma, appearance. Inflorescence a condensed spike-like panicle.

**Classification.** Subfamily Panicoideae. Tribe: Paniceae. Subtribe INCERTAE SEDIS.

**Habit, Vegetative Morphology.** Annual, caespitose. Culms 5–80 cm long. Ligule an eciliate membrane. Leaf-blades 2.5–30 cm long, 2–5 mm wide. Leaf-blade surface ribbed, papillose (on veins above).

**Inflorescence.** Inflorescence a panicle, aerial or shorter than basal leaves (rarely). Panicle spiciform, linear, 1–20 cm long. Primary panicle branches accrescent to a central axis, with lateral stumps on axis. Panicle axis with rounded ribs. 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, laterally compressed, gibbous, 1–1.7(–2) mm long, falling entire.

**Glumes.** Glumes reaching apex of florets, thinner than fertile lemma. Lower glume elliptic, 0.66 length of spikelet, membranous, without keels, 5 -veined. Lower glume apex obtuse. Upper glume elliptic, gibbous, 1 length of spikelet, membranous, without keels, 7–9 -veined. Upper glume lateral veins ribbed. Upper glume surface glabrous or hispid. 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, 7–9 -veined, ribbed, glabrous or hispid, obtuse. Fertile lemma elliptic, dorsally compressed, 1 mm long, coriaceous, pallid, shiny, without keel, 5 -veined, more than 3-veined. Lemma margins involute. Lemma apex acute. Palea involute, coriaceous.

**Distribution (TDWG). Continent.** Africa.

**Country /Province /State.** West-central tropical Africa, Northeast tropical Africa, East tropical Africa, South tropical Africa, Southern Africa, Western Indian ocean. Ethiopia (inc. Eritrea), Sudan. Tanzania, Uganda. Angola, Malawi, Mozambique, Zambia, Zimbabwe. Namibia, Limpopo, Kwazulu-Natal.

**Sacciolepis striata** (L.) Nash. *Bull. Torr. Bot. Club*, 1903, 383. (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:** *Holcus striatus* L., *Sp. Pl.* 2: 1048 (1753). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: LT: *Clayton 590*, USA: Virginia (LINN-1212.12). LT designated by Hitchcock, *Contr. U.S. Natl. Herb.* 12: 127 (1908).

**Illustrations (Books):** M.E.Barkworth et al, *Flora of North America north of Mexico Vol 25 Poaceae*, part 2 (2003) (405), F.W.Gould, *The Grasses of Texas* (1975) (541, Fig. 283), A.S.Hitchcock, *Manual of the Grasses of the West Indies* (1936) (311, Fig. 291), J.A.Steyermark et al, *Flora of the Venezuelan Guayana Vol. 8* (2004) (261, Fig. 211), E.Judziewicz, *Flora of the Guianas*, 187. *Poaceae* (1990) (570, Fig. 98).

**Derivation** (Clifford & Bostock 2007): L. stria, furrow; -ata, possessing. Glumes and lemmas streaked.

**Classification.** Subfamily Panicoideae. Tribe: Paniceae. Subtribe INCERTAE SEDIS.

**Habit, Vegetative Morphology.** Perennial. Stolons absent or present. Culms geniculately ascending or decumbent, 100–200 cm long, rooting from lower nodes. Leaf-sheaths glabrous on surface or hispid, with tubercle-based hairs. Ligule a fringe of hairs. Leaf-blades 8–20 cm long, 6–15 mm wide. Leaf-blade margins ciliate, hairy at base.

**Inflorescence.** Inflorescence a panicle. Panicle contracted or spiciform, linear, continuous or interrupted, 8–25 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 elliptic, laterally compressed, gibbous, 3.6–4.3 mm long, falling entire.

**Glumes.** Glumes reaching apex of florets, thinner than fertile lemma. Lower glume ovate, 0.2–0.25 length of spikelet, hyaline, without keels. Lower glume apex acute. Upper glume oblong, gibbous, 1 length of adjacent fertile lemma, 1 length of spikelet, membranous, without keels, 7–11 -veined. Upper glume lateral veins ribbed. Upper glume apex acute.

**Florets.** Basal sterile florets 1, male or barren, with palea. Lemma of lower sterile floret similar to upper glume, oblong, 1 length of spikelet, membranous, 3–5 -veined, ribbed, acute. Fertile lemma elliptic, dorsally compressed, 2 mm long, coriaceous, shiny, without keel. Lemma margins involute. Lemma apex obtuse. Palea involute, coriaceous.

**Distribution (TDWG). Continent.** North America, South America.

**Country /Province /State.** South-central USA, Southeastern USA, Mexico. Texas. Alabama, Arkansas, Delaware, Florida, Georgia, Louisiana, Maryland, Mississippi, North Carolina, South Carolina, Tennessee, Virginia, District of Columbia. Gulf (Mexico), Southeast Mexico. **Mesoamerica, Caribbean, Northern South America, Brazil.** Costa Rica, Honduras, Nicaragua, Panama. Cuba, Dominican Republic, Haiti, Jamaica, Puerto Rico, Trinidad-Tobago. Guyana. Brazil Northeast, Brazil North.

Veracruz. Tabasco.

**Sacciolepis tenuissima** C.E.Hubb. *Kew Bull.* 1927, 220. (1927).

**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, Taruang: *Kerr 9732* (K holotype).

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

**Derivation** (Clifford & Bostock 2007): L. slender; -issima, most. Inflorescence slender.

**Classification.** Subfamily Panicoideae. Tribe: Paniceae. Subtribe INCERTAE SEDIS.

**Habit, Vegetative Morphology.** Annual. Culms erect or geniculately ascending, weak, 15–50 cm long. Culm-nodes glabrous or pubescent. Ligule an eciliate membrane, truncate. Leaf-blades straight or flexuous, flat or involute, 2–10 cm long, 1–1.5 mm wide. Leaf-blade apex obtuse.

**Inflorescence.** Inflorescence a panicle. Panicle spiciform, linear or oblong, 0.75–1.5 cm long, 0.2–0.4 cm wide. Primary panicle branches accrescent to a central axis, with lateral stumps on axis. Panicle axis with rounded ribs. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, 0.3–0.7 mm long, scaberulous.

**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, laterally compressed, gibbous, obtuse or acute, 1.2–1.5 mm long, falling entire.

**Glumes.** Glumes reaching apex of florets, thinner than fertile lemma. Lower glume ovate, 0.75 mm long, 0.5 length of spikelet, hyaline, without keels, 3 -veined. Lower glume apex obtuse or acute. Upper glume elliptic or ovate, gibbous, 1.5 mm long, 1.5 length of adjacent fertile lemma, 1 length of spikelet, membranous, without keels, 7–9 -veined. Upper glume lateral veins ribbed. Upper glume surface pubescent. 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, 7 -veined, ribbed, pubescent, obtuse. Palea of lower sterile floret 0.4 length of lemma. Fertile lemma elliptic, dorsally compressed, 1 mm long, chartaceous, pallid, shiny, without keel. Lemma margins involute. Lemma apex acute. Palea involute, chartaceous.

**Flower and Fruit.** Caryopsis 0.8 mm long.

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

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

### **Sacciolepis transbarbata** Stapf. *Fl. Trop. Afr.* ix. 761 (1920).

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

**TYPE** from Zambia. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: ST: *Kassner 2087*, Chibenga stream, Zambia (K). ST: *Kassner 2157*, Zambia: Chibenga stream (K).

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

**Derivation** (Clifford & Bostock 2007): L. trans, across; barba, beard; -ata, possessing. Lemma of male floret with a transverse fringe of hairs.

**Classification.** Subfamily Panicoideae. Tribe: Paniceae. Subtribe INCERTAE SEDIS.

**Habit, Vegetative Morphology.** Perennial, caespitose. Culms erect, 30–100 cm long. Ligule a ciliolate membrane. Leaf-blades 6–20 cm long, 2–6 mm wide. Leaf-blade surface pilose.

**Inflorescence.** Inflorescence a panicle. Panicle spiciform, linear, continuous or interrupted, 2–10 cm long. Primary panicle branches accrescent to a central axis, with lateral stumps on axis. Panicle axis with rounded ribs. 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, laterally compressed, gibbous, 3–4 mm long, falling entire.

**Glumes.** Glumes exceeding apex of florets, thinner than fertile lemma. Lower glume ovate, 0.33 length of spikelet, hyaline, without keels, 7 -veined. Lower glume surface pubescent. Lower glume apex acute. Upper glume oblong, gibbous, 1 length of spikelet, membranous, without keels, 13 -veined. Upper glume lateral veins ribbed. 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, oblong, 0.9 length of spikelet, membranous, 11 -veined, ribbed, pubescent, with a transverse fringe of hair, acute. Palea of lower sterile floret 0.5 length of lemma. Fertile lemma oblong, dorsally compressed, 2 mm long, coriaceous, dull, without keel, 5 -veined, more than 3-veined. Lemma margins involute. Lemma apex acute. Palea involute, coriaceous.

**Distribution (TDWG). Continent.** Africa.

**Country /Province /State.** West-central tropical Africa, East tropical Africa, South tropical Africa. DRC. Tanzania. Angola, Zambia, Zimbabwe.

### **Sacciolepis typhura** (Stapf) Stapf. *Fl. Trop. Afr.* ix. 760 (1920).

**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 typhurum* Stapf, *Fl. Cap.* 7: 414 (1899). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *Nelson 74*, South Africa: Transvaal: Naboomspruit (K).

**Illustrations (Books):** L.K.A. Chippindall, *Grasses and Pastures of South Africa* (1955) (358, Fig 308), G.E.Gibbs Russell et al, *Grasses of Southern Africa* (1990) (284, Fig 181).

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

**Derivation** (Clifford & Bostock 2007): Gk. typhos, snake; oura, tail. Inflorescence a spicate panicle.

**Classification.** Subfamily Panicoideae. Tribe: Paniceae. Subtribe INCERTAE SEDIS.

**Habit, Vegetative Morphology.** Perennial. Rhizomes elongated. Butt sheaths papery, reticulately veined. Culms 20–150 cm long, spongy. Ligule a ciliolate membrane. Leaf-blades flat or conduplicate, 5–35 cm long, 2–10 mm wide. Leaf-blade surface ribbed, smooth or papillose, glabrous or pubescent.



**Inflorescence.** Inflorescence a panicle. Panicle spiciform, linear, 3–30 cm long. Primary panicle branches accrescent to a central axis, with lateral stumps on axis. Panicle axis with rounded ribs. 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, 1.7–2.5 mm long, falling entire.

**Glumes.** Glumes reaching apex of florets, thinner than fertile lemma. Lower glume ovate, 0.5 length of spikelet, hyaline, without keels, 5–7 -veined. Lower glume apex obtuse or acute. Upper glume elliptic, gibbous, 1 length of spikelet, membranous, without keels, 7–9 -veined. Upper glume lateral veins ribbed. Upper glume apex obtuse or acute.

**Florets.** Basal sterile florets 1, male, with palea. Lemma of lower sterile floret similar to upper glume, elliptic, 1 length of spikelet, membranous, 9 -veined, ribbed, acute. Palea of lower sterile floret 1 length of lemma. Fertile lemma oblong, dorsally compressed, 1 mm long, coriaceous, pallid, shiny, without keel, 5 -veined, more than 3-veined. Lemma margins involute. Lemma apex acute. Palea involute, coriaceous.

**Flower and Fruit.** Anthers 3, 0.6–0.8 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, Southern Africa. Burundi, DRC. Chad, Sudan. Kenya, Tanzania, Uganda. Angola, Malawi, Mozambique, Zambia, Zimbabwe. Namibia, Botswana, Limpopo, Mpumalanga, Swaziland.

**Sacciolepis viguieri** A.Camus. *Bull. Soc. Bot. France*, lxxii. 618. (1925).

**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: Madagascar: prov. du Vakinankaratra, distr. d'Ambatolampy, entre Ambatolampy et Tsinjoarivo, 1600 m, *Viguiér & Humbert 1753* (HT: not designated).

**Illustrations (Books):** J.Bosser, *Graminees des Paturage et des Cultures a Madagascar* (1969) (313, Fig 116).

**Derivation** (Clifford & Bostock 2007): in honor of Reni Viguiér (1880–1931) French botanist who collected on Madagascar.

**Classification.** Subfamily Panicoideae. Tribe: Paniceae. Subtribe INCERTAE SEDIS.

**Habit, Vegetative Morphology.** Perennial. Rhizomes short. Culms erect, 40–100 cm long. Lateral branches lacking or sparse. Leaf-sheaths reticulately veined. Ligule an eciliate membrane, 1–1.5 mm long, truncate. Leaf-blades filiform, involute, 5–16 cm long, 1–2 mm wide. Leaf-blade surface glabrous. Leaf-blade apex antrorsely scabrous.

**Inflorescence.** Inflorescence a panicle. Panicle spiciform, linear, continuous or interrupted, 5–20 cm long, 0.4–0.5 cm wide. Primary panicle branches accrescent to a central axis, with lateral stumps on axis. Panicle axis with rounded ribs. 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, symmetrical (almost), 2–2.5 mm long, falling entire.

**Glumes.** Glumes reaching apex of florets, thinner than fertile lemma. Lower glume ovate, 0.5 length of spikelet, hyaline, without keels, 5 -veined. Lower glume apex obtuse. Upper glume oblong, 1 length of spikelet, membranous, without keels, 7 -veined. Upper glume lateral veins ribbed. Upper glume apex obtuse.

**Florets.** Basal sterile florets 1, male or barren, with palea. Lemma of lower sterile floret similar to upper glume, oblong, 1 length of spikelet, membranous, 7 -veined, ribbed, obtuse. Fertile lemma ovate, dorsally compressed, 1.5 mm long, coriaceous, light brown, shiny, without keel. Lemma margins involute. Lemma apex acute. Palea involute, coriaceous.

**Distribution (TDWG).** Continent. Africa.

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

**Sacciolepis vilvoides** (Trin.) Chase. *Proc. Biol. Soc. Washington*, 1: 7 (1908).

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

**TYPE** from Brazil. **Basionym or Replaced Name:** *Panicum vilvoides* Trin., *Gram. Panic.* 171 (1826). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: ST: [*Fischer?*], Guyane Francaise

(LE-TRIN-1008.01). LT: *Nees*, Brazil (LE-TRIN-1008.02 (& figs.); ILT: K, NY, US (fragm. ex LE)). LT designated by Chase, *Proc. Biol. Soc. Wash.* 21: 7 (1908).

**Recent Synonyms:** *Sacciolepis strumosa* (Presl) Chase, *Proc. Biol. Soc. Washington* 1: 8 (1908). *Sacciolepis campestris* (Nees) L. Parodi, *Darwiniana* 15: 75 (1969).

**Illustrations (Books):** S.A.Renvoize, *Gramineas de Bolivia* (1998) (421, Fig. 90), S.A.Renvoize, *The Grasses of Bahia*, 1984 (107, Fig. 38), J.A.Steyermark et al, *Flora of the Venezuelan Guayana* Vol. 8 (2004) (261, Fig. 210), E.G.Nicora, *Los Generos de Gramineas de America Austral* (1987) (464, Fig. 165 as *S. campestris*), L.B. Smith, D.C. Wasshausen, R.M. Klein *Flora Illustrada Catarinensis Gramineas* (1981–1982) (835, Fig. 172 as *S. campestris*), A.Burkat, *Flora Illustrada de Entre Rios (Argentina)*, Pt II, Gramineas (1969) (276, Fig.106 as *S. campestris*), B.Rosengurtt, *Gramineas Uruguayas I* (1970) (387, Fig. 172 as *S. campestris*), E.Judziewicz, *Flora of the Guianas*, 187. *Poaceae* (1990) (570, Fig. 98).

**Derivation** (Clifford & Bostock 2007): Gk. -oides, resembling. Similar to *Vilfa* also sometimes spelled *Vilva*.

**Classification.** Subfamily Panicoideae. Tribe: Paniceae. Subtribe INCERTAE SEDIS.

**Habit, Vegetative Morphology.** Annual, caespitose. Culms 18–50 cm long. Ligule an eciliate membrane, 0.3–1.2 mm long. Leaf-blades 9–15 cm long, 3–5 mm wide.

**Inflorescence.** Inflorescence a panicle. Peduncle 7–17 cm long. Panicle spiciform, linear, 2–6 cm long, 0.5–0.7 cm wide. Primary panicle branches accrescent to a central axis, with lateral stumps on axis. Panicle axis with rounded ribs. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, scabrous.

**Fertile Spikelets.** Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets ovate, laterally compressed, gibbous, 2.5–3.3 mm long, falling entire.

**Glumes.** Glumes reaching apex of florets, thinner than fertile lemma. Lower glume lanceolate or elliptic, 1.5–2.2 mm long, 0.5–0.66 length of spikelet, hyaline, without keels, 5–7 -veined. Lower glume apex obtuse or acute. Upper glume lanceolate or ovate, gibbous, 1 length of spikelet, membranous, without keels, 11–13 -veined. Upper glume lateral veins ribbed. Upper glume margins ciliate. Upper glume apex acute.

**Florets.** Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret similar to upper glume, lanceolate or ovate, 1 length of spikelet, membranous, 9 -veined, ribbed, eciliate on margins or ciliolate on margins, acute. Fertile lemma elliptic, dorsally compressed, 1.1–1.5 mm long, coriaceous, shiny, without keel. Lemma margins involute. Lemma apex acute. Palea involute, coriaceous.

**Distribution (TDWG). Continent.** South America.

**Country /Province /State.** Caribbean, Northern South America, Western South America, Brazil, Southern South America. Cuba. French Guiana, Guyana, Surinam, Venezuela. Bolivia. Brazil West Central, Brazil Southeast, Brazil South. Argentina Northeast, Paraguay, Uruguay.

**TDWG4.** Roraima, Para, Amapa, Goias, Bahia, Maranhao, Piaui, Ceara, Rio Grande do Norte, Paraiba, Pernambuco, Alagoas, Sergipe, Minas Gerais, Rio de Janeiro, Espirito Santo, Sao Paulo Parana, Catarina, Rio Grande do Sul. Chaco, Corrientes, Entre Rios, Misiones.

**Sarga angustum** (S.T.Blake) Spangler. *Austral. Syst. Bot.* 16(3): 289 . (2003).

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

**TYPE** from Australia. **Basionym or Replaced Name:** *Sorghum angustum* S.T. Blake, *Pap. Dept. Bot. Univ. Queensland* 1(18): 21 (1941). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *S.T. Blake 13737*, 8 Apr 1938, Australia: Queensland: Cook District: about 40 miles north-west of Mungana (BRI; IT: K).

**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. narrow. Narrow, with respect to leaf- blades or spicate panicles.

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

**Habit, Vegetative Morphology.** Annual. Culms erect, 50–100 cm long, 3–6 -noded, without nodal roots or with prop roots. Culm-nodes bearded. Leaves cauline. Leaf-sheath oral hairs bearded. Ligule a ciliolate membrane, 0.6–1 mm long. Leaf-blades 8–46 cm long, 2–5.6 mm wide. Leaf-blade surface glabrous or hirsute, with tubercle-based hairs. Leaf-blade apex attenuate, filiform.

**Inflorescence.** Inflorescence a panicle with branches tipped by a raceme. Panicle open, lanceolate, loose, 9.5–20 cm long. Primary panicle branches drooping, 1–2(–4) -nate, whorled at lower nodes, simple, 2–9 cm long. Panicle branches capillary, bearded in axils, with prominent pulvini. Racemes 1–2(–4) cm long, bearing few fertile spikelets, bearing 1–2(–4) fertile spikelets on each. Rhachis fragile at the nodes, ciliate on margins. Rhachis hairs white or dark brown or red. Rhachis internodes linear, 4–6 mm long. Rhachis internode tip

oblique. 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, linear, ciliate.

**Sterile Spikelets.** Companion sterile spikelets represented by barren pedicels.

**Fertile Spikelets.** Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. 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, dorsally compressed, 10.7–13 mm long, falling entire, deciduous with accessory branch structures. Spikelet callus linear, curved, 3.5–7 mm long, pilose, base pungent, attached obliquely. Spikelet callus hairs white or red.

**Glumes.** Glumes dissimilar, with lower wider than upper, exceeding apex of florets, firmer than fertile lemma, dull or shiny. Lower glume elliptic, 1 length of spikelet, coriaceous, without keels, keel-less except near apex, 9–11 -veined. Lower glume surface glabrous or hispid or villous. Lower glume apex acute. Upper glume ovate, coriaceous, without keels, 7–9 -veined. Upper glume surface glabrous or pilose.

**Florets.** Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret elliptic, 0.8 length of spikelet, hyaline, 2 -veined, ciliolate on margins. Fertile lemma oblong, 3.7–4.2 mm long, hyaline, 1 -veined, 0–3 -veined, one-veined. Lemma margins ciliate. Lemma apex dentate, 2 -fid, awned, 1 -awned. Principal lemma awn from a sinus, geniculate, 37–85(–114) mm long overall, with twisted column. Column of lemma awn pubescent, hairy on the spiral. Palea absent or minute.

**Flower and Fruit.** Lodicules 2, ciliate. Anthers 3, 2.5 mm long. Caryopsis with adherent pericarp, oblong, 3.3 mm long.

**Distribution (TDWG). Continent.** Australasia.

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

**TDWG4.** Darwin & Gulf. North.

**Sarga intrans** (F.Muell. ex Benth.) Spangler. *Austral. Syst. Bot.* 16(3): 290 . (2003).

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

**TYPE** from Australia. **Basionym or Replaced Name:** *Sorghum intrans* F. Muell. ex Benth., *Fl. Austral.* 7: 541 (1878). T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: LT: *Schultz* 31, Oct 1869, Australia: Northern Territory: Port Darwin, presented by R. Schomburgk (K). LT designated by Lazarides et al., *Austral. Syst. Bot.* 4: 618 (1991).

**Recent Synonyms:** *Sorghum exstans* Lazarides, *Austral. Syst. Bot.* 4(4): 613–615, f. 3d-h, 5a. (1991).

**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);

**Derivation** (Clifford & Bostock 2007): L. intro, enter. With their long awns and short calli, the detached spikelets readily penetrate animal skins and clothing.

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

**Habit, Vegetative Morphology.** Annual. Culms erect, 100–360 cm long, 4–8 mm diam., 4–6 -noded, without nodal roots or with prop roots. Culm-nodes glabrous or pubescent or bearded. Leaves cauline. Ligule an eciliate membrane, 2–4 mm long, erose. Leaf-blades 10–15 mm wide. Leaf-blade surface hirsute, with tubercle-based hairs.

**Inflorescence.** Inflorescence a panicle with branches tipped by a raceme. Panicle contracted, linear or lanceolate, 14–40 cm long, 2.5–4 cm wide. Primary panicle branches 1–14 -nate, not whorled, simple, 2–5 cm long. Panicle branches scabrous, glabrous in axils or bearded in axils, with prominent pulvini. Racemes 1.5–3 cm long, bearing a triad of spikelets, bearing 1(–3) fertile spikelets on each. Rhachis fragile at the nodes, ciliate on margins. Rhachis hairs red, 1–1.6 mm long. Rhachis internodes linear, 5.5–6 mm long. Rhachis internode tip oblique. Spikelets in threes. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 2 in the cluster. Pedicels present, filiform, straight or curved (around sessile spikelet), 6–7 mm long, ciliate (rufously).

**Sterile Spikelets.** Companion sterile spikelets well-developed, containing empty lemmas, linear, 9–24 mm long, as long as fertile, persistent. Companion sterile spikelet glumes chartaceous, 5 -veined, glabrous or pubescent or villous, entire or dentate, muticous or awned, several-awned (the lower 3-awned), with 0–15 mm long awn. Companion sterile spikelet lemmas enclosed by glumes.

**Fertile Spikelets.** Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets elliptic, dorsally compressed, (6–)10–15(–20) mm long, falling entire, deciduous with accessory branch structures. Spikelet callus linear, 3–6 mm long, pubescent, base pungent, attached obliquely.

**Glumes.** Glumes dissimilar, with lower wider than upper, exceeding apex of florets, firmer than fertile lemma, shiny. Lower glume ovate, 1 length of spikelet, coriaceous, 2-keeled, keeled above, 9 -veined. Lower glume primary vein spinulose. Lower glume surface glabrous or pubescent. Lower glume hairs dark brown. Lower glume apex rostrate. Upper glume ovate, coriaceous, without keels, 5–7 -veined. Upper glume surface glabrous or pubescent. Upper glume muticous or mucronate.

**Florets.** Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret elliptic, 0.8 length of spikelet, hyaline, 2 -veined, ciliolate on margins. Fertile lemma oblong, 3–5 mm long, hyaline, 1 -veined, 0–3 -veined, one-veined. Lemma margins ciliate. Lemma apex dentate, 2 -fid, awned, 1 -awned. Principal lemma awn from a sinus, geniculate, (4–)7.5–11(–15) mm long overall, with twisted column. Column of lemma awn glabrous or pubescent, hairy on the spiral. Palea absent or minute.

**Flower and Fruit.** Lodicules 2, glabrous or ciliate. Anthers 3, 3.6–5 mm long. Ovary pubescent on apex. Caryopsis with adherent pericarp, oblong or obovoid, 4–6.3 mm long, hairy at apex.

**Distribution (TDWG). Continent.** Australasia.

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

**TDWG4.** Kimberley. Darwin & Gulf, Victoria R & Barkly Tableland.

**Sarga leiocladum** (Hack.) Spangler. *Austral. Syst. Bot.* 16(3): 290 . (2003).

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

**TYPE** from Australia. **Basionym or Replaced Name:** *Andropogon australis* var. *leiocladus* Hack., *Monogr. Phan.* T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *C. Gaudichaud s.n.*, Feb 1825, Australia: New South Wales: Central Coast, Port Jackson (P; IT: BM, K).

**Recent Synonyms:** *Sorghum leiocladum* (Hack.) C.E.Hubb., *Hook. Ic. Pl.* 34: t. 3364 (1938).

**Illustrations (Books):** N.Walsh & T.Entwistle, *Flora of Victoria* Vol 2 (1994) (622, Fig 125 as *Sorghum*), S.W.L.Jacobs, R.D.B.Whalley & D.J.B.Wheeler., *Grasses of New South Wales*, 4th edn (2008) (as *Sorghum*), T.D.Stanley & E.Ross, *Flora of South East Queensland, Gramineae* (1989) (259, Fig. 39 as *Sorghum*), D.Sharp & B.K.Simon, *AusGrass. Grasses of Australia. CD-Rom Version 1.0.* (2002).

**Illustrations (Journals):** *Hooker's Icones Plantarum* (t.3364 (1938) as *Sorghum*).

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

**Derivation** (Clifford & Bostock 2007): Gk. leios, smooth; klados, branch. Panicle branches smooth.

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

**Habit, Vegetative Morphology.** Perennial. Rhizomes absent or short. Culms 60–150 cm long, 3–5 -noded. Culm-nodes bearded. Leaf-sheaths mostly shorter than adjacent culm internode. Leaf-sheath oral hairs lacking or bearded. Ligule an eciliate membrane, 1–1.3 mm long, glabrous on abaxial surface. Leaf-blades curled, flat or involute, 10–70 cm long, 1.5–3.5 mm wide. Leaf-blade midrib widened. Leaf-blade surface glabrous or hirsute, with tubercle-based hairs. Leaf-blade apex filiform.

**Inflorescence.** Inflorescence a panicle with branches tipped by a raceme. Panicle open, lanceolate or oblong, 14.5–19 cm long, 2–4 cm wide. Primary panicle branches 1–6 -nate, indistinct the panicle almost racemose, 1.5–4 cm long. Panicle axis smooth or scaberulous. Panicle branches glabrous in axils or bearded in axils, with prominent pulvini. Racemes 1.8–5 cm long, bearing few fertile spikelets, bearing 3–6 fertile spikelets on each. Rhachis fragile at the nodes, ciliate on margins. Rhachis internodes linear, 3–6 mm long. Rhachis internode tip transverse, cupuliform. Spikelets in pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, filiform, flattened, ciliate.

**Sterile Spikelets.** Companion sterile spikelets well-developed, containing empty lemmas or male, lanceolate, dorsally compressed, 5–8 mm long, as long as fertile, separately deciduous. Companion sterile spikelet glumes membranous or chartaceous, 5–8 -veined, pilose, muticous. Companion sterile spikelet lemmas enclosed by glumes, muticous or 1-awned, with 0–2.5 mm long awn.

**Fertile Spikelets.** Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets lanceolate or oblong, dorsally compressed, 6–8 mm long, falling entire, deciduous with accessory branch structures. Spikelet callus brief, 0.3 mm long, pilose, base obtuse. Spikelet callus hairs white or tawny, 1–3 mm long.

**Glumes.** Glumes dissimilar, with lower wider than upper, exceeding apex of florets, firmer than fertile lemma. Lower glume ovate, 1 length of spikelet, coriaceous, much thinner above, without keels, keel-less except near apex, 7–11 -veined. Lower glume surface pilose. Lower glume hairs tawny. Lower glume apex truncate. Upper glume ovate, coriaceous, much thinner above, without keels, 7–11 -veined. Upper glume surface pilose. Upper glume hairs tawny. Upper glume apex obtuse or acute.

**Florets.** Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret lanceolate, 5.5–7 mm long, hyaline, 2 -veined, pubescent, hairy above, ciliate on margins, acute. Fertile lemma oblong, 2.5–

4 mm long, hyaline, 1 -veined, 0–3 -veined, one-veined. Lemma surface pubescent, hairy above. Lemma margins ciliate. Lemma apex lobed, 2 -fid, awned, 1 -awned. Principal lemma awn from a sinus, geniculate, 15–20 mm long overall, with twisted column. Column of lemma awn glabrous. Palea absent or minute.

**Flower and Fruit.** Lodicules 2, oblong, fleshy, ciliate. Anthers 3, 3.5–4.5 mm long. Stigmas 2. Caryopsis with adherent pericarp, 2.5–2.8 mm long.

**Distribution (TDWG). Continent.** Australasia.

**Country /Province /State.** Australia. Queensland, New South Wales, A.C.T., Victoria.

**TDWG4.** Central, South East, Inland. Coast, Tablelands, Western Slopes.

**Sarga plumosum** (R.Br.) Spangler. *Austral. Syst. Bot.* 16(3): 291 . (2003).

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

**TYPE** from Australia. **Basionym or Replaced Name:** *Holcus plumosus* R. Br., *Prodr.* 200 (1810). T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: HT: *R. Brown 6192*, 19 Nov 1802, Australia: Queensland: Burke District: Gulf of Carpentaria, Allen Island (Wellesley Group) (BM; IT: K).

**Recent Synonyms:** *Sorghum plumosum* (R.Br.) Beauv., *Agrost.* 132 (1812). *Sorghum grande* Lazarides, *Austral. Syst. Bot.*, 4(4): 615 (1991).

*Sorghum interjectum* Lazarides, *Austral. Syst. Bot.*, 4(4): 616 (1991).

**Illustrations (Books):** C.A.Gardner, *Flora of Western Australia*, Vol 1, Part 1, *Gramineae* (1952) (315, Pl. 93 as *Sorghum*), J.R.Wheeler et al, *Flora of the Kimberley Region* (1992) (1217, Fig. 345 as *Sorghum*), 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. feathery. With long hairs giving on the pedicels a feathery appearance.

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

**Habit, Vegetative Morphology.** Perennial. Rhizomes short. Butt sheaths pubescent. Culms erect, 100–300 cm long, 3–6 mm diam., 4–5 -noded. Culm-nodes glabrous or pubescent or bearded. Leaf-sheaths hirsute, with simple hairs or tubercle-based hairs. Leaf-sheath oral hairs bearded. Ligule a ciliolate membrane or a ciliate membrane, 1.5–3 mm long. Leaf-blades 15–30 cm long, 4–12 mm wide. Leaf-blade surface glabrous or hirsute, hairy abaxially or on both sides. Leaf-blade apex acuminate, filiform.

**Inflorescence.** Inflorescence a panicle with branches tipped by a raceme. Panicle contracted, linear or lanceolate, 12.5–32(–45) cm long, 2–4 cm wide. Primary panicle branches 1–8 -nate, not whorled, simple, 3–7 cm long. Panicle branches angular, scabrous, pubescent in axils or bearded in axils, with prominent pulvini. Racemes 2–3.5 cm long, bearing few fertile spikelets, bearing (1–)2–4(–6) fertile spikelets on each. Rhachis fragile at the nodes, ciliate on margins. Rhachis internodes filiform, 4–5 mm long. Rhachis internode tip oblique. Spikelets in pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, filiform, 4.5–6 mm long, ciliate.

**Sterile Spikelets.** Companion sterile spikelets well-developed, containing empty lemmas, linear, 7–10.5 mm long, as long as fertile, persistent. Companion sterile spikelet glumes chartaceous, 3–7 -veined, villous, acuminate, muticous. Companion sterile spikelet lemmas enclosed by glumes.

**Fertile Spikelets.** Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets elliptic, dorsally compressed, (6–)8–9(–11) mm long, falling entire, deciduous with accessory branch structures. Spikelet callus cuneate, curved, (0.5–)1.3–2.5(–4) mm long, base pungent.

**Glumes.** Glumes dissimilar, with lower wider than upper, exceeding apex of florets, firmer than fertile lemma. Lower glume ovate, 1 length of spikelet, cartilaginous, without keels, keel-less except near apex, 5–7 -veined. Lower glume surface villous. Lower glume apex acute. Upper glume ovate, cartilaginous, without keels, 5–7 -veined. Upper glume surface villous.

**Florets.** Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret elliptic, 0.8 length of spikelet, hyaline, 2 -veined, ciliolate on margins. Fertile lemma oblong, 2–3 mm long, hyaline, 1 -veined, 0–3 -veined, one-veined. Lemma margins ciliate. Lemma apex dentate, 2 -fid, awned, 1 -awned. Principal lemma awn from a sinus, geniculate, (30–)50–70(–100) mm long overall, with twisted column. Column of lemma awn pubescent, hairy on the spiral. Palea absent or minute.

**Flower and Fruit.** Lodicules 2, ciliate. Anthers 3, 3.6–3.8 mm long. Caryopsis with adherent pericarp, obovoid, flattened, 3.3–4.3 mm long.

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

**Country /Province /State.** Indo-China, Malesia, Papuasia. Thailand. Lesser Sunda Is, Moluccas, Sulawesi. New Guinea. Australia. Western Australia, Northern Territory, Queensland.

**TDWG4.** Kimberley, Eremean. Darwin & Gulf, Victoria R & Barkly Tableland, Central Australia. North, Central, Inland.

**Sarga timorensis** (Kunth) Spangler. *Austral. Syst. Bot.* 16(3): 292 . (2003).

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

**TYPE** from Timor. **Basionym or Replaced Name:** *Andropogon tropicus* var. *timorensis* Kunth, *Revis. Gramin.* 1: 367, t. 97 (1829). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: var "B" in insula Timor.,.

**Recent Synonyms:** *Sorghum timorensis* (Kunth) Buse ex DeVriese, *Pl. Ind. Bat. Reinw.* 103 (1857). *Sorghum bulbosum* M. Lazarides, *Austral. Syst. Bot.*, 4(4): 609 (1991).

*Sorghum amplum* M. Lazarides, *Austral. Syst. Bot.*, 4(4): 606 (1991).

*Sorghum ecarinatum* M. Lazarides, *Austral. Syst. Bot.* 4(4): 611 (1991).

*Sorghum brachypodium* Lazarides, *Austral. Syst. Bot.* 4(4): 608 (1991).

*Sorghum matarankense* Garber & Snyder, *Madrono* 11. 8 (1951).

*Sorghum stipoideum* (Ewart & J. White) C.A.Gardner & C.E.Hubbard, *Hook. Ic. Pl.* 4. sub t. 3364, p. 6 (1938).

**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);, K.O.Mallett (ed.). *Flora of Australia*, Vol 44 A (2002) & Vol 44B (2004). *Poaceae*;

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

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

**Habit, Vegetative Morphology.** Annual. Culms erect or geniculately ascending, 30–300 cm long, 7–13 mm diam., without nodal roots or with prop roots. Culm-internodes distally pruinose or glabrous. Culm-nodes constricted or flush with internodes, pubescent or bearded. Lateral branches sparse. Leaf-sheaths glabrous on surface or puberulous. Leaf-sheath oral hairs lacking or bearded. Ligule an eciliate membrane, 1.3–3.5 mm long. Leaf-blades straight or curled, 30–60 cm long, 5–10 mm wide. Leaf-blade surface glabrous or pubescent, with tubercle-based hairs. Leaf-blade apex filiform.

**Inflorescence.** Inflorescence a panicle with branches tipped by a raceme. Panicle open, dense or loose, 15–40 cm long. Primary panicle branches simple, 2–11 cm long. Panicle axis smooth. Panicle branches angular or flat, scabrous, rough distally, villous, hairy at tip, glabrous in axils or bearded in axils, with prominent pulvini. Racemes bearing few fertile spikelets, 2–10 fertile spikelets on each. Rhachis fragile at the nodes, ciliate on margins. Rhachis internodes linear, 5–6 mm long. Rhachis internode tip oblique. Spikelets in pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, filiform, flattened, 5 mm long, ciliate, with white hairs.

**Sterile Spikelets.** Companion sterile spikelets well-developed, containing empty lemmas or male, lanceolate, dorsally compressed, 7–8 mm long, longer than fertile, separately deciduous. Companion sterile spikelet callus square, 1 mm long. Companion sterile spikelet glumes chartaceous, 7–10 -veined, glabrous or pilose, ciliate on margins, muticous. Companion sterile spikelet lemmas enclosed by glumes.

**Fertile Spikelets.** Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets lanceolate or oblong, dorsally compressed, 6–7 mm long, falling entire, deciduous with accessory branch structures. Spikelet callus square, 0.3–1.3 mm long, pilose, base obtuse. Spikelet callus hairs tawny, 2 mm long.

**Glumes.** Glumes dissimilar, with lower wider than upper, exceeding apex of florets, firmer than fertile lemma, dull or shiny. Lower glume ovate, 1 length of spikelet, coriaceous, much thinner above, 2-keeled, keeled above, 8–9 -veined. Lower glume surface asperulous, rough above, glabrous to pilose, with simple hairs or tubercle-based hairs. Lower glume margins eciliate or ciliate. Lower glume hairs yellow. Lower glume apex muticous or mucronate. Upper glume ovate, coriaceous, much thinner above, without keels, 5–7 -veined. Upper glume surface asperulous, rough above, glabrous to pilose, with simple hairs or tubercle-based hairs. Upper glume hairs tawny. Upper glume apex setaceously acuminate.

**Florets.** Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret lanceolate, hyaline, 2 -veined, acute. Fertile lemma oblong, hyaline, 1 -veined, 0–3 -veined, one-veined. Lemma apex lobed, 2 -fid, awned, 1 -awned. Principal lemma awn from a sinus, geniculate, 30–45 mm long overall, with twisted column. Column of lemma awn glabrous. Palea absent or minute.

**Flower and Fruit.** Lodicules 2, oblong, 0.5–0.9 mm long, fleshy, glabrous or ciliate. Anthers 3, 2.6–5 mm long, yellow or orange. Stigmas 2. Caryopsis with adherent pericarp, ellipsoid or obovoid, dorsally compressed, 2.6 mm long.

**Distribution (TDWG). Continent.** Tropical Asia and Australasia.

**Country /Province /State.** Malesia, Papuaia. Lesser Sunda Is, Moluccas. New Guinea. Australia. Western Australia, Northern Territory, Queensland.

**TDWG4.** Kimberley, Eremean. Darwin & Gulf, Victoria R & Barkly Tableland, Central Australia. North, Inland.

## Sarocalamus Genus

**Sartidia angolensis** (C. E. Hubbard) de Winter. *Kirkia*, iii. 137 (1963).

**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:** *Aristida angolensis* C.E. Hubb., *Kew Bull.* 1949: 359 (1949). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Angola: Benguella; country of the Ganguellas and Ambuellas, *Gossweiler 4099A*.

**Illustrations (Books):** G.V.Pope et al., *Flora Zambesiaca* 10 (1(1971):96, t. 29), L.K.A. Chippindall, *Grasses and Pastures of South Africa* (1955), G.E.Gibbs Russell et al, *Grasses of Southern Africa* (1990) (286, Fig 182).

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

**Classification.** Subfamily Aristidoideae. Tribe: Aristideae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Basal innovations intravaginal. Culms 100–200 cm long, 2 mm diam. Culm-internodes solid. Leaf-sheath oral hairs bearded. Ligule a fringe of hairs. Leaf-blades 15–35 cm long, 2–4 mm wide. Leaf-blade surface scaberulous, rough adaxially, pubescent, hairy abaxially.

**Inflorescence.** Inflorescence a panicle. Panicle contracted, linear, 20–40 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 linear, subterete, 25–33 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus elongated, 3.5–4 mm long, pubescent, pungent.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 25–33 mm long, 1–1.3 length of upper glume, chartaceous, much thinner above, without keels, 5 -veined. Lower glume apex acuminate. Upper glume lanceolate, 25 mm long, 1.2 length of adjacent fertile lemma, chartaceous, much thinner above, without keels, 3 -veined. Upper glume apex acuminate.

**Florets.** Fertile lemma lanceolate, subterete, 18–22 mm long, coriaceous, much thinner on margins, without keel, 3 -veined, 0–3 -veined. Lemma surface scaberulous. Lemma margins involute, covering most of palea. Lemma apex acute, awned, 3 -awned. Principal lemma awn curved, 75–100 mm long overall, without a column. Lateral lemma awns present, gyrate, 75–100 mm long, subequal to principal. Palea 0.15 length of lemma.

**Flower and Fruit.** Lodicules 2. Anthers 3. Ovary glabrous. Caryopsis with adherent pericarp, linear, dorsally compressed, sulcate on hilar side, 9 mm long, dark brown. Embryo 0.2 length of caryopsis. Hilum linear.

**Distribution (TDWG). Continent.** Africa.

**Country /Province /State.** South tropical Africa and Southern Africa. Angola, Zambia, Zimbabwe. Namibia.

## **Sartidia dewinteri\***

**Habit, Vegetative Morphology.** Perennial, caespitose, clumped densely. Rhizomes short. Basal innovations intravaginal. Culms erect, 40–100 cm long, 1–2.5 mm diam., 2–3 -noded. Culm-internodes terete, striate, distally glabrous. Lateral branches lacking. Leaf-sheaths striately veined, glabrous on surface. Leaf-sheath oral hairs ciliate, 3 mm long. Ligule a fringe of hairs. Collar glabrous or pubescent. Leaf-blades (24–)26–40(–55) cm long, 10–30 mm wide, light green. Leaf-blade midrib prominent beneath. Leaf-blade surface scabrous, rough abaxially, glabrous or pilose, hairy abaxially. Leaf-blade margins smooth or scabrous.

**Inflorescence.** Inflorescence a panicle. Panicle open, oblong, effuse, 15–25 cm long. Primary panicle branches drooping, bearing 1–6 fertile spikelets on each lower branch. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, (2–)3.5–12.7(–20) mm long.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile

or the upper sterile. Spikelets linear, subterete, 16–25 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus elongated, 0.8–1.5 mm long, pilose, 2-toothed.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 15–25 mm long, 1 length of upper glume, membranous, without keels, 3–5 -veined. Lower glume surface scabrous. Lower glume apex setaceously acuminate. Upper glume lanceolate, 15–20 mm long, 1.3–1.5 length of adjacent fertile lemma, membranous, without keels, 3 -veined. Upper glume surface scabrous. Upper glume apex setaceously acuminate.

**Florets.** Fertile lemma linear, subterete, 10–15 mm long, chartaceous, light brown or dark brown or purple, without keel, 3 -veined, 0–3 -veined. Lemma surface with a median groove. Lemma margins involute, covering most of palea. Lemma apex acute, awned, 3 -awned. Principal lemma awn (19–)25–41 mm long overall, without a column or with a straight or slightly twisted column. Column of lemma awn 1–4 mm long. Lateral lemma awns present, 8–25(–31) mm long, shorter than principal. Palea 1–2 mm long, 0.1–0.15 length of lemma.

**Flower and Fruit.** Lodicules 2, lanceolate, 0.8–1.6 mm long. Anthers 3, 4–6 mm long. Caryopsis with adherent pericarp, linear, 6–8 mm long, dark brown. Embryo 0.2–0.25 length of caryopsis. Hilum linear, 1 length of caryopsis.

**Distribution (TDWG).** Continent. Africa.

**Country /Province /State.** Southern Africa.

### **Sartidia jucunda** (Schweickerdt) de Winter. *Kirkia*, iii. 137 (1963).

**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:** *Aristida jucunda* Schweick., *Bot. Jahrb. Syst.* 76(2): 221–223 (1954). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *H.G. Schweickerdt 1807*, Mar 1947, South Africa: Transvaal: Pietersberg District, Summit of Blaauwberg, alt. 6700 ft [2042 m] (PRE; IT: B, K, L, M, S, US-2116022).

**Illustrations (Books):** L.K.A. Chippindall, *Grasses and Pastures of South Africa* (1955) (307, Fig 272 as *Aristida*).

**Derivation** (Clifford & Bostock 2007): L. pleasant. Attractive in appearance.

**Classification.** Subfamily Aristidoideae. Tribe: Aristideae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Butt sheaths dark brown. Basal innovations intravaginal. Culms erect, 50–100 cm long, 2–3 -noded. Culm-internodes solid. Culm-nodes glabrous. Lateral branches lacking. Leaf-sheaths glabrous on surface. Leaf-sheath oral hairs lacking or ciliate. Ligule a fringe of hairs. Leaf-blades 20–45 cm long, 3–4 mm wide. Leaf-blade surface scabrous, rough on both sides. Leaf-blade apex attenuate.

**Inflorescence.** Inflorescence a panicle. Panicle open, linear, 20–35 cm long. Primary panicle branches appressed, 1–2 -nate, bearing 1–6 fertile spikelets on each lower branch. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, scabrous.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets linear, subterete, 15–23 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus elongated, 1–3 mm long, pubescent, with longer hairs above, obtuse.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 15–23 mm long, 1 length of upper glume, hyaline, light brown, without keels, 3 -veined. Lower glume surface asperulous. Lower glume apex setaceously acuminate. Upper glume lanceolate, 15–23 mm long, 1.2–2 length of adjacent fertile lemma, membranous, light brown, without keels, 3 -veined. Upper glume apex setaceously acuminate.

**Florets.** Fertile lemma linear, subterete, 12 mm long, chartaceous, without keel, 3 -veined, 0–3 -veined. Lemma surface scaberulous, rough above. Lemma margins involute, covering most of palea. Lemma apex acute, awned, 3 -awned. Principal lemma awn spreading, flat below, 20–45 mm long overall, without a column. Lateral lemma awns present, gyrate, 20–45 mm long, subequal to principal. Palea 2 mm long, 0.15 length of lemma.

**Flower and Fruit.** Lodicules 2. Anthers 3, 6 mm long. Ovary glabrous. Caryopsis with adherent pericarp, linear, dorsally compressed, sulcate on hilar side, 10 mm long. Embryo 0.2 length of caryopsis. Hilum linear.

**Distribution (TDWG).** Continent. Africa.

**Country /Province /State.** Southern Africa. Limpopo, Swaziland.



**Sartidia perrieri** (A. Camus) Bourreil. *Compt. Rend. Acad. Sci., Paris, Ser. D*, cclxv. 904 (1967).

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

**TYPE** from Madagascar. **Basionym or Replaced Name:** *Aristida perrieri* A. Camus, *Bull. Soc. Bot. France* 73: 434 (1926). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *Perrier de la Bathie 10751*, Madagascar cent.: env. d'Antsirabe, alt. 1900 m, tres rare (P).

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

**Derivation** (Clifford & Bostock 2007): in honor of Joseph Marie Henri Alfred Perrier de la Bbthie (1872–1958) French botanist.

**Classification.** Subfamily Aristidoideae. Tribe: Aristideae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Culms erect, 30–60 cm long. Culm-internodes solid. Lateral branches lacking. Ligule a fringe of hairs. Leaf-blades filiform, convolute, 15–25 cm long, 1–1.5 mm wide, stiff. Leaf-blade apex acute.

**Inflorescence.** Inflorescence a panicle. Peduncle scaberulous above. Panicle contracted, oblong, 6–10 cm long, 2–2.5 cm wide. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, 3–5 mm long.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets linear, subterete, 20–27 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, thinner than fertile lemma. Lower glume lanceolate, 20–22 mm long, 1.4–1.5 length of upper glume, chartaceous, without keels, 3 -veined. Lower glume apex acuminate. Upper glume lanceolate, 14–15 mm long, 1.2–1.3 length of adjacent fertile lemma, chartaceous, without keels, 3 -veined. Upper glume apex obtuse.

**Florets.** Fertile lemma linear, subterete, 11–15 mm long, coriaceous, without keel, 3 -veined, 0–3 -veined. Lemma margins involute, covering most of palea. Lemma apex acute, awned, 3 -awned. Principal lemma awn spreading, flat below, 20–22 mm long overall, without a column. Lateral lemma awns present, gyrate, 20–22 mm long, subequal to principal. Palea 0.15 length of lemma.

**Flower and Fruit.** Lodicules 2. Anthers 3, 5–6 mm long. Ovary glabrous. Caryopsis with adherent pericarp, linear, dorsally compressed, sulcate on hilar side. Embryo 0.2 length of caryopsis. Hilum linear.

**Distribution (TDWG). Continent.** Africa.

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

**Sartidia vanderystii** (De Wild.) de Winter. *Kirkia*, iii. 137 (1963).

**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:** *Aristida vanderysti* De Wild., *Bull. Jard. Bot. Etat* 6: 40, t. 35, f. 7–12 (1919). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: ST: *H. Vanderyst 3216*, Jan 1914, Congo: Nyungu (BR). ST: *H. Vanderyst 3182*, Jan 1914, Congo: Mukulu (BR).

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

**Derivation** (Clifford & Bostock 2007): in honor of Hyacinthe Robert Julien Vanderyst (fl. 1907–1925) Belgian cleric and botanist.

**Classification.** Subfamily Aristidoideae. Tribe: Aristideae.

**Habit, Vegetative Morphology.** Perennial, caespitose, clumped densely. Culms erect, 40–80 cm long, 1–3 -noded. Culm-internodes solid, smooth or scaberulous. Culm-nodes glabrous. Lateral branches lacking. Leaf-sheaths striately veined, scaberulous, outer margin hairy. Leaf-sheath oral hairs lacking or bearded. Ligule a fringe of hairs. Leaf-blades 10–20 cm long, 2–3 mm wide. Leaf-blade surface scaberulous, rough abaxially. Leaf-blade apex attenuate.

**Inflorescence.** Inflorescence a panicle. Panicle open, lanceolate, 10–20 cm long. Primary panicle branches appressed, 1–2 -nate, bearing 1–6 fertile spikelets on each lower branch. Panicle axis scabrous. Panicle branches scabrous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets linear, subterete, 30–40 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus elongated, 3–3.5 mm long, pubescent, pungent.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume linear or lanceolate, 30–40 mm long, 1.2–1.3 length of upper glume, chartaceous, much thinner above, dark brown, without keels, 5 -veined. Lower glume apex acute. Upper glume linear or lanceolate, 25–30 mm long, 1.6–2 length of adjacent fertile lemma, chartaceous, much thinner above, dark brown, without keels, 3 -veined. Upper glume apex acute.

**Florets.** Fertile lemma linear, subterete, 15 mm long, coriaceous, without keel, 3 -veined, 0–3 -veined. Lemma margins involute, covering most of palea. Lemma apex acute, awned, 3 -awned. Principal lemma awn 3-branched, spreading, flat below, with 80–95 mm long limb, with a straight or slightly twisted column. Column of lemma awn 25–40 mm long. Lateral lemma awns present, gyrate, 80–95 mm long, subequal to principal. Palea 2.5 mm long, 0.15 length of lemma.

**Flower and Fruit.** Lodicules 2. Anthers 3. Ovary glabrous. Caryopsis with adherent pericarp, linear, dorsally compressed, sulcate on hilar side, 8–9 mm long. Embryo 0.2 length of caryopsis. Hilum linear, 1 length of caryopsis.

**Distribution (TDWG). Continent.** Africa.

**Country /Province /State.** West-central tropical Africa. DRC.

**Sasa albosericea** W.T. Lin & J.Y. Lin. *Acta Phytotax. Sin.*, 26(3): 232 (1988).

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

**TYPE** from China. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: China: Guangdong: Fogang, Guanyin Shan, 1000 m, 11 Dec. 1986, *J.Y. Lin 18006* (HT: SCAC).

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

**Derivation** (Clifford & Bostock 2007): *L. albus*, white; *sericeus*, silken. Dense white hairs are abundant immediately above the nodes.

**Classification.** Subfamily Bambusoideae. Tribe: Bambuseae.

**Habit, Vegetative Morphology.** Perennial, woody bamboo. Rhizomes elongated, leptomorph. Butt sheaths absent. Culms geniculately ascending, 100–130 cm long, 5–7 mm diam., woody. Culm-internodes terete, 10–17 cm long, distally glabrous. Culm-nodes pubescent. Lateral branches suffrutescent. Bud complement 1. Branch complement one, solitary. Culm-sheaths present, persistent, pubescent, with white hairs, auriculate, setose on shoulders, shoulders with 1 mm long hairs. Culm-sheath ligule 0.5 mm high. Culm-sheath blade linear or lanceolate, spreading. Leaves 2–3 per branch. Leaf-sheaths glabrous on surface. Leaf-sheath oral hairs setose, 3 mm long. Leaf-sheath auricles falcate. Ligule an eciliate membrane. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades lanceolate or elliptic, 11–26 cm long, 25–45 mm wide. Leaf-blade venation with 12–22 secondary veins. Leaf-blade surface glabrous. Leaf-blade apex acuminate. Flowering specimens unknown.

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

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

**Sasa bitchuensis** Makino. *Bot. Mag., Tokyo*, xxviii. 31 (1914).

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

**TYPE** from Japan. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: IT: *T. Makino s.n.*, Aug 1913, Japan: Bitchu Prov. (US-2241718 (fragm.)).

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

**Derivation** (Clifford & Bostock 2007): *L. -ensis*, denoting origin. From Bitchu Province, Japan.

**Classification.** Subfamily Bambusoideae. Tribe: Bambuseae.

**Habit, Vegetative Morphology.** Perennial, woody bamboo. Rhizomes elongated, leptomorph. Butt sheaths absent. Culms erect, 200–300 cm long, 6–11 mm diam., woody. Culm-internodes terete, thin-walled, distally pubescent. Culm-nodes pubescent. Lateral branches suffrutescent. Bud complement 1. Branch complement one, solitary, as thick as stem. Culm-sheaths present, persistent, puberulous, with reflexed hairs. Leaf-sheaths glabrous on surface. Leaf-sheath oral hairs ciliate, spreading. Ligule an eciliate membrane. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades lanceolate or oblong, 11–15 cm long, 23–28 mm wide. Leaf-blade surface glabrous. Leaf-blade apex acuminate. Flowering specimens unknown.

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

**Country /Province /State.** Eastern Asia. Japan.

**Sasa borealis** (Hack.) Makino & Shibata. *Bot. Mag. Tokyo*, xv. 24 (1901).

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

**TYPE** from Japan. **Basionym or Replaced Name:** *Bambusa borealis* Hack., *Bull. Herb. Boissier* 7(9): 720 (1899). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: ST: *J. Matsumura 301*, no date, Japan (US-2809288). ST: *Faurie 10899*, Japan: Akkeshi, Yezo, in silvis ST: *Faurie 576*, Japan: montagnes d'Onikobe ST: *Miyabe s.n.*, Japan: in Kurilarum insula Riruran.

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

**Derivation** (Clifford & Bostock 2007): L. of the north. Growing in the cold regions of the northern hemisphere.

**Classification.** Subfamily Bambusoideae. Tribe: Bambuseae.

**Habit, Vegetative Morphology.** Perennial, woody bamboo. Rhizomes elongated, leptomorph. Butt sheaths absent. Culms erect, 150–200 cm long, 5–8 mm diam., woody. Culm-internodes terete, thin-walled, distally glabrous or pubescent, with reflexed hairs. Culm-nodes pubescent. Lateral branches ample, arising from upper culm. Bud complement 1. Branch complement one, solitary, as thick as stem. Culm-sheaths present, persistent, glabrous, without auricles. Leaves 2–3 per branch. Leaf-sheaths glabrous on surface or puberulous. Leaf-sheath oral hairs lacking. Ligule an eciliate membrane. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades oblong, 15–21 cm long, 15–25 mm wide. Leaf-blade surface glabrous. Leaf-blade apex acuminate.

**Inflorescence.** Inflorescence a panicle. Panicle open, ovate, 8–10 cm long. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 5–8 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets linear, laterally compressed, 15–25 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes 2 mm long, obscured by lemmas, pubescent.

**Glumes.** Glumes persistent, similar, shorter than spikelet, thinner than fertile lemma. Lower glume lanceolate, 4–5 mm long, scarios, without keels. Lower glume apex acuminate. Upper glume ovate, 6–7 mm long, scarios, without keels, 7–9 -veined. Upper glume margins ciliate. Upper glume apex acuminate.

**Florets.** Fertile lemma ovate, 8 mm long, chartaceous, without keel, 11–13 -veined, more than 3-veined. Lemma margins ciliate. Lemma apex acuminate. Palea 1 length of lemma, 8–10 -veined. Palea keels ciliate. Palea apex truncate or obtuse. Apical sterile florets resembling fertile though underdeveloped.

**Flower and Fruit.** Lodicules 3, ovate, 2–2.5 mm long, veined, ciliate, obtuse. Anthers 6, 5 mm long. Stigmas 3. Caryopsis with adherent pericarp, apex unappendaged.

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

**Country /Province /State.** Russian far east, **Eastern Asia.** Sakhalin.

**Sasa cernua** Makino. *Journ. Jap. Bot.* vi. 12 (1929).

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

**TYPE** from Japan. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: "Hab. Prov. Shimotsuke: Nikko, *T.Makino*."

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

**Derivation** (Clifford & Bostock 2007): L. nodding. Panicle branches pendant.

**Classification.** Subfamily Bambusoideae. Tribe: Bambuseae.

**Habit, Vegetative Morphology.** Perennial, woody bamboo. Rhizomes elongated, leptomorph. Butt sheaths absent. Culms erect, 200–300 cm long, woody. Culm-internodes terete, thin-walled, distally glabrous or pilose, with reflexed hairs. Lateral branches dendroid. Bud complement 1. Branch complement one, solitary, as thick as stem. Culm-sheaths present, persistent, glabrous, without auricles. Leaf-sheaths glabrous on surface. Ligule an eciliate membrane. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades oblong, 20–28 cm long, 50–70 mm wide, mid-green and glaucous, discolourous with last colour beneath. Leaf-blade midrib scarcely raised beneath. Leaf-blade surface glabrous or pubescent, sparsely hairy, hairy abaxially. Leaf-blade apex acuminate.

**Inflorescence.** Inflorescence a panicle. Panicle open, ovate, 5 cm long. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 5–7 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, laterally compressed, 20–30 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes 3–4 mm long, pubescent.

**Glumes.** Glumes persistent, similar, shorter than spikelet, thinner than fertile lemma. Lower glume lanceolate, 1–1.5 mm long, scarios, without keels. Lower glume apex acuminate. Upper glume lanceolate, 1–1.5 mm long, scarios, without keels. Upper glume apex acuminate.

**Florets.** Fertile lemma ovate, 12 mm long, chartaceous, without keel, 9 -veined, more than 3-veined. Lemma surface scabrous. Lemma apex acuminate. Palea 10 mm long, 8 -veined. Palea keels ciliate, adorned above. Palea surface scabrous. Palea apex awned, awns hairy. Apical sterile florets resembling fertile though underdeveloped.

**Flower and Fruit.** Lodicules 3, ovate, ciliate, acute. Anthers 6, 4–5 mm long. Stigmas 3. Caryopsis with adherent pericarp, apex unappendaged.

**Distribution (TDWG). Continent.** Temperate Asia.  
**Country /Province /State.** Russian far east, **Eastern Asia.** Sakhalin.

**Sasa chartacea** (Mak.) Makino & Shibata. *Bot. Mag. Tokyo*, xv. 27 (1901).

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

**TYPE** from Japan. **Basionym or Replaced Name:** *Arundinaria chartacea* Makino, *Bot. Mag. (Tokyo)* 14(158): 55 (1900). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Hab. Prov. Musashi: Kamitano-mura, *T. Makino 1895*.

**Recent Synonyms:** *Sasa nikkoensis* Makino, *Journ. Jap. Bot.* 6.: 23 (1929).

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

**Derivation** (Clifford & Bostock 2007): *L. charta*, paper; *-acea*, pertaining to. Used for making paper.

**Classification.** Subfamily Bambusoideae. Tribe: Bambuseae.

**Habit, Vegetative Morphology.** Perennial, woody bamboo. Rhizomes elongated, leptomorph. Butt sheaths absent. Culms erect, 100–150 cm long, 3–5 mm diam., woody. Culm-internodes terete, thin-walled, dark green. Lateral branches suffrutescent. Bud complement 1. Branch complement one, solitary, as thick as stem. Culm-sheaths present. Leaf-sheaths 6–9 cm long, glabrous on surface. Leaf-sheath oral hairs setose, spreading. Ligule an eciliate membrane. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades lanceolate, 3.7–17 cm long, 8–23 mm wide. Leaf-blade venation with 8–12 secondary veins, with distinct cross veins. Leaf-blade margins scaberulous. Leaf-blade apex attenuate.

**Inflorescence.** Inflorescence comprising only a few spikelets, comprising 1–3 fertile spikelets. 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 linear, laterally compressed, 20–30 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes pilose.

**Glumes.** Glumes one the lower absent or obscure, persistent, shorter than spikelet, thinner than fertile lemma.

**Florets.** Fertile lemma ovate, 9–17 mm long, chartaceous, dark green, without keel, more than 3-veined. Lemma lateral veins with cross-veins. Lemma apex acute. Apical sterile florets resembling fertile though underdeveloped.

**Flower and Fruit.** Lodicules 3. Anthers 3. Stigmas 3. Caryopsis with adherent pericarp, oblong, 5–6 mm long, apex unappendaged.

$2n = 48$  (1 ref TROPICOS).

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

**Country /Province /State.** Russian far east, **Eastern Asia.** Kuril Is.

**Sasa depauperata** (Takeda) Nakai. *Journ. Fac. Agric.*, Sapporo, xxvi. 185 (1931).

Regarded by K as a synonym (*S. yahikoensis*).

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

**TYPE** from Japan. **Basionym or Replaced Name:** *Sasa nipponica* var. *depauperata* Takeda, *J. Linn. Soc.* 42:498 (1914). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Kuril Is., Shikotan: Coll?.

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

**Derivation** (Clifford & Bostock 2007): *L. reduced*. Small compared with related species.

**Classification.** Subfamily Bambusoideae. Tribe: Bambuseae.

**Habit, Vegetative Morphology.** Perennial, woody bamboo, caespitose. Rhizomes elongated, leptomorph. Butt sheaths absent. Culms erect, 20 cm long, 2–3 mm diam., woody. Culm-internodes terete, thin-walled, distally glabrous or pilose, with reflexed hairs. Culm-nodes glabrous. Lateral branches suffrutescent. Bud complement 1. Branch complement one, solitary, as thick as stem. Culm-sheaths present, 1 length of internode, puberulous, with reflexed hairs. Leaves 2–4 per branch. Leaf-sheaths glabrous on surface. Ligule an eciliate membrane. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades oblong, 6–13 cm long, 17–34 mm wide, mid-green or glaucous, discoloured with last colour beneath. Leaf-blade venation with 12–16 secondary veins. Leaf-blade surface scabrous, pubescent, hairy abaxially. Leaf-blade apex acuminate.

**Inflorescence.** Inflorescence a panicle. Panicle open, ovate, 7 cm long, 4 cm wide. Panicle axis pilose. 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 linear or oblong, laterally compressed, 8–12 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes persistent, shorter than spikelet, thinner than fertile lemma. Lower glume lanceolate, 1 mm long, scarios, without keels. Lower glume surface pilose. Lower glume apex acute. Upper glume ovate, 2–7 mm long, scarios, without keels. Upper glume surface pilose. Upper glume apex acute.

**Florets.** Fertile lemma ovate, 5–7 mm long, chartaceous, purple, without keel, more than 3-veined. Lemma apex setaceously acuminate. Palea 4–5 mm long. Apical sterile florets resembling fertile though underdeveloped.

**Flower and Fruit.** Lodicules 3. Anthers 6, purple. Stigmas 3. Caryopsis with adherent pericarp, apex unappendaged.

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

**Country /Province /State.** Russian far east, **Eastern Asia.** Kuril Is. Japan.

**Sasa elegantissima** Koidz. *Acta Phytotax. & Geobot.* iv. 86 (1935).

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

**TYPE** from Japan. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: ST: *T.Kurokawa*, Japan: Prov. Iga, Ayamagunn, Kuhashiramura. Hisokochi ST: *T.Kurokawa*, Japan: Niimura, Takahatayama ST: *R.Yoshii*, Japan: Prov. Kawachi, mt. Kongosan.

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

**Derivation** (Clifford & Bostock 2007): *L. elegans*, elegant; -issima, most. Very attractive in some respect, usually the inflorescence.

**Classification.** Subfamily Bambusoideae. Tribe: Bambuseae.

**Habit, Vegetative Morphology.** Perennial, woody bamboo. Rhizomes elongated, leptomorph. Butt sheaths absent. Culms erect, 50–80 cm long, woody. Culm-internodes terete, thin-walled, distally glabrous or pubescent, with reflexed hairs. Culm-nodes glabrous or pubescent. Lateral branches lacking. Culm-sheaths present, persistent, glabrous, without auricles. Leaf-sheaths glabrous on surface. Leaf-sheath oral hairs setose. Ligule an eciliate membrane. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades oblong, 15–22 cm long, 30–50 mm wide. Leaf-blade surface pubescent, densely hairy, hairy abaxially. Leaf-blade apex acuminate.

**Inflorescence.** Inflorescence a panicle. Panicle open, oblong, 12 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 linear, laterally compressed, 20–30 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes persistent, similar, shorter than spikelet, thinner than fertile lemma. Lower glume lanceolate, 1 mm long, scarios, without keels. Lower glume apex acuminate. Upper glume lanceolate, 2 mm long, scarios, without keels. Upper glume apex acuminate.

**Florets.** Fertile lemma ovate, 6–9 mm long, chartaceous, without keel, more than 3-veined. Lemma apex acuminate. Apical sterile florets resembling fertile though underdeveloped.

**Flower and Fruit.** Lodicules 3. Anthers 6. Stigmas 3. Caryopsis with adherent pericarp, apex unappendaged.

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

**Country /Province /State.** **Eastern Asia.** Japan.

**Sasa fugeshiensis** Koidz. *Acta Phytotax. & Geobot.* iv. 167 (1935).

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

**TYPE** from Japan. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: "Hab. Nippon: prov. Noto: Fugeshigunn, Kawaradamura, Ishiyasuba.", *J.Yosishawa 2.a.c.*.

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

**Derivation** (Clifford & Bostock 2007): *L. -ensis*, denoting origin. From Fugeshigunn, Noto Province, Japan.

**Classification.** Subfamily Bambusoideae. Tribe: Bambuseae.

**Habit, Vegetative Morphology.** Perennial, woody bamboo. Rhizomes elongated, leptomorph. Butt sheaths absent. Culms erect, robust, 150–200 cm long, woody. Culm-internodes terete, thin-walled, distally pubescent. Culm-nodes pubescent. Lateral branches suffrutescent. Bud complement 1. Branch complement one, solitary, as thick as stem. Culm-sheaths present, persistent, puberulous, with reflexed hairs. Leaf-sheaths glabrous on

surface or puberulous. Leaf-sheath oral hairs pubescent or ciliate, spreading. Ligule an eciliate membrane. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades oblong or ovate, 8–19 cm long, 24–43 mm wide, indurate. Leaf-blade surface glabrous. Leaf-blade apex acuminate. Flowering specimens unknown.

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

**Country /Province /State.** Eastern Asia. Japan.

**Sasa gracillima** Nakai. *Bot. Mag., Tokyo*, xlvi. 47 (1932).

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

**TYPE** from Japan. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: "Hab. Kiuziu: in monte Unzengatake, prov. Hizen", *J.Matsumura & G.Koidzumi* (HT:Herb.Imp.Univ.Tokyo).

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

**Derivation** (Clifford & Bostock 2007): L. very delicate. Of slender habit.

**Classification.** Subfamily Bambusoideae. Tribe: Bambuseae.

**Habit, Vegetative Morphology.** Perennial, woody bamboo. Rhizomes elongated, leptomorph. Butt sheaths absent. Culms erect, weak, 30–80 cm long, woody. Culm-internodes terete, thin-walled, distally glabrous. Culm-nodes glabrous. Lateral branches lacking. Culm-sheaths present, persistent, glabrous. Leaf-sheaths glabrous on surface. Leaf-sheath oral hairs scanty or ciliate, spreading. Ligule an eciliate membrane. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades lanceolate or oblong, 15–18 cm long, 25–30 mm wide. Leaf-blade surface glabrous, hairless throughout or except near base. Leaf-blade apex acuminate. Flowering specimens unknown.

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

**Country /Province /State.** Eastern Asia. Japan.

**Sasa guangdongensis** W.T. Lin & X.B. Ye. *Acta Phytotax. Sin.*, 26(2): 148 (1988).

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

**TYPE** from China. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: China: Guangdong: Taishan, Gudou Shan, 450 m, *X.B. Yie*, 35118 (HT: SCAC).

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

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

**Classification.** Subfamily Bambusoideae. Tribe: Bambuseae.

**Habit, Vegetative Morphology.** Perennial, woody bamboo. Rhizomes elongated, leptomorph. Butt sheaths absent. Culms erect, 100–150 cm long, 5–6 mm diam., woody. Culm-internodes terete, thin-walled, 4.5–9 cm long, distally glabrous. Lateral branches suffrutescent. Bud complement 1. Branch complement one, solitary, as thick as stem. Culm-sheaths present, persistent, 6.5–7.5 cm long, glabrous, without auricles, glabrous on shoulders. Culm-sheath blade lanceolate, deciduous, reflexed, 1 cm long. Leaves 6 per branch. Leaf-sheaths reticulately veined, glabrous on surface. Leaf-sheath oral hairs lacking. Leaf-sheath auricles absent. Ligule an eciliate membrane, 3–4 mm long. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades oblong, 10–23 cm long, 25–40 mm wide. Leaf-blade venation with 14 secondary veins, with distinct cross veins. Leaf-blade surface glabrous.

**Inflorescence.** Inflorescence a panicle, comprising 8–11 fertile spikelets. Panicle open, oblong or ovate. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, 10–30 mm long.

**Fertile Spikelets.** Spikelets comprising 4–9 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets linear, laterally compressed, 35–80 mm long, 3–6 mm wide, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes 4 mm long, eventually visible between lemmas, pubescent.

**Glumes.** Glumes several, 4 empty glumes, persistent, shorter than spikelet, thinner than fertile lemma. Lower glume lanceolate, 6 mm long, scarious, without keels. Lower glume apex acute. Upper glume ovate, 15 mm long, scarious, without keels. Upper glume apex acute.

**Florets.** Fertile lemma ovate, 12–16 mm long, chartaceous, without keel, 12–14 -veined, more than 3-veined. Lemma apex acuminate. Palea 7–11 mm long. Palea keels ciliolate. Apical sterile florets resembling fertile though underdeveloped.

**Flower and Fruit.** Lodicules 3, 2.5 mm long, glabrous. Anthers 6, 4 mm long. Stigmas 3. Caryopsis with adherent pericarp, apex unappendaged.

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

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

**Sasa guangxiensis** C.D.Chu & C.S.Chao. *J. Nanjing Techn. Coll. Forest Prod.*, 1981(3): 34 (1981).

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

**TYPE** from China. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: China: Guanxi: Rongshui, banks of mountain streams, 500–800 m, C.D. Chu et al. 7906 (HT: NFU).

**Illustrations (Books):** S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 143).

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

**Classification.** Subfamily Bambusoideae. Tribe: Bambuseae.

**Habit, Vegetative Morphology.** Perennial, woody bamboo, pluricaespitose. Rhizomes elongated, leptomorph. Butt sheaths absent. Culms erect, 50–100 cm long, 2–5 mm diam., woody. Culm-internodes terete, 8–10 cm long, distally pubescent. Culm-nodes swollen. Lateral branches suffrutescent. Bud complement 1. Branch complement one, solitary. Culm-sheaths present, deciduous, pubescent, with grey hairs, auriculate, setose on shoulders, shoulders with straight hairs, shoulders with 5–10 mm long hairs. Culm-sheath ligule 5 mm high, lacerate. Culm-sheath blade lanceolate, deciduous, erect. Leaves 3–8 per branch. Leaf-sheaths glabrous on surface or puberulous. Leaf-sheath oral hairs setose, spreading, 6–10 mm long. Leaf-sheath auricles falcate. Ligule an eciliate membrane, 15 mm long. Leaf-blade base cuneate, with a brief petiole-like connection to sheath. Leaf-blades lanceolate or elliptic, 13–26 cm long, 20–43 mm wide. Leaf-blade venation with 8–14 secondary veins, with distinct cross veins. Leaf-blade surface glabrous. Leaf-blade apex acuminate. Flowering specimens unknown.

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

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

**TDWG4.** Guangxi, Jiangxi.

**Sasa hainanensis** C.D. Chu & C.S. Chao. *Acta Phytotax. Sinica* 18: 31 (1980).

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

**TYPE** from China. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: China: Hainan: Baoting, Diaoluoshan, 988 m, *Diaoluoshan Exp.* 2997 (HT: SCBI).

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

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

**Classification.** Subfamily Bambusoideae. Tribe: Bambuseae.

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

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

**Sasa hayatae** Makino. *Journ. Jap. Bot.* iii. 16 (1926).

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

**TYPE** from Japan. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: Japan: Prov. Musashi: Mt. Takao, *T.Makino s.n.*

**Recent Synonyms:** *Sasa hidaensis* Makino, *Journ. Jap. Bot.* 3: 46 (1926). *Sasa minoensis* Koidz., *Acta Phytotax. & Geobot., Kyoto.* ^; 75. (1937).

*Sasa hirtella* Nakai, *Journ. Jap. Bot.* 10: 567 (1934).

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

**Derivation** (Clifford & Bostock 2007): in honor of Bunzt Hayata (1874–1934) Japanese botanist.

**Classification.** Subfamily Bambusoideae. Tribe: Bambuseae.

**Habit, Vegetative Morphology.** Perennial, woody bamboo. Rhizomes elongated, leptomorph. Butt sheaths absent. Culms erect, woody. Culm-internodes terete, thin-walled. Lateral branches suffrutescent. Bud complement 1. Branch complement one, solitary, as thick as stem. Culm-sheaths present. Leaf-sheaths 4–10 cm long, glabrous on surface. Leaf-sheath oral hairs setose. Ligule an eciliate membrane. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades lanceolate, 9–20 cm long, 16–44 mm wide, mid-green and glaucous, discolourous with last colour beneath and variegated (white margins). Leaf-blade surface pubescent. Leaf-blade margins scaberulous. Leaf-blade apex attenuate.

**Inflorescence.** Inflorescence a panicle. Peduncle 12–14 cm long, pubescent above. Panicle open, ovate. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 3–5 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets linear or oblong, laterally compressed, 10–20 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes persistent, shorter than spikelet, thinner than fertile lemma. Lower glume lanceolate, 2–4 mm long, scarios, without keels. Lower glume surface pubescent. Lower glume apex acute. Upper glume ovate, 2–4 mm long, scarios, without keels. Upper glume apex acute.

**Florets.** Fertile lemma ovate, 8 mm long, chartaceous, dark green, without keel, more than 3-veined. Lemma lateral veins with cross-veins. Lemma margins ciliate. Lemma apex acute. Palea 5–6 mm long. Palea keels ciliate. Apical sterile florets resembling fertile though underdeveloped.

**Flower and Fruit.** Lodicules 3, 1 mm long. Anthers 6. Stigmas 2. Caryopsis with adherent pericarp, apex unappendaged.

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

**Country /Province /State.** Eastern Asia. Japan.

**Sasa heterotricha** Koidz. *Acta Phytotax. & Geobot.* iv. 168 (1935).

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

**TYPE** from Japan. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: "Hab. Nippon: prov. noto, Fugeshigunn, Koonosumura, Kutegawa.", *J.Yoshikawa s.n.*.

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

**Derivation** (Clifford & Bostock 2007): Gk. heteros, different; thrix, hair. Glumes and sterile lemma bear hairs of various lengths.

**Classification.** Subfamily Bambusoideae. Tribe: Bambuseae.

**Habit, Vegetative Morphology.** Perennial, woody bamboo. Rhizomes elongated, leptomorph. Butt sheaths absent. Culms erect, 100–200 cm long, woody. Culm-internodes terete, thin-walled, distally pubescent, with reflexed hairs. Culm-nodes glabrous or pubescent. Lateral branches dendroid. Bud complement 1. Branch complement one, solitary, as thick as stem. Culm-sheaths present, persistent, glabrous, without auricles. Leaf-sheaths glabrous on surface or pilose. Leaf-sheath oral hairs setose. Ligule an eciliate membrane. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades oblong, 20–25 cm long, 40–60 mm wide. Leaf-blade surface glabrous. Leaf-blade apex acuminate.

**Inflorescence.** Inflorescence a panicle. Panicle open, oblong, 10 cm long. 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 linear, laterally compressed, 20–30 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes persistent, similar, shorter than spikelet, thinner than fertile lemma. Lower glume lanceolate, 1.5 mm long, scarios, without keels. Lower glume apex acuminate. Upper glume lanceolate, 3 mm long, scarios, without keels. Upper glume apex acuminate.

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

**Flower and Fruit.** Lodicules 3. Anthers 6. Stigmas 3. Caryopsis with adherent pericarp, apex unappendaged.

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

**Country /Province /State.** Eastern Asia. Japan.

**Sasa hibaconuca** Koidz. *Acta Phytotax. & Geobot., Kyoto.* viii. 57 (1939).

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

**TYPE** from Japan. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: "Japonica: prov. Bingo, Hibagun, Onukamura.",.

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

**Derivation** (Clifford & Bostock 2007): from Hibagun Province, Japan.

**Classification.** Subfamily Bambusoideae. Tribe: Bambuseae.

**Habit, Vegetative Morphology.** Perennial, woody bamboo. Rhizomes elongated, leptomorph. Butt sheaths absent. Culms erect, slender, 60–80 cm long, woody. Culm-internodes terete, thin-walled, distally pubescent, with reflexed hairs. Lateral branches lacking. Culm-sheaths present, persistent, pilose. Leaf-sheaths puberulous. Leaf-sheath oral hairs ciliate, spreading. Ligule an eciliate membrane. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades lanceolate or oblong, 15–29 cm long, 22–40 mm wide, fleshy. Leaf-blade surface glabrous. Leaf-blade apex acuminate. Flowering specimens unknown.

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



**Country /Province /State. Eastern Asia.** Japan.

**Sasa hirta** (Koidz.) Tsvelev. *Novosti Sist. Vyssh. Rast.*, 12: 62 (1975).

Regarded by K as a synonym (*S. kurlensis*).

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

**TYPE** from Japan. **Basionym or Replaced Name:** *Sasa pseudocernua* var. *hirta* Koidz., *Acta Phytotax. Geobot.* 9: 174 (1940). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Japan, Mt. Kashizan: Suzuki.

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

**Derivation** (Clifford & Bostock 2007): L. hairy. Hairy in part or extensively.

**Classification.** Subfamily Bambusoideae. Tribe: Bambuseae.

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

**Country /Province /State.** Russian far east, **Eastern Asia.** Sakhalin. Japan.

**Sasa hisauchii** (Makino) Makino. *Journ. Jap. Bot.* iii. 22 (1926).

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

**TYPE** from Japan. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Japan: Hondo: Sagami prov., Hakone, 24 July 1921, *T. Nakai s.n.*.

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

**Derivation** (Clifford & Bostock 2007): in honor of Kiyotaka Hisauchi or Hisauti (1884–1981) Japanese botanist.

**Classification.** Subfamily Bambusoideae. Tribe: Bambuseae.

**Habit, Vegetative Morphology.** Perennial, woody bamboo. Rhizomes elongated, leptomorph. Butt sheaths absent. Culms erect, 100–150 cm long, 4–7 mm diam., woody. Culm-internodes terete, thin-walled, distally glabrous or pubescent. Culm-nodes glabrous. Lateral branches dendroid. Bud complement 1. Branch complement one or three, in a horizontal line, as thick as stem. Culm-sheaths present, persistent, glabrous, without auricles. Leaf-sheaths glabrous on surface or pilose. Leaf-sheath oral hairs setose, spreading. Ligule an eciliate membrane. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades lanceolate or oblong, 20–25 cm long, 25–40 mm wide. Leaf-blade surface glabrous. Leaf-blade apex acuminate.

**Inflorescence.** Inflorescence a panicle. Panicle open, ovate, 6 cm long. 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 linear, laterally compressed, 40–50 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes 5 mm long, pubescent.

**Glumes.** Glumes persistent, similar, shorter than spikelet, thinner than fertile lemma. Lower glume lanceolate, 3 mm long, scarious, without keels. Lower glume apex acuminate. Upper glume lanceolate, 5 mm long, scarious, without keels. Upper glume apex acuminate.

**Florets.** Fertile lemma ovate, 12 mm long, chartaceous, without keel, 9 -veined, more than 3-veined. Lemma lateral veins with cross-veins. Lemma margins ciliate, hairy above. Lemma apex acuminate. Palea 11 mm long, 8 -veined. Palea keels ciliate, adorned above, with 0.5 of their length adorned. Palea apex with excurrent keel veins. Apical sterile florets resembling fertile though underdeveloped.

**Flower and Fruit.** Lodicules 3, ovate, ciliate, acute. Anthers 6. Stigmas 3. Caryopsis with adherent pericarp, apex unappendaged.

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

**Country /Province /State. Eastern Asia.** Japan.

**Sasa hubeiensis** (C.H. Hu) C.H.Hu. *Bamboo Res.*, 1985(2): 60: (1985).

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

**TYPE** from China. **Basionym or Replaced Name:** *Sasamorpha hubeiensis* C.H. Hu, *J. Bamboo Res.* 2(1): 51 (1983). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: China: Hubei: Tongshan, 10 May 1980, *Want Siyun 704* (HT: NJU).

**Illustrations (Books):** S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 145).

**Derivation** (Clifford & Bostock 2007): L. -ensis, denoting origin. From Hubei Sheng, China.

**Classification.** Subfamily Bambusoideae. Tribe: Bambuseae.

**Habit, Vegetative Morphology.** Perennial, woody bamboo. Rhizomes elongated, leptomorph. Butt sheaths absent. Culms erect, 50–100 cm long, 3–5 mm diam., woody. Culm-internodes unequal, the lower longer, terete, distally mealy. Lateral branches suffrutescent. Bud complement 1. Branch complement one, solitary. Culm-sheaths present, persistent, coriaceous, pilose, hairy above. Culm-sheath ligule ciliate. Culm-sheath blade lanceolate, 3 cm long. Leaf-sheaths pilose, with tubercle-based hairs. Ligule an eciliate membrane. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades oblong, 20 cm long, 40 mm wide, fleshy. Leaf-blade venation with 16 secondary veins, with distinct cross veins. Leaf-blade apex acuminate. Flowering specimens unknown.

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

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

**TDWG4.** Jiangxi. Hubei.

**Sasa kagamiana** Makino & Uchida. *Journ. Jap. Bot.* v. 42 (1928).

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

**TYPE** from Japan. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: ST: *S.Uchida*, 1928, Japan: Prov. Rikuchu: Yonai-mura

ST: *T.Makino*, 1928, Japan: Prov. Rikuchu: Yonai-mura.

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

**Derivation** (Clifford & Bostock 2007): L. -ana, indicating connection. In honor of Jasunosuki Kagami (-), Japanese agriculturalist and forester.

**Classification.** Subfamily Bambusoideae. Tribe: Bambuseae.

**Habit, Vegetative Morphology.** Perennial, woody bamboo. Rhizomes elongated, leptomorph. Butt sheaths absent. Culms erect, robust, 100–200 cm long, 4–7 mm diam., woody. Culm-internodes terete, thin-walled, distally glabrous or pubescent. Lateral branches lacking or sparse. Bud complement 1. Branch complement one, solitary, as thick as stem. Culm-sheaths present, persistent, pilose. Leaves 4–9 per branch. Leaf-sheaths puberulous. Leaf-sheath oral hairs lacking or ciliate, spreading. Ligule an eciliate membrane. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades lanceolate or oblong, 25–30 cm long, 45–60 mm wide. Leaf-blade surface glabrous, hairless throughout or except near base. Leaf-blade apex acuminate. Flowering specimens unknown.

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

**Country /Province /State.** Eastern Asia. Japan.

**Sasa kogasensis** Nakai. *Bot. Mag., Tokyo*, xlvi. 46. (1932).

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

**TYPE** from Japan. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: "Hondo: in pinetum Kogashi prov. Shimotsuke.", *T.Nakai* (HT:Herb.Imp.Univ.Tokyo.).

**Recent Synonyms:** *Sasa debilis* Nakai, *Bot. Mag., Tokyo*, 46: 93 (1932).

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

**Derivation** (Clifford & Bostock 2007): L. -ensis, denoting origin. From Kogashi, Shimotsuku Province, Japan.

**Classification.** Subfamily Bambusoideae. Tribe: Bambuseae.

**Habit, Vegetative Morphology.** Perennial, woody bamboo. Rhizomes elongated, leptomorph. Butt sheaths absent. Culms erect, 5–10 cm long, 1.5–2 mm diam., woody. Culm-internodes terete, thin-walled. Culm-nodes glabrous. Lateral branches suffrutescent. Bud complement 1. Branch complement one, solitary, as thick as stem. Culm-sheaths present. Leaves 2–3 per branch. Leaf-sheaths glabrous on surface, outer margin hairy. Ligule an eciliate membrane. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades lanceolate or oblong, 5–9 cm long, 5–18 mm wide, mid-green and glaucous, discolourous with last colour beneath. Leaf-blade surface glabrous.

**Inflorescence.** Inflorescence composed of racemes. Racemes 1, single, 5–6 cm long. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 4–5 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets linear or oblong, laterally compressed, 8–12 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes persistent, shorter than spikelet, thinner than fertile lemma. Lower glume lanceolate, 1 mm long, scarios, without keels. Lower glume surface pubescent. Lower glume apex acute. Upper glume ovate, 2–3 mm long, scarios, without keels. Upper glume surface pubescent. Upper glume apex acute.

**Florets.** Fertile lemma ovate, 5–8 mm long, chartaceous, purple, without keel, more than 3-veined. Lemma margins ciliolate. Lemma apex acute or acuminate. Palea 5–7 mm long. Palea keels ciliate. Palea apex dentate, 2-fid. Apical sterile florets resembling fertile though underdeveloped.

**Flower and Fruit.** Lodicules 3, ciliate. Anthers 6, yellow. Stigmas 3. Caryopsis with adherent pericarp, apex unappendaged.

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

**Country /Province /State.** Eastern Asia. Japan.

**Sasa kurilensis** (Rupr.) Makino & Shibata. *Bot. Mag. Tokyo*, xv. 27 (1901).

**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:** *Arundinaria kurilensis* Rupr., *Bull. Cl. Phys.-Math. Acad. Imp. Sci. Saint-Petersbourg* 8: 121 (1850). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: TYPE MATERIAL: *Wosnessenski s.n.*, 1844, USSR: Russian Sfsr (US-2808849).

**Recent Synonyms:** *Sasa capillaris* Nakai, *Journ. Jap. Bot.* 10: 555 (1934).

**Illustrations (Books):** N.N.Tsvelev, *Grasses of the Soviet Union* (1983) (113 (80), Pl.1), D.Farrelly, *The Book of Bamboo* (1984) (178).

**Derivation** (Clifford & Bostock 2007): L. -ensis, denoting origin. Of the Kuriles.

**Classification.** Subfamily Bambusoideae. Tribe: Bambuseae.

**Habit, Vegetative Morphology.** Perennial, woody bamboo. Rhizomes elongated, leptomorph. Butt sheaths absent. Culms erect, woody. Culm-internodes terete, thin-walled. Lateral branches lacking. Culm-sheaths present. Leaf-sheaths glabrous on surface. Ligule an eciliate membrane, 1.5 mm long. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades linear or lanceolate, 4.5–15 cm long, 10–23 mm wide, dark green and glaucous, discolorous with last colour beneath. Leaf-blade venation with 10–12 secondary veins. Leaf-blade surface scaberulous, glabrous. Leaf-blade apex acuminate.

**Inflorescence.** Inflorescence a panicle. Panicle open, ovate. Panicle branches capillary, glabrous. 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 or oblong, laterally compressed, 12–16 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes persistent, shorter than spikelet, thinner than fertile lemma. Lower glume lanceolate, 1 mm long, scarios, without keels. Lower glume surface pilose. Lower glume apex acute. Upper glume lanceolate, 2–3 mm long, scarios, without keels. Upper glume surface pilose. Upper glume apex acute.

**Florets.** Fertile lemma ovate, 5–6 mm long, chartaceous, without keel, more than 3-veined. Lemma margins ciliolate. Lemma apex acute. Palea 5–6 mm long. Palea keels eciliate. Palea surface glabrous. Apical sterile florets resembling fertile though underdeveloped.

**Flower and Fruit.** Lodicules 3, 1–2 mm long, ciliate. Anthers 6. Stigmas 3. Caryopsis with adherent pericarp, oblong or ovoid, 6 mm long, apex unappendaged.

$2n = 48$  (1 ref TROPICOS).

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

**Country /Province /State.** Russian far east, Eastern Asia. Kuril Is, Sakhalin. Japan, Korea.

**Sasa kurokawana** Makino. *Journ. Jap. Bot.* vii. 27 (1931).

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

**TYPE** from Japan. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Japan: Hondo: Iga prov., Ueno, *T. Kurokawa* (ST: TI).

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

**Derivation** (Clifford & Bostock 2007): L. -ana, indicating connection. In honor of Takao Kurokawa (fl. 1931–1934) Japanese botanist.

**Classification.** Subfamily Bambusoideae. Tribe: Bambuseae.

**Habit, Vegetative Morphology.** Perennial, woody bamboo. Rhizomes elongated, leptomorph. Butt sheaths absent. Culms erect, 70–80 cm long, 2.5–5 mm diam., woody. Culm-internodes terete, thin-walled, 10 cm long, distally glabrous. Culm-nodes glabrous or pubescent. Lateral branches suffrutescent. Bud complement 1. Branch

complement one, solitary, as thick as stem. Culm-sheaths present, persistent. Leaves 4–6 per branch. Leaf-sheaths striately veined, glabrous on surface, outer margin hairy. Leaf-sheath oral hairs lacking. Ligule a ciliolate membrane, 1.5–3 mm long, pubescent on abaxial surface, truncate. Leaf-blade base with a brief petiole-like connection to sheath, petiole 0.3–1.1 cm long, petiole pubescent. Leaf-blades oblong, 15–29 cm long, 40–70 mm wide, light green and glaucous, discolourous with last colour beneath. Leaf-blade midrib prominent beneath. Leaf-blade venation with 14–22 secondary veins, with distinct cross veins. Leaf-blade surface puberulous, hairy abaxially. Leaf-blade margins scaberulous. Leaf-blade apex acuminate.

**Inflorescence.** Inflorescence a panicle. Panicle open, oblong or ovate, 10–14 cm long, 5–8 cm wide. Panicle axis puberulous. Panicle branches puberulous. 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 linear, laterally compressed, 25–40 mm long, 15–40 mm wide, with hairs extending 2–3 mm beyond apex, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes eventually visible between lemmas, pubescent.

**Glumes.** Glumes persistent, dissimilar, shorter than spikelet, thinner than fertile lemma. Lower glume lanceolate. Lower glume surface pubescent. Lower glume apex acute. Upper glume ovate. Upper glume surface pubescent. Upper glume apex acute.

**Florets.** Fertile lemma ovate, 7–8.5 mm long, chartaceous, without keel, more than 3-veined. Lemma surface pubescent, hairy above. Lemma apex acute. Palea 1 mm long, 7 -veined. Palea keels pubescent, adorned above. Apical sterile florets resembling fertile though underdeveloped.

**Flower and Fruit.** Lodicules 3, ciliate. Anthers 6. Stigmas 3. Caryopsis with adherent pericarp, oblong, 6 mm long, apex unappendaged.

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

**Country /Province /State.** Eastern Asia. Japan.

### **Sasa longiligulata** McClure. *Lingnan Sc. Journ.* xix. 536 (1940).

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

**TYPE** from China. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: IT: *F.A. McClure 20512*, 1 Nov 1936, China: Kwangtung (US-37192).

**Recent Synonyms:** *Sasa sulcata* W.T.Lin, *J. Bamboo Res.*, 12(2): 35 (1993).

**Illustrations (Books):** S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 142).

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

**Classification.** Subfamily Bambusoideae. Tribe: Bambuseae.

**Habit, Vegetative Morphology.** Perennial, woody bamboo. Rhizomes elongated, leptomorph. Butt sheaths absent. Culms erect, 150 cm long, 10 mm diam., woody, 20 -noded. Culm-internodes terete, thin-walled, distally pubescent. Culm-nodes swollen. Lateral branches suffrutescent. Bud complement 1. Branch complement one, solitary. Culm-sheaths present, persistent, chartaceous, purple, antrorsely scabrous, pilose, hairy at the base, with reflexed hairs, with tawny hairs, hairy on margins, without auricles, glabrous on shoulders. Culm-sheath ligule 1 mm high, ciliolate. Culm-sheath blade linear, erect, 5–15 cm long, scabrid. Leaves 3–15 per branch. Leaf-sheaths glabrous on surface or hispid. Ligule an eciliate membrane. Leaf-blade base asymmetrical, with a brief petiole-like connection to sheath. Leaf-blades lanceolate, 6–25 cm long, 15–33 mm wide. Leaf-blade surface glabrous. Leaf-blade apex acuminate. Flowering specimens unknown.

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

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

**TDWG4.** Guangdong, Hunan.

### **Sasa magnifica** (Nakai) S.Suzuki. *Hikobia*, 8(1–2): 62 (1977).

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

**TYPE** from Japan. **Basionym or Replaced Name:** *Arundinaria magnifica* Nakai, *J. Jap. Bot.* 10(9): 577–578 (1934). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Japan: Kiusiu: Higo prov., Isshohchi, *K. Mayebaru* 2132.

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

**Classification.** Subfamily Bambusoideae. Tribe: Bambuseae.

**Habit, Vegetative Morphology.** Perennial, woody bamboo. Rhizomes elongated, leptomorph. Butt sheaths absent. Culms erect, 100–150 cm long, 4–7 mm diam., woody. Culm-internodes terete, thin-walled, distally pubescent. Culm-nodes pubescent. Lateral branches suffrutescent, arising from upper culm. Bud complement 1.

Branch complement one, solitary, as thick as stem. Culm-sheaths present, persistent, pubescent. Leaf-sheaths puberulous. Leaf-sheath oral hairs ciliate, deciduous. Ligule an eciliate membrane. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades lanceolate or oblong, 21–24 cm long, 40–50 mm wide. Leaf-blade surface glabrous, hairless throughout or except near base. Leaf-blade apex acuminate. Flowering specimens unknown.

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

**Country /Province /State.** Eastern Asia. Japan.

**Sasa magnonoda** T.H. Wen & Liao. *J. Bamboo Res.*, 10(1): 14 (1991).

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

**TYPE** from China. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: China, Jingashan: Wen & Liao 90551 (ZJFI holo).

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

**Classification.** Subfamily Bambusoideae. Tribe: Bambuseae.

**Habit, Vegetative Morphology.** Perennial, woody bamboo. Rhizomes elongated, leptomorph. Butt sheaths absent. Culms erect, 100 cm long, 10 mm diam., woody. Culm-internodes terete, 11 cm long. Culm-nodes swollen, pubescent. Lateral branches suffrutescent. Bud complement 1. Branch complement one, solitary. Culm-sheaths present, chartaceous, green and purple, distinctly mottled with last colour, pilose, glabrous on margins, auriculate, with 1 mm high auricles, glabrous on shoulders. Culm-sheath ligule 1 mm high. Culm-sheath blade triangular, erect. Leaf-sheaths reticulately veined, glabrous on surface. Leaf-sheath oral hairs lacking. Ligule an eciliate membrane, 11 mm long, lacerate. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades lanceolate or elliptic, 25–30 cm long, 35–47 mm wide. Leaf-blade venation with 12–14 secondary veins, with distinct cross veins. Leaf-blade surface glabrous. Leaf-blade apex acuminate. Flowering specimens unknown.

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

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

**Sasa makinoi** Nakai. *Journ. Jap. Bot.* 1934, x. 557. (1934).

Regarded by K as a synonym (*S. senanensis*).

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

**TYPE** from Japan. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: Japan: Hondo: Shimotsuke prov., Yumoto, *T. Nakai* (HT: TI).

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

**Derivation** (Clifford & Bostock 2007): in honor of Tomitaro Makino (1861–1957) Japanese botanist.

**Classification.** Subfamily Bambusoideae. Tribe: Bambuseae.

**Habit, Vegetative Morphology.** Perennial, woody bamboo. Rhizomes elongated, leptomorph. Butt sheaths absent. Culms erect, 200 cm long, 5–7 mm diam., woody. Culm-internodes terete, thin-walled, 19 cm long, distally glabrous. Culm-nodes pubescent. Lateral branches sparse. Bud complement 1. Branch complement one, solitary, as thick as stem. Culm-sheaths present. Leaves 3–7 per branch. Leaf-sheaths glabrous on surface. Leaf-sheath oral hairs scanty or lacking. Ligule an eciliate membrane. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades oblong, 20–26 cm long, 45–75 mm wide, mid-green or glaucous, discolourous with last colour beneath. Leaf-blade surface glabrous or puberulous. Leaf-blade margins scabrous.

**Inflorescence.** Inflorescence a panicle. Panicle open, ovate, 15–20 cm long, 10 cm wide. Panicle axis pubescent. Panicle branches stiff. 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 or oblong, laterally compressed, 11–16 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes persistent, shorter than spikelet, thinner than fertile lemma. Lower glume lanceolate, 1–3 mm long, scarios, without keels. Lower glume surface pubescent. Lower glume apex acute. Upper glume ovate, 1–3 mm long, scarios, without keels. Upper glume surface pubescent. Upper glume apex acute.

**Florets.** Fertile lemma ovate, 8–11 mm long, chartaceous, purple, without keel, more than 3-veined. Lemma margins ciliate. Lemma apex acuminate. Palea 7–9 mm long. Apical sterile florets resembling fertile though underdeveloped.

**Flower and Fruit.** Lodicules 3. Anthers 6, 3 mm long, purple. Stigmas 3, purple. Caryopsis with adherent pericarp, apex unappendaged.

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

**Country /Province /State.** Russian far east, **Eastern Asia.** Kuril Is, Sakhalin. Japan.

**Sasa masamuneana** (Makino) C.S.Chao & S.A.Rennoize. *Kew Bull.*, 44(2): 368 (1989).

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

**TYPE** from Japan. **Basionym or Replaced Name:** *Pleioblastus masamuneanus* Makino, *Journ. Jap. Bot.* 6: 5 (1929). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Japan, Yakushima: Masamune.

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

**Derivation** (Clifford & Bostock 2007): L. -ana, indicating connection. In honor of Genkei Masamune (1899-) Japanese botanist.

**Classification.** Subfamily Bambusoideae. Tribe: Bambuseae.

**Habit, Vegetative Morphology.** Perennial, woody bamboo. Rhizomes elongated, leptomorph. Butt sheaths absent. Culms erect, 200 cm long, woody. Culm-internodes terete, thin-walled, distally glabrous or pubescent, with reflexed hairs. Culm-nodes glabrous or pubescent. Lateral branches suffrutescent. Bud complement 1. Branch complement one, solitary, as thick as stem. Culm-sheaths present. Leaf-sheath oral hairs setose. Ligule an eciliate membrane. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades lanceolate, 12–20 cm long, 19–28 mm wide. Leaf-blade apex attenuate.

**Inflorescence.** Inflorescence a panicle. Panicle open, ovate. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 5–7 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets oblong, laterally compressed, 20–30 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes persistent, shorter than spikelet. Lower glume lanceolate, scarious, without keels. Lower glume apex acute. Upper glume ovate, scarious, without keels. Upper glume apex acute.

**Florets.** Fertile lemma ovate, chartaceous, without keel, more than 3-veined. Lemma apex acute. Apical sterile florets resembling fertile though underdeveloped.

**Flower and Fruit.** Lodicules 3. Anthers 6. Stigmas 2. Caryopsis with adherent pericarp, apex unappendaged.

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

**Country /Province /State.** **Eastern Asia.** Japan.

**Sasa matsudae** Nakai. *Journ. Jap. Bot.* xi. 376 (1935).

Regarded by K as a synonym (*S. cernua*).

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

**TYPE** from Japan. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Japan: Hondo: Ugo prov., in monte Hatsumandai, 1400 m, 8 Aug. 1931, *M. Matsuda* (HT:).

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

**Derivation** (Clifford & Bostock 2007): in honor of Magodji Matsuda (fl. 1931) Japanese botanist.

**Classification.** Subfamily Bambusoideae. Tribe: Bambuseae.

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

**Country /Province /State.** Russian far east, **Eastern Asia.** Sakhalin. Japan.

**Sasa megalophylla** Makino & Uchida. *Journ. Jap. Bot.* vi. 23 (1929).

**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 Japan. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: "Hab. Prov. Rikuchu: Takizawa, by stream side in field." Sept. 15, 1929., *T.Makino*.

**Recent Synonyms:** *Sasa kitamiana* Nakai, *Bot. Mag., Tokyo*, 46: 93 (1932).

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

**Derivation** (Clifford & Bostock 2007): Gk. megal, large; phyllon, leaf. Leaf-blades large.

**Classification.** Subfamily Bambusoideae. Tribe: Bambuseae.

**Habit, Vegetative Morphology.** Perennial, woody bamboo. Rhizomes elongated, leptomorph. Butt sheaths absent. Culms erect, 20 cm long, 2–2.5 mm diam., woody. Culm-internodes terete, thin-walled, distally hispid, with reflexed hairs. Culm-nodes pubescent. Lateral branches suffrutescent. Bud complement 1. Branch complement one, solitary, as thick as stem. Culm-sheaths present, 1 length of internode, pubescent, with

reflexed hairs. Leaves 5 per branch. Leaf-sheaths glabrous on surface. Ligule an eciliate membrane. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades oblong, 15–17 cm long, 38–41 mm wide, mid-green and glaucous, discolourous with last colour beneath. Leaf-blade venation with 14–16 secondary veins. Leaf-blade surface scabrous, pubescent. Leaf-blade apex attenuate.

**Inflorescence.** Inflorescence a panicle. Peduncle scaberulous above, pilose above. Panicle open, ovate, 9–10 cm long, 7–9 cm wide. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, flexuous, pubescent.

**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 linear or oblong, laterally compressed, 9–12 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes persistent, shorter than spikelet, thinner than fertile lemma. Lower glume linear, 1 mm long, scarios, without keels. Lower glume surface pilose. Lower glume apex acute. Upper glume linear, 2.5–3 mm long, scarios, without keels. Upper glume surface pilose. Upper glume apex acute.

**Florets.** Fertile lemma ovate, 7–9 mm long, chartaceous, without keel, more than 3-veined. Lemma margins ciliate. Lemma apex acute. Palea surface pubescent. Apical sterile florets resembling fertile though underdeveloped.

**Flower and Fruit.** Lodicules 3. Anthers 6. Stigmas 3. Caryopsis with adherent pericarp, apex unappendaged.

$2n = 48$  (1 ref TROPICOS).

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

**Country /Province /State.** Russian far east, **Eastern Asia.** Kuril Is, Sakhalin. Japan.

**Sasa miakeana** Sad. Suzuki. *J. Jap. Bot.*, 67(5): 287 (1992).

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

**TYPE** from Japan. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Hab. Japan: Honshu: Pref. Yamaguchi: Kanagokei, Ato-machi, Abu-gun, 3 Aug 1969, *N. Miake 8041* (HT: TI).

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

**Classification.** Subfamily Bambusoideae. Tribe: Bambuseae.

**Habit, Vegetative Morphology.** Perennial, woody bamboo. Rhizomes elongated, leptomorph. Butt sheaths absent. Culms erect, 60–90 cm long, 3–5 mm diam., woody. Culm-internodes terete, thin-walled, distally glabrous. Culm-nodes swollen, pubescent. Lateral branches ample. Bud complement 1. Branch complement one, solitary, as thick as stem. Culm-sheaths present, persistent, 0.66 length of internode, pilose, without auricles. Culm-sheath blade lanceolate, deciduous, 0.5–3.5 cm long, attenuate. Leaves 4–6 per branch. Leaf-sheath oral hairs scanty or lacking, deciduous. Ligule an eciliate membrane, 1–3 mm long, pubescent on abaxial surface, entire, truncate. Leaf-blade base broadly rounded, with a brief petiole-like connection to sheath, petiole 0.3–0.7 cm long. Leaf-blades lanceolate or oblong, 20–25 cm long, 45–60 mm wide, concolorous or variegated (white margins in winter). Leaf-blade surface glabrous. Leaf-blade margins ciliate. Leaf-blade apex acuminate. Flowering specimens unknown.

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

**Country /Province /State.** **Eastern Asia.** Japan.

**Sasa minensis** Sad. Suzuki. *J. Jap. Bot.*, 67(5): 286 (1992).

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

**TYPE** from Japan. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Hab. Japan: Pref. Yamaguchi: Hinaga, Omine, Mine-shi, 28 Jul 1981, *N. Miake 56024* (HT: TI).

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

**Classification.** Subfamily Bambusoideae. Tribe: Bambuseae.

**Habit, Vegetative Morphology.** Perennial, woody bamboo. Rhizomes elongated, leptomorph. Butt sheaths absent. Culms erect, 80–120 cm long, 3–5 mm diam., woody. Culm-internodes terete, thin-walled, distally glabrous. Culm-nodes swollen, pubescent. Lateral branches sparse. Bud complement 1. Branch complement one, solitary, as thick as stem. Culm-sheaths present, persistent, 0.66 length of internode, pilose, without auricles. Culm-sheath blade ovate or triangular, deciduous, 0.4–3 cm long, attenuate. Leaves 4–7 per branch. Leaf-sheath oral hairs scanty or lacking, deciduous. Ligule an eciliate membrane, 1–2 mm long, pubescent on abaxial surface, entire, truncate. Leaf-blade base broadly rounded, with a brief petiole-like connection to sheath, petiole 0.3–0.7 cm long, petiole glabrous or pubescent. Leaf-blades lanceolate or oblong, 20–25 cm long, 50–70

mm wide, glaucous, variegated (white margins in winter). Leaf-blade surface pubescent, hairy abaxially. Leaf-blade margins ciliate. Leaf-blade apex acuminate. Flowering specimens unknown.

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

**Country /Province /State.** Eastern Asia. Japan.

**Sasa mollissima** Koidz. *Acta Phytotax. & Geobot.* iv. 171. (1935).

**TYPE** from Japan. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Japan, Nagoyya Higashiyamakoyen: Okada.

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

**Derivation** (Clifford & Bostock 2007): L. molle, soft; -issima, most. Plant in whole or in part densely covered with soft hairs.

**Classification.** Subfamily Bambusoideae. Tribe: Bambuseae.

**Habit, Vegetative Morphology.** Perennial, woody bamboo. Rhizomes elongated, leptomorph. Butt sheaths absent. Culms erect, 100–200 cm long, woody. Culm-internodes terete, thin-walled, distally glabrous or pubescent, with reflexed hairs. Culm-nodes glabrous. Lateral branches dendroid. Bud complement 1. Branch complement one, solitary, as thick as stem. Culm-sheaths present, persistent, glabrous, without auricles. Leaf-sheaths pilose. Leaf-sheath oral hairs setose, spreading. Ligule an eciliate membrane. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades lanceolate, 15–20 cm long, 25–40 mm wide. Leaf-blade surface pubescent, densely hairy, hairy abaxially. Leaf-blade apex acuminate.

**Inflorescence.** Inflorescence a panicle. Panicle open, oblong, 5 cm long. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 7–9 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets linear, laterally compressed, 40–50 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes 5 mm long, pubescent.

**Glumes.** Glumes persistent, dissimilar, shorter than spikelet, thinner than fertile lemma. Lower glume lanceolate, 5 mm long, scarios, without keels, 3 -veined. Lower glume apex acuminate. Upper glume ovate, 6 mm long, scarios, without keels, 3 -veined. Upper glume apex acuminate.

**Florets.** Fertile lemma ovate, 11 mm long, chartaceous, without keel, 11 -veined, more than 3-veined. Lemma lateral veins with cross-veins. Lemma margins ciliate, hairy above. Lemma apex acuminate, mucronate. Palea 1 length of lemma, 10 -veined. Palea keels ciliate, adorned above. Palea apex obtuse. Apical sterile florets resembling fertile though underdeveloped.

**Flower and Fruit.** Lodicules 3, ovate, 2.5 mm long, veined, ciliate, acute. Anthers 6, 8 mm long. Stigmas 3. Caryopsis with adherent pericarp, apex unappendaged.

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

**Country /Province /State.** Eastern Asia. Japan.

**Sasa nijimai** Tatewaki ex Nakai. *Journ. Fac. Agric.*, Sapporo, xxvi. 188 (1931).

Regarded by K as a synonym (*S. palmata*).

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

**TYPE** from Japan. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Japan, Yezo, Teshio Exp. Forest: Tatewaki 17041.

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

**Derivation** (Clifford & Bostock 2007): in honor of Yoshinao Nijima (1871-?) Japanese botanist.

**Classification.** Subfamily Bambusoideae. Tribe: Bambuseae.

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

**Country /Province /State.** Russian far east, Eastern Asia. Kuril Is. Japan.

**Sasa nipponica** (Makino) Makino & Shibata. *Bot. Mag. Tokyo*, xv. 24 (1901).

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

**TYPE** from Japan. **Basionym or Replaced Name:** *Bambusa nipponica* Makino, *Tokyo. Bot. Mag.* 9: 72 (1895). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Japan, Liukiu: Kuroiwa.

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

**Derivation** (Clifford & Bostock 2007): L. -ica, belonging to; Nippon, according to many nationals the Latin spelling most closely corresponding to the local pronunciation of the name of their country. From Japan.

**Classification.** Subfamily Bambusoideae. Tribe: Bambuseae.



**Habit, Vegetative Morphology.** Perennial, woody bamboo. Rhizomes elongated, leptomorph. Butt sheaths absent. Culms erect, 50–80 cm long, woody. Culm-internodes terete, thin-walled, distally glabrous. Culm-nodes swollen, glabrous. Lateral branches dendroid. Bud complement 1. Branch complement one, solitary, as thick as stem. Culm-sheaths present, persistent, glabrous, without auricles. Leaf-sheaths glabrous on surface. Leaf-sheath oral hairs lacking or setose. Ligule an eciliate membrane. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades oblong, 9–18 cm long, 25–45 mm wide. Leaf-blade surface pubescent, hairy abaxially. Leaf-blade apex acuminate.

**Inflorescence.** Inflorescence a panicle. Panicle open, ovate, 10 cm long. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 5–8 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets linear, laterally compressed, 20–30 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes 4–5 mm long, pubescent.

**Glumes.** Glumes persistent, similar, shorter than spikelet, thinner than fertile lemma. Lower glume lanceolate, 1 mm long, scarious, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume apex acuminate. Upper glume lanceolate, 2–3 mm long, scarious, without keels, 3 -veined. Upper glume apex acuminate.

**Florets.** Fertile lemma ovate, 9 mm long, chartaceous, without keel, 11 -veined, more than 3-veined. Lemma lateral veins with cross-veins. Lemma surface smooth. Lemma margins eciliate or ciliate, hairy above. Lemma apex acuminate. Palea 1 length of lemma, 8 -veined. Palea keels eciliate. Palea surface pilose, hairy on margins, hairy above. Apical sterile florets resembling fertile though underdeveloped.

**Flower and Fruit.** Lodicules 3, ovate, 2 mm long, veined, ciliate. Anthers 6, 5 mm long. Stigmas 3. Caryopsis with adherent pericarp, apex unappendaged.

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

**Country /Province /State.** Eastern Asia. Japan.

**Sasa oblongula** C.H.Hu. *J. Bamboo Res.*, 6(4): 18 (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 China. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: China, Cult. at Zhungshan Univ.: Yang & Hu 198001 (NJU holo).

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

**Derivation** (Clifford & Bostock 2007): *L. oblongus*, oblong; -ula, diminutive. Leaf-blade oblong-ovate.

**Classification.** Subfamily Bambusoideae. Tribe: Bambuseae.

**Habit, Vegetative Morphology.** Perennial, woody bamboo. Rhizomes elongated, leptomorph. Butt sheaths absent. Culms erect, 100–150 cm long, 2–4 mm diam., woody. Culm-internodes terete, 8 cm long, distally glabrous. Lateral branches suffrutescent. Bud complement 1. Branch complement one, solitary. Culm-sheaths present, persistent, chartaceous or coriaceous, glabrous, auriculate, setose on shoulders. Culm-sheath ligule 1 mm high. Culm-sheath blade lanceolate, erect, 1.2–2.2 cm long. Leaf-sheath oral hairs setose. Ligule an eciliate membrane. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades lanceolate or elliptic, 7–9 cm long, 17–26 mm wide. Leaf-blade venation with 12 secondary veins, with distinct cross veins. Leaf-blade surface glabrous. Leaf-blade apex acuminate. Flowering specimens unknown.

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

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

**TDWG4.** Guangdong (+).

**Sasa occidentalis** S. Suzuki. *J. Jap. Bot.*, 58(12): 358 (1983).

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

**TYPE** from Japan. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Japan, Kasayama Hill: Miake 55150 (TI holo).

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

**Derivation** (Clifford & Bostock 2007): *L. occident*, west; -ale, pertaining to. From western Japan.

**Classification.** Subfamily Bambusoideae. Tribe: Bambuseae.

**Habit, Vegetative Morphology.** Perennial, woody bamboo. Rhizomes elongated, leptomorph. Butt sheaths absent. Culms erect, 60–150 cm long, 4–8 mm diam., woody. Culm-internodes terete, thin-walled, distally glabrous or pubescent. Culm-nodes swollen, glabrous or pubescent. Lateral branches suffrutescent. Bud complement 1. Branch complement one, solitary, as thick as stem. Culm-sheaths present, persistent, 0.66 length

of internode, puberulous, with reflexed hairs, without auricles. Culm-sheath blade lanceolate, 14–22 cm long, acuminate. Leaves 4–8 per branch. Leaf-sheaths glabrous on surface. Leaf-sheath oral hairs scanty or lacking. Ligule a ciliolate membrane, 1–2 mm long, pubescent on abaxial surface, truncate or obtuse. Leaf-blade base with a brief petiole-like connection to sheath, petiole 0.5–1 cm long, petiole glabrous. Leaf-blades lanceolate or oblong, 21–30 cm long, 35–55 mm wide, fleshy, mid-green and glaucous, discolourous with last colour beneath (and margins white in winter). Leaf-blade surface glabrous. Leaf-blade margins scabrous. Leaf-blade apex acuminate. Flowering specimens unknown.

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

**Country /Province /State.** Eastern Asia. Japan.

**Sasa oseana** Makino. *Journ. Jap. Bot.* vii. 32 (1931).

Regarded by K as a synonym (*S. yahikoensis*).

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

**TYPE** from Japan. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Japan, Ose: Makino.

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

**Derivation** (Clifford & Bostock 2007): L. -ana, indicating location. From Ozenuma, Oze Ushikubi and Ozegahara, Ktdzuke Province, Japan.

**Classification.** Subfamily Bambusoideae. Tribe: Bambuseae.

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

**Country /Province /State.** Russian far east, Eastern Asia. Sakhalin. Japan.

**Sasa oshidensis** Makino & Uchida. *Journ. Jap. Bot.* vi. 21 (1929).

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

**TYPE** from Japan. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Japan, Oshida: Makino.

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

**Derivation** (Clifford & Bostock 2007): L. -ensis, denoting origin. From Oshida, Rikuchu Province, Japan.

**Classification.** Subfamily Bambusoideae. Tribe: Bambuseae.

**Habit, Vegetative Morphology.** Perennial, woody bamboo. Rhizomes elongated, leptomorph. Butt sheaths absent. Culms erect, 100–200 cm long, 4–7 mm diam., woody. Culm-internodes terete, thin-walled, distally glabrous or pubescent, with reflexed hairs. Culm-nodes bearded. Lateral branches dendroid. Bud complement 1. Branch complement one, solitary, as thick as stem. Culm-sheaths present, persistent, glabrous, without auricles. Leaves 5–9 per branch. Leaf-sheaths glabrous on surface. Leaf-sheath oral hairs ciliate. Ligule an eciliate membrane. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades oblong, 20–32 cm long, 40–55 mm wide. Leaf-blade surface glabrous. Leaf-blade apex acuminate.

**Inflorescence.** Inflorescence a panicle. Panicle open, ovate, 8 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 lanceolate, laterally compressed, 15–20 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes 3–4 mm long, pubescent.

**Glumes.** Glumes persistent, similar, shorter than spikelet, thinner than fertile lemma. Lower glume ovate, 3 mm long, scarious, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume apex acuminate. Upper glume ovate, 5 mm long, scarious, without keels, 3 -veined. Upper glume apex acuminate.

**Florets.** Fertile lemma ovate, 8 mm long, chartaceous, without keel, 13 -veined, more than 3-veined. Lemma lateral veins with cross-veins. Lemma surface smooth. Lemma margins ciliolate. Lemma apex acuminate. Palea 1 length of lemma, 10–12 -veined. Palea keels ciliate, adorned above, with 0.5 of their length adorned. Apical sterile florets resembling fertile though underdeveloped.

**Flower and Fruit.** Lodicules 3, ovate, 2 mm long, veined, ciliate, acute. Anthers 6, 4 mm long. Stigmas 3. Caryopsis with adherent pericarp, apex unappendaged.

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

**Country /Province /State.** Eastern Asia. Japan.

**Sasa palmata** (Burb.) E.G.Camus. *Les Bambusees*, 25 (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), 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 France. **Basionym or Replaced Name:** *Bambusa palmata* Burb., *Gard. Chron.* 1: 641 fig. 106 (1890). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: France, Cult. at Temple-sur-Lot: Marliac.

**Recent Synonyms:** *Sasa brachyphylla* Nakai, *Journ. Fac. Agric.*, Sapporo, 26: 195 (1931).

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

**Derivation** (Clifford & Bostock 2007): L. palma, hand; -ata, resembling. Leaves congested and their blades arranged like the fingers on a hand.

**Classification.** Subfamily Bambusoideae. Tribe: Bambuseae.

**Habit, Vegetative Morphology.** Perennial, woody bamboo. Rhizomes elongated, leptomorph. Butt sheaths absent. Culms erect, 150–300 cm long, 7–10 mm diam., woody. Culm-internodes terete, thin-walled, 14–20 cm long. Lateral branches suffrutescent. Bud complement 1. Branch complement one, solitary, as thick as stem. Culm-sheaths present, persistent, glabrous, without auricles, glabrous on shoulders. Culm-sheath blade lanceolate. Leaf-sheaths glabrous on surface. Leaf-sheath oral hairs lacking. Ligule an eciliate membrane. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades oblong, 18–30 cm long, 50–80 mm wide. Leaf-blade venation comprising 19–29 vascular bundles.

**Inflorescence.** Inflorescence a panicle. Panicle open, oblong or ovate, 10–15 cm long. Panicle branches pubescent. 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 linear or oblong, laterally compressed, 25–40 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes 4 mm long, eventually visible between lemmas, pubescent.

**Glumes.** Glumes persistent, dissimilar, shorter than spikelet, thinner than fertile lemma. Lower glume lanceolate, 0.5–3 mm long, 0.25–0.75 length of upper glume, scarious, without keels, 3 -veined. Lower glume apex acute. Upper glume ovate, 2–4 mm long, 0.3–0.4 length of adjacent fertile lemma, scarious, without keels, 5 -veined. Upper glume apex acute.

**Florets.** Fertile lemma ovate, 7 mm long, chartaceous, without keel, 9 -veined, more than 3-veined. Lemma surface asperulous. Lemma margins ciliate. Lemma apex acuminate. Palea 9 -veined. Palea keels scaberulous. Palea surface pubescent, hairy on back or on flanks. Apical sterile florets resembling fertile though underdeveloped.

**Flower and Fruit.** Lodicules 3, 1.5 mm long, veined, ciliate. Anthers 6, 4 mm long. Stigmas 3. Caryopsis with adherent pericarp, apex unappendaged.

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

**Region. Northern Europe, Southwestern Europe.**

**Country /Province /State.** : GB Aliens (Ryves et al), Ireland, Northern Ireland. : Channel Islands, France. Russian far east, **Eastern Asia.** Kuril Is, Sakhalin. Japan. **New Zealand.** New Zealand North I, New Zealand South I.

**Sasa pubens** Nakai. *Journ. Jap. Bot.* xi. 83 (1935).

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

**TYPE** from Japan. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Japan, Naigo: Ikegami.

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

**Derivation** (Clifford & Bostock 2007): L. downy. Leaf-sheaths downy.

**Classification.** Subfamily Bambusoideae. Tribe: Bambuseae.

**Habit, Vegetative Morphology.** Perennial, woody bamboo. Rhizomes elongated, leptomorph. Butt sheaths absent. Culms erect, 100–150 cm long, woody. Culm-internodes terete, thin-walled, distally pubescent. Culm-nodes bearded. Lateral branches suffrutescent. Bud complement 1. Branch complement one, solitary, as thick as stem. Culm-sheaths present, persistent, pilose, with reflexed hairs. Leaf-sheaths pubescent. Leaf-sheath oral hairs lacking. Ligule an eciliate membrane. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades lanceolate or oblong, 21–25 cm long, 40–60 mm wide, indurate. Leaf-blade surface glabrous, hairless throughout or except near base. Leaf-blade apex acuminate. Flowering specimens unknown.

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

**Country /Province /State. Eastern Asia.** Japan.

**Sasa pubiculmis** Makino. *Journ. Jap. Bot.* vi. 25 (1929). (1929).

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

**TYPE** from Japan. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Japan, Omoie: Makino.

**Recent Synonyms:** *Sasa chitosensis* Nakai, *Bot. Mag., Tokyo*, 46: 93 (1932).

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

**Derivation** (Clifford & Bostock 2007): L. pubes, signs of puberty; culmus, stalk. Leaf-sheaths densely hairy.

**Classification.** Subfamily Bambusoideae. Tribe: Bambuseae.

**Habit, Vegetative Morphology.** Perennial, woody bamboo, caespitose. Rhizomes elongated, leptomorph. Butt sheaths absent. Culms erect, 40 cm long, 2.5–3.5 mm diam., woody. Culm-internodes terete, thin-walled, striate, distally pubescent, with reflexed hairs. Culm-nodes pubescent. Lateral branches suffrutescent. Bud complement 1. Branch complement one, solitary, as thick as stem. Culm-sheaths present, 1 length of internode, glabrous or puberulous, with reflexed hairs. Culm-sheath blade lanceolate, 0.3–0.4 cm long. Leaves 2–3 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, 16–21 cm long, 24–36 mm wide, mid-green. Leaf-blade surface scabrous, glabrous.

**Inflorescence.** Inflorescence a panicle. Panicle open, ovate, 16 cm long, 15 cm wide. 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 linear or oblong, laterally compressed, 10–20 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes persistent, shorter than spikelet, thinner than fertile lemma. Lower glume lanceolate, 0.5–1.5 mm long, scarios, without keels. Lower glume surface pilose. Lower glume apex acute. Upper glume ovate, 4–5 mm long, scarios, without keels. Upper glume surface pilose. Upper glume apex acute.

**Florets.** Fertile lemma ovate, 8–10 mm long, chartaceous, purple, without keel, more than 3-veined. Lemma margins ciliolate. Lemma apex acute. Palea 7–8 mm long. Palea keels ciliate. Palea surface pubescent, hairy on back. Apical sterile florets resembling fertile though underdeveloped.

**Flower and Fruit.** Lodicules 3, ciliate. Anthers 6, yellow. Stigmas 3. Caryopsis with adherent pericarp, apex unappendaged.

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

**Country /Province /State.** Eastern Asia. Japan.

**Sasa pulcherrima** Koidz. *Acta Phytotax. & Geobot.* 1934, iii. 155 (1934).

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

**TYPE** from Japan. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Japan, Itsukaichi: Koidzumi.

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

**Derivation** (Clifford & Bostock 2007): L. most beautiful. To be the most beautiful member of a genus.

**Classification.** Subfamily Bambusoideae. Tribe: Bambuseae.

**Habit, Vegetative Morphology.** Perennial, woody bamboo. Rhizomes elongated, leptomorph. Butt sheaths absent. Culms erect, 20–30 cm long, 1–1.5 mm diam., woody. Culm-internodes terete, thin-walled. Lateral branches suffrutescent. Bud complement 1. Branch complement one, solitary, as thick as stem. Culm-sheaths present. Leaves 3–5 per branch. Leaf-sheaths glabrous on surface. Leaf-sheath oral hairs setose, spreading. Ligule an eciliate membrane. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades oblong, 5–10 cm long, 10–25 mm wide, dark green and light green, discolorous with last colour beneath. Leaf-blade venation with 6–12 secondary veins. Leaf-blade apex attenuate.

**Inflorescence.** Inflorescence a panicle. Panicle open, oblong or ovate, 6–9 cm long. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 3–7 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets linear or oblong, laterally compressed, 25–40 mm long, 9–18 mm wide, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes eventually visible between lemmas, pilose.

**Glumes.** Glumes persistent, dissimilar, shorter than spikelet, thinner than fertile lemma. Lower glume lanceolate. Lower glume apex acute. Upper glume ovate. Upper glume apex acute.

**Florets.** Fertile lemma ovate, 6–11 mm long, chartaceous, without keel, more than 3-veined. Lemma margins ciliolate. Lemma apex acute. Palea 5–10 mm long. Palea keels ciliolate. Palea apex dentate, 2 -fid. Apical sterile florets resembling fertile though underdeveloped.

**Flower and Fruit.** Lodicules 3. Anthers 6. Stigmas 3. Caryopsis with adherent pericarp, ellipsoid, 5–6 mm long, dark brown, apex unappendaged.

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

**Country /Province /State.** Eastern Asia. Japan.

**Sasa qingyuanensis** (C.H. Hu) C.H.Hu. *Bamboo Res.*, 1985(2): 62 (1985).

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

**TYPE** from China. **Basionym or Replaced Name:** *Sasamorpha qingyuanensis* C.H.Hu, *J. Bamboo Res.*, 2(1): 52 (1983). T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: China, Qinguang: Zhuang 7801041.

**Illustrations (Books):** S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 145).

**Derivation** (Clifford & Bostock 2007): L. -ensis, denoting origin. From Qingyuan, Zhejiang Province, China.

**Classification.** Subfamily Bambusoideae. Tribe: Bambuseae.

**Habit, Vegetative Morphology.** Perennial, woody bamboo. Rhizomes elongated, leptomorph. Butt sheaths absent. Culms erect, 100–150 cm long, 4–6 mm diam., woody. Culm-internodes terete. Lateral branches suffrutescent. Bud complement 1. Branch complement one, solitary. Culm-sheaths present, 8–13.5 cm long, hispid, without auricles, glabrous on shoulders. Culm-sheath blade lanceolate, 2.5 cm long. Leaves 2–4 per branch. Leaf-sheaths 12 cm long, hispid. Leaf-sheath oral hairs lacking. Ligule an eciliate membrane, 0.5 mm long, truncate. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades oblong, 18–28 cm long, 47–60 mm wide. Leaf-blade venation with 20–26 secondary veins, with distinct cross veins. Leaf-blade surface glabrous. Leaf-blade apex acuminate. Flowering specimens unknown.

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

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

**TDWG4.** Zhejiang.

**Sasa quelpaertensis** Nakai. *Fl. Sylvat. Koreana*, xx. 40 (1933).

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

**TYPE** from Korea. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: Korea, Quelpaert: Taquet 6198.

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

**Derivation** (Clifford & Bostock 2007): L. -ensis, denoting origin. From Quelpaert, now Cheju do, a Korean island.

**Classification.** Subfamily Bambusoideae. Tribe: Bambuseae.

**Habit, Vegetative Morphology.** Perennial, woody bamboo. Rhizomes elongated, leptomorph. Butt sheaths absent. Culms erect, 10–50 cm long, 3–4 mm diam., woody. Culm-internodes terete, thin-walled. Culm-nodes constricted, glabrous. Lateral branches suffrutescent. Bud complement 1. Branch complement one, solitary. Culm-sheaths present. Leaves 2–4 per branch. Leaf-sheaths 5–8.7 cm long. Leaf-sheath oral hairs scanty or lacking. Ligule an eciliate membrane, 1–1.5 mm long. Leaf-blade base with a brief petiole-like connection to sheath, petiole 0.3–0.7 cm long. Leaf-blades lanceolate or elliptic, 7–21 cm long, 14–66 mm wide, light green and glaucous, discolourous with last colour beneath. Leaf-blade venation with 12–22 secondary veins. Leaf-blade surface glabrous. Leaf-blade margins scabrous. Leaf-blade apex acuminate. Flowering specimens unknown.

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

**Country /Province /State.** Eastern Asia. Korea.

**Sasa ramosa** (Makino) Makino & Shibata. *Bot. Mag. Tokyo*, xv. 24 (1901).

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

**TYPE** from Japan. **Basionym or Replaced Name:** *Arundinaria ramosa* Makino, *Bot. Mag. Tokyo* 14: 22. (1900). T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: Japan, Koganei: Makino ; Japan, Fukushima: Nemoto.

**Recent Synonyms:** *Sasaella ramosa* (Makino) Makino, *Journ. Jap. Bot.* 6: 15 (1929).

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

**Derivation** (Clifford & Bostock 2007): *L. ramus*, branch; -osa, abundance. Inflorescences or culms much branched.

**Classification.** Subfamily Bambusoideae. Tribe: Bambuseae.

**Habit, Vegetative Morphology.** Perennial, woody bamboo. Rhizomes elongated, leptomorph. Butt sheaths absent. Culms erect, 100–200 cm long, 4–8 mm diam., woody. Culm-internodes terete, thin-walled, distally glabrous or pubescent. Culm-nodes glabrous or pubescent. Lateral branches dendroid. Bud complement 1. Branch complement one, solitary, as thick as stem. Culm-sheaths present, persistent, glabrous, without auricles. Leaf-sheaths glabrous on surface. Leaf-sheath oral hairs setose. Ligule an eciliate membrane. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades lanceolate or oblong, 17–25 cm long, 25–35 mm wide. Leaf-blade surface pubescent, densely hairy, hairy abaxially or on both sides. Leaf-blade apex acuminate.

**Inflorescence.** Inflorescence a panicle. Panicle open, oblong, 10 cm long. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 6–11 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, 40–50 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes 5 mm long, pubescent.

**Glumes.** Glumes persistent, dissimilar, shorter than spikelet, thinner than fertile lemma. Lower glume linear, 1–2 mm long, scarious, without keels. Lower glume apex acuminate. Upper glume lanceolate, 4–6 mm long, scarious, without keels, 3 -veined. Upper glume apex acuminate.

**Florets.** Fertile lemma ovate, 12–14 mm long, chartaceous, without keel, 13–15 -veined, more than 3-veined. Lemma lateral veins with cross-veins. Lemma margins ciliate, hairy above. Lemma apex acuminate. Palea 0.9 length of lemma, 13 -veined. Palea keels ciliate, adorned above, with 0.5 of their length adorned. Palea apex with excurrent keel veins. Apical sterile florets resembling fertile though underdeveloped.

**Flower and Fruit.** Lodicules 3, ovate, 2–2.5 mm long, veined, ciliate, obtuse. Anthers 6, 5 mm long. Stigmas 3. Caryopsis with adherent pericarp, apex unappendaged.

**Distribution (TDWG). Continent.** Europe, Australasia.

**Region. Northern Europe.**

**Country /Province /State.** : GB Aliens (Ryves et al). **Eastern Asia. New Zealand.** New Zealand South I.

**Sasa rivularis** Nakai. *Journ. Fac. Agric.*, Sapporo, xxvi. 191 (1931).

Regarded by K as a synonym (*S. senanensis*).

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

**TYPE** from Japan. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: Japan, Sounkyo: Nakai.

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

**Derivation** (Clifford & Bostock 2007): *L. rivulus*, river; -are, pertaining to. Growing adjacent to rivers.

**Classification.** Subfamily Bambusoideae. Tribe: Bambuseae.

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

**Country /Province /State.** Russian far east, **Eastern Asia.** Kuril Is, Sakhalin. Japan.

**Sasa rubrovaginata** C.H.Hu. *Bamboo Res.*, 1985(2): 59 (1985).

**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, Qieng-wang Mone: Nan 5102.

**Recent Synonyms:** *Sasa duplicata* W.T. Lin & Z.J. Feng, *Acta Phytotax. Sin.*, 30(6): 561 (1992).

**Illustrations (Books):** S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 143).

**Classification.** Subfamily Bambusoideae. Tribe: Bambuseae.

**Habit, Vegetative Morphology.** Perennial, woody bamboo. Rhizomes elongated, leptomorph. Butt sheaths absent. Culms erect, 150 cm long, 5–6 mm diam., woody. Culm-internodes terete, thin-walled, 10–17 cm long, glaucous, distally mealy. Culm-nodes swollen. Lateral branches suffrutescent. Bud complement 1. Branch complement one, solitary. Culm-sheaths present, persistent, 6–8 cm long, 0.5 length of internode, coriaceous, red or purple, hispid, hairy at the base, without auricles, glabrous on shoulders. Culm-sheath ligule 0.3 mm high. Leaves 5–6 per branch. Leaf-sheaths reticulately veined, glabrous on surface. Leaf-sheath oral hairs ciliate, 1 mm long, dark. Leaf-sheath auricles falcate. Ligule an eciliate membrane, 1 mm long. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades lanceolate or elliptic, 17–26 cm long, 35–60 mm wide. Leaf-

blade venation with 18–20 secondary veins, with distinct cross veins. Leaf-blade surface glabrous. Leaf-blade apex acuminate. Flowering specimens unknown.

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

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

**TDWG4.** Guangxi.

**Sasa samaniana** Miyabe & Kudo. *Journ. Fac.Agric., Sapporo*, xxvi. 184 (1931).

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

**TYPE** from Japan. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Japan, Mt. Apoi: Nakai.

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

**Derivation** (Clifford & Bostock 2007): L. -ana, indicating location. From Samani, Hokkaido Province, Japan.

**Classification.** Subfamily Bambusoideae. Tribe: Bambuseae.

**Habit, Vegetative Morphology.** Perennial, woody bamboo. Rhizomes elongated, leptomorph. Butt sheaths absent. Culms erect, 50–100 cm long, woody. Culm-internodes terete, thin-walled, distally glabrous or pubescent. Culm-nodes glabrous or pubescent. Lateral branches lacking. Culm-sheaths present, persistent, glabrous, without auricles. Leaf-sheaths glabrous on surface or pilose. Leaf-sheath oral hairs setose. Ligule an eciliate membrane. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades oblong, 17–25 cm long, 30–50 mm wide. Leaf-blade surface pubescent, densely hairy, hairy abaxially. Leaf-blade apex acuminate.

**Inflorescence.** Inflorescence a panicle. Panicle open, ovate, 10 cm long. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 5–8 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets linear, laterally compressed, 20–30 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes 4 mm long, pubescent.

**Glumes.** Glumes persistent, similar, shorter than spikelet, thinner than fertile lemma. Lower glume lanceolate, 1–2 mm long, scarious, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume apex acuminate. Upper glume lanceolate, 1–2 mm long, scarious, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume apex acuminate.

**Florets.** Fertile lemma ovate, 8 mm long, chartaceous, without keel, 11 -veined, more than 3-veined. Lemma lateral veins with cross-veins. Lemma margins ciliate. Lemma apex acuminate. Palea 7 mm long, 8–10 -veined. Palea keels ciliate, adorned above, with 0.25 of their length adorned. Palea apex with excurrent keel veins. Apical sterile florets resembling fertile though underdeveloped.

**Flower and Fruit.** Lodicules 3, ovate, 2 mm long, veined, ciliate, acute. Anthers 6, 4 mm long. Stigmas 3. Caryopsis with adherent pericarp, apex unappended.

$2n = 48$  (1 ref TROPICOS).

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

**Country /Province /State. Eastern Asia.** Japan.

**Sasa scytophylla** Koidz. *Acta Phytotax. & Geobot.* iv. 26 (1935).

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

**TYPE** from Japan. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Japan, Mt. Ibukiyama: Araki 3529.

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

**Derivation** (Clifford & Bostock 2007): Gk. skytos, leather; phyllon, leaf. Leaf-blades leathery.

**Classification.** Subfamily Bambusoideae. Tribe: Bambuseae.

**Habit, Vegetative Morphology.** Perennial, woody bamboo. Rhizomes elongated, leptomorph. Butt sheaths absent. Culms erect, robust, 150 cm long, woody. Culm-internodes terete, thin-walled, distally glabrous. Culm-nodes swollen, pubescent. Lateral branches suffrutescent. Bud complement 1. Branch complement one, solitary, as thick as stem. Culm-sheaths present, persistent, pilose. Leaf-sheaths glabrous on surface. Leaf-sheath oral hairs scanty. Ligule an eciliate membrane. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades lanceolate or oblong, 18–21 cm long, 35–43 mm wide, indurate. Leaf-blade surface glabrous. Leaf-blade apex acuminate. Flowering specimens unknown.

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

**Country /Province /State. Eastern Asia.** Japan.

**Sasa senanensis** (Franch. & Sav.) Rehder. *Journ. Arnold Arb.* i. 58 (1919).

**Accepted by:** R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), N.Tsvelev, *Grasses of the Soviet Union* (1983).

**TYPE** from Japan. **Basionym or Replaced Name:** *Bambusa senanensis* Franch. & Sav., *Enum. Pl. Jap.* 2: 606 (1879). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Japan, Ontake Mt.: Savatier 3641 (P syn. LE) Japan, Ontake Mt.: Savatier 3773 (P syn. LE).

**Recent Synonyms:** *Sasa dissitiflora* Nakai, *Journ. Jap. Bot.* 10: 556 (1934). *Sasa osoreyamensis* Nakai, *Bot. Mag., Tokyo*, xlv. 93 (1932).

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

**Derivation** (Clifford & Bostock 2007): L. -ensis, denoting origin. From Senano Island, Japan.

**Classification.** Subfamily Bambusoideae. Tribe: Bambuseae.

**Habit, Vegetative Morphology.** Perennial, woody bamboo. Rhizomes elongated, leptomorph. Butt sheaths absent. Culms erect, 40–80 cm long, woody. Culm-internodes terete, thin-walled, distally mealy. Lateral branches sparse. Bud complement 1. Branch complement one, solitary, as thick as stem. Culm-sheaths present. Leaves 2–3 per branch. Leaf-sheaths glabrous on surface. Leaf-sheath oral hairs setose, spreading. Ligule an eciliate membrane, 2 mm long. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades lanceolate, 14–19 cm long, 26–54 mm wide, mid-green and glaucous, discolourous with last colour beneath and variegated (white margins). Leaf-blade surface glabrous.

**Inflorescence.** Inflorescence a panicle. Panicle open, ovate, 11–15 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 or oblong, laterally compressed, 12–15 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes persistent, shorter than spikelet, thinner than fertile lemma. Lower glume lanceolate, scarious, without keels. Lower glume apex acute. Upper glume ovate, scarious, without keels. Upper glume apex acute.

**Florets.** Fertile lemma ovate, 8–9 mm long, chartaceous, without keel, more than 3-veined. Lemma apex acute. Palea apex dentate, 2-fid. Apical sterile florets resembling fertile though underdeveloped.

**Flower and Fruit.** Lodicules 3, 2 mm long. Anthers 6. Stigmas 3. Caryopsis with adherent pericarp, apex unappendaged.

$2n = 48$  (2 refs TROPICOS).

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

**Country /Province /State.** Russian far east, **Eastern Asia.** Kuril Is, Primorye, Sakhalin. Japan.

**Sasa sendaica** Makino. *Journ. Jap. Bot.* v. 8 (1928).

Regarded by K as a synonym (*S. chartacea*).

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

**TYPE** from Japan. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Japan, Sendai: Makino ; Japan, Sendai: Hashimoto.

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

**Derivation** (Clifford & Bostock 2007): L. -ica, belonging to. From Sendai Hill, Rikuzen Province, Japan.

**Classification.** Subfamily Bambusoideae. Tribe: Bambuseae.

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

**Country /Province /State.** Russian far east, **Eastern Asia.** Kuril Is.

**Sasa septentrionalis** Makino. *Journ. Jap. Bot.* v. 6 (1928).

**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 Japan. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Japan, Takizawa: Makino.

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

**Derivation** (Clifford & Bostock 2007): L. northern. Northern in distribution.

**Classification.** Subfamily Bambusoideae. Tribe: Bambuseae.

**Habit, Vegetative Morphology.** Perennial, woody bamboo. Rhizomes elongated, leptomorph. Butt sheaths absent. Culms erect, 100–150 cm long, woody. Culm-internodes terete, thin-walled, distally glabrous or pubescent, with reflexed hairs. Lateral branches dendroid. Bud complement 1. Branch complement one, solitary,



as thick as stem. Culm-sheaths present, persistent, glabrous, without auricles. Leaf-sheaths glabrous on surface or puberulous. Leaf-sheath oral hairs setose. Ligule an eciliate membrane. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades oblong, 18–25 cm long, 35–50 mm wide. Leaf-blade surface pubescent, densely hairy, hairy abaxially. Leaf-blade apex acuminate.

**Inflorescence.** Inflorescence a panicle. Panicle open, ovate, 10 cm long. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 5–7 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets linear, laterally compressed, 20–25 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes 3–4 mm long, pubescent.

**Glumes.** Glumes persistent, similar, shorter than spikelet, thinner than fertile lemma. Lower glume lanceolate, 1–2 mm long, scarios, without keels. Lower glume apex acuminate. Upper glume lanceolate, 1–2 mm long, scarios, without keels. Upper glume apex acuminate.

**Florets.** Fertile lemma ovate, 6–7 mm long, chartaceous, without keel, 11–13 -veined, more than 3-veined. Lemma lateral veins with cross-veins. Lemma surface scabrous. Lemma margins ciliate. Lemma apex acuminate. Palea 1 length of lemma, 6–8 -veined. Palea keels ciliate. Palea apex truncate. Apical sterile florets resembling fertile though underdeveloped.

**Flower and Fruit.** Lodicules 3, ovate, 1.5 mm long, veined, ciliate. Anthers 6, 4 mm long. Stigmas 3. Caryopsis with adherent pericarp, apex unappendaged.

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

**Country /Province /State.** Russian far east, **Eastern Asia.** Sakhalin. Japan.

**Sasa shimidzuana** Makino. *Journ. Jap. Bot.* ii. 15 (1920).

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

**TYPE** from Japan. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: Japan, Ashinoyu: Makino & Hisauchi.

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

**Derivation** (Clifford & Bostock 2007): L. -ana, indicating connection. In honor of Tttart Shimidzu (1932-) Japanese botanist.

**Classification.** Subfamily Bambusoideae. Tribe: Bambuseae.

**Habit, Vegetative Morphology.** Perennial, woody bamboo. Rhizomes elongated, leptomorph. Butt sheaths absent. Culms erect, 100–200 cm long, 5–7 mm diam., woody. Culm-internodes terete, thin-walled, distally glabrous or pubescent. Culm-nodes glabrous or pubescent. Lateral branches ample, arising from upper culm. Bud complement 1. Branch complement one, solitary, as thick as stem. Culm-sheaths present, persistent, glabrous, without auricles. Leaves 5–9 per branch. Leaf-sheaths glabrous on surface. Leaf-sheath oral hairs lacking or ciliate. Ligule an eciliate membrane. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades oblong, 23–28 cm long, 40–50 mm wide. Leaf-blade surface pubescent, densely hairy, hairy abaxially. Leaf-blade apex acuminate.

**Inflorescence.** Inflorescence a panicle. Panicle open, ovate, 7–12 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 linear, laterally compressed, 20–30 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes persistent, similar, shorter than spikelet, thinner than fertile lemma. Lower glume lanceolate, 1 mm long, scarios, without keels. Lower glume apex acuminate. Upper glume lanceolate, 3 mm long, scarios, without keels. Upper glume apex acuminate.

**Florets.** Fertile lemma ovate, 7 mm long, chartaceous, without keel, more than 3-veined. Lemma apex acuminate. Apical sterile florets resembling fertile though underdeveloped.

**Flower and Fruit.** Lodicules 3. Anthers 6. Stigmas 3. Caryopsis with adherent pericarp, apex unappendaged.

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

**Country /Province /State.** **Eastern Asia.** Japan.

**Sasa sinica** Keng. *Sinensia* 7(6): 748 (1936).

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

**TYPE** from China. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: China: Anhui: "Collected by roadside, about 5 li below the Lion Forestry, Wang Shan, Anhwei Province, 22 May 1934", Y.Y. Ho 2481 (HT: NAS).

**Illustrations (Books):** S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 144).

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

**Classification.** Subfamily Bambusoideae. Tribe: Bambuseae.

**Habit, Vegetative Morphology.** Perennial, woody bamboo. Rhizomes elongated, leptomorph. Butt sheaths absent. Culms erect, 150 cm long, 4 mm diam., woody. Culm-internodes terete, solid, distally mealy. Lateral branches suffrutescent. Culm-sheaths present, 6–10 cm long, purple, pubescent, hairy on margins, without auricles, glabrous on shoulders. Culm-sheath blade lanceolate or triangular. Leaves 2(–3) per branch. Leaf-sheaths glabrous on surface, outer margin hairy. Ligule an eciliate membrane, 0.5–2 mm long, truncate. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades lanceolate or oblong, 10–20 cm long, 13–20 mm wide. Leaf-blade venation with 12–16 secondary veins, with distinct cross veins. Leaf-blade surface glabrous or pilose, hairy abaxially.

**Inflorescence.** Inflorescence a panicle, comprising 2–8(–10) fertile spikelets, without bracts or bracteate at pedicel base. Panicle open, linear or oblong or ovate, 5–11 cm long, bearing few spikelets. Primary panicle branches indistinct the panicle almost racemose or simple. Panicle axis puberulous. Panicle branches puberulous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, 3–17 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 linear, laterally compressed, 8–25 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes 2–4 mm long, pubescent.

**Glumes.** Glumes persistent, similar, shorter than spikelet, thinner than fertile lemma. Lower glume ovate, 3–6 mm long, 0.3–0.6 length of upper glume, scarious, without keels, 7–9 -veined. Lower glume margins ciliate. Lower glume apex cuspidate. Upper glume ovate, scarious, without keels. Upper glume apex acute.

**Florets.** Fertile lemma ovate, 9–19 mm long, chartaceous, purple, without keel, 11 -veined, more than 3-veined. Lemma surface puberulous. Lemma margins ciliate. Lemma apex cuspidate. Palea keels ciliate. Palea surface puberulous. Palea apex dentate, 2 -fid. Apical sterile florets resembling fertile though underdeveloped.

**Flower and Fruit.** Lodicules 3, lanceolate or ovate, 2–2.5 mm long, veined, ciliate. Anthers 6, 4–5 mm long, yellow. Stigmas 3.

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

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

**TDWG4.** Anhui, Zhejiang.

**Sasa spiculosa** (Schmidt) Makino. *Bot. Mag. Tokyo.* , xxvi. 12 (1912).

Regarded by K as a synonym (*S. borealis*).

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

**TYPE** from Japan. **Basionym or Replaced Name:** *Arundinaria kurilensis* var. *spiculosa* Schmid, *Mem. Acad. Imp. Sci. Saint Petersburg, Ser. 7* 122: 198 (1868). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Hab. Otechkoro, *Glehn*.

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

**Derivation** (Clifford & Bostock 2007): L. *spica*, thorn; -ula, diminutive; -osa, well-developed.

**Classification.** Subfamily Bambusoideae. Tribe: Bambuseae.

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

**Country /Province /State.** Russian far east, **Eastern Asia.** Sakhalin. Japan.

**Sasa subglabra** McClure. *Lingnan Univ. Sci. Bull.*, No. 9, 45 (1940).

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

**TYPE** from Hong Kong. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: TYPE COLLECTION: *H. Fung 21251*, 3 May 1938, Hong Kong (US-45445).

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

**Derivation** (Clifford & Bostock 2007): L. *sub*, approaching; *glaber*, without hairs. Having few hairs on the glumes and/or sterile lemmas.

**Classification.** Subfamily Bambusoideae. Tribe: Bambuseae.

**Habit, Vegetative Morphology.** Perennial, woody bamboo. Rhizomes elongated, leptomorph. Butt sheaths absent. Culms erect, 130 cm long, 6 mm diam., woody. Culm-internodes terete. Culm-nodes glabrous. Lateral branches suffrutescent. Bud complement 1. Branch complement one or three (rarely), solitary. Culm-sheaths

present, persistent, glabrous, without auricles, glabrous on shoulders. Culm-sheath ligule 0.3 mm high, ciliolate. Culm-sheath blade linear, erect, hispid. Leaf-sheaths glabrous on surface. Leaf-sheath oral hairs lacking. Ligule a ciliolate membrane. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades lanceolate, 11–19 cm long, 25–51 mm wide. Leaf-blade surface glabrous. Leaf-blade apex attenuate. Flowering specimens unknown.

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

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

**TDWG4.** Hong Kong.

**Sasa subvillosa** S. Suzuki. *Jap. Journ. Bot.* xviii. 307 (1964).

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

**TYPE** from Japan. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: Japan: Honshu: Iwashiro: in Yasuishi, oppido Ose, tracto Asaka, 4 Jul 1958, *Suzuki 1947* (HT: Herb. Tohoku Univ. Sendai).

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

**Classification.** Subfamily Bambusoideae. Tribe: Bambuseae.

**Habit, Vegetative Morphology.** Perennial, woody bamboo. Rhizomes elongated, leptomorph. Butt sheaths absent. Culms erect, robust, 100–200 cm long, 8–13 mm diam., woody. Culm-internodes terete, thin-walled, distally glabrous or pubescent, with reflexed hairs. Lateral branches suffrutescent. Bud complement 1. Branch complement one, solitary, as thick as stem. Culm-sheaths present, persistent, pilose. Leaf-sheaths glabrous on surface or puberulous or pilose. Leaf-sheath oral hairs lacking. Ligule an eciliate membrane. Leaf-blade base cuneate, with a brief petiole-like connection to sheath. Leaf-blades lanceolate or oblong, 20–30 cm long, 40–55 mm wide. Leaf-blade surface pubescent, sparsely hairy, hairy adaxially or on both sides. Leaf-blade apex acuminate. Flowering specimens unknown.

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

**Country /Province /State.** Eastern Asia. Japan.

**Sasa suzukii** Nakai. *Journ. Jap. Bot.* 1935, xi. 78 (1935).

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

**TYPE** from Japan. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: Japan, Mt. Kochiyama: Suzuki.

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

**Derivation** (Clifford & Bostock 2007): in honor of Suda Suzuki, Japanese botanist.

**Classification.** Subfamily Bambusoideae. Tribe: Bambuseae.

**Habit, Vegetative Morphology.** Perennial, woody bamboo. Rhizomes elongated, leptomorph. Butt sheaths absent. Culms erect, 200 cm long, 5–11 mm diam., woody. Culm-internodes terete, thin-walled, 18 cm long, distally glabrous. Culm-nodes swollen. Lateral branches suffrutescent. Bud complement 1. Branch complement one, solitary, as thick as stem. Culm-sheaths present, hispid. Leaves 5–6 per branch. Ligule an eciliate membrane. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades oblong, 12–34 cm long, 28–62 mm wide, mid-green and glaucous, discolourous with last colour beneath. Leaf-blade surface glabrous. Leaf-blade margins smooth or scaberulous. Leaf-blade apex attenuate.

**Inflorescence.** Inflorescence a panicle, embraced at base by subtending leaf. Panicle open, oblong or ovate. Primary panicle branches reflexed. Panicle axis pubescent. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 6–9 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets linear or oblong, laterally compressed, 25–40 mm long, 12–16 mm wide, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes eventually visible between lemmas.

**Glumes.** Glumes persistent, dissimilar, shorter than spikelet, thinner than fertile lemma. Lower glume lanceolate. Lower glume apex acute. Upper glume ovate. Upper glume apex acute.

**Florets.** Fertile lemma ovate, 8–13 mm long, chartaceous, without keel, more than 3-veined. Lemma margins eciliate or ciliolate. Lemma apex acuminate. Apical sterile florets resembling fertile though underdeveloped.

**Flower and Fruit.** Lodicules 3. Anthers 6, 5 mm long. Stigmas 3. Caryopsis with adherent pericarp, ellipsoid, 6 mm long, dark brown, apex unappendaged.

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

**Country /Province /State. Eastern Asia. Japan.**

**Sasa takizawana** Makino & Uchida. *Journ. Jap. Bot.* vi. 22 (1929).

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

**TYPE** from Japan. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: Japan, Takizawa: Makino.

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

**Derivation** (Clifford & Bostock 2007): L. -ana, indicating location. From Takizuna, Rikuchu Province, Japan.

**Classification.** Subfamily Bambusoideae. Tribe: Bambuseae.

**Habit, Vegetative Morphology.** Perennial, woody bamboo. Rhizomes elongated, leptomorph. Butt sheaths absent. Culms erect, 100–200 cm long, 4–7 mm diam., woody. Culm-internodes terete, thin-walled, distally glabrous or pubescent. Culm-nodes glabrous or pubescent. Lateral branches dendroid. Bud complement 1. Branch complement one, solitary, as thick as stem. Culm-sheaths present, persistent, glabrous, without auricles. Leaves 5–8 per branch. Leaf-sheaths glabrous on surface. Leaf-sheath oral hairs lacking or setose. Ligule an eciliate membrane. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades oblong, 20–28 cm long, 35–60 mm wide. Leaf-blade surface pubescent, hairy abaxially. Leaf-blade apex acuminate.

**Inflorescence.** Inflorescence a panicle. Panicle open, obovate, 12 cm long. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 5–8 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets linear, laterally compressed, 25–30 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes 3–4 mm long, pubescent.

**Glumes.** Glumes persistent, similar, shorter than spikelet, thinner than fertile lemma. Lower glume lanceolate, 5 mm long, scarios, without keels, 1–3 -veined. Lower glume lateral veins absent or obscure. Lower glume apex acuminate. Upper glume lanceolate, 7 mm long, scarios, without keels, 5–7 -veined. Upper glume apex acuminate.

**Florets.** Fertile lemma ovate, 7–10 mm long, chartaceous, without keel, 13 -veined, more than 3-veined. Lemma lateral veins with cross-veins. Lemma surface scaberulous. Lemma margins ciliate. Lemma apex acuminate. Palea 6–9 mm long, 10 -veined. Palea keels ciliate. Palea apex with excurrent keel veins. Apical sterile florets resembling fertile though underdeveloped.

**Flower and Fruit.** Lodicules 3, ovate, 2 mm long, veined, ciliate, acute. Anthers 6, 6 mm long. Stigmas 3. Caryopsis with adherent pericarp, apex unappendaged.

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

**Country /Province /State. Eastern Asia. Japan.**

**Sasa tatewakiana** Makino. *Journ. Jap. Bot.* v. 41 (1928).

**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 Japan. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: Japan, Nupuromapporo: Tatewaki 10789, Japan, Temaku-no-Sawa: Tatewaki 10826.

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

**Derivation** (Clifford & Bostock 2007): in honor of Misao Tatewake (1899-) Japanese botanist.

**Classification.** Subfamily Bambusoideae. Tribe: Bambuseae.

**Habit, Vegetative Morphology.** Perennial, woody bamboo. Rhizomes elongated, leptomorph. Butt sheaths absent. Culms erect, 150–200 cm long, woody. Culm-internodes terete, thin-walled, distally pubescent, with reflexed hairs. Culm-nodes pubescent. Lateral branches ample. Bud complement 1. Branch complement one, solitary, as thick as stem. Culm-sheaths present, persistent, puberulous, with reflexed hairs, without auricles. Leaf-sheaths puberulous. Leaf-sheath oral hairs lacking. Ligule an eciliate membrane. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades lanceolate or oblong, 20–30 cm long, 50–70 mm wide. Leaf-blade surface glabrous or pubescent, sparsely hairy. Leaf-blade apex acuminate.

**Inflorescence.** Inflorescence a panicle. Panicle open, ovate, 7 cm long. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**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 lanceolate, laterally compressed, 25–30 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes 3 mm long, pubescent.

**Glumes.** Glumes one the lower absent or obscure or two, persistent, similar, shorter than spikelet, thinner than fertile lemma. Lower glume lanceolate, 1–2 mm long, scarios, without keels. Lower glume apex acuminate. Upper glume lanceolate, 1–2 mm long, scarios, without keels. Upper glume apex acuminate.

**Florets.** Fertile lemma ovate, 8 mm long, chartaceous, without keel, 13 -veined, more than 3-veined. Lemma lateral veins with cross-veins. Lemma surface scabrous. Lemma apex acuminate. Palea 6 mm long, 8 -veined. Palea keels ciliolate, adorned above. Palea surface scabrous. Palea apex with excurrent keel veins. Apical sterile florets resembling fertile though underdeveloped.

**Flower and Fruit.** Lodicules 3, ovate, 2 mm long, ciliate, obtuse. Anthers 6, 4 mm long. Stigmas 3. Caryopsis with adherent pericarp, apex unappendaged.

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

**Country /Province /State.** Russian far east, **Eastern Asia.** Sakhalin. Japan.

**Sasa tenuifolia** Nakai. *Journ. Jap. Bot.* x. 552 (1934).

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

**TYPE** from Japan. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Japan, Mt. Kanmuriyama: Tsuyama.

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

**Derivation** (Clifford & Bostock 2007): *L. tenuis*, slender; folium, leaf. Leaf-blades narrow.

**Classification.** Subfamily Bambusoideae. Tribe: Bambuseae.

**Habit, Vegetative Morphology.** Perennial, woody bamboo. Rhizomes elongated, leptomorph. Butt sheaths absent. Culms erect, 30–40 cm long, 2–2.5 mm diam., woody. Culm-internodes terete, thin-walled, distally glabrous. Culm-nodes glabrous. Lateral branches suffrutescent. Bud complement 1. Branch complement one, solitary, as thick as stem. Culm-sheaths present. Leaves 1–14 per branch. Leaf-sheaths glabrous on surface. Leaf-sheath oral hairs scanty or lacking. Ligule an eciliate membrane. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades lanceolate, 4–14 cm long, 12–23 mm wide, mid-green or glaucous, discolorous with last colour beneath. Leaf-blade venation with 8–10 secondary veins. Leaf-blade surface scabrous, pubescent, hairy abaxially. Leaf-blade apex attenuate.

**Inflorescence.** Inflorescence composed of racemes. Racemes 1, single. Rhachis pubescent on surface. 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 linear or oblong, laterally compressed, 9–12 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes persistent, shorter than spikelet, thinner than fertile lemma. Lower glume lanceolate, scarios, without keels. Lower glume apex acute. Upper glume ovate, scarios, without keels. Upper glume apex acute.

**Florets.** Fertile lemma ovate, 5.5–7 mm long, chartaceous, without keel, more than 3-veined. Lemma apex acute. Palea keels ciliate. Apical sterile florets resembling fertile though underdeveloped.

**Flower and Fruit.** Lodicules 3. Anthers 6. Stigmas 3. Caryopsis with adherent pericarp, apex unappendaged.

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

**Country /Province /State.** **Eastern Asia.** Japan.

**Sasa tokugawana** Makino. *Journ. Jap. Bot.* ii. 8 (1918).

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

**TYPE** from Japan. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Japan, Hakone: Hisauchi, Japan, Hakone: Makino.

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

**Derivation** (Clifford & Bostock 2007): *L. -ana*, indicating connection. In honor of Tokugawa.

**Classification.** Subfamily Bambusoideae. Tribe: Bambuseae.

**Habit, Vegetative Morphology.** Perennial, woody bamboo. Rhizomes elongated, leptomorph. Butt sheaths absent. Culms erect, 150 cm long, woody. Culm-internodes terete, thin-walled, distally glabrous. Culm-nodes swollen, glabrous. Lateral branches ample, arising from upper culm. Bud complement 1. Branch complement one, solitary, as thick as stem. Culm-sheaths present, persistent, 0.5 length of internode, glabrous, without auricles. Leaf-sheaths pilose. Leaf-sheath oral hairs lacking or setose. Ligule an eciliate membrane. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades oblong, 15–23 cm long, 30–45 mm wide. Leaf-blade surface pubescent, densely hairy, hairy abaxially. Leaf-blade apex acuminate.

**Inflorescence.** Inflorescence a panicle. Panicle open, oblong, 8–9 cm long. 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 linear, laterally compressed, 28 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes persistent, similar, shorter than spikelet, thinner than fertile lemma. Lower glume lanceolate, 1.5–2 mm long, scarios, without keels. Lower glume apex acuminate. Upper glume lanceolate, 3 mm long, scarios, without keels. Upper glume apex acuminate.

**Florets.** Fertile lemma ovate, 7 mm long, chartaceous, without keel, more than 3-veined. Lemma apex acuminate. Apical sterile florets resembling fertile though underdeveloped.

**Flower and Fruit.** Lodicules 3. Anthers 6. Stigmas 3. Caryopsis with adherent pericarp, apex unappendaged.

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

**Country /Province /State.** Eastern Asia. Japan.

**Sasa tomentosa** C.D.Chu & C.S.Chao. *J. Nanjing Techn. Coll. Forest Prod.*, 1981(3): 35 (1981).

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

**TYPE** from China. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: China: Guangxi: Rongshui, dense forests at mountain summits, ca. 400 m, *S.Q. Chen 15320* (HT: IBG; IT: JSBI).

**Illustrations (Books):** S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 143).

**Derivation** (Clifford & Bostock 2007): *L. tomentum*, stuffing material of a pillow; -osa, abundance. Plant invested in part or totally with short hairs.

**Classification.** Subfamily Bambusoideae. Tribe: Bambuseae.

**Habit, Vegetative Morphology.** Perennial, woody bamboo. Rhizomes elongated, leptomorph. Butt sheaths absent. Culms erect, 200 cm long, 5 mm diam., woody. Culm-internodes terete, thin-walled, 15–22 cm long. Culm-nodes flush with internodes. Lateral branches suffrutescent. Bud complement 1. Branch complement one, solitary. Culm-sheaths present, 0.33–0.5 length of internode, pubescent, auriculate, with 3 mm high auricles, setose on shoulders, shoulders with straight hairs, shoulders with 8–10 mm long hairs. Culm-sheath ligule 0.3 mm high, entire. Culm-sheath blade lanceolate, erect or spreading, 1.3–3.5 cm long, 2–5 mm wide. Leaves 2–3 per branch. Leaf-sheaths pubescent. Leaf-sheath oral hairs setose, spreading, 10–13 mm long. Leaf-sheath auricles falcate. Ligule an eciliate membrane, 0.3 mm long. Leaf-blade base cuneate, with a brief petiole-like connection to sheath, petiole 0.5–0.8 cm long, petiole pubescent. Leaf-blades lanceolate or elliptic, 15–20 cm long, 30–42 mm wide. Leaf-blade venation with 16–18 secondary veins, with distinct cross veins. Leaf-blade surface glabrous. Leaf-blade apex acuminate. Flowering specimens unknown.

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

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

**TDWG4.** Guangxi.

**Sasa tsuboiana** Makino. *Bot. Mag., Tokyo*. 1912, xxvi. 23. (1912).

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

**TYPE** from Japan. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Japan, Mt. Ibuki: Makino.

**Recent Synonyms:** *Sasa hatchoensis* Nakai, *Bot. Mag., Tokyo*, xlvi. 93 (1932). *Sasa maxima* Nakai, *Journ. Jap. Bot.* 10: 558. (1934).

*Sasa yokotai* Nakai, *Bot. Mag., Tokyo*, 46: 93, (1932).

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

**Derivation** (Clifford & Bostock 2007): *L. -ana*, indicating connection. In honor of Tsuboi, Japanese botanist.

**Classification.** Subfamily Bambusoideae. Tribe: Bambuseae.

**Habit, Vegetative Morphology.** Perennial, woody bamboo. Rhizomes elongated, leptomorph. Butt sheaths absent. Culms erect, 200 cm long, 5–7 mm diam., woody. Culm-internodes terete, thin-walled, 5–10 cm long. Culm-nodes glabrous. Lateral branches suffrutescent. Bud complement 1. Branch complement one, solitary, as thick as stem. Culm-sheaths present, 4–15 cm long, setose on shoulders. Leaves 5 per branch. Leaf-sheaths glabrous on surface. Ligule an eciliate membrane. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades oblong or ovate, 9–20 cm long, 20–45 mm wide, mid-green and glaucous, discolourous with last

colour beneath and variegated (white margins). Leaf-blade venation with 10–18 secondary veins. Leaf-blade apex acuminate.

**Inflorescence.** Inflorescence a panicle. Panicle open, ovate, 7–8 cm long, 4–5 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 linear or oblong, laterally compressed, 12–20 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes persistent, shorter than spikelet, thinner than fertile lemma. Lower glume linear, 1–1.5 mm long, scarios, without keels. Lower glume surface pubescent. Lower glume apex acute. Upper glume linear, 1–1.5 mm long, scarios, without keels. Upper glume surface pubescent. Upper glume apex acute.

**Florets.** Fertile lemma ovate, 7–8 mm long, chartaceous, dark green, without keel, more than 3-veined. Lemma apex acute. Palea 6–7 mm long. Palea keels ciliolate. Apical sterile florets resembling fertile though underdeveloped.

**Flower and Fruit.** Lodicules 3. Anthers 6, yellow. Stigmas 2. Caryopsis with adherent pericarp, apex unappendaged.

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

**Country /Province /State.** Eastern Asia. Japan.

**Sasa yokotai** Nakai. *Bot. Mag., Tokyo*, xlv. 93, (1932).

Regarded by K as a synonym (*S. tsuboiana*).

**TYPE** from Japan. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Japan, Lake Hatcho-ike: Nakai.

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

**Derivation** (Clifford & Bostock 2007): in honor of Yokota, Japanese botanist.

**Classification.** Subfamily Bambusoideae. Tribe: Bambuseae.

**Habit, Vegetative Morphology.** Perennial, woody bamboo. Rhizomes elongated, leptomorph. Butt sheaths absent. Culms erect, 100–150 cm long, 5–7 mm diam., woody. Culm-internodes terete, thin-walled, 8.5 cm long, distally pruinose. Lateral branches suffrutescent. Bud complement 1. Branch complement one, solitary, as thick as stem. Culm-sheaths present. Leaves 2–4 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, 8–15 cm long, 19–38 mm wide, mid-green or glaucous, discolorous with last colour beneath or variegated (white margins).

**Inflorescence.** Inflorescence a panicle. Panicle open, ovate, 8–12 cm long, 4–5 cm wide. Panicle axis glabrous. Panicle branches pubescent. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 5–7 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets linear or oblong, laterally compressed, 10–20 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes persistent, shorter than spikelet, thinner than fertile lemma. Lower glume lanceolate, scarios, without keels. Lower glume apex acute. Upper glume ovate, scarios, without keels. Upper glume apex acute.

**Florets.** Fertile lemma ovate, 6–11 mm long, chartaceous, dark green or purple, without keel, more than 3-veined. Lemma apex acuminate. Apical sterile florets resembling fertile though underdeveloped.

**Flower and Fruit.** Lodicules 3, 2 mm long. Anthers 6, yellow. Stigmas 2. Caryopsis with adherent pericarp, apex unappendaged.

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

**Country /Province /State.** Eastern Asia.

**Sasa tsukubensis** Nakai. *Journ. Jap. Bot.* xi. 86 (1935).

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

**TYPE** from Japan. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Japan, Mt. Tsukuba: Nakai.

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

**Derivation** (Clifford & Bostock 2007): L. -ensis, denoting origin. From Tsukubasan, Hitachi Province, Japan.

**Classification.** Subfamily Bambusoideae. Tribe: Bambuseae.

**Habit, Vegetative Morphology.** Perennial, woody bamboo. Rhizomes elongated, leptomorph. Butt sheaths absent. Culms erect, 40–200 cm long, 1–7 mm diam., woody. Culm-internodes terete, thin-walled, distally glabrous or pubescent. Culm-nodes glabrous or bearded. Lateral branches ample, arising from upper culm. Bud complement 1. Branch complement one, solitary, as thick as stem. Culm-sheaths present, persistent, glabrous, without auricles. Leaves 2–8 per branch. Leaf-sheaths glabrous on surface. Leaf-sheath oral hairs lacking or ciliate. Ligule an eciliate membrane. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades oblong, 9–30 cm long, 15–60 mm wide. Leaf-blade surface pubescent, hairy abaxially. Leaf-blade apex acuminate.

**Inflorescence.** Inflorescence a panicle. Panicle open, ovate, 8–12 cm long. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 5–7 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets linear, laterally compressed, 30–45 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes 5 mm long, pubescent.

**Glumes.** Glumes one the lower absent or obscure or two, persistent, similar, shorter than spikelet, thinner than fertile lemma. Lower glume lanceolate, 1 mm long, scarious, without keels. Lower glume apex acuminate. Upper glume ovate, 4 mm long, scarious, without keels. Upper glume apex acuminate.

**Florets.** Fertile lemma ovate, 8 mm long, chartaceous, without keel, 9 -veined, more than 3-veined. Lemma lateral veins with cross-veins. Lemma surface smooth. Lemma apex acuminate. Palea 8 -veined. Palea keels eciliate. Palea apex with excurrent keel veins. Apical sterile florets resembling fertile though underdeveloped.

**Flower and Fruit.** Lodicules 3. Anthers 6, 5 mm long. Stigmas 3. Caryopsis with adherent pericarp, apex unappendaged.

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

**Country /Province /State.** Eastern Asia. Japan.

**Sasa tyuhgokensis** Makino. *Journ. Jap. Bot.* iv. 3 (1927).

Regarded by K as a synonym (*S. veitchii*).

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

**TYPE** from Japan. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: Japan, Saekigori: Makino.

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

**Derivation** (Clifford & Bostock 2007): L. -ensis, denoting origin. From Tyuhgoke, Aki Province, Japan.

**Classification.** Subfamily Bambusoideae. Tribe: Bambuseae.

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

**Country /Province /State.** Russian far east, Eastern Asia. Kuril Is, Sakhalin. Japan.

**Sasa veitchii** (Carr.) Rehder. *Journ. Arnold Arb.* i. 58 (1919).

**Accepted by:** R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), T.G.Tutin et al, *Flora Europaea* 5 (1980), N.Tsvelev, *Grasses of the Soviet Union* (1983).

**TYPE** from Japan. **Basionym or Replaced Name:** *Bambusa veitchii* Carr., *Rev. Hort.* : 90 (1888). T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: Japan, Cult. at Paris: Maries (K iso).

**Illustrations (Books):** D.Farrelly, *The Book of Bamboo* (1984) (179).

**Derivation** (Clifford & Bostock 2007): in honor of John Gould Veitch (1839–1870) English nurseryman.

**Classification.** Subfamily Bambusoideae. Tribe: Bambuseae.

**Habit, Vegetative Morphology.** Perennial, woody bamboo. Rhizomes elongated, leptomorph. Butt sheaths absent. Culms erect, 100–150 cm long, woody. Culm-internodes terete, thin-walled, distally glabrous. Culm-nodes glabrous. Lateral branches ample, arising from lower culm. Bud complement 1. Branch complement one, solitary, as thick as stem. Culm-sheaths present, persistent, glabrous, without auricles. Leaf-sheaths glabrous on surface. Leaf-sheath oral hairs setose. Ligule an eciliate membrane. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades oblong, 20–25 cm long, 40–50 mm wide, withering along margins. Leaf-blade surface glabrous. Leaf-blade apex acuminate.

**Inflorescence.** Inflorescence a panicle. Panicle open, oblong, 10 cm long. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 4–8 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets linear, laterally compressed, 20–35 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes 4–5 mm long, pubescent.



**Glumes.** Glumes persistent, similar, shorter than spikelet, thinner than fertile lemma. Lower glume lanceolate, 1 mm long, scarios, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume apex acuminate. Upper glume lanceolate, 1.5 mm long, scarios, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume apex acuminate.

**Florets.** Fertile lemma ovate, 6 mm long, chartaceous, without keel, 9 -veined, more than 3-veined. Lemma lateral veins with cross-veins. Lemma surface scabrous. Lemma margins ciliate. Lemma apex acuminate. Palea 1 length of lemma, 10 -veined. Palea keels ciliate, adorned above. Palea apex obtuse. Apical sterile florets resembling fertile though underdeveloped.

**Flower and Fruit.** Lodicules 3, ovate, 1.5 mm long, veined, ciliate. Anthers 6, 4 mm long. Stigmas 3. Caryopsis with adherent pericarp, apex unappendaged.

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

**Region. Northern Europe** (\*).

**Country /Province /State.** : GB Aliens (Ryves et al). Russian far east, **Eastern Asia**. Sakhalin. Japan.

**Sasa yahikoensis** Makino. *Journ. Jap. Bot.* vi. 14 (1929).

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

**TYPE** from Japan. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Japan, Yahiko: Makino.

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

**Derivation** (Clifford & Bostock 2007): L. -ensis, denoting origin. From Yahiko, Echigo Province, Japan.

**Classification.** Subfamily Bambusoideae. Tribe: Bambuseae.

**Habit, Vegetative Morphology.** Perennial, woody bamboo, caespitose. Rhizomes elongated, leptomorph. Butt sheaths absent. Culms erect, 20 cm long, 2–3 mm diam., woody. Culm-internodes terete, thin-walled, distally glabrous or pilose, with reflexed hairs. Culm-nodes glabrous. Lateral branches suffrutescent. Bud complement 1. Branch complement one, solitary, as thick as stem. Culm-sheaths present, 1 length of internode, puberulous, with reflexed hairs. Leaves 2–4 per branch. Leaf-sheaths glabrous on surface. Ligule an eciliate membrane. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades oblong, 6–13 cm long, 17–34 mm wide, mid-green and glaucous, discolorous with last colour beneath. Leaf-blade venation with 12–16 secondary veins. Leaf-blade surface scabrous, pubescent, hairy abaxially. Leaf-blade apex acuminate.

**Inflorescence.** Inflorescence a panicle. Panicle open, ovate, 7 cm long, 4 cm wide. Panicle axis pilose. 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 linear or oblong, laterally compressed, 8–12 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes persistent, shorter than spikelet, thinner than fertile lemma. Lower glume lanceolate, 1 mm long, scarios, without keels. Lower glume surface pilose. Lower glume apex acute. Upper glume ovate, 2–7 mm long, scarios, without keels. Upper glume surface pilose. Upper glume apex acute.

**Florets.** Fertile lemma ovate, 5–7 mm long, chartaceous, purple, without keel, more than 3-veined. Lemma apex setaceously acuminate. Palea 4–5 mm long. Apical sterile florets resembling fertile though underdeveloped.

**Flower and Fruit.** Lodicules 3. Anthers 6, purple. Stigmas 3. Caryopsis with adherent pericarp, apex unappendaged.

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

**Country /Province /State.** Russian far east and **Eastern Asia**. Kuril Is, Sakhalin.

**Saugetia fasciculata** Hitchcock & Chase. *Contrib. U. S. Nat. Herb.* xviii. 378 (1917).

More checking of status required.

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

**TYPE** from Cuba. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Cuba, Guane: Leon & Roca 6901 (US holo, NY).

**Illustrations (Books):** A.S.Hitchcock, *Manual of the Grasses of the West Indies* (1936) (122, Fig. 77).

**Derivation** (Clifford & Bostock 2007): L. fascis, bundle; -ulus, diminutive. -ata, possessing. With spikelets or branches clustered in the inflorescence.

**Classification.** Subfamily Chloridoideae. Tribe: Cynodonteae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Culms 40–50 cm long, wiry. Lateral branches fastigiate. Leaf-sheath oral hairs bearded. Ligule a fringe of hairs. Leaf-blades curled, filiform, conduplicate, 1–10 cm long, 0.5 mm wide.

**Inflorescence.** Inflorescence composed of racemes. Racemes 1, single, flexuous, unilateral, 3–5 cm long. Rhachis angular. Spikelet packing broadside to rhachis, regular, 2 -rowed. Spikelets appressed, solitary. Fertile spikelets sessile.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, with diminished florets at the apex. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets elliptic, dorsally compressed, 3–3.5 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus evident, 0.5 mm long, pubescent, obtuse.

**Glumes.** Glumes persistent, dissimilar, shorter than spikelet, thinner than fertile lemma, gaping. Lower glume subulate, 0.4–0.8 mm long, 0.2–0.3 length of upper glume. Upper glume linear, 2–2.5 mm long, 0.66–0.75 length of adjacent fertile lemma, membranous, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume apex acuminate.

**Florets.** Fertile lemma elliptic, dorsally compressed, 3–3.5 mm long, coriaceous, keeled, 3 -veined, 0–3 -veined. Lemma apex dentate, 2 -fid, awned, 1 -awned. Principal lemma awn from a sinus, flexuous, 12–16 mm long overall. Palea 2 -veined. Apical sterile florets 1 in number, linear, 1–1.2 mm long. Apical sterile lemmas acute, muticous.

**Flower and Fruit.** Caryopsis with free soft pericarp, ellipsoid, flattened, concavo-convex.

**Distribution (TDWG). Continent.** South America.

**Country /Province /State. Caribbean.** Cuba, Dominican Republic.

**Saugetia pleiostachya** Hitchcock & Ekman. *US Dept. Agr. Misc. Publ.* 243:123 (1936).

More checking of status required.

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

**TYPE** from Cuba. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: Cuba, Mendoza: Ekman 11483 (US holo, K, NY).

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

**Derivation** (Clifford & Bostock 2007): Gk. pleios, several; stachys, ear of corn. Inflorescence of several spikes.

**Classification.** Subfamily Chloridoideae. Tribe: Cynodonteae.

**Habit, Vegetative Morphology.** Perennial. Culms 50–80 cm long, wiry. Culm-internodes distally glabrous. Lateral branches ample. Leaf-sheaths glabrous on surface. Leaf-sheath oral hairs bearded. Ligule a ciliate membrane. Leaf-blades filiform, involute, 5–20 cm long, 1.5 mm wide. Leaf-blade surface smooth, glabrous. Leaf-blade margins scabrous.

**Inflorescence.** Inflorescence composed of racemes. Racemes 1–3, single or paired or digitate, unilateral, 8–12 cm long. Rhachis angular. Spikelet packing broadside to rhachis, lax, regular. Spikelets appressed, solitary. Fertile spikelets sessile.

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

**Glumes.** Glumes persistent, similar, shorter than spikelet, thinner than fertile lemma, gaping. Lower glume linear, 0.5 mm long, 0.15 length of upper glume, membranous, without keels, 1 -veined. Lower glume primary vein scaberulous. Lower glume lateral veins absent. Lower glume apex acuminate. Upper glume linear, 2–4 mm long, 0.5–1 length of adjacent fertile lemma, membranous, without keels, 1 -veined. Upper glume primary vein scaberulous. Upper glume lateral veins absent. Upper glume apex acuminate.

**Florets.** Fertile lemma lanceolate, dorsally compressed, 4 mm long, coriaceous, keeled, 3 -veined, 0–3 -veined. Lemma apex acute, awned, 1 -awned. Principal lemma awn flexuous, 10–20 mm long overall. Palea 2 -veined. Apical sterile florets 1 in number, linear, 0.5–1 mm long. Apical sterile lemmas acute, muticous.

**Flower and Fruit.** Caryopsis flattened, concavo-convex.

**Distribution (TDWG). Continent.** South America.

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

**Saxipoa saxicola** R. Br. *Australian Systematic Botany* 22: 406 (2009).

**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:** *Poa saxicola* R.Br., *Prod.* 1: 180. (1810). T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: HT: *Brown 6286*, Mar 1804, Australia: Tasmania: Table Mountain (i.e. Mt. Wellington) (BM).

**Illustrations (Books):** S.W.L.Jacobs, R.D.B.Whalley & D.J.B.Wheeler., *Grasses of New South Wales*, 4th edn (2008) (354).

**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. saxum*, rock; -cola, dweller. Growing on or amongst boulders.

**Classification.** Subfamily Pooideae. Tribe: Poeae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Butt sheaths herbaceous, persistent and investing base of culm, with fibrous dead sheaths. Culms erect, 25–60 cm long, 1–2 -noded. Culm-internodes terete or elliptical in section, smooth. Lateral branches lacking. Leaves mostly basal. Leaf-sheaths longer than adjacent culm internode, smooth or scaberulous, glabrous on surface. Ligule an eciliate membrane, 1–4.5 mm long, glabrous on abaxial surface or scaberulous on abaxial surface, erose, truncate. Leaf-blades conduplicate, 10–25 cm long, 2–4 mm wide. Leaf-blade surface smooth or scabrous. Leaf-blade apex obtuse or abruptly acute.

**Inflorescence.** Inflorescence a panicle. Peduncle smooth or scaberulous above. Panicle contracted, linear, 6–15 cm long, bearing few spikelets. Primary panicle branches appressed, 1–2 -nate. Panicle branches scabrous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, 1–1.5 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 elliptic, laterally compressed, compressed slightly, 7 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes 0.5 mm long, smooth, glabrous or pubescent. Floret callus glabrous.

**Glumes.** Glumes persistent, similar, shorter than spikelet. Lower glume ovate, 3.5–5 mm long, 0.9 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume primary vein scaberulous. Lower glume lateral veins absent. Lower glume margins ciliate. Lower glume apex acute. Upper glume ovate, 4.5–6 mm long, 1.1 length of adjacent fertile lemma, membranous, 1-keeled, 3 -veined. Upper glume primary vein scaberulous. Upper glume margins ciliate. Upper glume apex acute.

**Florets.** Fertile lemma ovate, oblong in profile, 4–5.5 mm long, chartaceous, much thinner on margins, shiny, keeled, 5 -veined, more than 3-veined. Lemma surface scaberulous, rough above. Lemma margins ciliate. Lemma apex acute. Palea ovate, 0.9 length of lemma. Palea keels ciliate (more than 1 row), adorned above. Palea surface glabrous or pubescent, hairy on back. Apical sterile florets resembling fertile though underdeveloped.

**Flower and Fruit.** Lodicules 2, membranous. Anthers 3, 0.75–1.5 mm long, pallid or purple. Caryopsis with adherent pericarp, ellipsoid, trigonous, 2–2.5 mm long. Embryo 0.25 length of caryopsis. Hilum punctiform.

**Distribution (TDWG). Continent.** Australasia.

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

**TDWG4.** Tablelands.

**xSchedolium loliaceum** (Huds.) J. Holub. *Preslia* 70(2): 112 (1998).

**Accepted by:** R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online.

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

**Classification.** Subfamily Pooideae. Tribe: Poeae.

**Schedonorus arundinaceus** Roem. & Schult. *Syst.* 2: 700 (1817).

**Accepted by:** R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online (as *Festuca*), U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), D.Sharp, D. & B.K.Simon, *AusGrass* (2002) (as *Festuca*), S-L Chen et al, *Flora of China* 22 (Poaceae) (2006) (as *Festuca*), J.F.Veldkamp, *Poaceae ms (Flora Malesiana)* (as *Festuca*), N.L.Bor, *Grasses of Burma, Ceylon, India and Pakistan* (1960) (as *Festuca*), T.G.Tutin et al, *Flora Europaea* 5 (1980) (as *Festuca*), N.Tsvelev, *Grasses of the Soviet Union* (1983) (as *Festuca*), W.D.Clayton & N.Snow, *Key to Pacific Grasses* (2010) (as *Festuca*).

**TYPE** from Germany. **Basionym or Replaced Name:** *Festuca arundinacea* Schreb., *Spicil. Fl. Lips.* 57 (1771). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Germany, Biniz: Schreber (M holo).

**Recent Synonyms:** *Festuca elatior* subsp. *arundinacea* (Schreb.) Wimmer, *Fl. Schles. Ed.3.*, :59 (1857). *Festuca archeri* E.B. Alekseev, *Novosti Sist. Vyssh. Rast.*, 24: 8 (1987).

**Illustrations (Books):** C.E.Hubbard, *Grasses* (1968) (144 374), G.Hegi, *Flora von Mitteleuropa* 1 (1909), L.K.A. Chippindall, *Grasses and Pastures of South Africa* (1955) (57, Fig. 27), N.Feinbrun-Dothan, *Flora Palaestina* 4 (1986) (Pl. 292), L.Boulos, *Flora of Egypt* 4 (2005) (138, Fig. 39), N.L.Bor, *Gramineae in Flora of Iraq* (1968) (83, Pl. 29), T.Koyama, *Grasses of Japan and its neighbouring regions* (1987) (78, Fig. 23a as *F. elatior*), T.A.Cope, *Flora of Pakistan* 143: *Poaceae* (1982) (363, Fig. 38), H.J.Noltie, *The Grasses of Bhutan* (2000) (537, Fig.12), J.P.Jessop, G.R.M. Dashorst & F.M.James, *Grasses of South Australia* (2006) (123, Fig. 80), N.Walsh & T.Entwistle, *Flora of Victoria* Vol 2 (1994) (402, Fig. 80), S.W.L.Jacobs, R.D.B.Whalley & D.J.B.Wheeler., *Grasses of New South Wales*, 4th edn (2008) (267), J.C.Tothill, & J.B.Hacker. *The grasses of southern Queensland* (1983) (248), T.D.Stanley & E.Ross, *Flora of South East Queensland, Gramineae* (1989), A.Wilson (ed.), *Flora of Australia*, Vol 44A. *Poaceae* (2009) (280, Fig. 37), D.Sharp & B.K.Simon, *AusGrass*. Grasses of Australia. CD-Rom Version 1.0. (2002), F.W.Gould, *The Grasses of Texas* (1975), L.B. Smith, D.C. Wasshausen, R.M. Klein *Flora Illustrata Catarinensis Gramineas* (1981–1982) (211, Fig. 45), W.Burger, *Flora Costaricensis* 15, Gramineae: *Fieldiana Botany New Series* 4 (1980) (240, Fig. 83), M.N.Correa, *Flora Patagonica* Parte III, Gramineae (1978) (98, Fig. 55), B.Rosengurt, *Gramineas Uruguayas I* (1970) (118, Fig. 42 as *Festuca*), H.M. Longhi-Wagner, *Flora Illustrada do Rio Grande do Sul, Gramineae, Poaceae* (1987), E.Hafliger & E.Schultz, *Grass Weeds*, CIBA-GEIGY (2:80(1980)).

**Illustrations (Journals):** *Contrib. U.S.Nat. Herbarium* (56: 43, fig 16 (2007)).

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

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

**Classification.** Subfamily Pooideae. Tribe: Poae.

**Habit, Vegetative Morphology.** Perennial, caespitose, clumped moderately. Cataphylls inconspicuous. Rhizomes absent or short, fleshy, not obviously scaly. Basal innovations extravaginal. Culms robust, straight or curved, 45–180 cm long, without nodal roots. Culm-internodes terete. Culm-nodes without exudate, glabrous. Lateral branches lacking. Leaves basal and cauline, 3–5 per branch. Leaf-sheaths tight, unthickened at base, open for most of their length, without keel, striately veined, glabrous on surface. Leaf-sheath oral hairs ciliate. Leaf-sheath auricles falcate. Ligule an eciliate membrane, 1–2 mm long, membranous or scarious, white, erose. Leaf-blade base symmetrical. Leaf-blades straight or flexuous, linear in section, 10–60 cm long, 3–12 mm wide, firm, mid-green. Leaf-blade midrib conspicuous. Leaf-blade venation distinct, with subepidermal sclerenchyma strands similar in size, with subepidermal sclerenchyma attached to veins above and below, without layer of subepidermal sclerenchyma masking vein striation. Leaf-blade surface glabrous. Leaf-blade margins smooth, glabrous. Leaf-blade apex attenuate.

**Inflorescence.** Inflorescence a panicle, with 1 peduncles per sheath. Peduncle straight or flexuous, terete, eglandular, glabrous. Panicle open, lanceolate or ovate, continuous, dense or loose, straight, 10–50 cm long. Primary panicle branches ascending or spreading, 2-nate, moderately divided, bearing 3–8 fertile spikelets on each lower branch (on shorter branch), bearing spikelets almost to the base. Panicle branches straight or arcuate, angular, scabrous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, 3–8 mm long.

**Fertile Spikelets.** Spikelets comprising 6–8(–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 elliptic or oblong, laterally compressed, 9–12(–15) mm long, breaking up at maturity, disarticulating below each fertile floret. Spikelet callus glabrous. Rhachilla internodes scaberulous. Floret callus glabrous.

**Glumes.** Glumes persistent, dissimilar, subequal in width, shorter than spikelet. Lower glume lanceolate, 3.3–5.5 mm long, 0.6 length of upper glume, herbaceous or scarious, mid-green, without keels, 1-veined. Lower glume lateral veins absent. Lower glume apex obtuse. Upper glume lanceolate or oblong, 4.5–7 mm long, 0.7–0.8 length of adjacent fertile lemma, chartaceous, mid-green, without keels, 3-veined. Upper glume apex acute.

**Florets.** Fertile lemma ovate, symmetrical, 6–9 mm long, chartaceous, mid-green, without keel, 5-veined, more than 3-veined. Lemma surface scaberulous. Lemma apex acute, muticous or awned, 1-awned. Principal lemma awn stiff, 0–4 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, 3–4 mm long. Ovary glabrous. Caryopsis with adherent pericarp, glabrous. Hilum linear, 0.5 length of caryopsis.

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

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

**Country /Province /State.** : Denmark, Great Britain. Estonia, Latvia, Lithuania, Central European Russia, East European Russia, South European Russia, Ukraine. **Northern Africa, Macaronesia, Northeast tropical Africa, East tropical Africa,** and **Southern Africa.** Algeria, Egypt, Libya, Morocco, Tunisia. Azores, Madeira. Ethiopia (inc. Eritrea). Kenya. Free State, Kwazulu-Natal (\*), Western Cape, Eastern Cape. **Middle Asia, Caucasus, Western Asia, Arabian Peninsula, China, Eastern Asia, Russia.** Altay. Kazakhstan, Kirgizistan, Turkmenistan, Tadjikistan, Uzbekistan. Afghanistan, Iran, Iraq. China South Central (+), Inner Mongolia (+), Manchuria (+), China North-Central (+), Qinghai (+), China Southeast (+), Xinjiang. Japan, Taiwan. Japan Hokkaido, or Honshu, or Shikoku, or Kyushu. **Indian Subcontinent, Papuaasia.** Eastern Himalaya, Pakistan. New Guinea West Papua (Irian Jaya). New Guinea. **Australia, New Zealand.** Western Australia (\*), South Australia (\*), Queensland (\*), New South Wales (\*), Victoria (\*), Tasmania (\*). Chatham Is, New Zealand North I, New Zealand South I, Stewart Is. **North-central Pacific.** Hawaii (\*). **Subarctic America, Western Canada, Eastern Canada, Northwest USA, Northeast USA, Southwestern USA, South-central USA, Southeastern USA,** and **Mexico.** Aleutian Is, Alaska, Yukon. Alberta, British Columbia. Newfoundland, Ontario, 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, Texas. Alabama, Arkansas, Delaware, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, North Carolina, South Carolina, Tennessee, Virginia, District of Columbia. Central Mexico, Northeast Mexico. **Mesoamerica, Caribbean, Western South America, Brazil,** and **Southern South America.** Costa Rica, Guatemala. Bolivia, Colombia, Ecuador. Brazil South. Argentina Northeast, Argentina South, Chile North, Chile Central, Chile South, Juan Fernandez Is, Uruguay. **Subantarctic islands.** Tristan de Cunha.

**TDWG4.** Gansu, Shaanxi. Jiangxi, Zhejiang. Hubei, Sichuan, Yunnan. Bhutan. South-West. Southern. South East. Coast, Tablelands, Western Slopes. Buenos Aires, Entre Rios, La Pampa. Chubut, Neuquén, Río Negro, Tierra del Fuego. Valparaiso, Santiago, Maule. Los Lagos, Aisen. Distrito Federal, Mexico State. Hidalgo, Zacatecas.

**Schedonorus giganteus** (L.) Holub. *Preslia* 70:113 [June] (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 (as *Festuca*), U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), S-L Chen et al, *Flora of China* 22 (Poaceae) (2006) (as *Festuca*), N.L.Bor, *Grasses of Burma, Ceylon, India and Pakistan* (1960) (as *Festuca*), T.G.Tutin et al, *Flora Europaea* 5 (1980) (as *Festuca*), N.Tsvelev, *Grasses of the Soviet Union* (1983) (as *Festuca*).

**TYPE** from Europe. **Basionym or Replaced Name:** *Bromus giganteus* L., *Sp. Pl.* 1: 77 (1753). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: LT: *Herb A. Van Royen*, (L-913.62–78). LT designated by Darbyshire in Cafferty et al., *Taxon* 49(2): 248 (2000).

**Recent Synonyms:** *Festuca gigantea* (L.) Vill., *Hist. Pl. Dauph.* 2: 110. (1787).

**Illustrations (Books):** C.E.Hubbard, *Grasses* (1968) (146 as *Festuca*), G.Hegi, *Flora von Mitteleuropa* 1 (1909) (as *Festuca*), H.Jacques-Felix, *Les Graminees d'Afrique tropicale* (1962) (175, Fig. 98 as *Festuca*), H.J.Noltie, *The Grasses of Bhutan* (2000) (537, Fig. 11 as *Festuca*), M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 24 *Poaceae*, part 1 (2007) (447), S-L Chen et al, *Flora of China*, Illustrations, *Poaceae* (2007) (Fig.331 as *Festuca*).

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

**Classification.** Subfamily Pooideae. Tribe: Poeae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Culms erect or geniculately ascending, 45–150 cm long, 2–5 -noded. Culm-nodes purple. Leaf-sheaths without keel, smooth or scaberulous, glabrous on surface. Leaf-sheath oral hairs lacking. Leaf-sheath auricles falcate. Ligule an eciliate membrane, 1–2.5 mm long. Leaf-blades drooping, 30–60 cm long, 6–18 mm wide. Leaf-blade margins scaberulous. Leaf-blade apex attenuate.

**Inflorescence.** Inflorescence a panicle. Panicle open, lanceolate or ovate, effuse, nodding, 10–50 cm long. Primary panicle branches 2 -nate, bearing 3–8 fertile spikelets on each lower branch (on shorter branch). Panicle branches flexuous, angular, scabrous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, 1.5–6 mm long.

**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 lanceolate or oblong, laterally compressed, 8–20 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes definite.

**Glumes.** Glumes persistent, dissimilar, shorter than spikelet. Lower glume lanceolate, 4–7 mm long, 0.8–0.9 length of upper glume, chartaceous, much thinner on margins, without keels, 1–3 -veined. Lower glume apex acute. Upper glume lanceolate, 5–8 mm long, 0.8–0.9 length of adjacent fertile lemma, chartaceous, with membranous margins, without keels, 3 -veined. Upper glume apex acute.

**Florets.** Fertile lemma elliptic, 6–9 mm long, chartaceous, of similar consistency on margins, without keel, 5 -veined, more than 3-veined. Lemma surface scaberulous. Lemma apex acute, awned, 1 -awned. Principal lemma awn straight or flexuous, 10–18 mm long overall, limb scaberulous. Palea 1 length of lemma, 2 -veined. Palea keels scaberulous. Apical sterile florets resembling fertile though underdeveloped.

**Flower and Fruit.** Anthers 3, 2.5–3 mm long. Ovary glabrous. Caryopsis with adherent pericarp, fusiform, glabrous. Embryo 0.2 length of caryopsis. Hilum linear, 0.9 length of caryopsis.

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

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

**Country /Province /State.** : Denmark, Great Britain. Belarus, Estonia, Latvia, Lithuania, Central European Russia, East European Russia, North European Russia, South European Russia, Northwest European Russia, Ukraine. Siberia, **Middle Asia, Caucasus, Western Asia, China.** Altay, Irkutsk, Krasnoyarsk, Tuva. Kazakhstan, Turkmenistan, Tadjikistan. Afghanistan, Iran. China South Central, Xinjiang. **Indian Subcontinent.** Assam, Eastern Himalaya, Pakistan, West Himalaya. **Eastern Canada, Northeast USA.** Quebec. Connecticut, New York.

**TDWG4.** Sichuan, Yunnan. Darjeeling, Bhutan.

### **Schedonorus pratensis** (Huds.) Beauv. *Agrost.* 99 (1812).

More checking of status required.

**Accepted by:** R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), E.Edgar, & H.Connor, *Flora of New Zealand Gramineae* 5 (2000).

**TYPE** from UK. **Basionym or Replaced Name:** *Festuca pratensis* Huds., *Fl. Angl.* 37 (1762)

. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Britain: Buddle (BM lecto).

**Illustrations (Books):** M.E.Barkworth et al, *Flora of North America north of Mexico Vol 24 Poaceae*, part 1 (2007) (447).

**Derivation** (Clifford & Bostock 2007): *L. pratense*, a meadow; -ense, place of origin. Meadow species.

**Classification.** Subfamily Pooideae. Tribe: Poeae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Culms erect or geniculately ascending, 30–120 cm long, 2–4 -noded. Leaf-sheaths without keel, smooth, glabrous on surface. Leaf-sheath oral hairs lacking. Leaf-sheath auricles falcate. Ligule an eciliate membrane, 1 mm long. Leaf-blades 20–45 cm long, 3–8 mm wide. Leaf-blade margins scaberulous. Leaf-blade apex attenuate.

**Inflorescence.** Inflorescence a panicle. Panicle open, lanceolate or ovate, effuse, nodding, 10–35 cm long. Primary panicle branches 2 -nate, bearing 1–2 fertile spikelets on each lower branch (on shorter branch). Panicle branches angular, scabrous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, 5 mm long.

**Fertile Spikelets.** Spikelets comprising 5–14 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate or oblong, laterally compressed, 10–20 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes persistent, dissimilar, shorter than spikelet. Lower glume lanceolate, 2–4 mm long, 0.6–0.8 length of upper glume, chartaceous, much thinner above, much thinner on margins, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume apex acute. Upper glume oblong, 3–5 mm long, 0.7–0.8 length of adjacent fertile lemma, chartaceous, much thinner above, with membranous margins, without keels, 1–3 -veined. Upper glume apex acute.

**Florets.** Fertile lemma elliptic, 6–7 mm long, chartaceous, of similar consistency above, of similar consistency on margins, without keel, 5 -veined, more than 3-veined. Lemma surface smooth or scaberulous, rough above. Lemma apex acute, muticous. Palea 1 length of lemma, 2 -veined. Palea keels scaberulous. Apical sterile florets resembling fertile though underdeveloped.

**Flower and Fruit.** Anthers 3, 3–4 mm long. Ovary glabrous. Caryopsis with adherent pericarp, ellipsoid, glabrous. Embryo 0.3 length of caryopsis. Hilum linear, 0.9 length of caryopsis.

**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, Foroyar, Great Britain, Iceland, Ireland, Norway, Sweden. : Austria, Belgium, Czechoslovakia, Germany, Hungary, Netherlands, Poland, Switzerland. : Corsica, France, Sardinia, Spain. : Albania, Bulgaria, Greece, Italy, Romania, Malta, Sicily, Yugoslavia. Belarus, Estonia, Latvia, Lithuania, Krym, Northwest European Russia, Ukraine. **Macaronesia.** Azores. Siberia, Russian far east, **Middle Asia, Caucasus, Western Asia, Eastern Asia.** Altay, Buryatiya, Chita, Irkutsk, Krasnoyarsk, Tuva, West Siberia, Yakutiya. Primorye, Sakhalin. Kazakhstan, Kirgizistan, Turkmenistan, Tadjikistan. North Caucasus,

Transcaucasus. **Indian Subcontinent.** Pakistan. **Australia.** Western Australia, South Australia, New South Wales. **Subarctic America, Western Canada, Eastern Canada, Northwest USA, North-central USA, Northeast USA, Southwestern USA, South-central USA, Southeastern USA.** Alaska, Greenland. Alberta, British Columbia, Manitoba, Saskatchewan. Labrador, 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, Texas. Alabama, Georgia, Tennessee. **Southern South America.** Argentina Northeast, Argentina South.

**TDWG4.** Mendoza. Buenos Aires, Distrito Federal. Río Negro, Tierra del Fuego.

### **Schismus arabicus** Nees. *Fl. Afr. Austr.* 422 (1841).

**Accepted by:** R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), D.Sharp, D. & B.K.Simon, *AusGrass* (2002), S-L Chen et al, *Flora of China* 22 (Poaceae) (2006), N.L.Bor, *Grasses of Burma, Ceylon, India and Pakistan* (1960), T.G.Tutin et al, *Flora Europaea* 5 (1980), N.Tsvelev, *Grasses of the Soviet Union* (1983).

**TYPE** from Egypt. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: Egypt: Arabia petraea, Chabba, in valle Hamme, 21 March 1835, *Schimper* 391 (HT: W; IT: L, M).

**Illustrations (Books):** N.Feinbrun-Dothan, *Flora Palaestina* 4 (1986), L.Boulos, *Flora of Egypt* 4 (2005) (219, Pl. 62), M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 25 *Poaceae*, part 2 (2003) (308), J.P.Jessop, G.R.M. Dashorst & F.M.James, *Grasses of South Australia* (2006) (312, Fig 244), E.G.Nicora, *Los Generos de Gramineas de America Austral* (1987) (129, Fig. 27), M.N.Correa, *Flora Patagonica* Parte III, Gramineae (1978) (31, Fig 10), S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 631).

**Images:** D.Sharp & B.K.Simon, *AusGrass*. Grasses of Australia. CD-Rom Version 1.0. (2002);, L.Boulos, *Flora of Egypt* 4 (2005);.

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

**Classification.** Subfamily Danthonioideae. Tribe: Danthonieae.

**Habit, Vegetative Morphology.** Annual, caespitose. Culms decumbent, 3–20 cm long. Leaf-sheath oral hairs bearded. Ligule a fringe of hairs. Leaf-blades filiform or aciculate, flat or convolute, 1.5–15 cm long, 0.5–2 mm wide.

**Inflorescence.** Inflorescence a panicle. Panicle contracted, lanceolate or elliptic, 1–5 cm long. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, linear, 0.5–2 mm long, scaberulous, tip widened.

**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, 5–7 mm long, falling entire or breaking up at maturity, deciduous with the pedicel, pedicel base truncate, disarticulating between fertile florets but the lowest falling with glumes attached. Floret callus obtuse.

**Glumes.** Glumes deciduous with pedicel attached, similar, reaching apex of florets, similar to fertile lemma in texture. Lower glume lanceolate, 5–7 mm long, 1 length of upper glume, membranous, without keels, 5–7 -veined. Lower glume lateral veins ribbed. Lower glume apex acute. Upper glume lanceolate, 5–7 mm long, 2 length of adjacent fertile lemma, membranous, with hyaline margins, without keels, 3–5 -veined. Upper glume lateral veins ribbed. Upper glume apex acute.

**Florets.** Fertile lemma oblong, 2.5–3.3 mm long, membranous, much thinner above, much thinner on margins, without keel, 7–9 -veined, more than 3-veined. Lemma surface pilose, hairy below. Lemma apex lobed, 2 -fid, with lanceolate lobes, incised 0.33–0.5 of lemma length, acuminate, mucronate. Principal lemma awn from a sinus. Palea 0.75 length of lemma, 2 -veined. Palea apex obtuse. Apical sterile florets resembling fertile though underdeveloped.

**Flower and Fruit.** Lodicules 2, cuneate, fleshy, ciliate. Anthers 3, 0.3 mm long. Ovary glabrous. Caryopsis with adherent pericarp.

$N = 6$  (1 ref TROPICOS).  $2n = 12$  (1 ref TROPICOS).

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

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

**Country /Province /State.** : GB Aliens (Ryves et al). : Greece, Crete. South European Russia. **Northern Africa, Northeast tropical Africa.** Egypt, Libya. Eritrea, Sudan. Siberia, **Middle Asia, Caucasus, Western Asia, Arabian Peninsula, China, Mongolia, Russia.** Altay. Kazakhstan, Kirgizistan, Turkmenistan, Tadzhiistan, Uzbekistan. Afghanistan, Iran, Iraq. Gulf States, Kuwait, Oman. Tibet, Xinjiang. Mongolia. **Indian Subcontinent.** India, Pakistan, West Himalaya. **Australia.** Western Australia (\*), South Australia (\*).

**Southwestern USA, South-central USA, Mexico.** Arizona, California, Nevada, Utah. New Mexico. Northeast Mexico, Northwest Mexico. **Southern South America.** Argentina South, Chile Central.

**TDWG4.** Eremean, South-West. NW & Lake Eyre, Southern. Mendoza. Buenos Aires, La Pampa. Chubut, Neuquén, Río Negro, Santa Cruz. Coquimbo, Valparaiso. Chihuahua. Baja California, Sonora.

**Schismus barbatus** (L.) Thell. *Bull. Herb. Boiss.* ser.2, 7:391 (1907).

**Accepted by:** R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), D.Sharp, D. & B.K.Simon, *AusGrass* (2002), S-L Chen et al, *Flora of China* 22 (Poaceae) (2006), N.L.Bor, *Grasses of Burma, Ceylon, India and Pakistan* (1960), T.G.Tutin et al, *Flora Europaea* 5 (1980), N.Tsvelev, *Grasses of the Soviet Union* (1983).

**TYPE** from Spain. **Basionym or Replaced Name:** *Festuca barbata* L., *Demonstr. Pl.* 3 (1753). T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: LT: (LINN-92.26). LT designated by Scholz in Cafferty et al., *Taxon* 49(2): 250 (2000).; Spain: *Herb. Linn.* 92.16 (LINN lecto).

**Illustrations (Books):** H.Jacques-Felix, *Les Graminees d'Afrique tropicale* (1962) (151, Fig. 76), L.K.A. Chippindall, *Grasses and Pastures of South Africa* (1955) (241, Fig. 213), G.E.Gibbs Russell et al, *Grasses of Southern Africa* (1990) (288, Fig. 183), N.Feinbrun-Dothan, *Flora Palaestina* 4 (1986) (Pl. 356), L.Boulos, *Flora of Egypt* 4 (2005) (219, Pl. 62), N.L.Bor, *Gramineae in Flora of Iraq* (1968) (379, Pl. 144), T.A.Cope, *Flora of Pakistan* 143: *Poaceae* (1982) (30, Fig. 4), J.P.Jessop, G.R.M. Dashorst & F.M.James, *Grasses of South Australia* (2006) (313, Fig. 245), N.Walsh & T.Entwistle, *Flora of Victoria* Vol 2 (1994) (544, Fig. 107), S.W.L.Jacobs, R.D.B.Whalley & D.J.B.Wheeler., *Grasses of New South Wales*, 4th edn (2008) (364), K.O.Mallett (ed.), *Flora of Australia*, Vol 44B. *Poaceae* (2004) (28, Fig. 4), M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 25 *Poaceae*, part 2 (2003) (308), F.W.Gould, *The Grasses of Texas* (1975) (59, Fig. 22), A.L.Cabrera, *Flora de la Provincia de Buenos Aires, IV Pt 2 Gramineas* (1970) (58, Fig. 14), M.N.Correa, *Flora Patagonica* Parte III, Gramineae (1978) (31, Fig. 10).

**Illustrations (Journals):** *Ann. Missouri Bot. Gard.* (97: 353, Fig.17 (2010)).

**Images:** D.Sharp & B.K.Simon, *AusGrass*. Grasses of Australia. CD-Rom Version 1.0. (2002).; L.Boulos, *Flora of Egypt* 4 (2005).;

**Derivation** (Clifford & Bostock 2007): L. bearded, barbed. With hairs on the callus, glumes or lemma.

**Classification.** Subfamily Danthonioideae. Tribe: Danthonieae.

**Habit, Vegetative Morphology.** Annual, caespitose. Culms decumbent, 3–30 cm long. Leaf-sheath oral hairs bearded. Ligule a fringe of hairs. Leaf-blades filiform or aciculate, flat or convolute, 1–10 cm long, 0.5–1.5 mm wide.

**Inflorescence.** Inflorescence a panicle. Panicle contracted, elliptic or oblong, 1–5 cm long. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, linear, 0.5–2 mm long, scaberulous, tip widened.

**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, 4–7 mm long, falling entire or breaking up at maturity, deciduous with the pedicel, pedicel base truncate, disarticulating between fertile florets but the lowest falling with glumes attached. Floret callus obtuse.

**Glumes.** Glumes deciduous with pedicel attached, similar, shorter than spikelet, similar to fertile lemma in texture. Lower glume lanceolate, 2.75–6 mm long, 1 length of upper glume, membranous, without keels, 5–7 -veined. Lower glume lateral veins ribbed. Lower glume apex acute. Upper glume lanceolate, 2.75–6 mm long, 2 length of adjacent fertile lemma, membranous, with hyaline margins, without keels, 3–5 -veined. Upper glume lateral veins ribbed. Upper glume apex acute.

**Florets.** Fertile lemma oblong, 1.75–2.5 mm long, membranous, much thinner above, much thinner on margins, without keel, 7–9 -veined, more than 3-veined. Lemma surface pilose, hairy below. Lemma apex lobed, 2 -fid, with triangular lobes, incised 0.15–0.25 of lemma length, obtuse, muticous or mucronate. Principal lemma awn from a sinus. Palea 1 length of lemma, 2 -veined. Palea apex acute. Apical sterile florets resembling fertile though underdeveloped.

**Flower and Fruit.** Lodicules 2, cuneate, fleshy, ciliate. Anthers 3, 0.1–0.2 mm long. Ovary glabrous. Caryopsis with adherent pericarp.

$N = 6$  (4 refs TROPICOS).  $2n = 18$  (1 ref TROPICOS).

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

**Region.** Northern Europe (\*), Southwestern Europe.

**Country /Province /State.** : GB Aliens (Ryves et al). : France, Spain. **Northern Africa, Macaronesia, West tropical Africa, Northeast tropical Africa, Southern Africa.** Algeria, Egypt, Libya, Morocco, Tunisia. Canary Is, Madeira. Namibia, Botswana, Free State, Lesotho, Northern Cape, Western Cape, Eastern Cape.



**Middle Asia, Caucasus, Western Asia, Arabian Peninsula, China.** Turkmenistan, Tadjikistan. Afghanistan, Iran, Iraq, Palestine, Israel & Jordan. Gulf States, Kuwait, Oman, Saudi Arabia. Tibet. **Indian Subcontinent.** India, Pakistan. **Australia.** Western Australia (\*), Northern Territory (\*), South Australia (\*), New South Wales (\*), Victoria (\*). **Southwestern USA, South-central USA, Mexico.** Arizona, California, Nevada, Utah. New Mexico, Texas. Northeast Mexico, Northwest Mexico. **Southern South America.** Argentina Northeast, Argentina South, Chile Central.

**TDWG4.** Eremean, South-West. Central Australia. NW & Lake Eyre, Southern. Coast, Western Slopes, Western Plains. Mendoza. Buenos Aires, La Pampa. Chubut, Río Negro. Coquimbo, Valparaiso, Santiago. Chihuahua. Baja California, Baja California Sur, Sonora.

**Schismus inermis** (Stapf) C.E.Hubb. *Fl. Trop. Afr.* x. 147 (1937).

**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:** *Danthonia inermis* Stapf, Dyer, *Fl. Cap.* 7: 534 (1899). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: South Africa, Port Elixabeth: ESCA Herb. 178 (K holo).

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

**Derivation** (Clifford & Bostock 2007): L. unarmed. Apices of lemmas or glumes rounded.

**Classification.** Subfamily Danthonioideae. Tribe: Danthonieae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Culms geniculately ascending or decumbent, 20–60 cm long, 3–5 -noded. Leaf-sheath oral hairs bearded. Ligule a fringe of hairs, 1–2 mm long. Leaf-blades filiform, flat or involute, 10–25 cm long, 1 mm wide.

**Inflorescence.** Inflorescence a panicle. Panicle contracted, oblong, 5–7 cm long, 1 cm wide. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, linear, 0.5–3 mm long, scaberulous.

**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, 4.5–5 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes 0.4 mm long. Floret callus pubescent, obtuse.

**Glumes.** Glumes persistent, similar, shorter than spikelet, similar to fertile lemma in texture, gaping. Lower glume ovate, 4–4.5 mm long, 1 length of upper glume, membranous, without keels, 5–7 -veined. Lower glume lateral veins ribbed. Lower glume surface asperulous. Lower glume apex acute. Upper glume lanceolate, 4–4.5 mm long, 1.6 length of adjacent fertile lemma, membranous, without keels, 5 -veined. Upper glume lateral veins ribbed. Upper glume surface asperulous. Upper glume apex acute.

**Florets.** Fertile lemma ovate, 2.4–2.8 mm long, membranous, much thinner above, much thinner on margins, without keel, 9 -veined, more than 3-veined. Lemma surface pilose, hairy below. Lemma hairs 1–1.5 mm long. Lemma apex dentate, 2 -fid, mucronate. Principal lemma awn from a sinus, 0.5–0.9 mm long overall. Palea 2 -veined. Palea keels ciliolate. Palea surface pilose, hairy on back or on flanks. Apical sterile florets resembling fertile though underdeveloped.

**Flower and Fruit.** Lodicules 2, cuneate, fleshy, ciliate. Anthers 3, 0.6–1.2 mm long. Ovary glabrous. Caryopsis with adherent pericarp, obovoid, 1–1.2 mm long. Embryo 0.33 length of caryopsis. Hilum elliptic.

**Distribution (TDWG). Continent.** Africa.

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

**Schismus scaberrimus** Nees. *Fl. Afr. Austr.* 423. (1841).

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

**TYPE** from South Africa. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: South Africa, Kamiebergen: Drege ; South Africa, Gangefontein to Bokpoort: Drege s.n. ; South Africa, Ebenezar: Drege sn.

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

**Derivation** (Clifford & Bostock 2007): L. scaber, rough; -rima, most. Leaf-blades very scabrous.

**Classification.** Subfamily Danthonioideae. Tribe: Danthonieae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Culms erect or geniculately ascending, 10–30 cm long, 2–3 -noded. Leaf-sheath oral hairs bearded. Ligule a fringe of hairs, 1 mm long. Leaf-blades filiform, involute, 3–15 cm long, 0.2–0.4 mm wide.

**Inflorescence.** Inflorescence a panicle. Panicle contracted, oblong, 1–5 cm long, 1–1.5 cm wide. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, linear, 1–4 mm long, scaberulous.

**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, 5–5.5 mm long, falling entire or breaking up at maturity, deciduous with the pedicel, pedicel base truncate, disarticulating between fertile florets but the lowest falling with glumes attached. Rhachilla internodes 0.6–0.8 mm long. Floret callus pubescent, obtuse.

**Glumes.** Glumes deciduous with pedicel attached, similar, shorter than spikelet, similar to fertile lemma in texture, gaping. Lower glume ovate, 3.5–5 mm long, 1.1–1.3 length of upper glume, membranous, without keels, 5–7 -veined. Lower glume lateral veins ribbed. Lower glume surface scabrous. Lower glume apex acute. Upper glume lanceolate, 3–4 mm long, 1.3–1.5 length of adjacent fertile lemma, membranous, without keels, 5 -veined. Upper glume lateral veins ribbed. Upper glume surface scabrous. Upper glume apex acute.

**Florets.** Fertile lemma elliptic, 2–3 mm long, membranous, much thinner above, much thinner on margins, without keel, 9 -veined, more than 3-veined. Lemma surface pubescent, hairy below. Lemma margins ciliate, hairy below. Lemma hairs 0.5–0.9 mm long. Lemma apex dentate, 2 -fid, mucronate. Principal lemma awn from a sinus, 0.2–0.9 mm long overall. Palea 2 -veined. Palea keels ciliolate. Palea surface pilose, hairy on back (below). Apical sterile florets resembling fertile though underdeveloped.

**Flower and Fruit.** Lodicules 2, cuneate, fleshy, ciliate. Anthers 3, 0.8–1.2 mm long. Ovary glabrous. Caryopsis with adherent pericarp, obovoid, 1 mm long. Embryo 0.33 length of caryopsis. Hilum elliptic.

*N* = 24 (1 ref TROPICOS), or 36 (1 ref TROPICOS).

**Distribution (TDWG). Continent.** Africa.

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

**Schismus schismoides** (Stapf ex Conert) Verboom & H.P. Linder. *Ann, Mo. Bot. Gard.*.

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

**TYPE** from South Africa. **Basionym or Replaced Name:** *Danthonia schismoides* Stapf ex Conert, *Senck. Biol.* 46: 180 (1965). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: South Africa, Great Buschmanland, Wortel : Schlechter (K holo, E, L, Z).

**Recent Synonyms:** *Karoochloa schismoides* (Stapf ex Conert) Conert & Turpe, *Senck. Biol.* 50: 299 (1969).

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

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

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

**Classification.** Subfamily Danthonioideae. Tribe: Danthonieae.

**Habit, Vegetative Morphology.** Annual, caespitose. Culms 5–15 cm long. Leaf-sheaths glabrous on surface. Ligule a fringe of hairs. Leaf-blades filiform, convolute, 3–6 cm long, 0.5 mm wide. Leaf-blade surface glabrous to pubescent.

**Inflorescence.** Inflorescence a panicle. Panicle contracted, oblong or ovate, 1–2 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, 4.5–6 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus evident, pilose.

**Glumes.** Glumes persistent, similar, shorter than spikelet, thinner than fertile lemma, gaping. Lower glume elliptic, 3.5–5 mm long, 1 length of upper glume, membranous, 1-keeled, 3 -veined. Lower glume apex acute. Upper glume elliptic, 3.5–5 mm long, 1.2–1.4 length of adjacent fertile lemma, membranous, 1-keeled, 3 -veined. Upper glume apex acute.

**Florets.** Fertile lemma oblong, 2.5–4 mm long, chartaceous, without keel, 9 -veined, more than 3-veined. Lemma surface glabrous or pubescent, hairy below, with a transverse fringe of hair. Lemma margins ciliate. Lemma apex lobed, 2 -fid, incised 0.5 of lemma length, acute, awned, 3 -awned. Principal lemma awn from a sinus, geniculate, 3–4.5 mm long overall, with twisted column. Lateral lemma awns present, arising on apex of lobes, 0.5–1 mm long. Palea 2.2–2.4 mm long. Palea surface pubescent, hairy on back. Apical sterile florets resembling fertile though underdeveloped.

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

**Distribution (TDWG). Continent.** Africa.

**Country /Province /State.** Southern Africa. Namibia, Northern Cape, Eastern Cape.

**Schizachne purpurascens** (Torr.) Swallen. *Journ. Wash. Acad. Sc.* xviii. 204 (1928).

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

al, *Flora of China* 22 (Poaceae) (2006), T.G.Tutin et al, *Flora Europaea* 5 (1980) (as *S. callosa*), N.Tsvelev, *Grasses of the Soviet Union* (1983), T.Koyama, *Grasses of Japan and its neighboring regions* (1987).

**TYPE** from USA and Canada. **Basionym or Replaced Name:** *Schizachne callosa*, *Trisetum purpurascens* Torr., *Fl. U. St.* 127 (1823). T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: Canada, Montreal: Paine ; USA, Boston: Bigelow ; USA, Williamstown: Dewey ; USA, Catskill Mts.: Eaton.

**Illustrations (Books):** T.Koyama, *Grasses of Japan and its neighbouring regions* (1987) (122, Fig. 37), K.F.Best, et al, *Prairie Grasses* (1971) (205), M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 24 *Poaceae*, part 1 (2007) (104), S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 432 as subspecies *callosa*).

**Derivation** (Clifford & Bostock 2007): *L. purpurascens*, become purple. Inflorescences reddish-purple.

**Classification.** Subfamily Pooideae. Tribe: Meliceae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Culms erect, 35–50 cm long, 0.7–1.5 mm diam., 3–5 -noded. Leaf-sheaths open for most of their length, with 0.25–0.5 of their length closed. Ligule an eciliate membrane, 1.5–2.5 mm long. Leaf-blades conduplicate or involute, 5–20 cm long, 1–2 mm wide. Leaf-blade venation with obscure cross veins. Leaf-blade surface pubescent, sparsely hairy, hairy adaxially.

**Inflorescence.** Inflorescence a panicle, comprising 5–10 fertile spikelets. Panicle open, lanceolate, nodding, 5–8 cm long, 1–2 cm wide, bearing few spikelets. Primary panicle branches indistinct the panicle almost racemose. Panicle branches scabrous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, filiform, 3–15 mm long, scabrous.

**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, 12–15 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes 2 mm long. Floret callus evident, bearded. Floret callus hairs 0.2 length of lemma.

**Glumes.** Glumes persistent, similar, shorter than spikelet, thinner than fertile lemma. Lower glume ovate, 3–5 mm long, 0.6 length of upper glume, membranous, 1-keeled, 3 -veined. Lower glume apex acute. Upper glume ovate, 5–8 mm long, 0.6 length of adjacent fertile lemma, membranous, 1-keeled, 5 -veined. Upper glume apex acute.

**Florets.** Fertile lemma lanceolate, 8–11 mm long, herbaceous, much thinner on margins, keeled, 7 -veined, more than 3-veined. Lemma apex dentate, 2 -fid, awned, 1 -awned. Principal lemma awn subapical, 12–20 mm long overall, limb scabrous. Palea oblong, 0.6 length of lemma, 2 -veined. Palea keels ciliate, adorned above. Apical sterile florets resembling fertile though underdeveloped.

**Flower and Fruit.** Lodicules 2, united, oblong, fleshy, truncate. Anthers 3, 1.5–2 mm long.

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

**Region.** Eastern Europe.

**Country /Province /State.** Central European Russia, East European Russia, North European Russia. Siberia, Russian far east, **Middle Asia, China, Mongolia, Eastern Asia, Russia.** Buryatiya, Chita, Irkutsk, Krasnoyarsk, Tuva. Amur, Kamchatka, Khabarovsk, Kuril Is, Primorye, Sakhalin. Kazakhstan. China South Central, Manchuria, China North-Central, China Southeast. Mongolia. Japan, Korea. Japan Hokkaido. **Subarctic America, Western Canada, Eastern Canada, Northwest USA, North-central USA, Northeast USA, South-central USA, Southeastern USA.** Aleutian Is, Alaska, Yukon. Alberta, British Columbia, Manitoba, Saskatchewan. Labrador, New Brunswick, Newfoundland, Nova Scotia, Ontario, Prince Edward I, Quebec. Colorado, Montana, Wyoming. North Dakota, Nebraska, South Dakota. New Mexico. Kentucky.

**TDWG4.** Hebei, Shanxi. Henan. Yunnan.

**Schizachyrium beckii** T.J. Killeen. *Ann. Missouri Bot. Gard.*, 77(1): 184 (1990).

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

**TYPE** from Bolivia. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: Bolivia, San Javier: Killeen 1987 (ISC holo, F, LPB, MO, US).

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

**Derivation** (Clifford & Bostock 2007): in honor of S. G. Beck (fl. 1984).

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

**Habit, Vegetative Morphology.** Perennial, caespitose. Culms 90 cm long. Ligule a ciliate membrane. Leaf-blades flat or conduplicate, 12–23 cm long, 6–8 mm wide. Leaf-blade apex acute.

**Inflorescence.** Synflorescence compound, paniculate.

Inflorescence composed of racemes, terminal and axillary, subtended by a spatheole, enclosed. Spatheole linear, 1.5–2 cm long, herbaceous. Racemes 1, single, 1–3 cm long. Rhachis fragile at the nodes, semiterete, ciliate on margins. Rhachis internodes cuneate. Rhachis internode tip crateriform, with scarious rim. Spikelets

squeezed between internode and pedicel, in pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, cuneate, ciliate.

**Sterile Spikelets.** Companion sterile spikelets well-developed, containing empty lemmas or male, lanceolate, dorsally compressed, 2–2.5 mm long, shorter than fertile, deciduous with the fertile. Companion sterile spikelet glumes coriaceous, awned, one glume awned, with 2.5 mm long awn. 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 linear, laterally compressed, 5 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 linear, 1 length of spikelet, coriaceous, 2-keeled, keeled all along, keeled frontally, keeled sharply. Lower glume intercarinal veins obscure. Lower glume apex dentate, 2 -fid. Upper glume lanceolate, membranous, 1-keeled. Upper glume apex acuminate.

**Florets.** Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret oblong, hyaline, 2 -veined. Fertile lemma oblong, hyaline, without keel, 1 -veined, 0–3 -veined, one-veined. Lemma apex lobed, 2 -fid, incised 0.75 of lemma length, awned, 1 -awned. Principal lemma awn from a sinus, geniculate, 17 mm long overall, with twisted column. Column of lemma awn glabrous. Palea absent or minute.

**Distribution (TDWG). Continent.** South America.

**Country /Province /State.** Western South America. Bolivia.

### **Schizachyrium brevifolium** (Sw.) Buse. *Miq., Pl. Jungh.* :359 (1854).

**Accepted by:** R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), S-L Chen et al, *Flora of China* 22 (Poaceae) (2006), N.L.Bor, *Grasses of Burma, Ceylon, India and Pakistan* (1960), T.Koyama, *Grasses of Japan and its neighboring regions* (1987) (as *Andropogon*), W.D.Clayton & N.Snow, *Key to Pacific Grasses* (2010).

**TYPE** from Jamaica. **Basionym or Replaced Name:** *Andropogon brevifolius* Sw., *Prod. Veg. Ind. Occ.* 26. (1788). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Jamaica: Swartz (M lecto).

**Illustrations (Books):** H.Jacques-Felix, *Les Graminees d'Afrique tropicale* (1962) (297, Fig. 235), J.Bosser, *Graminees des Paturage et des Cultures a Madagascar* (1969) (257, Fig. 94), S.Phillips, *Poaceae* (Gramineae) in I.Hedberg & S.Edwards, *Flora of Ethiopia and Eritrea* (1995) (320, Fig. 129), T.Koyama, *Grasses of Japan and its neighbouring regions* (1987) (446, Fig. 175 as *Andropogon*), C-C Hsu, *Flora of Taiwan*, Vol 5 (1978) (764), C-C Hsu, *Taiwan Grasses* (1975) (692, Pl. 1478), K.M.Matthew, *Illustrations on the Flora of Tamilnadu Carnatic* (1982) (Pl. 932), H.J.Noltie, *The Grasses of Bhutan* (2000) (807, Fig. 806), H.B.Gilliland, *Grasses of Malaya* (1971) (290, Fig. 62), E.E.Henty, *A Manual of the Grasses of New Guinea* (1969) (174, Pl. 64), C.A.Gardner, *Flora of Western Australia*, Vol 1, Part 1, *Gramineae* (1952) (335, Pl. 98), S.A.Renouze, *Gramineas de Bolivia* (1998) (606, Fig. 144), J.A.Steyermark et al, *Flora of the Venezuelan Guayana* Vol. 8 (2004) (263, Fig. 213 as *Andropogon*), W.Burger, *Flora Costaricensis* 15, Gramineae: *Fieldiana Botany New Series* 4 (1980) (519, Fig. 196), R.Pilger, *Die Naturlichen Pflanzenfamilien* 14e (1940) (167, Fig. 87 as *Andropogon*), S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 871).

**Illustrations (Journals):** *Ruizia* (13:447 Fig 60a-b (1993)).

**Derivation** (Clifford & Bostock 2007): *L. brevis*, short; folium, leaf. Leaf-blades shorter than those of some other species in the genus or relative to the length of the culm.

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

**Habit, Vegetative Morphology.** Annual. Culms rambling or prostrate, slender, 5–60 cm long, 1–2 mm diam. Leaf-sheaths mostly shorter than adjacent culm internode. Ligule a ciliolate membrane. Leaf-blades 1–6 cm long, 1–7 mm wide. Leaf-blade apex obtuse.

**Inflorescence.** Synflorescence compound, scanty.

Inflorescence composed of racemes, terminal and axillary, subtended by a spatheole, embraced at base by subtending leaf. Spatheole linear. Racemes 1, single, 1–2.5 cm long. Rhachis fragile at the nodes, semiterete, glabrous on margins or ciliate on margins. Rhachis internodes linear. Rhachis internode tip cupuliform, with simple rim. Spikelets squeezed between internode and pedicel, in pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, linear, glabrous or ciliate, tip widened.

**Sterile Spikelets.** Companion sterile spikelets rudimentary, lanceolate, dorsally compressed, 1–1.5 mm long, shorter than fertile, deciduous with the fertile. Companion sterile spikelet glumes chartaceous, awned, one glume awned, with 3–6 mm long awn.

**Fertile Spikelets.** Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret

male or barren, the upper fertile. Spikelets lanceolate, laterally compressed, 2–4 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 lanceolate, 1 length of spikelet, coriaceous, 2-keeled, keeled above, keeled frontally. Lower glume intercarinal veins obscure. Lower glume surface glabrous or pilose. Upper glume lanceolate, membranous, 1-keeled. Upper glume apex acuminate.

**Florets.** Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret oblong, hyaline, 2 -veined. Fertile lemma oblong, hyaline, without keel. Lemma apex entire (when awnless) or lobed, 2 -fid, incised 0.9 of lemma length, muticous (rarely) or awned, 1 -awned. Principal lemma awn from a sinus, geniculate, 7–12 mm long overall, with twisted column. Column of lemma awn glabrous. Palea absent or minute.

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

*N* = 10 (2 refs TROPICOS), or 20 (1 ref TROPICOS).

**Distribution (TDWG). Continent.** Africa, Temperate Asia, Tropical Asia, Pacific, 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. Gambia, Ghana, Guinea, Ivory Coast, Liberia, Mali, Nigeria, Senegal, Sierre Leone. Cameroon, Gabon, Annobon, Principe & Sao Tome, Rwanda, DRC. Chad, Ethiopia (inc. Eritrea), Sudan. Kenya, Tanzania, Uganda. Angola, Malawi, Mozambique, Zambia, Zimbabwe. Namibia, Botswana, Limpopo, Mpumalanga. Madagascar. **China, Eastern Asia.** China South Central, Hainan, China North-Central, China Southeast, Tibet. Japan, Korea, Nansei-Shoto, Ogosawara-shoto, Taiwan. Japan Honshu. **Indian Subcontinent, Indo-China, Malesia, Papuasia.** Bangladesh, Eastern Himalaya, India, Nepal. Andaman Is, Laos, Myanmar, Thailand, Vietnam. Java, Lesser Sunda Is, Malaya, Philippines, Sulawesi, Sumatra. New Guinea. **Northwestern Pacific.** Caroline Is, Marianas. **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, Dominican Republic, Haiti, Jamaica (& as *Andropogon brevifolius*), Leeward Is, Windward Islands (& as *Andropogon brevifolius*), Puerto Rico, Trinidad-Tobago. French Guiana, Guyana, Surinam, Venezuela. Bolivia, Colombia, Ecuador, Peru. Brazil West Central, Brazil Northeast, Brazil North. Paraguay.

**TDWG4.** Hebei, Shandong. Anhui, Fujian, Guangdong, Henan, Jiangsu, Zhejiang. Guizhou, Hubei, Sichuan. Darjeeling, Bhutan. Assam, Meghalaya, Nagaland. Bihar, Kerala. Madhya Pradesh. Salta. Mexico State, Morelos. Guanajuato, Zacatecas. Veracruz. Sinaloa, Sonora. Colima, Guerrero, Jalisco, Michoacan, Nayarit, Oaxaca. Chiapas.

**Schizachyrium cirratum** (Hack.) Wooton & Stand. *New Mexico Agric. Exp. Sta. Bull.*, 81:30 (1912).

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

**TYPE** from USA. **Basionym or Replaced Name:** *Andropogon cirratus* Hack., *Flora*, 68: 119 (1885). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: USA, Silver City: Greene ; USA, New Mexico: Wright 2105 ; USA, Texas, El Paso: Wright 804 ; USA, Texas, El Paso: Wright 805 (US syn, K).

**Illustrations (Books):** M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 25 *Poaceae*, part 2 (2003) (667), F.W.Gould, *The Grasses of Texas* (1975) (607, Fig. 322).

**Illustrations (Journals):** *Ruizia* (13:447 Fig 60i (1993)).

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

**Habit, Vegetative Morphology.** Perennial, caespitose. Culms erect, 40–80 cm long. Lateral branches sparse. Leaf-sheaths glabrous on surface. Ligule an eciliate membrane, 1–2.5 mm long. Leaf-blades 6–15 cm long, 1–4 mm wide. Leaf-blade surface scabrous, glabrous. Leaf-blade margins glabrous or ciliate. Leaf-blade apex attenuate.

**Inflorescence.** Inflorescence composed of racemes. Racemes 1, single, 3.5–8 cm long, 2–3 mm wide. Rhachis fragile at the nodes, semiterete, ciliate on margins (at tip). Rhachis internodes cuneate. Rhachis internode tip crateriform, with scarious rim. Spikelets appressed, in pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, cuneate, ciliate, hairy at tip.

**Sterile Spikelets.** Companion sterile spikelets well-developed, male, lanceolate, dorsally compressed, 7–10 mm long, as long as fertile, deciduous with the fertile. Companion sterile spikelet glumes coriaceous, muticous.

**Fertile Spikelets.** Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets lanceolate, laterally compressed, 7–10 mm long, falling entire, deciduous with accessory branch structures. Spikelet callus glabrous, base obtuse, inserted.

**Glumes.** Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma. Lower glume lanceolate, 1 length of spikelet, coriaceous, 2-keeled, keeled all along, keeled laterally. Lower glume surface flat. Lower glume margins ciliate. Upper glume lanceolate, membranous, 1-keeled.

**Florets.** Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret oblong, hyaline. Fertile lemma oblong, hyaline, without keel, 1 -veined, 0–3 -veined, one-veined. Lemma apex lobed, 2 -fid, incised 0.66 of lemma length, awned, 1 -awned. Principal lemma awn from a sinus, geniculate, 12–15 mm long overall, with twisted column. Column of lemma awn glabrous. Palea absent or minute.

**Flower and Fruit.**  $2n = 20$  (1 ref TROPICOS).

**Distribution (TDWG). Continent.** North America, South America.

**Country /Province /State.** **Southwestern USA, South-central USA, Mexico.** Arizona, California. New Mexico, Texas. Central Mexico, Northeast Mexico, Northwest Mexico, Southwest Mexico, Southeast Mexico. **Mesoamerica, Western South America.** Guatemala. Bolivia, Colombia, Ecuador, Peru.

**TDWG4.** Distrito Federal, Mexico State, Morelos, Puebla, Tlaxcala. Aguascalientes, Coahuila, Chihuahua, Durango, Guanajuato, Hidalgo, Neuvo Leon, Queretaro, San Luis Potosi, Tamaulipas, Zacatecas. Baja California, Baja California Sur, Sonora. Guerrero, Jalisco, Michoacan, Nayarit, Oaxaca. Chiapas.

**Schizachyrium claudopus** (Chiov.) Chiov. *Nuov. Giorn. Bot. Ital. n. s.* xxvi. 73 (1919).

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

**TYPE** from Zaire. **Basionym or Replaced Name:** *Andropogon claudopus* Chiov., *Ann. Bot., Roma*, 13: 37 (1914). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Zaire, Kayoyo: Bovone 69.

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

**Derivation** (Clifford & Bostock 2007): *L. clauda*, defective; Gk *pous*, foot. The spikelets break off transversely and not obliquely from the pedicel.

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

**Habit, Vegetative Morphology.** Perennial, caespitose. Butt sheaths woolly. Culms erect, 15–100 cm long. Ligule a ciliolate membrane. Leaf-blades 4–15 cm long, 1–3 mm wide. Leaf-blade apex acute.

**Inflorescence.** Synflorescence compound, scanty.

Inflorescence composed of racemes, terminal and axillary, subtended by a spatheole. Spatheole linear. Racemes 1, single, 6–10 cm long. Rhachis fragile at the nodes, semiterete, pubescent on margins. Rhachis internodes clavate. Rhachis internode tip crateriform, with scarious rim. Spikelets appressed, in pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, linear, glabrous or puberulous.

**Sterile Spikelets.** Companion sterile spikelets well-developed, containing empty lemmas or male, lanceolate, dorsally compressed, 4–5.5 mm long, shorter than fertile, deciduous with the fertile. Companion sterile spikelet glumes chartaceous, glabrous, acute, muticous. Companion sterile spikelet lemmas 2, enclosed by glumes.

**Fertile Spikelets.** Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets lanceolate, dorsally compressed, 6–8 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 elliptic, 1 length of spikelet, chartaceous or coriaceous, 2-keeled, keeled laterally, wingless. Lower glume intercarinal veins distinct. Lower glume surface glabrous. Upper glume lanceolate, membranous, 1-keeled.

**Florets.** Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret oblong, hyaline. Fertile lemma oblong, hyaline, without keel. Lemma apex lobed, 2 -fid, incised 0.75 of lemma length, awned, 1 -awned. Principal lemma awn from a sinus, flexuous or geniculate, 0.5–15 mm long overall, without a column or with twisted column. Column of lemma awn glabrous. Palea absent or minute.

**Distribution (TDWG). Continent.** Africa.

**Country /Province /State.** **West-central tropical Africa, East tropical Africa, South tropical Africa.** DRC. Tanzania. Zambia.

**Schizachyrium condensatum** (Kunth) Nees. *Agrost. Bras.* 333 (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), W.D.Clayton & N.Snow, *Key to Pacific Grasses* (2010).

**TYPE** from Mexico. **Basionym or Replaced Name:** *Schizachyrium plumigerum*, *Andropogon scoparius* J. Presl, non Michx.(1803), *Rel. Haenk.* 1: 338 (1830). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: : Based on *A. scoparius* Presl ; Mexico: Haenke 12 (PR holo, MO, W).

**Illustrations (Books):** K.F.Best, et al, *Prairie Grasses* (1971) (61), S.A.Rennoize, *Gramineas de Bolivia* (1998) (602, Fig. 143), S.A.Rennoize, *The Grasses of Bahia*, 1984 (282, Fig. 108), J.A.Steyermark et al, *Flora of the Venezuelan Guayana* Vol. 8 (2004) (263, Fig. 212), L.B. Smith, D.C. Wasshausen, R.M. Klein *Flora Illustrada Catarinensis Gramineas* (1981–1982) (1266, Fig. 251), A.Burkat, *Flora Illustrada de Entre Rios (Argentina)*, Pt II, Gramineas (1969) (493, Fig. 208 as *S. plumigerum*), B.Rosengurt, *Gramineas Uruguayas I* (1970) (188, Fig. 75 & 192, Fig. 78as *S. plumigerum*), E.Hafliger & E.Schultz, *Grass Weeds*, CIBA-GEIGY (1:120(1980)).

**Derivation** (Clifford & Bostock 2007): L. condense, press close together. Spikelets crowded in the inflorescence.

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

**Habit, Vegetative Morphology.** Perennial, caespitose. Culms erect, 90–150 cm long, 2–3.5 mm diam. Culm-internodes elliptical in section, solid. Culm-nodes glabrous. Lateral branches ample. Leaf-sheaths keeled, glabrous on surface. Ligule an eciliate membrane, 0.7–2 mm long. Leaf-blades 20–40 cm long, 3–8 mm wide. Leaf-blade midrib keeled beneath.

**Inflorescence.** Synflorescence compound, linear or paniculate or globose, 20–40 cm long, dense or lax.

Inflorescence composed of racemes, terminal and axillary, subtended by a spatheole, embraced at base by subtending leaf. Spatheole linear, 1.5–3.5 cm long, herbaceous. Peduncle 2.5–6 cm long. Racemes 1, single, sinuous, 2–4 cm long, bearing 6–8 fertile spikelets on each. Rhachis fragile at the nodes, subterete, plumose on margins. Rhachis internodes clavate, 4–6 mm long. Rhachis internode tip crateriform, with scarious rim. Spikelets appressed, in pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, clavate, curved, 3.6–5.5 mm long, plumose.

**Sterile Spikelets.** Companion sterile spikelets well-developed, comprising 2 subequal glumes without lemmas, linear, dorsally compressed, 1–2 mm long, shorter than fertile, deciduous with the fertile. Companion sterile spikelet glumes herbaceous, awned, one glume awned, with 0.5–2 mm long awn.

**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, 4.5–5 mm long, 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 lanceolate, 1 length of spikelet, chartaceous, 2-keeled, keeled all along, keeled laterally, keeled sharply. Lower glume intercarinal veins absent. Lower glume surface convex, glabrous. Lower glume apex emarginate. Upper glume lanceolate, membranous, 1-keeled, 3 -veined. Upper glume primary vein scabrous. Upper glume apex acute.

**Florets.** Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret oblong, 3.2–3.8 mm long, hyaline, 0 -veined, without midvein, without lateral veins, ciliolate on margins. Fertile lemma linear, 3–4 mm long, hyaline, without keel, 1 -veined, 0–3 -veined, one-veined. Lemma margins ciliolate. Lemma apex lobed, 2 -fid, incised 0.75 of lemma length, awned, 1 -awned. Principal lemma awn from a sinus, geniculate, 8–15 mm long overall, with twisted column. Column of lemma awn glabrous. Palea absent or minute.

**Flower and Fruit.** Caryopsis with adherent pericarp, linear, 2.5–2.8 mm long.

**Distribution (TDWG). Continent.** Pacific, North America, South America.

**Country /Province /State. North-central Pacific.** Hawaii (\*). **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.** El Salvador, Honduras. Leeward Is, Windward Islands, Trinidad-Tobago. French Guiana, Guyana, Surinam, Venezuela. Bolivia, Colombia, Ecuador, Peru. Brazil West Central, Brazil Northeast, Brazil Southeast, Brazil North, Brazil South. Argentina Northeast, Argentina Northwest, Paraguay, Uruguay.

**TDWG4.** Roraima, Mato Grosso, Goias, Bahia, Minas Gerais, Rio de Janeiro, Espirito Santo, Sao Paulo Parana, Catarina, Rio Grande do Sul. Catamarca, Jujuy, Mendoza, Salta, Santiago del Estero, San Luis, Tucuman. Buenos Aires, Chaco, Cordoba, Corrientes, Entre Rios, Formosa, La Pampa, Misiones, Santa Fe. Distrito Federal, Mexico State, Morelos, Puebla. Chihuahua, Guanajuato, Hidalgo, Nuevo Leon, Queretaro, San Luis Potosi, Tamaulipas. Veracruz. Sinaloa, Sonora. Colima, Guerrero, Jalisco, Michoacan, Nayarit, Oaxaca. Campeche, Chiapas, Quintana Roo, Tabasco, Yucatan.

**Schizachyrium crinizonatum** S. T. Blake. *Contrib. Queensl. Herb.*, 17: 22 (1974).

**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: *S.T. Blake 17477*, 26 Apr 1947, Australia: Northern Territory: near (NW of) Katherine, wet sandy margins of small

streams, alt. ca. 150–160 m, green to reddish annual with solitary or tufted, more or less spreading culms to 60 cm (BRI-106885; IT: L, MO-3748787, US-2959130).

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

**Illustrations (Journals):** *Contr.Qld.Herb.* (17:62, Fig.1 (1974)).

**Derivation** (Clifford & Bostock 2007): Gk *zone*, belt; L. *-atum*, possessing. Growing in the company of *Crinum* in places subject to inundation.

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

**Habit, Vegetative Morphology.** Annual. Culms 20–40 cm long, 0.35–0.6 mm diam., 6–9 -noded. Culm-internodes distally glabrous or pubescent. Lateral branches ample. Leaf-sheaths scaberulous. Ligule an eciliate membrane, 0.3–0.5 mm long. Leaf-blades conduplicate or convolute, 2–2.5 cm long, 0.9–1.5 mm wide. Leaf-blade surface scaberulous, rough adaxially. Leaf-blade margins scaberulous, glabrous. Leaf-blade apex obtuse.

**Inflorescence.** Inflorescence composed of racemes, terminal and axillary, subtended by a spatheole, embraced at base by subtending leaf. Spatheole linear, 3–4 cm long. Peduncle 0.25–0.4 cm long. Racemes 1, single, 2–2.5 cm long, 0.45–0.55 mm wide, bearing 4–5 fertile spikelets on each. Rhachis fragile at the nodes, semiterete, villous on surface (in a line across internode). Rhachis hairs 3.5–6 mm long. Rhachis internodes clavate. Rhachis internode tip crateriform, with scarious rim. Spikelets squeezed between internode and pedicel, in pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, linear, ciliate, hairy in the middle (in a transverse line), with 3.5–6 mm long hairs.

**Sterile Spikelets.** Companion sterile spikelets rudimentary, comprising 2 unequal glumes without lemmas, linear, 0.8–2 mm long, shorter than fertile, deciduous with the fertile. Companion sterile spikelet glumes chartaceous, awned, one glume awned, with 9–23 mm long awn.

**Fertile Spikelets.** Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets lanceolate, laterally compressed, acute, 4.5–6.7 mm long, 0.35–0.55 mm wide, falling entire, deciduous with accessory branch structures. Spikelet callus curved, 0.7–1.3 mm long, pilose, base acute, with elliptic scar. Spikelet callus hairs 1.2 mm long.

**Glumes.** Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma. Lower glume lanceolate, 1 length of spikelet, chartaceous, 2-keeled, keeled above, keeled frontally. Lower glume intercarinal veins obscure, 2 in number. Lower glume surface convex, asperulous. Lower glume apex dentate, 2 -fid. Upper glume lanceolate, membranous, 1-keeled, keeled above, 1 -veined. Upper glume lateral veins absent. Upper glume surface asperulous. Upper glume margins ciliolate. Upper glume apex dentate, 3 -fid.

**Florets.** Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret oblong, 0.75 length of spikelet, hyaline. Fertile lemma oblong, 4–5 mm long, hyaline, without keel, 1 -veined, 0–3 -veined, one-veined. Lemma apex lobed, 2 -fid, incised 0.9 of lemma length, awned, 1 -awned. Principal lemma awn from a sinus, geniculate, 16–23 mm long overall, with twisted column. Column of lemma awn 5–8.5 mm long, glabrous. Palea absent or minute.

**Flower and Fruit.** Anthers 0.5 mm long. Caryopsis with adherent pericarp, ovoid, 2.5–3.4 mm long.

**Distribution (TDWG).** Australasia.

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

**TDWG4.** Kimberley. Darwin & Gulf. North.

### **Schizachyrium cubense** (Hack.) Nash. *N. Amer. Fl.* xvii. 109 (1912).

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

**TYPE** from Cuba. **Basionym or Replaced Name:** *Andropogon cubensis* Hack., *Flora*, 68: 121 (1885). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Cuba: Wright 3898 (W holo, K, NY, US).

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

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

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

**Habit, Vegetative Morphology.** Perennial, caespitose. Rhizomes short. Culms 50–70 cm long. Ligule an eciliate membrane. Leaf-blades filiform, involute, 5–20 cm long, 0.5–1 mm wide.

**Inflorescence.** Inflorescence composed of racemes, terminal and axillary. Racemes 1, single, flexuous, 4–6 cm long. Rhachis fragile at the nodes, semiterete, plumose on surface. Spikelet packing lax. Rhachis internodes filiform, 3–10 mm long. Rhachis internode tip crateriform, with scarious rim. Spikelets appressed, in pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, filiform, curved, 2–7 mm long, plumose.



**Sterile Spikelets.** Companion sterile spikelets rudimentary, comprising 2 unequal glumes without lemmas, linear, 1–2 mm long, shorter than fertile, deciduous with the fertile. Companion sterile spikelet glumes chartaceous, 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 or lanceolate, dorsally compressed, 4 mm long, falling entire, deciduous with accessory branch structures. Spikelet callus pubescent, base obtuse.

**Glumes.** Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma. Lower glume lanceolate, 1 length of spikelet, cartilaginous, 2-keeled, keeled all along, keeled laterally, keeled obtusely (below). Lower glume surface concave. Upper glume lanceolate, membranous, 1-keeled.

**Florets.** Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret oblong, hyaline. Fertile lemma oblong, 4 mm long, hyaline, without keel, 1 -veined, 0–3 -veined, one-veined. Lemma apex lobed, 2 -fid, incised 0.33 of lemma length, awned, 1 -awned. Principal lemma awn from a sinus, geniculate, 4–8 mm long overall, with twisted column. Column of lemma awn glabrous. Palea absent or minute.

**Flower and Fruit.** Caryopsis with adherent pericarp.

**Distribution (TDWG).** Continent. South America.

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

**Schizachyrium delavayi** (Hack.) Bor. *Indian Forest Rec., n. s. Bot.*, i. 95 (1938).

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

**TYPE** from China. **Basionym or Replaced Name:** *Andropogon delavayi* Hack., *DC. Monog. Phan.* 6: 404 (1889). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: China, Koken: Delavay (P holo).

**Illustrations (Books):** H.J.Noltie, *The Grasses of Bhutan* (2000) (811, Fig. 59), S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 870).

**Derivation** (Clifford & Bostock 2007): in honor of Pierre Jean Marie Delavay (1834–95) French cleric who collected in China.

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

**Habit, Vegetative Morphology.** Perennial, caespitose. Culms erect, 40–120 cm long. Lateral branches sparse. Leaf-sheaths keeled, pubescent. Ligule a ciliolate membrane. Leaf-blades 8–25 cm long, 3–4 mm wide, glaucous. Leaf-blade midrib conspicuous. Leaf-blade surface glabrous or pubescent, hairy abaxially. Leaf-blade apex attenuate.

**Inflorescence.** Synflorescence compound.

Inflorescence composed of racemes, terminal and axillary, subtended by a spatheole, exserted. Spatheole linear, 2–3 cm long, herbaceous, red. Racemes 1, single, 2–3 cm long. Rhachis fragile at the nodes, subterete, ciliate on margins. Rhachis internodes clavate, 2.5 mm long, 0.5 length of fertile spikelet. Rhachis internode tip crateriform, with scarious rim. Spikelets appressed, in pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, clavate, 2.5 mm long, 0.5 length of internode, ciliate, hairy all along but hairs longer above.

**Sterile Spikelets.** Companion sterile spikelets well-developed, male, lanceolate, dorsally compressed, 5 mm long, as long as fertile, deciduous with the fertile. Companion sterile spikelet glumes herbaceous, muticous. Companion sterile spikelet lemmas 2, enclosed by glumes.

**Fertile Spikelets.** Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets lanceolate, dorsally compressed, 5 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 lanceolate, 1 length of spikelet, chartaceous, 2-keeled, keeled all along, keeled laterally, keeled sharply, 3–5 -veined. Lower glume surface flat, glabrous. Lower glume apex emarginate or obtuse. Upper glume lanceolate, membranous, 1-keeled, keeled above, 3 -veined. Upper glume apex acute.

**Florets.** Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret oblong, 5 mm long, hyaline, 0 -veined, without midvein, without lateral veins, ciliolate on margins, acute. Fertile lemma linear, 4 mm long, hyaline, without keel, 1 -veined, 0–3 -veined, one-veined. Lemma apex dentate, 2 -fid, incised 0.2 of lemma length, awned, 1 -awned. Principal lemma awn from a sinus, geniculate, 8–10 mm long overall, with twisted column. Column of lemma awn glabrous. Palea absent or minute.

**Flower and Fruit.** Anthers 3, 2.5 mm long.

*N* = 10 (1 ref TROPICOS).

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

**Country /Province /State. China.** China South Central, China Southeast, Tibet. **Indian Subcontinent, Indo-China.** Eastern Himalaya, India, Nepal. Myanmar.

**TDWG4.** Guangxi, Hunan. Guizhou, Sichuan, Yunnan. Bhutan, Sikkim. Nagaland.

**Schizachyrium delicatum** Stapf. *Prain, Fl. Trop. Afr.* ix. 190 (1917).

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

**TYPE** from Guinea. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Guinee, Timbo: Pobeguini 1791 (K holotype).

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

**Derivation** (Clifford & Bostock 2007): L. delicate. Habit delicate.

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

**Habit, Vegetative Morphology.** Annual. Culms erect, 10–60 cm long. Ligule a ciliate membrane. Leaf-blades 2–8 cm long, 0.5–2 mm wide. Leaf-blade apex acute.

**Inflorescence.** Synflorescence compound, scanty.

Inflorescence composed of racemes, terminal and axillary, subtended by a spatheole. Spatheole linear. Racemes 1, single, 1–3 cm long. Rhachis fragile at the nodes, semiterete, glabrous on margins or pubescent on margins. Rhachis internodes linear or clavate. Rhachis internode tip crateriform, with scarious rim. Spikelets appressed, in pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, linear or clavate, glabrous or bearing a few hairs.

**Sterile Spikelets.** Companion sterile spikelets well-developed, containing empty lemmas or male, lanceolate, dorsally compressed, 3–4 mm long, longer than fertile, deciduous with the fertile. Companion sterile spikelet glumes chartaceous, glabrous, awned, one glume awned, with 1–3 mm long awn. 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, 2.5–3(–5) 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 elliptic, 1 length of spikelet, chartaceous, 2-keeled, keeled laterally, winged on keel, winged narrowly, winged near apex. Lower glume intercarinal veins distinct. Lower glume surface pilose, hairy below. Upper glume lanceolate, membranous, 1-keeled.

**Florets.** Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret oblong, hyaline. Fertile lemma oblong, hyaline, without keel. Lemma apex lobed, 2-fid, incised 0.66 of lemma length, awned, 1-awned. Principal lemma awn from a sinus, geniculate, 20–25 mm long overall, with twisted column. Column of lemma awn glabrous. Palea absent or minute.

**Distribution (TDWG). Continent.** Africa.

**Country /Province /State. West tropical Africa, West-central tropical Africa, East tropical Africa, South tropical Africa.** Ghana, Guinea, Ivory Coast, Nigeria. Tanzania.

**Schizachyrium djalonicum** Jacques-Felix. *Rev. Bot. Appliq.* iii. 426 (1953).

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

**TYPE** from Guinea. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Guinee, Fouta Djallon, Fita: Jacques-Felix 1956 (P holotype, K).

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

**Derivation** (Clifford & Bostock 2007): L. -icum, belonging to. From Fouta Djallon, French Guinea.

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

**Habit, Vegetative Morphology.** Annual. Culms prostrate, 30–40 cm long, 1–1.3 mm diam., rooting from lower nodes. Ligule an eciliate membrane, 2 mm long. Leaf-blades 0.4–6 cm long, 1–3 mm wide. Leaf-blade margins cartilaginous. Leaf-blade apex obtuse.

**Inflorescence.** Synflorescence compound, scanty.

Inflorescence composed of racemes, terminal and axillary, subtended by a spatheole. Spatheole linear, 1.5–3 cm long. Racemes 1, single, 1.5–2 cm long. Rhachis fragile at the nodes, ciliate on margins. Rhachis internodes linear, 3.5 mm long. Rhachis internode tip crateriform, with scarious rim. Spikelets appressed, in pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, filiform, ciliate.

**Sterile Spikelets.** Companion sterile spikelets represented by awns, comprising 1 awn, 7–8 mm long, deciduous with the fertile.

**Fertile Spikelets.** Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets lanceolate, dorsally compressed, 3.5 mm long, falling entire, deciduous with accessory branch structures. Spikelet callus square, 0.5 mm long, bearded, base obtuse, inserted. Spikelet callus hairs 1 mm long.

**Glumes.** Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma. Lower glume lanceolate, 1 length of spikelet, chartaceous, 2-keeled, keeled laterally. Lower glume intercarinal veins distinct, 3 in number. Lower glume surface pubescent. Lower glume apex dentate, 2 -fid. Upper glume lanceolate, membranous, 1-keeled.

**Florets.** Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret oblong, 2.5 mm long, hyaline, 2 -veined, ciliolate on margins. Fertile lemma oblong, hyaline, without keel. Lemma apex lobed, 2 -fid, incised 0.6–0.7 of lemma length, awned, 1 -awned. Principal lemma awn from a sinus, geniculate, 26 mm long overall, with twisted column. Column of lemma awn 12 mm long, glabrous. Palea absent or minute.

**Distribution (TDWG). Continent.** Africa.

**Country /Province /State.** West tropical Africa. Guinea, Sierre Leone.

**Schizachyrium dolosum** S. T. Blake. *Contrib. Queensl. Herb.*, 17: 26 (1974).

**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 19617*, 18 Jul 1954, Australia: Queensland, Burke, Esmeralda, 13 m (L).

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

**Illustrations (Journals):** *Contr. Qld. Herb.* (17:62, Fig.1 (1974)).

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

**Derivation** (Clifford & Bostock 2007): L. deceitful. Easily confused with another species.

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

**Habit, Vegetative Morphology.** Annual. Culms 50–100 cm long, 0.35–0.8 mm diam., 7–11 -noded. Lateral branches ample. Leaf-sheaths wider than blade at the collar, smooth. Ligule an eciliate membrane, 0.2–0.4 mm long. Leaf-blades conduplicate or convolute, 2–6 cm long, 0.8–1.5 mm wide. Leaf-blade surface scaberulous, rough adaxially. Leaf-blade margins scaberulous, glabrous.

**Inflorescence.** Inflorescence composed of racemes, terminal and axillary, subtended by a spatheole, embraced at base by subtending leaf. Spatheole linear, 2.5–4.5 cm long. Peduncle 0.2–0.6 cm long. Racemes 1, single, 1.75–2.5 cm long, 1–1.2 mm wide, bearing 4–7 fertile spikelets on each. Rhachis fragile at the nodes, semiterete, pilose on surface (below). Rhachis internodes oblong, 4–7 mm long. Rhachis internode tip crateriform, with scarios rim. Spikelets squeezed between internode and pedicel, in pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, clavate, 4–7 mm long, ciliate, hairy below.

**Sterile Spikelets.** Companion sterile spikelets rudimentary, comprising 2 unequal glumes without lemmas, linear, 1–1.5 mm long, shorter than fertile, deciduous with the fertile. Companion sterile spikelet glumes chartaceous, awned, one glume awned, with 12–18 mm long awn.

**Fertile Spikelets.** Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets lanceolate, laterally compressed, acute, 4.3–8 mm long, 0.55–0.9 mm wide, falling entire, deciduous with accessory branch structures. Spikelet callus cuneate, 0.8–1.3 mm long, pilose, base obtuse, with elliptic scar. Spikelet callus hairs 1–1.5 mm long.

**Glumes.** Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma. Lower glume lanceolate, 1 length of spikelet, coriaceous, 2-keeled, keeled above, keeled frontally. Lower glume intercarinal veins obscure, 2–3 in number. Lower glume surface convex, glabrous or pilose, hairy below. Upper glume lanceolate, membranous, 1-keeled, keeled above, 1 -veined. Upper glume primary vein scaberulous. Upper glume lateral veins absent. Upper glume mucronate.

**Florets.** Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret oblong, 0.8 length of spikelet, hyaline, 0 -veined, without midvein, without lateral veins. Fertile lemma oblong, hyaline, without keel, 1 -veined, 0–3 -veined, one-veined. Lemma margins ciliolate. Lemma apex lobed, 2 -fid, incised 0.9 of lemma length, awned, 1 -awned. Principal lemma awn from a sinus, geniculate, 12–18 mm long overall, with twisted column. Column of lemma awn 5–8 mm long, glabrous. Palea absent or minute.

**Flower and Fruit.** Anthers 0.3–0.5 mm long. Caryopsis with adherent pericarp, linear, 2.3–2.5 mm long. Embryo 0.5 length of caryopsis.

**Distribution (TDWG). Continent.** Australasia.

**Country /Province /State.** Australia. Queensland.  
**TDWG4.** North.

**Schizachyrium exile** (Hochst.) Pilger. *Engl. Bot. Jahrb.* liv. 284 [March] (1917).

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

**TYPE** from Sudan. **Basionym or Replaced Name:** *Andropogon exilis* Hochst., *Flora*, 27: 142 (1844). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Sudan, Arashkol: Kotschy 19 (K isosyn) ; Sudan, Arashkol: Kotschy 370 (K isosyn).

**Illustrations (Books):** M.A.N.Muller, *Grasses of South West Africa/Namibia* (1984), J.Bosser, *Graminees des Paturage et des Cultures a Madagascar* (1969) (201, Fig 71), S.Phillips, *Poaceae* (Gramineae) in I.Hedberg & S.Edwards, *Flora of Ethiopia and Eritrea* (1995) (320, Fig 129).

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

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

**Habit, Vegetative Morphology.** Annual, caespitose. Culms erect, 10–120 cm long. Ligule a ciliate membrane. Leaf-blades 2–15 cm long, 1–4 mm wide. Leaf-blade apex acute.

**Inflorescence.** Synflorescence compound, linear.

Inflorescence composed of racemes, terminal and axillary, subtended by a spatheole, enclosed. Spatheole linear or lanceolate, red. Racemes 1, single, 3–6 cm long. Rhachis fragile at the nodes, semiterete, villous on margins. Rhachis hairs 1–3 mm long. Rhachis internodes cuneate. Rhachis internode tip crateriform, with scarious rim. Spikelets squeezed between internode and pedicel, in pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, cuneate, villous, with 1–3 mm long hairs.

**Sterile Spikelets.** Companion sterile spikelets rudimentary, lanceolate, dorsally compressed, 1–2(–3) mm long, shorter than fertile, deciduous with the fertile. Companion sterile spikelet glumes chartaceous, awned, one glume awned, with 3–10 mm long awn.

**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, laterally compressed, 5–8 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 lanceolate, 1 length of spikelet, coriaceous, 2-keeled, keeled frontally, keeled obtusely. Lower glume intercarinal veins absent. Lower glume surface glabrous to villous. Upper glume lanceolate, membranous, 1-keeled.

**Florets.** Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret oblong, hyaline. Fertile lemma oblong, hyaline, without keel. Lemma apex lobed, 2 -fid, incised 0.75 of lemma length, awned, 1 -awned. Principal lemma awn from a sinus, geniculate, (7–)10–25 mm long overall, with twisted column. Column of lemma awn glabrous. Palea absent or minute.

**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, Western Indian ocean. Benin, Burkina, Ghana, Guinea-Bissau, Ivory Coast, Mali, Nigeria, Senegal, Togo, Niger. Central African Republic. Chad, Eritrea, Ethiopia (inc. Eritrea), Sudan. Kenya, Tanzania. Angola, Mozambique, Zambia, Zimbabwe. Namibia, Botswana, Limpopo, Mpumalanga. Madagascar. **Indian Subcontinent, Indo-China.** Bangladesh. Myanmar.

**TDWG4.** Meghalaya. Bihar, Kerala. Madhya Pradesh, Tamilnadu, Uttah Pradesh, West Bengal.

**Schizachyrium fragile** (R.Br.) A.Camus. *Ann. Soc. Linn. Lyon.* n. s. lxx. 87 (1924).

**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), W.D.Clayton & N.Snow, *Key to Pacific Grasses* (2010).

**TYPE** from Australia. **Basionym or Replaced Name:** *Andropogon fragilis* R. Br., *Prodr.* 202 (1810). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Australia: Queensland: Endeavour River, *Banks & Solander s.n.* (HT: BM (photo, BRI); IT: BRI (fragm.), NSW) "(T) Littora Novae Hollandiae intra tropicum".

**Recent Synonyms:** *Schizachyrium obliquiberbe* (Hack.) A.Camus, *Ann. Soc. Linn. Lyon* n. s.70: 89 (1924).

**Illustrations (Books):** C-C Hsu, *Flora of Taiwan*, Vol 5 (1978) (766), C-C Hsu, *Taiwan Grasses* (1975) (as var. *shimadae*), S.W.L.Jacobs, R.D.B.Whalley & D.J.B.Wheeler., *Grasses of New South Wales*, 4th edn (2008) (365), D.Sharp & B.K.Simon, *AusGrass*. Grasses of Australia. CD-Rom Version 1.0. (2002), J.C.Tothill,&

J.B.Hacker. *The grasses of southern Queensland* (1983) (368), S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (fig. 871).

**Illustrations (Journals):** *Contr.Old.Herb.* (17:62, Fig.1 (1974)).

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

**Derivation** (Clifford & Bostock 2007): L. weak. Inflorescences readily disarticulating.

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

**Habit, Vegetative Morphology.** Annual, caespitose. Culms erect, slender, 10–75 cm long. Lateral branches lacking. Leaves basal and cauline. Leaf-sheaths keeled. Ligule a ciliate membrane. Leaf-blades flat or conduplicate, 5–10 cm long, 1–2 mm wide. Leaf-blade surface scaberulous, rough adaxially. Leaf-blade margins scaberulous. Leaf-blade apex abruptly acute.

**Inflorescence.** Inflorescence composed of racemes, subtended by a spatheole, embraced at base by subtending leaf or enclosed. Spatheole linear, 4–6 cm long. Racemes 1, single, 4–6 cm long. Rhachis fragile at the nodes, semiterete, ciliate on margins. Rhachis internodes linear. Rhachis internode tip cupuliform, with simple rim. Spikelets squeezed between internode and pedicel, in pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, linear, ciliate.

**Sterile Spikelets.** Companion sterile spikelets represented by single glumes, lanceolate, 1–2 mm long, shorter than fertile, deciduous with the fertile. Companion sterile spikelet glumes chartaceous, awned, with 3–4 mm long awn.

**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, 6–7 mm long, 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 lanceolate, 6–7 mm long, 1 length of spikelet, chartaceous, 2-keeled, keeled above, keeled frontally, winged on keel, winged narrowly, winged above, 3 -veined. Lower glume intercarinal veins obscure. Lower glume surface pubescent, hairy below. Lower glume margins ciliate. Lower glume apex dentate, 2 -fid. Upper glume lanceolate, chartaceous, 1-keeled, winged on keel, 1 -veined. Upper glume lateral veins absent.

**Florets.** Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret elliptic, 3–4 mm long, membranous, 0 -veined, without midvein, without lateral veins. Fertile lemma elliptic, 3–4 mm long, hyaline, without keel. Lemma apex lobed, 2 -fid, incised 0.9 of lemma length, awned, 1 -awned. Principal lemma awn from a sinus, geniculate, 10 mm long overall, with twisted column. Column of lemma awn 5 mm long, glabrous. Palea absent or minute.

**Flower and Fruit.** Anthers 3, 1 mm long.

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

**Country /Province /State.** **China, Eastern Asia.** China Southeast. Taiwan. **Malesia, Papuasias.** New Guinea. **Australia.** Western Australia, Northern Territory, Queensland, New South Wales. **Northwestern Pacific.** New Caledonia, Tonga. Caroline Is, Marianas.

**TDWG4.** Anhui, Fujian, Guangdong, Guangxi, Hunan, Jiangxi. Kimberley, Eremean. Darwin & Gulf, Victoria R & Barkly Tableland, Central Australia. North, Central, South East, Inland. Coast, Western Plains.

**Schizachyrium gaumeri** Nash. *N. Amer. Fl.* xvii. 102 (1912).

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

**TYPE** from Mexico. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Mexico, Izamal: Gaumer 1037 (NY holo, K, MEXU, MO, US).

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

**Derivation** (Clifford & Bostock 2007): in honor of George Franklin Gaumer (1850–1929) who collected in the Americas.

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

**Habit, Vegetative Morphology.** Annual, caespitose. Culms erect, 35–60 cm long. Leaf-sheaths glabrous on surface. Ligule an eciliate membrane, 1–1.3 mm long. Leaf-blades 6–10 cm long, 1.5–4.5 mm wide. Leaf-blade surface glabrous. Leaf-blade apex abruptly acute, hooded.

**Inflorescence.** Synflorescence compound, scanty.

Inflorescence composed of racemes, terminal and axillary, subtended by a spatheole, embraced at base by subtending leaf. Spatheole linear. Racemes 1, single, 3–6 cm long. Rhachis fragile at the nodes, semiterete, glabrous on margins. Rhachis internodes clavate. Rhachis internode tip crateriform, with scarious rim. Spikelets squeezed between internode and pedicel, in pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, linear, 4 mm long, ciliate.

**Sterile Spikelets.** Companion sterile spikelets well-developed, linear, dorsally compressed, 3–3.5 mm long, shorter than fertile, deciduous with the fertile. Companion sterile spikelet glumes chartaceous, awned, one glume awned, with 5 mm long awn.

**Fertile Spikelets.** Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets linear, laterally compressed, 5.5–7 mm long, falling entire, deciduous with accessory branch structures. Spikelet callus base obtuse, inserted.

**Glumes.** Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma. Lower glume linear, 1 length of spikelet, coriaceous, 2-keeled, keeled all along, keeled frontally, 7 -veined. Lower glume surface convex, asperulous. Lower glume apex lobed, 2 -fid. Upper glume lanceolate, membranous, 1-keeled.

**Florets.** Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret oblong, 4 mm long, hyaline. Fertile lemma oblong, 3–3.5 mm long, hyaline, without keel, 1 -veined, 0–3 -veined, one-veined. Lemma apex lobed, 2 -fid, incised 0.75 of lemma length, awned, 1 -awned. Principal lemma awn from a sinus, geniculate, 10–15 mm long overall, with twisted column. Column of lemma awn glabrous. Palea absent or minute.

**Flower and Fruit.** Anthers 3.

**Distribution (TDWG). Continent.** North America.

**Country /Province /State.** Mexico. Southeast Mexico.

**TDWG4.** Campeche, Chiapas, Quintana Roo, Yucatan.

### **Schizachyrium gracilipes** (Hack.) A.Camus. *Ann. Soc. Linn. Lyon.* n. s. lxx. 90 (1924).

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

**TYPE** from Paraguay. **Basionym or Replaced Name:** *Andropogon gracilipes* Hack., *Flora*, 68: 120 (1885). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Paraguay: Balansa 278 (P holo, K, US).

**Illustrations (Books):** L.B. Smith, D.C. Wasshausen, R.M. Klein *Flora Illustrada Catarinensis Gramineas* (1981–1982) (1266, Fig. 251), B.Rosengurt, *Gramineas Uruguayas I* (1970) (188, Fig. 75 & 189, Fig. 76).

**Derivation** (Clifford & Bostock 2007): *L. gracilis*, slender; pes, foot. Pedicels slender.

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

**Habit, Vegetative Morphology.** Perennial. Rhizomes short. Culms geniculately ascending, 50–120 cm long, 0.5 mm diam. Lateral branches ample. Ligule an eciliate membrane, 0.75–1 mm long. Leaf-blades conduplicate, 2.5–7 cm long, 2–4 mm wide. Leaf-blade surface smooth. Leaf-blade margins scabrous. Leaf-blade apex abruptly acute.

**Inflorescence.** Synflorescence compound, scanty.

Inflorescence composed of racemes, terminal and axillary, subtended by a spatheole, embraced at base by subtending leaf. Spatheole linear, 2 cm long. Peduncle widened at apex. Racemes 1, single, flexuous, 1.5–2.5 cm long. Rhachis fragile at the nodes, semiterete, glabrous on surface, ciliate on margins. Rhachis internodes filiform, 2.5–3 mm long. Rhachis internode tip crateriform, with scarious rim. Spikelets appressed, in pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, linear, curved, 2–2.5 mm long, ciliate.

**Sterile Spikelets.** Companion sterile spikelets rudimentary, comprising 2 unequal glumes without lemmas, linear, 1–1.5 mm long, shorter than fertile, deciduous with the fertile. Companion sterile spikelet glumes chartaceous, awned, one glume awned, with 1–1.5 mm long awn.

**Fertile Spikelets.** Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets lanceolate, dorsally compressed, 4.5–5 mm long, falling entire, deciduous with accessory branch structures. Spikelet callus pubescent, base obtuse.

**Glumes.** Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma. Lower glume lanceolate, 1 length of spikelet, cartilaginous, 2-keeled, keeled all along, keeled frontally. Lower glume surface convex, asperulous. Upper glume lanceolate, membranous, 1-keeled.

**Florets.** Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret oblong, hyaline. Fertile lemma oblong, 2.5 mm long, hyaline, without keel, 1 -veined, 0–3 -veined, one-veined. Lemma apex lobed, 2 -fid, incised 0.8 of lemma length, awned, 1 -awned. Principal lemma awn from a sinus, geniculate, 9 mm long overall, with twisted column. Column of lemma awn glabrous. Palea absent or minute.

**Flower and Fruit.** Caryopsis with adherent pericarp.

**Distribution (TDWG). Continent.** South America.

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

**TDWG4.** Minas Gerais, Rio de Janeiro, Espirito Santo, Catarina, Rio Grande do Sul. Corrientes, Misiones.

**Schizachyrium gresicola** Jacques-Felix. *Rev. Bot. Appliq.* iii. 446 (1953).

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

**TYPE** from Guinea. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: Guinee, Kindia: Jacques-Felix 183 (P holo, K).

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

**Derivation** (Clifford & Bostock 2007): Fr. grhs, sandstone; -colum, dweller. Growing on sandstones.

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

**Habit, Vegetative Morphology.** Perennial, caespitose. Basal innovations flabellate. Culms erect, 20–60 cm long, 1–1.5 mm diam. Leaf-sheaths outer margin hairy. Ligule an eciliate membrane, 1 mm long. Leaf-blades filiform, convolute, 10–15 cm long, 0.5–1 mm wide. Leaf-blade apex acuminate.

**Inflorescence.** Synflorescence compound, scanty or linear, 8–15 cm long.

Inflorescence composed of racemes, terminal and axillary, subtended by a spatheole. Spatheole linear, 3 cm long. Peduncle 3–6 cm long, widened at apex. Racemes 1, single, flexuous, 1–3.5 cm long. Rhachis fragile at the nodes, ciliate on margins. Rhachis hairs lengthening towards internode tip, 3–3.5 mm long. Rhachis internodes clavate, 3.5 mm long. Rhachis internode tip crateriform, with scarious rim. Spikelets appressed, in pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, linear, 3 mm long, ciliate.

**Sterile Spikelets.** Companion sterile spikelets well-developed, male, lanceolate, dorsally compressed, 3.5–4 mm long, shorter than fertile, deciduous with the fertile. Companion sterile spikelet glumes chartaceous, keeled, 5 -veined, awned, one glume awned, with 1–2 mm long awn. Companion sterile spikelet lemmas 2, enclosed by glumes.

**Fertile Spikelets.** Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets lanceolate, dorsally compressed, 7 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 lanceolate, 1 length of spikelet, chartaceous, 2-keeled, keeled laterally. Lower glume intercarinal veins distinct, 3 in number. Lower glume surface flat, pilose, hairy below. Lower glume apex dentate, 2 -fid. Upper glume lanceolate, membranous, 1-keeled, 3 -veined. Upper glume apex acuminate.

**Florets.** Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret oblong, 5 mm long, hyaline, 2 -veined, obtuse. Fertile lemma elliptic, membranous, without keel, 3 -veined, 0–3 -veined. Lemma apex dentate or lobed, 2 -fid, incised 0.1–0.33 of lemma length, awned, 1 -awned. Principal lemma awn from a sinus, geniculate, 12–15 mm long overall, with twisted column. Column of lemma awn glabrous. Palea absent or minute.

**Distribution (TDWG). Continent.** Africa.

**Country /Province /State.** West tropical Africa. Ghana, Guinea, Mali, Nigeria.

**Schizachyrium hatschbachii** Peichoto. *Bot. J. Linn. Soc.* 150:495 (2006).

**TYPE** from Brazil. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: Parana, Curiola: *Hatschbach 16140* (MBM holo, C, K).

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

**Distribution (TDWG). Continent.** South America.

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

**Schizachyrium impressum** (Hack.) A.Camus. *Ann. Soc. Linn. Lyon.* n. s. lxx. 91 (1924).

**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:** *Andropogon impressus* Hack., *Oest. Bot. Zeitschr.* 41: 49 (1891). T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: India, Kashmir, Kischwar: Clarke 31433 (K iso).

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

**Derivation** (Clifford & Bostock 2007): L. imprimo, press in. Lower glume of sessile spikelet deeply concave.

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

**Habit, Vegetative Morphology.** Perennial. Culms 40–50 cm long. Ligule an eciliate membrane. Leaf-blades 12–18 cm long, 1.5 mm wide. Leaf-blade apex acuminate, filiform.

**Inflorescence.** Synflorescence compound, fastigiate.

Inflorescence composed of racemes, terminal and axillary, subtended by a spatheole, exerted. Spatheole linear, 2–2.5 cm long, herbaceous. Racemes 1, single, 2 cm long. Rhachis fragile at the nodes, semiterete, ciliate on margins. Rhachis internodes cuneate. Rhachis internode tip crateriform, with scarious rim. Spikelets appressed, in pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, cuneate, ciliate.

**Sterile Spikelets.** Companion sterile spikelets well-developed, male, lanceolate, dorsally compressed, 6–7 mm long, longer than fertile, separately deciduous. Companion sterile spikelet glumes coriaceous, mucous. Companion sterile spikelet lemmas 2, enclosed by glumes.

**Fertile Spikelets.** Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets lanceolate, dorsally compressed, 5–6 mm long, 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 lanceolate, 1 length of spikelet, coriaceous, 2-keeled, keeled all along, keeled laterally, keeled obtusely. Lower glume intercarinal veins obscure. Lower glume surface concave or deeply depressed, impressed below. Upper glume lanceolate, membranous, 1-keeled.

**Florets.** Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret oblong, hyaline, 2 -veined. Fertile lemma oblong, hyaline, without keel, 1 -veined, 0–3 -veined, one-veined. Lemma apex lobed, 2 -fid, with lanceolate lobes, incised 0.75 of lemma length, awned, 1 -awned. Principal lemma awn from a sinus, geniculate, 15–18 mm long overall, with twisted column. Column of lemma awn glabrous. Palea absent or minute.

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

**Country /Province /State. Indian Subcontinent.** Pakistan, West Himalaya.

**TDWG4.** Jammu Kashmir.

**Schizachyrium jeffreysii** (Hack.) Stapf. Prain, *Fl. Trop. Afr.* ix. 198 (1918).

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

**TYPE** from Zimbabwe. **Basionym or Replaced Name:** *Andropogon jeffreysii* Hack., *Proc. Rhodesia Sci. Ass.* 7: II. 70 (1908). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Ziimbabwe, Bulawayo: *Jeffreys* 78.

**Illustrations (Journals):** *Hooker's Icones Plantarum* (t.3087 (1922) as *S. ursulus*).

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

**Derivation** (Clifford & Bostock 2007): in honor of Jeffreys (fl. 1907) plant collector in Rhodesia, now Zimbabwe.

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

**Habit, Vegetative Morphology.** Perennial, caespitose. Rhizomes short. Butt sheaths glabrous. Culms geniculately ascending, 30–45 cm long. Lateral branches sparse. Leaf-sheaths keeled. Ligule a ciliolate membrane. Leaf-blades conduplicate or involute, 5–15 cm long, 3–4 mm wide. Leaf-blade surface smooth, glabrous. Leaf-blade margins scabrous. Leaf-blade apex attenuate.

**Inflorescence.** Synflorescence compound, scanty.

Inflorescence composed of racemes, terminal and axillary, subtended by a spatheole. Spatheole linear, 3–5 cm long. Racemes 1, single, 6–8 cm long. Rhachis fragile at the nodes, semiterete, villous on surface, villous on margins. Rhachis hairs 2–4 mm long. Rhachis internodes linear or clavate, 7 mm long. Rhachis internode tip crateriform, with scarious rim. Spikelets appressed, in pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, linear, villous.

**Sterile Spikelets.** Companion sterile spikelets well-developed, containing empty lemmas or male, lanceolate, dorsally compressed, 5–6 mm long, as long as fertile, deciduous with the fertile. Companion sterile spikelet glumes chartaceous, puberulous, setaceously 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 lanceolate, dorsally compressed, 7–9 mm long, 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 elliptic, 1 length of spikelet, chartaceous, 2-keeled, keeled laterally, wingless. Lower glume primary vein scaberulous.



Lower glume intercarinal veins distinct, 6 in number. Lower glume surface flat. Lower glume apex emarginate, mucronate. Upper glume oblong, membranous, 1-keeled, 3 -veined. Upper glume primary vein scaberulous. Upper glume margins ciliolate. Upper glume apex acute.

**Florets.** Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret oblong, 6–7 mm long, hyaline, 2 -veined. Fertile lemma oblong, 6 mm long, hyaline, without keel, 3 -veined, 0–3 -veined. Lemma margins ciliolate. Lemma apex lobed, 2 -fid, incised 0.5–0.75 of lemma length, awned, 1 -awned. Principal lemma awn from a sinus, geniculate, adnate to lemma lobes at base, 14–20 mm long overall, with twisted column. Column of lemma awn glabrous. Palea absent or minute.

**Flower and Fruit.** Anthers 3, 3 mm long. Caryopsis with adherent pericarp, lanceolate, 4.5 mm long. Embryo 0.5 length of caryopsis.

**Distribution (TDWG). Continent.** Africa.

**Country /Province /State.** South tropical Africa, Southern Africa. Angola, Mozambique, Zambia, Zimbabwe. Namibia, Botswana, Limpopo, North-West, Gauteng, Mpumalanga.

**Schizachyrium kwiluense** Vanderyst ex Robyns. *Bull. Jard. Bot. Brux.* 14:94 (1936).

**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>: *vide* TROPICOS and Kew Synonymy Database: Zaire, Wombali: *Vanderyst 4259* (BR holo, K).

**Recent Synonyms:** *Ystia stagnina* Compère, *Bull. Jard. Bot. Brux.* 33: 400 (1963).

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

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

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

**Habit, Vegetative Morphology.** Perennial. Culms erect, 100–150 cm long. Ligule a ciliolate membrane. Leaf-blades convolute, 10–30 cm long, 2–4 mm wide. Leaf-blade apex attenuate.

**Inflorescence.** Synflorescence compound, scanty, 30–40 cm long.

Inflorescence composed of racemes, terminal and axillary, subtended by a spatheole. Spatheole linear. Racemes 1, single, 1–2 cm long, bearing 8–14 fertile spikelets on each. Rhachis fragile at the nodes, semiterete, scabrous on margins, glabrous on margins. Rhachis internodes filiform, 4–5 mm long. Rhachis internode tip cupuliform, with simple rim. Spikelets appressed, in pairs. Fertile spikelets sessile and pedicelled, 2 in the cluster. Pedicels present, filiform, 2–3 mm long, scabrous, glabrous, tip cupuliform.

**Fertile Spikelets.** Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets lanceolate, dorsally compressed, 4–5 mm long, 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 lanceolate, 1 length of spikelet, chartaceous, 2-keeled, keeled above, keeled laterally, (5–)7(–9) -veined. Lower glume intercarinal veins distinct. Lower glume surface asperulous, rough above, glabrous. Lower glume apex dentate, 2 -fid. Upper glume lanceolate, chartaceous, 1-keeled, keeled above, 3 -veined. Upper glume primary vein smooth or scabrous. Upper glume apex acuminate.

**Florets.** Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret oblong, hyaline. Fertile lemma oblong, 3.5 mm long, hyaline, without keel. Lemma apex entire or lobed, 2 -fid, incised 0.33 of lemma length, muticous or awned, 1 -awned. Principal lemma awn from a sinus, geniculate, 4–5 mm long overall, with twisted column. Column of lemma awn glabrous. Palea absent or minute.

**Distribution (TDWG). Continent.** Africa.

**Country /Province /State.** West-central tropical Africa. DRC.

**Schizachyrium littorale** (Nash) E.P.Bicknell. *Bull. Torr. Bot. Club*, 35 :182 (1908).

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

**TYPE** from Mexico. **Basionym or Replaced Name:** *Andropogon neomexicanus* Nash, *Bull. Torr. Bot. Club*, 1898, 83 (1898). T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: Mexico, White Sands: *Wootton 583*.

**Illustrations (Books):** M.E.Barkworth et al, *Flora of North America north of Mexico Vol 25 Poaceae*, part 2 (2003) (675).

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

**Derivation** (Clifford & Bostock 2007): L. *lit(t)us*, seashore; -ale, pertaining to. Species of sand dunes, salt marshes or river banks.

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

**Distribution (TDWG). Continent.** North America.

**Country /Province /State. Mexico.** Central Mexico, Northeast Mexico, Gulf (Mexico), Southeast Mexico. Puebla. Tamaulipas. Veracruz. Campeche, Tabasco.

**Schizachyrium lomaense** A.Camus. *Journ. Agric. Trop. & Bot. Appliq.* i. 210 (1954).

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

**TYPE** from Sierra Leone. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Sierra Leone, Mt. Loma: *Jaeger 401* (P holo).

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

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

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

**Habit, Vegetative Morphology.** Perennial, caespitose. Basal innovations flabellate. Culms erect, 15–30 cm long. Leaf-sheaths keeled. Ligule an eciliate membrane. Leaf-blades flat or conduplicate, 4–12 cm long, 1–1.5 mm wide. Leaf-blade apex abruptly acute.

**Inflorescence.** Synflorescence compound, scanty.

Inflorescence composed of racemes, terminal and axillary, subtended by a spatheole. Spatheole linear. Racemes 1, single, 2–2.5 cm long, bearing 7–8 fertile spikelets on each. Rhachis fragile at the nodes, semiterete, glabrous on margins. Rhachis internodes linear, 2 mm long. Rhachis internode tip cupuliform, with simple rim. Spikelets appressed, in pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, linear, 1.1–1.2 mm long, glabrous, tip cupuliform.

**Sterile Spikelets.** Companion sterile spikelets well-developed, lanceolate, dorsally compressed, 4–5 mm long, longer than fertile, deciduous with the fertile. Companion sterile spikelet glumes chartaceous, acuminate, 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 lanceolate, dorsally compressed, 3–3.5 mm long, falling entire, deciduous with accessory branch structures. Spikelet callus oblong, 0.5 mm long, pubescent, base obtuse, inserted.

**Glumes.** Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma. Lower glume lanceolate, 1 length of spikelet, chartaceous, 2-keeled, keeled above, keeled laterally, wingless. Lower glume intercarinal veins absent. Lower glume surface glabrous. Lower glume apex dentate, 2 -fid. Upper glume lanceolate, membranous, 1-keeled. Upper glume apex acuminate, awned, 1 -awned, awn 2–3 mm long.

**Florets.** Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret oblong, hyaline. Fertile lemma oblong, 1.5–2.5 mm long, hyaline, without keel, 1 -veined, 0–3 -veined, one-veined. Lemma apex lobed, 2 -fid, incised 0.66–0.75 of lemma length, awned, 1 -awned. Principal lemma awn from a sinus, geniculate, 11–12 mm long overall, with twisted column. Column of lemma awn glabrous. Palea absent or minute.

**Distribution (TDWG). Continent.** Africa.

**Country /Province /State. West tropical Africa.** Sierre Leone.

**Schizachyrium lopollense** (Rendle) Sales. *Fl. Zambesiaca* 10,4:87 (2002).

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

**TYPE** from Angola. **Basionym or Replaced Name:** *Andropogon lopollensis* Rendle, *Cat. Welw. Afr. Pl.* 2 : 143 (1899). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Angola, Lopollo: *Welwitsch 2641*.

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

**Derivation** (Clifford & Bostock 2007): L. *-ensis*, denoting origin. From the Lopollo District, Angola.

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

**Habit, Vegetative Morphology.** Perennial, caespitose. Rhizomes short. Culms geniculately ascending, 30–50 cm long. Culm-internodes purple. Lateral branches sparse. Leaves mostly basal. Leaf-sheaths mostly shorter than adjacent culm internode, glabrous on surface. Ligule a ciliolate membrane. Leaf-blades 1–3.5 cm long, 2 mm wide. Leaf-blade midrib keeled beneath. Leaf-blade surface smooth, glabrous. Leaf-blade apex attenuate.

**Inflorescence.** Synflorescence compound, scanty.

Inflorescence composed of racemes, terminal and axillary, subtended by a spatheole. Spatheole linear. Racemes 1, single, 1.5–3.5 cm long. Rhachis fragile at the nodes, subterete, villous on surface, villous on margins. Rhachis hairs 3–4 mm long. Rhachis internodes linear or clavate, 7 mm long. Rhachis internode tip crateriform, with scarious rim. Spikelets appressed, in pairs. Fertile spikelets sessile, 1 in the cluster. Companion

sterile spikelets pedicelled, 1 in the cluster. Pedicels present, linear, 0.5–0.66 length of fertile spikelet, villous, with 3–4 mm long hairs.

**Sterile Spikelets.** Companion sterile spikelets well-developed, male, lanceolate, dorsally compressed, 4.5–5.5 mm long, shorter than fertile, deciduous with the fertile. Companion sterile spikelet glumes chartaceous, acuminate. 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, dorsally compressed, 5.5–7.5 mm long, 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 elliptic, 1 length of spikelet, chartaceous, 2-keeled, keeled laterally, wingless. Lower glume intercarinal veins distinct. Lower glume surface convex, villous. Lower glume hairs 3–4 mm long. Upper glume oblong, membranous, 1-keeled. Upper glume apex acute.

**Florets.** Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret oblong, hyaline, 2 -veined. Fertile lemma oblong, hyaline, without keel, 2 -veined, 0–3 -veined. Lemma apex entire, awned, 1 -awned. Principal lemma awn geniculate, 4–9 mm long overall, with twisted column. Column of lemma awn glabrous. Palea absent or minute.

**Flower and Fruit.** Anthers 3, 2.7–3 mm long. Caryopsis with adherent pericarp.

**Distribution (TDWG). Continent.** Africa.

**Country /Province /State.** South tropical Africa. Angola, Mozambique, Zambia.

### **Schizachyrium maclaudii** (Jacques-Felix) S. T. Blake. *Proc. Roy. Soc. Queensl.* 1. 76 (1969).

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

**TYPE** from Guinea. **Basionym or Replaced Name:** *Schizachyrium brevifolium* var. *maclaudii* Jac.-Fel., *Rev. Bot. Appl.* 33:432 (1953). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Guinee, Kindia: *Jacques-Felix 208* (P holo, K).

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

**Derivation** (Clifford & Bostock 2007): in honor of C. Maclaud (1895-?) who collected in West Africa.

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

**Habit, Vegetative Morphology.** Annual. Culms rambling or prostrate, 8–40 cm long, 1–2 mm diam. Leaf-sheaths mostly shorter than adjacent culm internode, keeled. Ligule a ciliolate membrane. Leaf-blades 2–6 cm long, 2–7 mm wide. Leaf-blade apex abruptly acute.

**Inflorescence.** Synflorescence compound, paniculate.

Inflorescence composed of racemes, terminal and axillary, subtended by a spatheole, embraced at base by subtending leaf. Spatheole linear, 1.5–2 cm long. Racemes 1, single, 2–3 cm long. Rhachis fragile at the nodes, semiterete, glabrous on margins. Rhachis internodes oblong or cuneate. Rhachis internode tip crateriform, with scarious rim. Spikelets squeezed between internode and pedicel, in pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, oblong, glabrous.

**Sterile Spikelets.** Companion sterile spikelets represented by single glumes, lanceolate, 1 mm long, shorter than fertile, deciduous with the fertile. Companion sterile spikelet glumes chartaceous, awned, with 3–5 mm long awn.

**Fertile Spikelets.** Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets lanceolate, dorsally compressed, 3–3.5 mm long, 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 lanceolate, 1 length of spikelet, chartaceous, 2-keeled, keeled all along, keeled laterally. Lower glume intercarinal veins obscure, 3 in number. Lower glume surface glabrous. Lower glume apex dentate, 2 -fid. Upper glume lanceolate, membranous, 1-keeled. Upper glume apex acuminate.

**Florets.** Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret lanceolate, 3 mm long, hyaline. Fertile lemma oblong, 2–3 mm long, hyaline, without keel. Lemma apex lobed, 2 -fid, incised 0.9 of lemma length, awned, 1 -awned. Principal lemma awn from a sinus, geniculate, 5–8 mm long overall, with twisted column. Column of lemma awn glabrous. Palea absent or minute.

**Distribution (TDWG). Continent.** Africa, South America.

**Country /Province /State.** West tropical Africa, West-central tropical Africa. Ghana, Guinea, Liberia, Nigeria, Sierra Leone. Cameroon. Northern South America, Western South America, Brazil. French Guiana, Guyana, Surinam. Bolivia, Colombia. Brazil North.

**Schizachyrium malacostachyum** (Presl) Nash. *N. Amer. Fl.* xvii. 102 (1912).

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

**TYPE** from Mexico. **Basionym or Replaced Name:** *Andropogon malacostachyus* J. Presl, *Rel. Haenk.* 1: 337 (1830). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Mexico, Acapulco: Haenke (PR holo, MO).

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

**Derivation** (Clifford & Bostock 2007): Gk. malakos, soft to the touch; stachys, ear of corn. Peduncles of racemes plumose hairy.

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

**Habit, Vegetative Morphology.** Annual, culms solitary or caespitose. Culms decumbent or rambling, 12–50 cm long. Ligule an eciliate membrane. Leaf-blades 3–8 cm long, 1.5–3 mm wide. Leaf-blade apex obtuse.

**Inflorescence.** Synflorescence compound, scanty, 20–25 cm long.

Inflorescence composed of racemes, terminal and axillary, subtended by a spatheole, embraced at base by subtending leaf. Spatheole linear, 4–5 cm long. Racemes 1, single, 1.5–4 cm long. Rhachis fragile at the nodes, semiterete, glabrous on margins. Rhachis internodes clavate, 4 mm long. Rhachis internode tip crateriform, with scarious rim. Spikelets squeezed between internode and pedicel, in pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, linear, 4 mm long, glabrous.

**Sterile Spikelets.** Companion sterile spikelets rudimentary, comprising 2 subequal glumes without lemmas, linear, dorsally compressed, 2–3 mm long, shorter than fertile, deciduous with the fertile. Companion sterile spikelet glumes chartaceous, awned, one glume awned, with 3–5 mm long awn.

**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, laterally compressed, 4–5 mm long, falling entire, deciduous with accessory branch structures. Spikelet callus base obtuse, inserted.

**Glumes.** Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma. Lower glume linear, 1 length of spikelet, coriaceous, 2-keeled, keeled all along, keeled frontally. Lower glume surface convex. Upper glume lanceolate, membranous, 1-keeled.

**Florets.** Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret oblong, hyaline. Fertile lemma oblong, 3.5–4.5 mm long, hyaline, without keel, 1 -veined, 0–3 -veined, one-veined. Lemma apex lobed, 2 -fid, incised 0.75 of lemma length, awned, 1 -awned. Principal lemma awn from a sinus, geniculate, 5–8 mm long overall, with twisted column. Column of lemma awn glabrous. Palea absent or minute.

**Distribution (TDWG). Continent.** North America, South America.

**Country /Province /State.** Mexico. Gulf (Mexico), Southwest Mexico, Southeast Mexico. **Mesoamerica, Caribbean, Western South America.** Costa Rica, Guatemala, Nicaragua. Cuba, Venezuelan and Netherlands Antilles. Colombia.

**TDWG4.** Morelos. Veracruz. Baja California Sur. Guerrero, Jalisco, Nayarit. Campeche, Chiapas, Yucatan.

**Schizachyrium maritimum** (Chapman) Nash. *Small, Fl. S. E. U. S.* 59 (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:** *Andropogon maritimus* Chapm., *Fl. S. Un. St. Suppl.* 668 (1883). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: USA, Florida: Chapman (K iso, US).

**Illustrations (Books):** M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 25 *Poaceae*, part 2 (2003).

**Derivation** (Clifford & Bostock 2007): L. belonging to the sea. Growing by the seaside.

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

**Habit, Vegetative Morphology.** Perennial, culms solitary. Rhizomes elongated. Culms 40–60 cm long. Lateral branches sparse. Leaf-sheaths keeled. Ligule an eciliate membrane. Leaf-blades 5–10 cm long, 2–4 mm wide. Leaf-blade apex abruptly acute.

**Inflorescence.** Synflorescence compound, scanty.

Inflorescence composed of racemes, terminal and axillary, subtended by a spatheole, embraced at base by subtending leaf. Spatheole linear, 5–6 cm long, herbaceous. Racemes 1, single, 2–4 cm long. Rhachis fragile at the nodes, semiterete, plumose on margins. Rhachis hairs 5–7 mm long. Rhachis internodes clavate, 4–5 mm long. Rhachis internode tip cupuliform, with scarious rim. Spikelets ascending, in pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, clavate, 8–10 mm long, plumose, with 5–7 mm long hairs.

**Sterile Spikelets.** Companion sterile spikelets well-developed, male, lanceolate, dorsally compressed, 5–7 mm long, shorter than fertile, deciduous with the fertile. Companion sterile spikelet glumes chartaceous, 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 lanceolate, dorsally compressed, 8–9 mm long, 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 lanceolate, 1 length of spikelet, coriaceous, 2-keeled, keeled laterally. Lower glume intercarinal veins distinct, 4 in number. Lower glume surface flat. Upper glume lanceolate, membranous, 1-keeled.

**Florets.** Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret oblong, hyaline. Fertile lemma oblong, hyaline, without keel, 1 -veined, 0–3 -veined, one-veined. Lemma apex lobed, 2 -fid, incised 0.33 of lemma length, awned, 1 -awned. Principal lemma awn from a sinus, geniculate, 10–15 mm long overall, with twisted column. Column of lemma awn glabrous. Palea absent or minute.

**Distribution (TDWG).** Continent. North America.

**Country /Province /State.** Southeastern USA. Florida, Louisiana.

**Schizachyrium mexicanum** (Hitchc.) A.Camus. *Ann. Soc. Linn. Lyon.* n. s. lxx. 91 (1924).

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

**TYPE** from Mexico. **Basionym or Replaced Name:** *Andropogon mexicanus* Hitchcock, *Contrib. US. Nat. Herb.* 17: 204 (1913). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Mexico, Guadalajara: Pringle 1805 (US holo, K).

**Illustrations (Books):** R.McVaugh, *Flora Nova-Galiciana* Vol.14 *Gramineae* (1983).

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

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

**Habit, Vegetative Morphology.** Perennial. Culms 60–90 cm long. Lateral branches sparse. Ligule an eciliate membrane, 2–4 mm long. Leaf-blades linear or lanceolate, 10–15 cm long, 5–10 mm wide. Leaf-blade apex abruptly acute.

**Inflorescence.** Synflorescence compound, scanty, 20–25 cm long.

Inflorescence composed of racemes, terminal and axillary, subtended by a spatheole. Spatheole linear, 2–2.5 cm long. Racemes 1, single, 2–6 cm long, bearing 5–10 fertile spikelets on each. Rhachis fragile at the nodes, semiterete, ciliate on margins. Rhachis hairs 1–2.5 mm long. Rhachis internodes clavate, 4–6 mm long. Rhachis internode tip crateriform, with scarious rim. Spikelets appressed, in pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, filiform, 4.5–6 mm long, ciliate, with 1–2.5 mm long hairs.

**Sterile Spikelets.** Companion sterile spikelets rudimentary, comprising 2 subequal glumes without lemmas or containing empty lemmas or male, linear, dorsally compressed, 1.5–2 mm long, shorter than fertile, deciduous with the fertile. Companion sterile spikelet glumes chartaceous, awned, one glume awned, with 1–1.5 mm long awn.

**Fertile Spikelets.** Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets linear, laterally compressed, 5–5.5 mm long, 0.7 mm wide, falling entire, deciduous with accessory branch structures. Spikelet callus base obtuse, inserted.

**Glumes.** Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma. Lower glume linear, 1 length of spikelet, coriaceous, 2-keeled, keeled all along, keeled laterally. Lower glume surface convex. Upper glume lanceolate, membranous, 1-keeled.

**Florets.** Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret oblong, hyaline. Fertile lemma oblong, 1.5 mm long, hyaline, without keel, 1 -veined, 0–3 -veined, one-veined. Lemma apex lobed, 2 -fid, incised 0.66 of lemma length, awned, 1 -awned. Principal lemma awn from a sinus, geniculate, 10–15 mm long overall, with twisted column. Column of lemma awn glabrous. Palea absent or minute.

**Flower and Fruit.** Anthers 1.5–2 mm long.

**Distribution (TDWG).** Continent. North America.

**Country /Province /State.** Mexico. Central Mexico, Northeast Mexico, Gulf (Mexico), Northwest Mexico, Southwest Mexico, Southeast Mexico.

**TDWG4.** Mexico State, Morelos. Chihuahua, Guanajuato. Veracruz. Sonora. Colima, Jalisco, Michoacan, Nayarit. Chiapas.

**Schizachyrium microstachyum** (Desv.) Roseng., Arrill. deMaffei & Izag. de Artucio. *Bol. Univ. Republ. Fac. Agron. Montevideo*, No. 103, 35 (1968).

Regarded by K as a synonym (*S. condensatum*).

**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 Columbia. **Basionym or Replaced Name:** *Andropogon condensatus* H. B. & K., *Nov. Gen. et Sp.* 1: 188 (1815). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Colombia, Ibaguè: Humboldt & Bonpland.

**Illustrations (Books):** L.B. Smith, D.C. Wasshausen, R.M. Klein *Flora Illustrada Catarinensis Gramineas* (1981–1982) (1266 & 1274, Fig. 251 & 253), A. Burkat, *Flora Illustrada de Entre Rios (Argentina)*, Pt II, Gramineas (1969) (493, Fig. 208), W. Burger, *Flora Costaricensis* 15, Gramineae: *Fieldiana Botany New Series* 4 (1980) (519, Fig. 196), A.L. Cabrera, *Flora de la Provincia de Buenos Aires, IV Pt 2 Gramineas* (1970) (590, Fig. 158), B. Rosengurtt, *Gramineas Uruguayas I* (1970) (190, Fig. 77 as subspecies *elongatum* & *microstachyum*).

**Illustrations (Journals):** *Ruizia* (13:447 Fig. 60c-d (1993)).

**Derivation** (Clifford & Bostock 2007): Gk. mikros, small; stachys, ear of corn. Inflorescences or spikelets small.

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

**Distribution (TDWG). Continent.** Australasia, South America.

**Country /Province /State.** Australia. Queensland. Mesoamerica, Caribbean, Northern South America, Western South America, Brazil, Southern South America. Belize, Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua, Panama. Leeward Is, Windward Islands, 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.** Corrientes, Entre Rios, Misiones.

**Schizachyrium mitchelliana** 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: Western Australia: Mitchell River Station, Admiralty Gulf, Nov/Dec 1973, *T. Kubicki* 53 (HT: PERTH).

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

**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: Andropogoneae. Subtribe ANDROPOGONINAE.

**Habit, Vegetative Morphology.** Annual. Culms 50–100 cm long. Lateral branches ample. Ligule an ciliate membrane, 3 mm long. Leaf-blades 1.5–10 cm long, 0.8–3 mm wide.

**Inflorescence.** Synflorescence compound, linear.

Inflorescence composed of racemes, terminal and axillary, subtended by a spatheole, embraced at base by subtending leaf. Spatheole linear, 1.8–3 cm long, glabrous. Peduncle 0.3–0.5 cm long. Racemes 1, single, 1–1.5 cm long. Rhachis fragile at the nodes, semiterete, pilose on surface, ciliate on margins. Rhachis internodes clavate, 4 mm long. Rhachis internode tip crateriform, with scarious rim. Spikelets appressed, in pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, clavate, 4 mm long, ciliate.

**Sterile Spikelets.** Companion sterile spikelets rudimentary, comprising 2 unequal glumes without lemmas, linear, 2 mm long, shorter than fertile, deciduous with the fertile. Companion sterile spikelet glumes chartaceous, awned, one glume awned, with 10–30 mm long awn.

**Fertile Spikelets.** Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets lanceolate, dorsally compressed, 4 mm long, 1 mm wide, falling entire, deciduous with accessory branch structures. Spikelet callus 0.1 mm long, pubescent, base obtuse, inserted. Spikelet callus hairs 1 mm long.

**Glumes.** Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma. Lower glume lanceolate, 1 length of spikelet, coriaceous, 2-keeled, keeled all along, keeled laterally, winged on keel, winged narrowly, winged all along. Lower glume intercarinal veins distinct. Lower glume surface convex, glabrous. Upper glume lanceolate, membranous, 1-keeled, 1-veined. Upper glume lateral veins absent.

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

-fid, incised 0.9 of lemma length, awned, 1 -awned. Principal lemma awn from a sinus, geniculate, 20 mm long overall, with twisted column. Column of lemma awn glabrous. Palea absent or minute.

**Flower and Fruit.** Anthers 1.5 mm long. Caryopsis with adherent pericarp.

**Distribution (TDWG). Continent.** Australasia.

**Country /Province /State.** Australia. Western Australia.

**TDWG4.** Kimberley.

### **Schizachyrium muelleri** Nash. *N. Amer. Fl.* xvii. 106 (1912).

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

**TYPE** from Mexico. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Mexico, Veracruz: Mueller 2176 (NY holo, US).

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

**Derivation** (Clifford & Bostock 2007): in honor of Friedrich Müller (fl. 1853) who collected in Mexico.

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

**Habit, Vegetative Morphology.** Perennial, caespitose. Culms 60–90 cm long. Ligule a ciliolate membrane. Leaf-blades 5–15 cm long, 2–4 mm wide. Leaf-blade apex attenuate.

**Inflorescence.** Synflorescence compound, paniculate, 20–25 cm long.

Inflorescence composed of racemes, terminal and axillary, subtended by a spatheole, embraced at base by subtending leaf. Spatheole linear, 3–4 cm long, membranous. Racemes 1, single, sinuous, 2–3 cm long. Rhachis fragile at the nodes, semiterete, plumose on margins. Rhachis internodes filiform, 3–5 mm long. Rhachis internode tip crateriform, with scarious rim. Spikelets appressed, in pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, filiform, plumose, tip widened.

**Sterile Spikelets.** Companion sterile spikelets rudimentary, linear, dorsally compressed, 1–2 mm long, shorter than fertile, deciduous with the fertile. Companion sterile spikelet glumes chartaceous, mucicous or awned, one glume awned, with 0–3 mm long awn.

**Fertile Spikelets.** Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets lanceolate, dorsally compressed, 4–6 mm long, 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 lanceolate, 1 length of spikelet, chartaceous, 2-keeled, keeled laterally. Lower glume intercarinal veins absent. Lower glume surface concave, asperulous, glabrous. Lower glume apex acute. Upper glume lanceolate, membranous, 1-keeled.

**Florets.** Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret oblong, hyaline. Fertile lemma oblong, 2.5 mm long, hyaline, without keel, 1 -veined, 0–3 -veined, one-veined. Lemma apex lobed, 2 -fid, incised 0.25 of lemma length, awned, 1 -awned. Principal lemma awn from a sinus, geniculate, 10–15 mm long overall, with a straight or slightly twisted column. Column of lemma awn glabrous. Palea absent or minute.

**Distribution (TDWG). Continent.** North America.

**Country /Province /State.** Mexico. Gulf (Mexico).

Veracruz.

### **Schizachyrium mukuluense** Vanderyst. *Bull. Soc. Bot. Belg.* lv. 37, in clavi. (1923).

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

**TYPE** from Zaire. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Zaire, Mukulu: Vanderyst 3176 (BR holo).

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

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

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

**Habit, Vegetative Morphology.** Perennial. Culms 50–100 cm long. Ligule a ciliolate membrane.

**Inflorescence.** Synflorescence compound, scanty.

Inflorescence composed of racemes, terminal and axillary, subtended by a spatheole. Spatheole linear. Racemes 1, single, 4–8 cm long. Rhachis fragile at the nodes, semiterete, glabrous on margins. Rhachis internodes clavate, 3–4 mm long. Rhachis internode tip cupuliform, with simple rim. Spikelets appressed, in pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, clavate, 3–4 mm long, glabrous.

**Sterile Spikelets.** Companion sterile spikelets well-developed, male, lanceolate, dorsally compressed, 4–5 mm long, as long as fertile, deciduous with the fertile. Companion sterile spikelet glumes chartaceous, acuminate, muticous. Companion sterile spikelet lemmas 2, enclosed by glumes.

**Fertile Spikelets.** Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets lanceolate, dorsally compressed, 4–5 mm long, falling entire, deciduous with accessory branch structures. Spikelet callus cuneate, 0.75 mm long, pilose, base obtuse, inserted.

**Glumes.** Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma. Lower glume lanceolate, 1 length of spikelet, coriaceous, 2-keeled, keeled frontally, 5 -veined. Lower glume intercarinal veins distinct, 3 in number. Lower glume surface glabrous. Lower glume apex dentate, 2 -fid. Upper glume lanceolate, membranous, 1-keeled, keeled above. Upper glume apex acuminate.

**Florets.** Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret oblong, hyaline, 2 -veined. Fertile lemma lanceolate, 3.5 mm long, hyaline, without keel, 1 -veined, 0–3 -veined, one-veined. Lemma apex lobed, 2 -fid, incised 0.15 of lemma length, awned, 1 -awned. Principal lemma awn from a sinus, geniculate, 6–7 mm long overall, with twisted column. Column of lemma awn glabrous. Palea absent or minute.

**Distribution (TDWG). Continent.** Africa.

**Country /Province /State.** West-central tropical Africa. DRC.

**Schizachyrium multinervosum** Nash. *N. Amer. Fl.* xvii. 109 (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 Cuba. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Cuba, Madrugá: Britton & Shaffer 608 (NY holo).

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

**Derivation** (Clifford & Bostock 2007): *L. multus*, many; *nervus*, nerve; -osa, abundance. The glumes or lemmas many-nerved.

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

**Habit, Vegetative Morphology.** Perennial, caespitose. Culms slender, 20–40 cm long. Lateral branches sparse. Leaf-sheaths mostly shorter than adjacent culm internode, striately veined, smooth, glabrous on surface. Ligule an eciliate membrane, scarious. Leaf-blades filiform, involute, 3–7 cm long, 1–1.5 mm wide. Leaf-blade midrib widened.

**Inflorescence.** Inflorescence composed of racemes, terminal and axillary. Racemes 1, single, straight, 3–6 cm long. Rhachis fragile at the nodes, semiterete, glabrous on surface, glabrous on margins. Rhachis internodes clavate. Rhachis internode tip crateriform, with scarious rim. Spikelets appressed, in pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, clavate, 1 length of internode, ciliate, hairy at tip, hairy on one margin.

**Sterile Spikelets.** Companion sterile spikelets rudimentary, comprising 2 unequal glumes without lemmas, lanceolate, 3 mm long, shorter than fertile, deciduous with the fertile. Companion sterile spikelet glumes chartaceous, 7 -veined, 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, 4–4.5 mm long, 1.75 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 lanceolate, 1 length of spikelet, cartilaginous, much thinner above, 2-keeled, keeled all along, keeled laterally, keeled obtusely (below), 11–13 -veined. Lower glume primary vein scabrous. Lower glume surface concave. Lower glume apex dentate, 2 -fid. Upper glume lanceolate, membranous, 1-keeled, 1 -veined. Upper glume lateral veins absent.

**Florets.** Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret oblong, 0.75 length of spikelet, hyaline, ciliate on margins, fringed above. Fertile lemma oblong, 2 mm long, hyaline, without keel, 1 -veined, 0–3 -veined, one-veined. Lemma margins ciliate, hairy above. Lemma apex lobed, 2 -fid, incised 0.5 of lemma length, awned, 1 -awned. Principal lemma awn from a sinus, geniculate, 10–15 mm long overall, with twisted column. Column of lemma awn 5–7 mm long, glabrous. Palea absent or minute.

**Flower and Fruit.** Caryopsis with adherent pericarp.

**Distribution (TDWG). Continent.** South America.

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



**Schizachyrium niveum** (Swallen) Gould. *Brittonia*, xix. 73 (1967).

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

**TYPE** from USA. **Basionym or Replaced Name:** *Andropogon niveus* Swallen, *Journ. Wash. Acad. Sci.* 31: 354 (1941). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: USA, Florida, Kissimmee: Silveus 6684 (US holo, K).

**Illustrations (Books):** M.E.Barkworth et al, *Flora of North America north of Mexico Vol 25 Poaceae*, part 2 (2003) (676).

**Derivation** (Clifford & Bostock 2007): *L. nivea*, snowy. Rhachis densely invested with short white hairs.

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

**Habit, Vegetative Morphology.** Perennial, culms solitary. Culms 50–65 cm long. Leaf-sheaths keeled, glabrous on surface. Ligule an eciliate membrane. Leaf-blades 5–9 cm long, 1–2 mm wide. Leaf-blade apex acute.

**Inflorescence.** Synflorescence compound, scanty.

Inflorescence composed of racemes, terminal and axillary, subtended by a spatheole, exerted. Spatheole linear, 3–4 cm long, herbaceous. Racemes 1, single, 3–4 cm long. Rhachis fragile at the nodes, semiterete, ciliate on margins. Rhachis hairs 2–3 mm long. Rhachis internodes clavate, 3 mm long. Rhachis internode tip cupuliform, with scarious rim. Spikelets ascending, in pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, filiform, 6–7 mm long, ciliate, with 2–3 mm long hairs.

**Sterile Spikelets.** Companion sterile spikelets rudimentary, linear, dorsally compressed, 1–2 mm long, shorter than fertile, deciduous with the fertile. Companion sterile spikelet glumes chartaceous, 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 lanceolate, dorsally compressed, 5–6 mm long, 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 lanceolate, 1 length of spikelet, coriaceous, 2-keeled, keeled frontally. Lower glume intercarinal veins distinct, 2 in number. Lower glume surface convex. Upper glume lanceolate, membranous, 1-keeled.

**Florets.** Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret oblong, hyaline. Fertile lemma oblong, hyaline, without keel, 1 -veined, 0–3 -veined, one-veined. Lemma apex lobed, 2 -fid, incised 0.9 of lemma length, awned, 1 -awned. Principal lemma awn from a sinus, geniculate, 10 mm long overall, with twisted column. Column of lemma awn glabrous. Palea absent or minute.

**Distribution (TDWG). Continent.** North America.

**Country /Province /State.** Southeastern USA. Florida.

**Schizachyrium nodulosum** (Hack.) Stapf. Prain, *Fl. Trop. Afr.* ix. 193 (1918).

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

**TYPE** from Nigeria. **Basionym or Replaced Name:** *Andropogon nodulosus* Hack., *Flora*, 68: 116 (1885). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Nigeria, Lokoja: Barter (K iso).

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

**Derivation** (Clifford & Bostock 2007): *L. nodus*, knot; -ula, diminutive; -osum, abundance. Apex of raceme joints cupuliform.

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

**Habit, Vegetative Morphology.** Annual. Culms erect, 15–45 cm long. Ligule an eciliate membrane. Leaf-blades 3–8 cm long, 2–3 mm wide. Leaf-blade apex acuminate.

**Inflorescence.** Synflorescence compound, scanty.

Inflorescence composed of racemes, terminal and axillary, subtended by a spatheole, embraced at base by subtending leaf. Spatheole lanceolate, 2.5–3 cm long, red. Racemes 1, single, smoothly terete, 2.5–5 cm long. Rhachis fragile at the nodes, subterete, 2 mm wide, pubescent on surface, pubescent on margins. Rhachis internodes oblong, 4–5 mm long. Rhachis internode tip crateriform, with scarious rim. Spikelets squeezed between internode and pedicel, in pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, linear, pubescent.

**Sterile Spikelets.** Companion sterile spikelets well-developed, comprising 2 subequal glumes without lemmas, lanceolate, dorsally compressed, 3 mm long, shorter than fertile, deciduous with the fertile. Companion sterile spikelet glumes membranous, awned, one glume awned, with 1–2 mm long awn.

**Fertile Spikelets.** Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret

male or barren, the upper fertile. Spikelets linear, dorsally compressed, 5–7 mm long, falling entire, deciduous with accessory branch structures. Spikelet callus bearded, base obtuse, inserted. Spikelet callus hairs 1.5 mm long.

**Glumes.** Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma. Lower glume linear, 1 length of spikelet, chartaceous, 2-keeled, keeled frontally. Lower glume intercarinal veins obscure, 3 in number. Lower glume surface glabrous. Lower glume apex dentate, 2 -fid. Upper glume lanceolate, membranous, 1-keeled, 1–3 -veined. Upper glume primary vein ciliate. Upper glume margins ciliate. Upper glume mucronate.

**Florets.** Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret oblong, 2 mm long, hyaline, 0 -veined. Fertile lemma ovate, hyaline, without keel. Lemma apex lobed, 2 -fid, incised 0.6–0.75 of lemma length, awned, 1 -awned. Principal lemma awn from a sinus, geniculate, 10–12 mm long overall, with twisted column. Column of lemma awn glabrous. Palea absent or minute.

**Flower and Fruit.** Anthers 3, 1 mm long. Caryopsis with adherent pericarp, lanceolate, 3 mm long. Embryo 0.5 length of caryopsis.

**Distribution (TDWG).** Continent. Africa.

**Country /Province /State.** West tropical Africa, West-central tropical Africa. Ghana, Ivory Coast, Mali, Nigeria, Senegal.

### **Schizachyrium occultum** S. T. Blake. *Contrib. Queensl. Herb.*, 17: 24 (1974).

**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: S.T. Blake 21283, 22 May 1962, Australia: Queensland: Cook District: Cooktown, damp sandy ground in Eucalyptus forest, green to reddish tufts (BRI; IT: L, MO-3748788).

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

**Illustrations (Journals):** *Contr.Qld.Herb.* (17:62, Fig.1 (1974)).

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

**Derivation** (Clifford & Bostock 2007): L. hidden. Sessile spikelet small, developing in the axil of the pedicel of the stalked spikelet, and thus easily overlooked.

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

**Habit, Vegetative Morphology.** Annual. Culms slender, 10–30 cm long, 0.3–0.5 mm diam., 8–12 -noded. Lateral branches ample. Leaf-sheaths wider than blade at the collar, smooth. Ligule an eciliate membrane, 0.15–0.25 mm long. Leaf-blades conduplicate or convolute, 1.5–3.5 cm long, 0.6–2 mm wide. Leaf-blade margins tuberculate-ciliate, hairy at base. Leaf-blade apex obtuse.

**Inflorescence.** Inflorescence composed of racemes, terminal and axillary, subtended by a spatheole, embraced at base by subtending leaf. Spatheole lanceolate, 1.5–3.7 cm long. Peduncle 0.2–0.4 cm long, glabrous or pilose above. Racemes 1, single, 1.2–2.7 cm long, 1.5 mm wide, bearing 5–10 fertile spikelets on each. Rhachis fragile at the nodes, semiterete, pubescent on surface. Rhachis internodes oblong, 3.5–5 mm long. Rhachis internode tip crateriform, with scarious rim. Spikelets squeezed between internode and pedicel, in pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, inflated, 3.5–5 mm long, ciliate.

**Sterile Spikelets.** Companion sterile spikelets rudimentary, comprising 2 unequal glumes without lemmas, linear, 0.9–1.2 mm long, shorter than fertile, deciduous with the fertile. Companion sterile spikelet glumes chartaceous, ciliate on margins, awned, one glume awned, with 5–8 mm long awn.

**Fertile Spikelets.** Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets lanceolate, laterally compressed, acute, 3.75–5.1 mm long, 0.35–0.5 mm wide, falling entire, deciduous with accessory branch structures. Spikelet callus 0.45–0.65 mm long, pubescent, base obtuse, with elliptic scar. Spikelet callus hairs 1 mm long.

**Glumes.** Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma. Lower glume lanceolate, 1 length of spikelet, chartaceous, 2-keeled, keeled above, keeled frontally. Lower glume primary vein scaberulous. Lower glume intercarinal veins obscure, 2 in number. Lower glume surface convex. Upper glume lanceolate, membranous, 1-keeled. Upper glume primary vein ciliate. Upper glume surface pubescent, hairy below. Upper glume apex acute, mucronate.

**Florets.** Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret oblong, 1 length of spikelet, hyaline, 0 -veined, without midvein, without lateral veins. Fertile lemma oblong, 3–3.5 mm long, hyaline, without keel, 1 -veined, 0–3 -veined, one-veined. Lemma apex lobed, 2 -fid, incised 0.9 of lemma length, awned, 1 -awned. Principal lemma awn from a sinus, geniculate, 9–13 mm long overall, with twisted column. Column of lemma awn 4–5 mm long, glabrous. Palea absent or minute.

**Flower and Fruit.** Anthers 0.4 mm long. Caryopsis with adherent pericarp, lanceolate, 2.6–3 mm long. Embryo 0.33 length of caryopsis.

**Distribution (TDWG). Continent.** Australasia.

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

**TDWG4.** Darwin & Gulf. North.

### **Schizachyrium pachyarthron** C.A.Gardner. *Fl. W. Austral.* i. 336 (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: HT: *Holmes s.n.*, May 1943, Australia: Western Australia: Northern Province: Kunmunya Mission, Camden Sound (PERTH; IT: BRI).

**Illustrations (Books):** C.A.Gardner, *Flora of Western Australia*, Vol 1, Part 1, *Gramineae* (1952) (335, Pl 98), J.R.Wheeler et al, *Flora of the Kimberley Region* (1992) (1214, Fig 344), D.Sharp & B.K.Simon, *AusGrass*. Grasses of Australia. CD-Rom Version 1.0. (2002).

**Illustrations (Journals):** *Contr.Qld.Herb.* (17:62, Fig.1 (1974)).

**Derivation** (Clifford & Bostock 2007): Gk *pachys*, thick; *arthron*, joint. Rhachis internodes thickened.

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

**Habit, Vegetative Morphology.** Annual. Culms 50–100 cm long, 0.5–2 mm diam., 5–13 -noded. Lateral branches ample. Leaf-sheaths wider than blade at the collar, smooth or scaberulous. Ligule an eciliate membrane, 0.2–0.6 mm long. Leaf-blades conduplicate, 1.5–10 cm long, 0.8–3 mm wide. Leaf-blade margins scaberulous, tuberculate-ciliate, hairy at base. Leaf-blade apex obtuse.

**Inflorescence.** Inflorescence composed of racemes, terminal and axillary, subtended by a spatheole, embraced at base by subtending leaf. Spatheole linear, 2.5–6 cm long. Peduncle 0.4–0.8 cm long. Racemes 1, single, 3–5 cm long, 1.5–2 mm wide, bearing 6–10 fertile spikelets on each. Rhachis fragile at the nodes, semiterete, pilose on surface, ciliate on margins. Rhachis internodes clavate, 5–8 mm long. Rhachis internode tip crateriform, with scarious rim. Spikelets appressed, in pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, linear, 4.5–8 mm long, ciliate.

**Sterile Spikelets.** Companion sterile spikelets rudimentary, comprising 2 unequal glumes without lemmas, linear, 1.5–3 mm long, shorter than fertile, deciduous with the fertile. Companion sterile spikelet glumes chartaceous, ciliolate on margins or ciliate on margins, awned, one glume awned, with 10–30 mm long awn.

**Fertile Spikelets.** Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets oblong, dorsally compressed, obtuse, 5–8 mm long, 1.3–1.6 mm wide, falling entire, deciduous with accessory branch structures. Spikelet callus 0.4–1 mm long, pubescent, base obtuse, with circular scar or elliptic scar. Spikelet callus hairs 1 mm long.

**Glumes.** Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma. Lower glume lanceolate, 1 length of spikelet, coriaceous, 2-keeled, keeled all along, keeled laterally, winged on keel, winged narrowly, winged all along. Lower glume intercarinal veins distinct, 5 in number. Lower glume surface convex, glabrous or pilose, hairy at apex. Lower glume hairs 3–4.5 mm long. Upper glume lanceolate, membranous, 1-keeled, wingless or winged on keel, winged above. Upper glume surface glabrous or pubescent.

**Florets.** Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret oblong, 0.75–1 length of spikelet, hyaline, 2 -veined. Fertile lemma oblong, 4–6 mm long, hyaline, without keel, 1 -veined, 0–3 -veined, one-veined. Lemma apex lobed, 2 -fid, incised 0.9 of lemma length, awned, 1 -awned. Principal lemma awn from a sinus, geniculate, 19–30 mm long overall, with twisted column. Column of lemma awn 8.5–11 mm long, glabrous. Palea absent or minute.

**Flower and Fruit.** Anthers 0.5–0.7 mm long. Caryopsis with adherent pericarp, ellipsoid or oblong, 2.3–3.5 mm long, obtuse. Embryo 0.4–0.5 length of caryopsis.

**Distribution (TDWG). Continent.** Australasia.

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

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

### **Schizachyrium parvifolium** (Hitche.) A.Borhidi & Catusus. *Acta Bot. Acad. Sci. Hung.*, 26: 258 (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 Cuba. **Basionym or Replaced Name:** *Andropogon parvifolius* Hitchcock, *U. S. Dept. Agric., Misc. Publ. No. 243: 391 (1936)*. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Cuba, Herradura: Ekman 14094 (US holo).

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

**Derivation** (Clifford & Bostock 2007): *L. parvus*, small; folium, leaf. Leaf-blades small.

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

**Habit, Vegetative Morphology.** Perennial, caespitose. Culms erect, 15–30 cm long, 4–5 -noded. Leaf-sheaths mostly shorter than adjacent culm internode, striately veined, glabrous on surface. Ligule a ciliolate membrane, 0.5 mm long. Leaf-blades 2–5 cm long, 0.5–1 mm wide. Leaf-blade surface scabrous, rough adaxially. Leaf-blade apex attenuate.

**Inflorescence.** Inflorescence composed of racemes, terminal. Racemes 1, single, smoothly terete, 3–5 cm long. Rhachis fragile at the nodes, semiterete, glabrous on surface, glabrous on margins. Rhachis internodes clavate, 3 mm long. Rhachis internode tip crateriform, with scarious rim. Spikelets appressed, in pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, clavate, glabrous.

**Sterile Spikelets.** Companion sterile spikelets rudimentary, comprising 2 unequal glumes without lemmas, lanceolate, dorsally compressed, 2–3 mm long, shorter than fertile, deciduous with the fertile. Companion sterile spikelet glumes chartaceous, distinctly veined, muticous.

**Fertile Spikelets.** Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets oblong, dorsally compressed, 5 mm long, 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 lanceolate, 1 length of spikelet, coriaceous, 2-keeled, keeled frontally. Lower glume intercarinal veins distinct. Lower glume surface glabrous. Upper glume lanceolate, membranous, 1-keeled.

**Florets.** Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret oblong, hyaline. Fertile lemma oblong, hyaline, without keel. Lemma apex entire, muticous. Palea absent or minute.

**Distribution (TDWG), Continent.** South America.

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

### **Schizachyrium penicillatum** Jacques-Felix. *Rev. Bot. Appliq.* iii. 437 (1953).

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

**TYPE** from Guinea. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Guinea, Kindia: Jacques-Felix 448 (P holo, K).

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

**Derivation** (Clifford & Bostock 2007): *L. penicillus*, a small brush; -ata, possessing. With tufts of hairs at the summit of the pedicel.

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

**Habit, Vegetative Morphology.** Perennial, caespitose. Butt sheaths persistent and investing base of culm, with compacted dead sheaths. Culms erect, 40–90 cm long, 2 mm diam. Ligule an eciliate membrane. Leaf-blades conduplicate, 15–25 cm long, 1–2 mm wide, coriaceous, stiff. Leaf-blade apex acuminate.

**Inflorescence.** Synflorescence simple or compound, scanty.

Inflorescence composed of racemes, terminal and axillary, subtended by a spatheole. Spatheole linear, 4.5 cm long. Peduncle 6–8 cm long. Racemes 1, single, 3–5 cm long. Rhachis fragile at the nodes, glabrous on surface, glabrous on margins. Rhachis internodes cuneate, 4 mm long. Rhachis internode tip crateriform, with scarious rim. Spikelets appressed, in pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, columnar, ciliate, hairy at tip, with 1.5–2 mm long hairs.

**Sterile Spikelets.** Companion sterile spikelets well-developed, male, lanceolate, dorsally compressed, 4–5 mm long, shorter than fertile, deciduous with the fertile. Companion sterile spikelet glumes herbaceous, keeled, 7 -veined, muticous. Companion sterile spikelet lemmas 2, enclosed by glumes.

**Fertile Spikelets.** Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets lanceolate, dorsally compressed, 4.5–6 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 lanceolate, 1 length of spikelet, coriaceous, 2-keeled, keeled laterally, wingless. Lower glume intercarinal veins distinct, 5 in number. Lower glume surface glabrous. Lower glume apex dentate, 2 -fid. Upper glume lanceolate, membranous, 1-keeled, 3 -veined. Upper glume apex acuminate.

**Florets.** Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret lanceolate, 3–4 mm long, hyaline, 2 -veined, ciliolate on margins. Fertile lemma oblong, 3 mm long, hyaline, without keel. Lemma apex lobed, 2 -fid, incised 0.75–0.8 of lemma length, awned, 1 -awned. Principal lemma awn from a sinus, geniculate, 10–15 mm long overall, with twisted column. Column of lemma awn 4–6 mm long, glabrous. Palea absent or minute.

**Distribution (TDWG).** Continent. Africa.

**Country /Province /State.** West tropical Africa. Sierra Leone.

**Schizachyrium perplexum** S. T. Blake. *Contrib. Queensl. Herb.*, 17: 14 (1974).

**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: Cook District: Mt. Mulligan, Apr 1939, *Pedler 6* (BRI-047910).

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

**Illustrations (Journals):** *Contr.Qld.Herb.* (17:62, Fig.1 (1974)).

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

**Derivation** (Clifford & Bostock 2007): *L. per.*, very; *plecto*, plait. Possessing the characters of two related species.

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

**Habit, Vegetative Morphology.** Annual. Culms 10–20 cm long, 0.4 mm diam., 5–8 -noded. Culm-internodes distally with pubescent line. Lateral branches ample. Leaf-sheaths wider than blade at the collar, keeled. Ligule an eciliate membrane, 0.7–0.8 mm long. Leaf-blades conduplicate, 1.7–2.7 cm long, 1–1.5 mm wide. Leaf-blade surface scaberulous. Leaf-blade margins scaberulous. Leaf-blade apex obtuse.

**Inflorescence.** Inflorescence composed of racemes, subtended by a spatheole. Spatheole linear or lanceolate, 1.8–3.2 cm long. Peduncle 2–4.5 cm long. Racemes 1, single, 1.3–1.8 cm long, 0.7–0.9 mm wide, bearing 3–5 fertile spikelets on each. Rhachis fragile at the nodes, semiterete, pilose on surface, glabrous on margins or ciliate on margins. Rhachis internodes clavate. Rhachis internode tip crateriform, with scarious rim. Spikelets appressed, in pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, clavate, glabrous or ciliate.

**Sterile Spikelets.** Companion sterile spikelets rudimentary, comprising 2 unequal glumes without lemmas, linear, 0.6–0.7 mm long, shorter than fertile, deciduous with the fertile. Companion sterile spikelet glumes chartaceous, awned, one glume awned, with 2–16 mm long awn.

**Fertile Spikelets.** Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets elliptic, dorsally compressed, 3.5–4.5 mm long, 0.6–0.7 mm wide, falling entire, deciduous with accessory branch structures. Spikelet callus 0.3–0.4 mm long, pilose, base obtuse, with circular scar. Spikelet callus hairs 2 mm long.

**Glumes.** Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma. Lower glume lanceolate, 1 length of spikelet, chartaceous, 2-keeled, keeled all along, keeled frontally, winged on keel, winged narrowly, winged all along. Lower glume intercarinal veins obscure, 3 in number. Lower glume surface convex, pilose. Lower glume hairs 3.5 mm long. Upper glume lanceolate, membranous, 1-keeled, keeled above, 1 -veined. Upper glume lateral veins absent. Upper glume apex obtuse.

**Florets.** Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret oblong, 0.75 length of spikelet, hyaline, 0 -veined, without midvein, without lateral veins. Fertile lemma oblong, hyaline, without keel, 1 -veined, 0–3 -veined, one-veined. Lemma apex lobed, 2 -fid, incised 0.9 of lemma length, awned, 1 -awned. Principal lemma awn from a sinus, geniculate, 16–21 mm long overall, with twisted column. Column of lemma awn 6–7 mm long, glabrous. Palea absent or minute.

**Flower and Fruit.** Anthers 0.4 mm long. Caryopsis with adherent pericarp, ellipsoid, 1.6–2.2 mm long. Embryo 0.5 length of caryopsis.

**Distribution (TDWG).** Continent. Australasia.

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

**TDWG4.** Darwin & Gulf. North, Inland.

**Schizachyrium platyphyllum** (Franch.) Stapf. Prain, *Fl. Trop. Afr.* ix. 188 (1917).

**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:** *Andropogon brevifolius* var. *platyphyllus* Franch., *Bull. Soc. Hist. Nat. Autun* 8:324 (1895). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Congo, Brazzaville: de Brazza & Thollon 46 (K isosyn) ; Congo, Ogoone: Thollon 789 (K isosyn).

**Illustrations (Books):** H.Jacques-Felix, *Les Graminees d'Afrique tropicale* (1962) (as var. *aestivum*), W. Robyns (1929 and 1934). *Flora Agrostologique du Congo Belge et du Ruanda-Urundi*, I. Maydees et Andropogonees and II. Panicees. Bruxelles, Goemaere (113, Pl. 9).

**Derivation** (Clifford & Bostock 2007): Gk. platys, flat; phyllon, leaf. Leaf-blade broad.

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

**Habit, Vegetative Morphology.** Annual or perennial. Culms prostrate, 60–120 cm long, (2–)3–4 mm diam. Culm-internodes elliptical in section. Leaf-sheaths longer than adjacent culm internode. Ligule a ciliolate membrane. Leaf-blades 4–17 cm long, 3–10 mm wide. Leaf-blade apex obtuse.

**Inflorescence.** Synflorescence compound, scanty.

Inflorescence composed of racemes, terminal and axillary, subtended by a spatheole, embraced at base by subtending leaf. Spatheole linear. Racemes 1, single, 1–4 cm long. Rhachis fragile at the nodes, semiterete, glabrous on margins. Rhachis internodes clavate. Rhachis internode tip cupuliform, with simple rim. Spikelets squeezed between internode and pedicel, in pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, clavate, glabrous.

**Sterile Spikelets.** Companion sterile spikelets rudimentary, lanceolate, dorsally compressed, 1 mm long, shorter than fertile, deciduous with the fertile. Companion sterile spikelet glumes chartaceous, awned, one glume awned, with 2–4 mm long awn.

**Fertile Spikelets.** Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets lanceolate, laterally compressed, 3–5 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 lanceolate, 1 length of spikelet, coriaceous, 2-keeled, keeled above, keeled frontally. Lower glume intercarinal veins obscure. Lower glume surface glabrous. Upper glume lanceolate, membranous, 1-keeled. Upper glume apex acuminate.

**Florets.** Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret oblong, hyaline, 2 -veined. Fertile lemma oblong, hyaline, without keel. Lemma apex lobed, 2 -fid, incised 0.9 of lemma length, awned, 1 -awned. Principal lemma awn from a sinus, geniculate, 8–12 mm long overall, with twisted column. Column of lemma awn glabrous. Palea absent or minute.

**Flower and Fruit.** Anthers 3, 2–3 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, Western Indian ocean. Burkina, Ghana, Guinea, Nigeria, Senegal, Sierre Leone, Togo. Cameroon, Congo, Gabon, DRC. Chad, Sudan. Kenya, Tanzania, Uganda. Malawi, Mozambique. Madagascar.

**Schizachyrium pseudeulalia** (Hosokawa) S. T. Blake. *Proc. Roy. Soc. Queensl.* 1. 77 (1969).

**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), W.D.Clayton & N.Snow, *Key to Pacific Grasses* (2010).

**TYPE** from Caroline Islands. **Basionym or Replaced Name:** *Microstegium pseudeulalia* Hosok., *Trans. Nat. Hist. Soc. Taiwan* 28: 151 (1938). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: T. Hosokawa 9189, 4 Sep 1937, Federated States of Micronesia: Caroline Islands: Palau (?; IT: A, US-2078215).

**Illustrations (Books):** J.R.Wheeler et al, *Flora of the Kimberley Region* (1992) (1214, Fig 344), 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 ANDROPOGONINAE.

**Habit, Vegetative Morphology.** Annual. Culms 40–90 cm long, 0.2–0.35 mm diam., 7–12 -noded, without nodal roots or rooting from lower nodes. Culm-internodes smooth or scaberulous, distally glabrous or with pubescent line. Lateral branches ample. Leaf-sheaths as wide as blade at the collar, smooth or scaberulous. Ligule an eciliate membrane, 0.2–1.3 mm long. Collar glabrous or pubescent. Leaf-blade base broadly rounded. Leaf-blades flat or conduplicate, 1.5–9 cm long, 0.8–5.5 mm wide. Leaf-blade margins scaberulous, glabrous or ciliate, hairy at base. Leaf-blade apex obtuse or abruptly acute.

**Inflorescence.** Inflorescence composed of racemes, terminal and axillary, subtended by a spatheole, embraced at base by subtending leaf. Spatheole linear, 2–4.5 cm long. Peduncle 0.3–2 cm long. Racemes 1, single, 1.5–5 cm long, 0.6–1.4 mm wide, bearing 5–10 fertile spikelets on each. Rhachis fragile at the nodes,

semiterete, glabrous on surface or pilose on surface, glabrous on margins or ciliate on margins. Rhachis internodes clavate. Rhachis internode tip crateriform, with scarious rim. Spikelets appressed, in pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, clavate, glabrous or ciliate.

**Sterile Spikelets.** Companion sterile spikelets rudimentary, comprising 2 unequal glumes without lemmas, linear, 1–1.7 mm long, shorter than fertile, deciduous with the fertile. Companion sterile spikelet glumes chartaceous, awned, one glume awned, with 3–14 mm long awn.

**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, acuminate, 4–8 mm long, 0.7–1 mm wide, falling entire, deciduous with accessory branch structures. Spikelet callus 0.5–0.7 mm long, pilose, base obtuse, attached obliquely, with circular scar. Spikelet callus hairs 1.2–2.5 mm long.

**Glumes.** Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma. Lower glume lanceolate, 1 length of spikelet, coriaceous, 2-keeled, keeled all along, keeled laterally. Lower glume intercarinal veins distinct, 3–5 in number. Lower glume surface convex, asperulous, rough above, glabrous or pilose. Upper glume lanceolate, membranous, 1-keeled. Upper glume surface scabrous.

**Florets.** Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret oblong, 0.6–0.8 length of spikelet, hyaline. Fertile lemma oblong, hyaline, without keel, 1 -veined, 0–3 -veined, one-veined. Lemma apex lobed, 2 -fid, incised 0.9 of lemma length, awned, 1 -awned. Principal lemma awn from a sinus, geniculate, 11–30 mm long overall, with twisted column. Column of lemma awn 4.5–9 mm long, glabrous. Palea absent or minute.

**Flower and Fruit.** Anthers 0.4–1 mm long. Caryopsis with adherent pericarp, ellipsoid or oblong or ovoid, 2–3 mm long. Embryo 0.5 length of caryopsis.

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

**Country /Province /State. Malesia, Papuaia.** Lesser Sunda Is, Moluccas, Sulawesi, Philippines. New Guinea. **Australia.** Western Australia, Northern Territory, Queensland. **Northwestern Pacific.** Cook Is.

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

### **Schizachyrium pulchellum** (Benth.) Stapf. *Prain, Fl. Trop. Afr.* ix. 203 (1918).

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

**TYPE** from Gambia. **Basionym or Replaced Name:** *Andropogon pulchellus* D.Don ex Benth., *Hook. Niger Fl.* 571 (1849). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Gambia: *Don* (K).

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

**Derivation** (Clifford & Bostock 2007): L. pretty. Attractive in some respect, usually the inflorescence.

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

**Habit, Vegetative Morphology.** Perennial. Stolons present. Culms prostrate, 30–60 cm long. Ligule an eciliate membrane. Leaf-blades flat or conduplicate, 3–5 cm long, 1.5–2.5 mm wide. Leaf-blade margins cartilaginous. Leaf-blade apex abruptly acute.

**Inflorescence.** Synflorescence compound, paniculate.

Inflorescence composed of racemes, terminal and axillary, subtended by a spatheole, embraced at base by subtending leaf or enclosed. Spatheole lanceolate, brown or red. Racemes 1, single, 3.5–4 cm long. Rhachis fragile at the nodes, plumose on surface, plumose on margins. Rhachis hairs 5–6 mm long. Rhachis internodes clavate, 6–8 mm long. Rhachis internode tip crateriform, with scarious rim. Spikelets appressed, in pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, clavate, 7–10 mm long, plumose, with 5–6 mm long hairs, toothed.

**Sterile Spikelets.** Companion sterile spikelets well-developed, male, lanceolate, dorsally compressed, 5–6 mm long, shorter than fertile, deciduous with the fertile. Companion sterile spikelet glumes chartaceous, muticous. 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, dorsally compressed, 6–7 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 lanceolate, 1 length of spikelet, chartaceous, 2-keeled, keeled laterally. Lower glume intercarinal veins distinct, 5 in number. Lower glume surface flat, glabrous. Lower glume apex dentate, 2 -fid. Upper glume lanceolate, membranous, 1-keeled, keeled above, 3 -veined.

**Florets.** Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret oblong, hyaline, 2 -veined, ciliolate on margins. Fertile lemma linear, hyaline, without keel, 3 -veined, 0–3 -veined. Lemma apex entire, awned, 1 -awned. Principal lemma awn apical, straight, 5–6 mm long overall, without a column. Palea absent or minute.

**Flower and Fruit.** Anthers 3, 4 mm long.

**Distribution (TDWG). Continent.** Africa.

**Country /Province /State.** West tropical Africa, West-central tropical Africa. Ghana, Ivory Coast, Liberia, Nigeria, Senegal, Sierre Leone. DRC.

**Schizachyrium radicosum** Jacques-Felix. *Rev. Bot. Appliq.* iii. 441 (1953).

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

**TYPE** from Guinea. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Guinee, Kindia: Jacques-Felix 255 (P holo, K).

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

**Derivation** (Clifford & Bostock 2007): L. radix, root; -osa, abundance. Plant with well developed roots or rhizomes.

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

**Habit, Vegetative Morphology.** Annual. Culms prostrate, 30–60 cm long, 2 mm diam., rooting from lower nodes. Ligule an eciliate membrane, 1.5 mm long. Leaf-blades 3–6 cm long, 2–3 mm wide. Leaf-blade margins cartilaginous. Leaf-blade apex obtuse.

**Inflorescence.** Synflorescence compound, scanty.

Inflorescence composed of racemes, terminal and axillary, subtended by a spatheole. Spatheole linear, 4–4.5 cm long. Racemes 1, single, 4 cm long. Rhachis fragile at the nodes, pubescent on surface, pubescent on margins. Rhachis internodes oblong, 4–5 mm long. Rhachis internode tip crateriform, with scarious rim. Spikelets squeezed between internode and pedicel, in pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, oblong, pubescent.

**Sterile Spikelets.** Companion sterile spikelets represented by awns, comprising 1 awn, 3–7 mm long, deciduous with the fertile.

**Fertile Spikelets.** Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets linear, laterally compressed, 4–5 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 linear, 1 length of spikelet, coriaceous, dark brown, 2-keeled, keeled frontally. Lower glume intercarinal veins obscure. Lower glume surface pubescent. Upper glume linear, chartaceous, 1-keeled. Upper glume margins ciliolate. Upper glume apex acuminate.

**Florets.** Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret lanceolate, 3.5 mm long, hyaline, 2 -veined, ciliolate on margins. Fertile lemma oblong, 4 mm long, hyaline, without keel. Lemma apex lobed, 2 -fid, incised 0.75 of lemma length, awned, 1 -awned. Principal lemma awn from a sinus, geniculate, 16 mm long overall, with twisted column. Column of lemma awn 7 mm long, glabrous. Palea absent or minute.

**Distribution (TDWG). Continent.** Africa.

**Country /Province /State.** West tropical Africa. Guinea.

**Schizachyrium reedii** (Hitchc. & Ekm.) A.Borhidi & Catusus. *Acta Bot. Acad. Sci. Hung.*, 26: 258 (1981).

More checking of status required.

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

**TYPE** from Cuba. **Basionym or Replaced Name:** *Andropogon reedii* Hitchc. & Ekman, *Man. Grasses W. Ind.* 390 (1936). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *E.L. Ekman 30 [American Grasses National Herbarium 1004]*, 5 Oct 1922, Cuba: Camaguey: in savannas (US-1161264; IT: MO, NY-71018, UB).

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

**Derivation** (Clifford & Bostock 2007): in honor of A.C. Reed, Railroad manager in Cuba.

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

**Habit, Vegetative Morphology.** Perennial, caespitose. Culms erect, 100 cm long. Leaf-sheaths keeled, glabrous on surface. Ligule an eciliate membrane, 0.5 mm long. Leaf-blades erect, conduplicate or involute, 15–



20 cm long, 0.5–1.5 mm wide. Leaf-blade midrib prominent beneath. Leaf-blade surface scaberulous, rough adaxially. Leaf-blade margins scabrous, tuberculate-ciliate, hairy at base.

**Inflorescence.** Synflorescence compound, paniculate.

Inflorescence composed of racemes, terminal and axillary, subtended by a spatheole, embraced at base by subtending leaf. Spatheole linear, 2–5 cm long. Racemes 1, single, 2–6 cm long. Rhachis fragile at the nodes, villous on margins. Rhachis hairs 3–5 mm long. Rhachis internodes filiform, 3 mm long. Rhachis internode tip transverse, cupuliform, with simple rim. Spikelets in pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, filiform, 3–4 mm long, villous, with 3–5 mm long hairs.

**Sterile Spikelets.** Companion sterile spikelets well-developed, comprising 2 subequal glumes without lemmas, linear, 4–5 mm long, as long as fertile or longer than fertile. Companion sterile spikelet glumes chartaceous, glabrous, acuminate, 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 lanceolate, dorsally compressed, 4 mm long, falling entire, deciduous with accessory branch structures. Spikelet callus base obtuse, inserted.

**Glumes.** Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma. Lower glume lanceolate, 1 length of spikelet, chartaceous, 2-keeled, keeled laterally. Lower glume primary vein scabrous. Lower glume intercarinal veins absent. Lower glume surface concave. Upper glume linear, membranous, 1-keeled. Upper glume muticous.

**Florets.** Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret oblong, hyaline, 2 -veined. Fertile lemma lanceolate, hyaline, without keel. Lemma apex lobed, 2 -fid, awned, 1 -awned. Principal lemma awn from a sinus, geniculate, 10 mm long overall, with twisted column. Column of lemma awn glabrous.

**Distribution (TDWG). Continent.** South America.

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

**Schizachyrium rhizomatum** (Swallen) Gould. *Brittonia*, xix. 73 (1967).

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

**TYPE** from USA. **Basionym or Replaced Name:** *Andropogon rhizomatus* Swallen, *J. Wash. Acad. Sci.* 31(8): 352, f. 6 (1941). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *W.A. Silveus 6614*, 16 Oct 1940, USA: Florida: Dade Co. (US-2209345; IT: 1817961).

**Illustrations (Books):** M.E.Barkworth et al, *Flora of North America north of Mexico Vol 25 Poaceae*, part 2 (2003) (673).

**Derivation** (Clifford & Bostock 2007): Gk. rhizoma, a root. Rhizomes well developed.

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

**Habit, Vegetative Morphology.** Perennial, culms solitary or caespitose. Rhizomes short. Culms 50–70 cm long. Lateral branches sparse. Leaf-sheaths without keel or keeled, smooth, glabrous on surface. Ligule an eciliate membrane. Leaf-blades spreading or reflexed, flat or involute, 10–25 cm long, 1–3 mm wide. Leaf-blade apex abruptly acute.

**Inflorescence.** Synflorescence compound, scanty.

Inflorescence composed of racemes, terminal and axillary, subtended by a spatheole, exerted or embraced at base by subtending leaf. Spatheole linear, 3–4 cm long, herbaceous. Peduncle 3–7 cm long. Racemes 1, single, sinuous, 2–3 cm long. Rhachis fragile at the nodes, semiterete, ciliate on margins. Rhachis hairs 1–2 mm long. Rhachis internodes clavate, 4–5 mm long. Rhachis internode tip cupuliform, with scarious rim. Spikelets ascending, in pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, linear, 3–4 mm long, ciliate, with 1–2 mm long hairs.

**Sterile Spikelets.** Companion sterile spikelets rudimentary, lanceolate, dorsally compressed, 2–3 mm long, shorter than fertile, deciduous with the fertile. Companion sterile spikelet glumes chartaceous, 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 lanceolate, dorsally compressed, 5–6 mm long, 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 lanceolate, 1 length of spikelet, cartilaginous, 2-keeled, keeled laterally, keeled obtusely. Lower glume intercarinal veins distinct, 2 in number. Lower glume surface convex. Upper glume lanceolate, membranous, 1-keeled.

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

-fid, incised 0.2–0.25 of lemma length, awned, 1 -awned. Principal lemma awn from a sinus, geniculate, 8–10 mm long overall, with twisted column. Column of lemma awn glabrous. Palea absent or minute.

**Distribution (TDWG). Continent.** North America.

**Country /Province /State.** Southeastern USA. Florida.

**Schizachyrium riedelii** (Trin.) A.Camus. *Ann. Soc. Linn. Lyon.* n. s. lxx. 88 (1924).

**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:** *Andropogon riedelii* Trin., *Mem. Acad. Imp. Sci. St.-Petersbourg, Ser. 6, Sci. Math.* 2(3): 263 (1832). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *L. Riedel 913A*, Apr 1827, Brazil: in umbr. humidiusculis ripae rivi Aujoba (LE; IT: US-75893 (fragm. ex LE HT)).

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

**Derivation** (Clifford & Bostock 2007): in honor of Ludwig Riedel (1790–1861) German plant collector and traveller.

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

**Habit, Vegetative Morphology.** Perennial, caespitose. Culms 70–150 cm long. Ligule a ciliolate membrane. Leaf-blades 10–20 cm long, 7–12 mm wide. Leaf-blade apex abruptly acute.

**Inflorescence.** Synflorescence compound, scanty.

Inflorescence composed of racemes, terminal and axillary, subtended by a spatheole, embraced at base by subtending leaf. Spatheole linear, 3–5 cm long, herbaceous. Racemes 1, single, 3–4 cm long. Rhachis fragile at the nodes, semiterete, ciliate on margins. Rhachis hairs 2.5 mm long. Rhachis internodes cuneate, 5 mm long. Rhachis internode tip crateriform, with scarious rim. Spikelets squeezed between internode and pedicel, in pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, cuneate, 5 mm long, ciliate, with 2.5 mm long hairs.

**Sterile Spikelets.** Companion sterile spikelets represented by single glumes, linear, 3–4 mm long, shorter than fertile, deciduous with the fertile. Companion sterile spikelet glumes coriaceous, awned, with 3–4 mm long awn.

**Fertile Spikelets.** Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets linear, laterally compressed, 5–7 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 linear, 1 length of spikelet, coriaceous, 2-keeled, keeled above, keeled frontally, keeled sharply. Lower glume intercarinal veins obscure. Lower glume apex dentate, 2 -fid. Upper glume lanceolate, membranous, 1-keeled. Upper glume apex acuminate.

**Florets.** Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret oblong, 4–5 mm long, hyaline, 2 -veined, ciliolate on margins. Fertile lemma oblong, hyaline, without keel, 1 -veined, 0–3 -veined, one-veined. Lemma apex lobed, 2 -fid, incised 0.75 of lemma length, awned, 1 -awned. Principal lemma awn from a sinus, geniculate, 12–15 mm long overall, with twisted column. Column of lemma awn glabrous. Palea absent or minute.

**Distribution (TDWG). Continent.** South America.

**Country /Province /State.** Northern South America, Western South America, Brazil. Brazil West Central.

**TDWG4.** Mato Grosso, Goiás.

**Schizachyrium ruderale** Clayton. *Kew Bull.* xix. 451 (1965).

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

**TYPE** from Ghana. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Ghana, Seripe to Dokrupe: Ankrah GC20438 (K holo).

**Illustrations (Books):** F.N.Hepper, *F.W.T.A.* 3(2) (1972) (480, Fig.453).

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

**Habit, Vegetative Morphology.** Annual. Culms 150–200 cm long, 3–4 mm diam. Ligule a ciliolate membrane, 2 mm long. Leaf-blades 10–25 cm long, 3–6 mm wide. Leaf-blade surface glabrous or pilose, sparsely hairy. Leaf-blade apex abruptly acute.

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

Inflorescence composed of racemes, terminal and axillary, subtended by a spatheole. Spatheole linear, 3 cm long, brown or purple. Peduncle 1 cm long. Racemes 1, single, 5–7 cm long. Rhachis fragile at the nodes, 0.75 mm wide, ciliate on margins. Rhachis internodes cuneate, 6.5 mm long. Rhachis internode tip crateriform, with scarious rim. Spikelets squeezed between internode and pedicel, in pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, cuneate, 4 mm long, ciliate, tip lobed.

**Sterile Spikelets.** Companion sterile spikelets well-developed, male, lanceolate, dorsally compressed, 4.5 mm long, shorter than fertile, deciduous with the fertile. Companion sterile spikelet glumes chartaceous, 11 -veined, scaberulous, ciliate on margins, dentate, 2 -fid, awned, one glume awned, with 3–10 mm long awn. 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 linear, dorsally compressed, 7–8 mm long, falling entire, deciduous with accessory branch structures. Spikelet callus oblong, 0.75 mm long, bearded, base obtuse, inserted.

**Glumes.** Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma. Lower glume linear, 1 length of spikelet, coriaceous, 2-keeled, keeled frontally. Lower glume intercarinal veins distinct. Lower glume surface asperulous, villous, hairy below. Lower glume margins ciliate. Lower glume apex dentate, 2 -fid. Upper glume lanceolate, membranous, 1-keeled. Upper glume margins ciliolate.

**Florets.** Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret linear, 4 mm long, hyaline. Fertile lemma oblong, 2 mm long, hyaline, without keel. Lemma margins ciliolate. Lemma apex lobed, 2 -fid, incised 0.9 of lemma length, awned, 1 -awned. Principal lemma awn from a sinus, geniculate, 14–20 mm long overall, with twisted column. Column of lemma awn 7 mm long, glabrous. Palea absent or minute.

**Flower and Fruit.** Lodicules 2, cuneate, 0.2 mm long. Anthers 3, 2.5 mm long.

**Distribution (TDWG). Continent.** Africa.

**Country /Province /State.** West tropical Africa. Benin, Burkina, Gambia, Ghana, Guinea, Ivory Coast, Mali, Senegal.

### **Schizachyrium rupestre** (K.Schum.) Stapf. *Prain, Fl. Trop. Afr.* ix. 204 (1918).

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

**TYPE** from Togo. **Basionym or Replaced Name:** *Andropogon rupestris* K. Schum., *Bot. Jahrb. Syst.* 24(3): 377 (1897). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *Baumann 361*, Togo: Misahöhe (B; IT: K).

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

**Derivation** (Clifford & Bostock 2007): *L. rupestris*, rock; -estres, place of growth; Growing amongst rocks.

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

**Habit, Vegetative Morphology.** Perennial, caespitose. Butt sheaths glabrous or pubescent. Culms erect, 30–150 cm long. Ligule a ciliolate membrane. Leaf-blades 15–30 cm long, 1–5 mm wide. Leaf-blade apex acute.

**Inflorescence.** Synflorescence compound, scanty.

Inflorescence composed of racemes, terminal and axillary, subtended by a spatheole. Spatheole linear. Racemes 1, single, 3–5 cm long. Rhachis fragile at the nodes, semiterete, villous on margins. Rhachis internodes linear or clavate. Rhachis internode tip crateriform, with scarious rim. Spikelets appressed, in pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, linear or clavate, villous.

**Sterile Spikelets.** Companion sterile spikelets well-developed, containing empty lemmas or male, lanceolate, dorsally compressed, 3–6.5 mm long, as long as fertile, deciduous with the fertile. Companion sterile spikelet glumes chartaceous, glabrous, acuminate, muticous or awned, one glume awned, with 1–2 mm long awn. 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, 4–6.5 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 elliptic, 1 length of spikelet, chartaceous, 2-keeled, keeled laterally, wingless. Lower glume intercarinal veins distinct. Lower glume surface glabrous. Upper glume lanceolate, membranous, 1-keeled.

**Florets.** Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret oblong, hyaline. Fertile lemma oblong, hyaline, without keel. Lemma apex lobed, 2 -fid, incised 0.25–0.33 of lemma

length, awned, 1 -awned. Principal lemma awn from a sinus, geniculate, simple at base, 10–16 mm long overall, with twisted column. Column of lemma awn 3.5–7 mm long, glabrous. Palea absent or minute.

**Distribution (TDWG). Continent.** Africa.

**Country /Province /State.** West tropical Africa, East tropical Africa, Southern Africa. Ghana, Guinea-Bissau, Liberia, Mali, Nigeria, Senegal, Sierre Leone, Togo. Kenya, Tanzania. Kwazulu-Natal.

**Schizachyrium salzmannii** (Trin. ex Steud.) Nash. *N. Amer. Fl.* xvii. 104 (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:** *Rottboellia salzmannii* Trin. ex Steud., *Syn. Pl. Glumac.* 1: 361 (1854). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *Salzmann s.n.* [715], 1838, Brazil: Bahia: in collibus apricis (P; IT: K, LE-TRIN-0117.01, MO-1837476, W). b= Bahia in argillosis, vs. et Rodig, Dresdae.

**Recent Synonyms:** *Schizachyrium imberbe* A.Camus, *Ann. Soc. Linn. Lyon.* n. s. 70: 89 (1924).

**Illustrations (Books):** S.A.Renvoize, *Gramineas de Bolivia* (1998) (602, Fig 143), S.A.Renvoize, *The Grasses of Bahia*, 1984 (284, Fig. 109), L.B. Smith, D.C. Wasshausen, R.M. Klein *Flora Illustrada Catarinensis Gramineas* (1981–1982) (1266, Fig.252 & 1267, Fig. 252 as *S. imberbe*), B.Rosengurt, *Gramineas Uruguayas I* (1970) (186, fig. 74 as *S. imberbe*), A.Burkat, *Flora Illustrada de Entre Rios (Argentina)*, Pt II, Gramineas (1969) (491, Fig. 207 as *S. imberbe*).

**Derivation** (Clifford & Bostock 2007): in honor of Philipp Salzmann (1781–1851) German-born physician, naturalist and traveller.

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

**Habit, Vegetative Morphology.** Perennial, caespitose. Rhizomes absent or short. Basal innovations flabellate. Culms erect, 12–95 cm long. Leaf-sheaths keeled. Ligule a ciliolate membrane. Leaf-blades 10–20 cm long, 1–3 mm wide. Leaf-blade apex attenuate.

**Inflorescence.** Inflorescence composed of racemes, terminal and axillary. Racemes 1, single, smoothly terete, 6–13 cm long. Rhachis fragile at the nodes, semiterete, glabrous on margins. Rhachis internodes cuneate, 5–6 mm long. Rhachis internode tip crateriform, with scarious rim or hairy rim. Spikelets appressed, in pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, linear, glabrous.

**Sterile Spikelets.** Companion sterile spikelets well-developed, lanceolate, dorsally compressed, 4.5–6.5 mm long, shorter than fertile, deciduous with the fertile. Companion sterile spikelet glumes chartaceous, keeled, distinctly veined, 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 lanceolate, dorsally compressed, 6–8 mm long, 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 lanceolate, 1 length of spikelet, coriaceous, 2-keeled, keeled frontally. Lower glume intercarinal veins distinct. Lower glume surface glabrous. Lower glume apex acuminate. Upper glume lanceolate, membranous, 1-keeled.

**Florets.** Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret oblong, hyaline. Fertile lemma oblong, 5 mm long, hyaline, without keel. Lemma apex lobed, 2 -fid, incised 0.5 of lemma length, muticous or awned, 1 -awned. Principal lemma awn from a sinus, geniculate, 7–15 mm long overall, with twisted column. Column of lemma awn glabrous. Palea absent or minute.

**Distribution (TDWG). Continent.** North America, South America.

**Country /Province /State.** Mexico. Northeast Mexico, Gulf (Mexico), Southwest Mexico, Southeast Mexico. Mesoamerica, Caribbean, Northern South America, Western South America, Brazil, Southern South America. Honduras. Leeward Is, Windward Islands. Venezuela. Bolivia, Colombia, Ecuador. Brazil West Central, Brazil Northeast, Brazil Southeast, Brazil South. Argentina Northeast, Paraguay, Uruguay.

**TDWG4.** Mato Grosso, Goias, Bahia, Catarina, Rio Grande do Sul. La Rioja. Cordoba, Corrientes, Entre Rios, Misiones. Tamaulipas. Veracruz. Oaxaca. Chiapas, Tabasco.

**Schizachyrium sanguineum** (Retz.) Alston. Trimen, *Hand-Book Fl. Ceylon*, vi. Suppl., 334 (1931).

**Accepted by:** R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), 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:** *Rottboellia sanguinea* Retz., *Obs.* 3: 25 (1783) . T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: China: Bladh (LD holo).

**Recent Synonyms:** *Schizachyrium hirtiflorum* Nees, *Agrost. Bras.* 334 (1829). *Schizachyrium domingense* (Schult.) Nash, *N. Amer. Fl.* 17: 103 (1912).

*Andropogon flavescens* J. Presl, *Rel. Haenk.* 1: 339. (1830).

**Illustrations (Books):** R.M.Polhill, F.T.E.A., *Gramineae* (3(1982):757, Fig 178), G.V.Pope et al., *Flora Zambesiaca* 10, L.K.A. Chippindall, *Grasses and Pastures of South Africa* (1955) (as *S. semiberbe*), G.E.Gibbs Russell et al, *Grasses of Southern Africa* (1990) (289, Fig. 184), J.Bosser, *Graminees des Paturage et des Cultures a Madagascar* (1969) (211 & 257, Fig. 75 & 94 as *S. domingense*), H.B.Gilliland, *Grasses of Malaya* (1971) (Pl. 22), H.Duistermaat, *Field Guide to the Grasses of Singapore* (2005) (123, Fig. 124), E.E.Henty, *A Manual of the Grasses of New Guinea* (1969) (174, Pl. 64), M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 25 *Poaceae*, part 2 (2003) (676 as varieties *sanguineum* & *hirtiflorum* & *S. domingense*), F.W.Gould, *The Grasses of Texas* (1975) (607, Fig. 322 as *S. hirtiflorum*), A.S.Hitchcock, *Manual of the Grasses of the West Indies* (1936) (392, Fig. 350, 351 & 352 as *Andropogon hirtiflorus* & *A. semiberbis*, *A. tener*), S.A.Renvoize, *Gramineas de Bolivia* (1998) (602, Fig. 143), S.A.Renvoize, *The Grasses of Bahia*, 1984 (284, Fig. 109), J.A.Steyermark et al, *Flora of the Venezuelan Guayana* Vol. 8 (2004), L.B. Smith, D.C. Wasshausen, R.M. Klein *Flora Illustrada Catarinensis Gramineas* (1981–1982) (1266, Fig. 251 as *S. semiberbe*), A.Burkat, *Flora Illustrada de Entre Rios (Argentina)*, Pt II, *Gramineas* (1969) (489, Fig. 206 as *S. hirtiflorum*), B.Rosengurt, *Gramineas Uruguayas I* (1970) (196, Fig. 80 as *S. domingense*), G.Harling & C.Persson, *Flora of Ecuador* (2006) (78: 185, Fig. 22 (2006)), E.Judziewicz, *Flora of the Guianas*, 187. *Poaceae* (1990) (580 Fig. 99), R.Pilger, *Die Naturlichen Pflanzenfamilien* 14e (1940) (167, Fig. 88 as *Andropogon semiberbis*), S-L Chen et al, *Flora of China*, Illustrations, *Poaceae* (2007) (Fig. 872/873).

**Illustrations (Journals):** *Ruizia* (13:447 Fig 60g-h (1993)).

**Images:** H.B.Gilliland et al., *Flora of Malaya Vol. 3 Grasses* (1971);, F.van Oudtshoorn, *Guide to Grasses of Southern Africa* (1999).

**Derivation** (Clifford & Bostock 2007): *L. sanguineus*, dull-red. Inflorescence dull-red in color.

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

**Habit, Vegetative Morphology.** Perennial, caespitose. Butt sheaths glabrous or pubescent. Culms erect, 60–300 cm long. Ligule a ciliolate membrane. Leaf-blades 6–30 cm long, 2–9 mm wide. Leaf-blade apex abruptly acute or acute.

**Inflorescence.** Synflorescence compound, fastigiata.

Inflorescence composed of racemes, terminal and axillary, subtended by a spatheole, exerted. Spatheole linear, 4–7 cm long, herbaceous. Peduncle widened at apex. Racemes 1, single, 2–15(–20) cm long. Rhachis fragile at the nodes, semiterete, glabrous on margins or ciliate on margins or villous on margins. Rhachis hairs 1 mm long. Rhachis internodes cuneate, 5–7 mm long. Rhachis internode tip crateriform, with scarious rim. Spikelets squeezed between internode and pedicel, in pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, cuneate, 3–5 mm long, glabrous or ciliate or villous.

**Sterile Spikelets.** Companion sterile spikelets well-developed, containing empty lemmas or male, lanceolate, dorsally compressed, 3–7 mm long, shorter than fertile, deciduous with the fertile. Companion sterile spikelet glumes coriaceous, muticous or awned, one glume awned, with 0–4 mm long awn. 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 linear, laterally compressed, 5–10 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 linear, 1 length of spikelet, coriaceous, 2-keeled, keeled all along, keeled frontally, keeled sharply, winged on keel, winged narrowly, winged near apex. Lower glume intercarinal veins obscure. Lower glume surface glabrous or pilose or villous. Lower glume apex dentate, 2 -fid. Upper glume lanceolate, membranous, 1-keeled, 1 -veined. Upper glume primary vein scaberulous. Upper glume lateral veins absent. Upper glume margins ciliolate. Upper glume apex acuminate.

**Florets.** Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret oblong, 3–5 mm long, hyaline, 2 -veined, ciliolate on margins. Fertile lemma oblong, 4 mm long, hyaline, without keel, 1 -veined, 0–3 -veined, one-veined. Lemma margins ciliolate. Lemma apex lobed, 2 -fid, with lanceolate lobes, incised 0.75 of lemma length, awned, 1 -awned. Principal lemma awn from a sinus, geniculate, 8–20 mm long overall, with twisted column. Column of lemma awn glabrous. Palea absent or minute.

**Flower and Fruit.**  $N = 40$  (1 ref TROPICOS).  $2n = 50$  (1 ref TROPICOS), or 70 (1 ref TROPICOS).

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

**Country /Province /State.** West tropical Africa, West-central tropical Africa, Northeast tropical Africa, East tropical Africa, South tropical Africa, Southern Africa, Western Indian ocean. Benin, Burkina, Ghana, Ivory Coast, Mali, Nigeria, Senegal, Togo. Central African Republic, Gabon, DRC. Chad,

Ethiopia (inc. Eritrea). Kenya, Tanzania, Uganda. Angola, Mozambique, Zambia, Zimbabwe. Namibia, Botswana, Limpopo, North-West, Gauteng, Mpumalanga, Swaziland, Kwazulu-Natal, Northern Cape, Eastern Cape. Madagascar. **China**. China South Central, Hainan, China Southeast, Tibet. **Indian Subcontinent, Indo-China, Malesia, Papuasia**. India, Sri Lanka. Laos, Myanmar, Thailand, Vietnam. Borneo, Lesser Sunda Is, Malaya, Singapore, Philippines, Sumatra. New Guinea. **Southwestern USA, South-central USA, Southeastern USA, Mexico**. Arizona. New Mexico, Texas. Alabama, Florida, Louisiana. Central Mexico, Northeast Mexico, Gulf (Mexico), Northwest Mexico, Southwest Mexico, Southeast Mexico. **Mesoamerica, Caribbean, Northern South America, Western South America, Brazil, Southern South America**. Belize, Costa Rica, El Salvador, Guatemala, Honduras. Bahamas, Cuba (& as *Andropogon hirtiflorus* & *A. tener*), Dominican Republic (& as *Andropogon hirtiflorus* & *A. tener*), Haiti (& as *Andropogon hirtiflorus* & *A. tener*), Jamaica (& as *Andropogon hirtiflorus* & *A. tener*), Leeward Is, Puerto Rico, Trinidad-Tobago. French Guiana, Guyana, Surinam, Venezuela. Bolivia, Colombia, Ecuador, Peru. Brazil West Central, Brazil Northeast, Brazil North, Brazil Southeast. Argentina Northeast, Chile Central.

**TDWG4**. Fujian, Guangdong, Guangxi, Hunan, Jiangxi. Sichuan, Yunnan. Meghalaya. Tucuman. Cordoba, Corrientes, Entre Rios, Misiones. Valparaiso, Santiago, Biobio. 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.

**Schizachyrium scabriflorum** (Hack.) A.Camus. *Ann. Soc. Linn. Lyon*. n. s. lxx. 89 (1924).

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

**TYPE** from Brazil. **Basionym or Replaced Name:** *Andropogon scabriflorus* Rupr. ex Hack., *Fl. Bras.* 2(3): 299 (1883). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *Riedel 2136*, Feb 1834, Brasilia: in campis subhumidis Ytu (W; IT: BM, K, LE, LE, LE, US).

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

**Derivation** (Clifford & Bostock 2007): L. scaber, rough; flos, flower. Spikelets with scabrous glumes and/or lemmas.

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

**Habit, Vegetative Morphology.** Perennial, caespitose. Culms erect, 80–200 cm long. Ligule a ciliolate membrane. Leaf-blades 6–30 cm long, 6–8 mm wide. Leaf-blade surface glabrous. Leaf-blade apex abruptly acute or acute.

**Inflorescence.** Synflorescence compound, scanty.

Inflorescence composed of racemes, terminal and axillary, subtended by a spatheole, embraced at base by subtending leaf. Spatheole linear, herbaceous. Racemes 1, single, 3–7 cm long. Rhachis fragile at the nodes, semiterete, ciliate on margins. Rhachis internodes cuneate. Rhachis internode tip crateriform, with scarious rim. Spikelets squeezed between internode and pedicel, in pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, cuneate, ciliate.

**Sterile Spikelets.** Companion sterile spikelets represented by single glumes, lanceolate, 0.5–1 mm long, shorter than fertile, deciduous with the fertile. Companion sterile spikelet glumes coriaceous, awned, with 3–5.5 mm long awn.

**Fertile Spikelets.** Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets linear, laterally compressed, 4–4.5 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 linear, 1 length of spikelet, coriaceous, 2-keeled, keeled all along, keeled frontally, keeled sharply. Lower glume intercarinal veins obscure. Lower glume surface scabrous, glabrous or pilose, with tubercle-based hairs. Lower glume apex dentate, 2 -fid. Upper glume lanceolate, membranous, 1-keeled. Upper glume apex acuminate.

**Florets.** Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret oblong, hyaline, 2 -veined. Fertile lemma oblong, hyaline, without keel, 1 -veined, 0–3 -veined, one-veined. Lemma apex lobed, 2 -fid, incised 0.75 of lemma length, awned, 1 -awned. Principal lemma awn from a sinus, geniculate, 15–25 mm long overall, with twisted column. Column of lemma awn glabrous. Palea absent or minute.

**Distribution (TDWG). Continent.** South America.

**Country /Province /State.** **Western South America, Brazil, Southern South America.** Bolivia. Brazil Southeast, Brazil South. Paraguay.

**TDWG4.** Misiones.

**Schizachyrium schweinfurthii** (Hack.) Stapf. Prain, *Fl. Trop. Afr.* ix. 199 (1918).

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

**TYPE** from Central Africa. **Basionym or Replaced Name:** *Andropogon schweinfurthii* Hack., *Flora* 68(7): 118 (1885). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: IT: *G.A. Schweinfurth* 4271, 1870, Central Africa (US-76211 (ex L)).

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

**Derivation** (Clifford & Bostock 2007): in honor of Georg August Schweinfurth (1836–1925) German botanist and anthropologist.

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

**Habit, Vegetative Morphology.** Perennial, caespitose. Roots simple (black). Culms erect, 60–120 cm long. Ligule an eciliate membrane. Leaf-blades 15–30 cm long, 1–3 mm wide. Leaf-blade surface glabrous or pilose. Leaf-blade margins scabrous. Leaf-blade apex attenuate.

**Inflorescence.** Synflorescence compound, paniculate.

Inflorescence composed of racemes, terminal and axillary, subtended by a spatheole. Spatheole linear, 3–5 cm long. Racemes 1, single, 3–5 cm long. Rhachis fragile at the nodes, glabrous on margins or pubescent on margins. Rhachis internodes linear, 2.5–3.5 mm long. Rhachis internode tip cupuliform, with scarious rim. Spikelets appressed, in pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, linear, 2.5–3.5 mm long, glabrous or puberulous.

**Sterile Spikelets.** Companion sterile spikelets well-developed, male, lanceolate, dorsally compressed, 6 mm long, as long as fertile, deciduous with the fertile. Companion sterile spikelet glumes chartaceous, mucous. Companion sterile spikelet lemmas 1–2, 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, dorsally compressed, 6 mm long, 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 lanceolate, 1 length of spikelet, chartaceous, 2-keeled, keeled laterally. Lower glume intercarinal veins distinct, 3–5 in number. Lower glume surface flat, glabrous. Lower glume apex entire or dentate, 2 -fid. Upper glume lanceolate, membranous, 1-keeled, 3 -veined. Upper glume margins ciliate. Upper glume apex acuminate.

**Florets.** Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret oblong, 5 mm long, hyaline, 2 -veined, ciliate on margins. Fertile lemma lanceolate, hyaline, without keel, 3 -veined, 0–3 -veined. Lemma margins ciliate. Lemma apex lobed, 2 -fid, incised 0.33–0.5 of lemma length, awned, 1 -awned. Principal lemma awn from a sinus, geniculate, 16–20 mm long overall, with twisted column. Column of lemma awn glabrous. Palea absent or minute.

**Flower and Fruit.** Anthers 3, 2.5 mm long.

**Distribution (TDWG). Continent.** Africa.

**Country /Province /State.** West tropical Africa, West-central tropical Africa, Northeast tropical Africa. Burkina, Ghana, Nigeria, Togo. Sudan.

**Schizachyrium scintillans** Stapf. Prain, *Fl. Trop. Afr.* ix. 202 (1918).

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

**TYPE** from Guinea. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Guinee, Soumbalako to Boulivel: *Chevalier 18664* (K holo).

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

**Derivation** (Clifford & Bostock 2007): L. scintillo, sparkle. Hairs on inflorescence silvery, glistening.

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

**Habit, Vegetative Morphology.** Annual. Culms slender, 30–60 cm long. Leaf-sheaths keeled. Ligule an eciliate membrane. Leaf-blades filiform or linear, 5–10 cm long, 0.5–1.5 mm wide. Leaf-blade surface pilose, sparsely hairy. Leaf-blade apex acuminate, filiform.

**Inflorescence.** Synflorescence compound, paniculate.

Inflorescence composed of racemes, terminal and axillary, subtended by a spatheole. Spatheole linear. Racemes 1, single, flexuous, 2–2.5 cm long. Rhachis fragile at the nodes, ciliate on margins. Rhachis internodes clavate. Rhachis internode tip cupuliform, with simple rim. Spikelets appressed, in pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, clavate, ciliate, tip lobed.

**Sterile Spikelets.** Companion sterile spikelets well-developed, containing empty lemmas, lanceolate, dorsally compressed, 3–4 mm long, shorter than fertile, deciduous with the fertile. Companion sterile spikelet

glumes chartaceous, 5 -veined, awned, one glume awned, with 1–3 mm long awn. Companion sterile spikelet lemmas 1, enclosed by glumes.

**Fertile Spikelets.** Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets lanceolate, dorsally compressed, 5 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 lanceolate, 1 length of spikelet, chartaceous, 2-keeled, keeled laterally. Lower glume intercarinal veins distinct, 3 in number. Lower glume surface flat, pubescent, hairy in lines. Lower glume apex dentate, 2 -fid. Upper glume lanceolate, membranous, 1-keeled, 1 -veined. Upper glume lateral veins absent. Upper glume margins ciliolate. Upper glume apex acute.

**Florets.** Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret oblong, 3 mm long, hyaline, 2 -veined, ciliolate on margins. Fertile lemma linear, 3 mm long, membranous, without keel, 3 -veined, 0–3 -veined. Lemma apex entire, awned, 1 -awned. Principal lemma awn apical, geniculate, 12–16 mm long overall, with twisted column. Column of lemma awn glabrous. Palea absent or minute.

**Flower and Fruit.** Anthers 3, 1.5 mm long.

**Distribution (TDWG).** Continent. Africa.

**Country /Province /State.** West tropical Africa. Guinea, Senegal, Sierre Leone.

### **Schizachyrium scoparium** (Michx.) Nash. Small, *Fl. S. E. U. S.* 59 (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), N.L.Bor, *Grasses of Burma, Ceylon, India and Pakistan* (1960), W.D.Clayton & N.Snow, *Key to Pacific Grasses* (2010).

**TYPE** from Mexico. **Basionym or Replaced Name:** *Andropogon scoparius* Michx., *Fl. Bor.-Amer.* 1: 57 (1803). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: IST: *T. Haenke s.n.*, no date, Mexico (US-75666 (fragm.)). ST: *A. Michaux s.n.*, USA: South Carolina (P; IST: US-75907 (fragm. ex P)).

**Recent Synonyms:** *Andropogon spadiceus* Swallen. *Schizachyrium praematurum* (Fern.) C.F.Reed, *Phytologia* 67(6): 451 (1989).

*Schizachyrium spadiceum* (Swallen) J.K. Wipff, *Phytologia*, 80(1): 35 (1996).

**Illustrations (Books):** K.F.Best, et al, *Prairie Grasses* (1971) (61 as *Andropogon scoparius*), M.E.Barkworth et al, *Flora of North America north of Mexico Vol 25 Poaceae*, part 2 (2003) (671 as varieties *scoparium* & *stolonifera* & *divergens*), F.W.Gould, *The Grasses of Texas* (1975) (610, ig. 323 as var. *frequens*), E.Hafliger & E.Schultz, *Grass Weeds*, CIBA-GEIGY (1:121(1980)).

**Images:** R.Darke, *Ornamental Grasses* (2004);, R.Darke, *The Encyclopaedia of Grasses for Liveable Landscapes* (2007);.

**Derivation** (Clifford & Bostock 2007): *L. scopae*, broom; -aria, pertaining to. Inflorescences condensed resembling a broom.

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

**Habit, Vegetative Morphology.** Perennial, caespitose. Rhizomes absent or short. Culms 50–150 cm long. Lateral branches ample. Leaf-sheaths keeled, glabrous on surface to hirsute. Ligule an eciliate membrane, 1–3 mm long. Leaf-blades 15–30 cm long, 3–6 mm wide. Leaf-blade surface glabrous to hirsute. Leaf-blade apex acute.

**Inflorescence.** Synflorescence compound, linear.

Inflorescence composed of racemes, terminal and axillary, subtended by a spatheole, exerted. Spatheole linear, 4–6 cm long, herbaceous. Racemes 1, single, sinuous, 3–6 cm long. Rhachis fragile at the nodes, semiterete, ciliate on margins or villous on margins. Rhachis internodes clavate. Rhachis internode tip cupuliform, with scarious rim. Spikelets ascending or spreading, in pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, filiform, curved, ciliate or villous.

**Sterile Spikelets.** Companion sterile spikelets represented by single glumes or well-developed, comprising 2 subequal glumes without lemmas or containing empty lemmas or male, lanceolate, dorsally compressed, 1.5–7 mm long, shorter than fertile, deciduous with the fertile. Companion sterile spikelet glumes chartaceous, muticous or awned, one glume awned, with 1.5–3 mm long awn. Companion sterile spikelet lemmas 2, enclosed by glumes.

**Fertile Spikelets.** Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets lanceolate, dorsally compressed, 6–8 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 lanceolate, 1 length of spikelet, coriaceous, 2-keeled, keeled all along, keeled laterally, keeled obtusely. Lower glume intercarinal veins distinct, 3 in number. Lower glume surface flat or concave. Upper glume lanceolate, membranous, 1-keeled.

**Florets.** Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret oblong, hyaline, 2 -veined. Fertile lemma oblong, hyaline, without keel, 1 -veined, 0–3 -veined, one-veined. Lemma apex lobed, 2 -fid, with lanceolate lobes, incised 0.5 of lemma length, awned, 1 -awned. Principal lemma awn from a sinus, geniculate, 8–15 mm long overall, with twisted column. Column of lemma awn glabrous. Palea absent or minute.

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

**Country /Province /State. Indian Subcontinent.** Pakistan. **North-central Pacific.** Hawaii (\*). **Western Canada, Eastern Canada, Northwest USA, North-central USA, Northeast USA, Southwestern USA, South-central USA, Southeastern USA, Mexico.** Alabama, Florida. Northeast Mexico. **Southern South America.** Chile Central.

**TDWG4.** Biobio, Coahuila, Chihuahua, Durango, Neuvo Leon, Queretaro, San Luis Potosi.

**Schizachyrium semitectum** (Swallen) J.R. Reeder. *Phytologia*, 55(4): 252: (1984).

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

**TYPE** from Guatemala. **Basionym or Replaced Name:** *Andropogon semitectus* Swallen, *Contr. U.S. Natl. Herb.* 29(9): 427 (1950). T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: HT: *P.C. Standley 73919*, 10 Oct 1940, Guatemala: Zacapa (US-1910596).

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

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

**Habit, Vegetative Morphology.** Annual. Culms erect, 20–55 cm long. Lateral branches ample. Leaf-sheaths keeled, glabrous on surface. Ligule a ciliolate membrane, 0.5 mm long. Leaf-blades flat or conduplicate, 4–9 cm long, 1.5–3 mm wide. Leaf-blade surface pilose, with tubercle-based hairs. Leaf-blade margins scabrous.

**Inflorescence.** Synflorescence compound, scanty.

Inflorescence composed of racemes, terminal and axillary, subtended by a spatheole, embraced at base by subtending leaf. Spatheole linear, 2.5–3.5 cm long. Racemes 1, single, 3–4 cm long. Rhachis fragile at the nodes, semiterete, villous on margins (below). Rhachis internodes cuneate, 4 mm long. Rhachis internode tip crateriform, with scarious rim. Spikelets squeezed between internode and pedicel, in pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, linear, 4 mm long, villous, hairy below.

**Sterile Spikelets.** Companion sterile spikelets rudimentary, comprising 2 subequal glumes without lemmas, linear, dorsally compressed, 2 mm long, shorter than fertile, deciduous with the fertile. Companion sterile spikelet glumes chartaceous, awned, one glume awned, with 3–5 mm long awn.

**Fertile Spikelets.** Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets linear or lanceolate, laterally compressed, 6 mm long, falling entire, deciduous with accessory branch structures. Spikelet callus base obtuse, inserted.

**Glumes.** Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma. Lower glume linear or lanceolate, 1 length of spikelet, coriaceous, 2-keeled, keeled all along, keeled frontally. Lower glume surface convex, pilose, hairy below. Lower glume hairs 2–2.5 mm long. Upper glume lanceolate, membranous, 1-keeled.

**Florets.** Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret oblong, hyaline. Fertile lemma oblong, 2.5 mm long, hyaline, without keel, 1 -veined, 0–3 -veined, one-veined. Lemma apex lobed, 2 -fid, incised 0.66 of lemma length, awned, 1 -awned. Principal lemma awn from a sinus, geniculate, 15 mm long overall, with twisted column. Column of lemma awn 6 mm long, glabrous. Palea absent or minute.

**Distribution (TDWG). Continent.** North America, South America.

**Country /Province /State. Mexico.** Central Mexico, Southwest Mexico. **Mesoamerica, Caribbean.** Guatemala.

**TDWG4.** Mexico State, Morelos. Chihuahua. Baja California, Baja California Sur, Sonora. Guerrero, Jalisco, Michoacan, Oaxaca. Chiapas, Yucatan.

**Schizachyrium sericatum** (Swallen) Gould. *Brittonia*, xix. 73 (1967).

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

**TYPE** from USA. **Basionym or Replaced Name:** *Andropogon sericatus* Swallen, *J. Wash. Acad. Sci.* 31(8): 355, f. 8 (1941). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *W.A. Silveus 6633*, 17 Oct 1940, USA: Florida: Ramrod Key (US-2209347 ex National Arbor; IT: US-1817962, US-1867556).

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

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

**Habit, Vegetative Morphology.** Perennial, caespitose. Culms erect, 50–80 cm long. Lateral branches ample. Leaf-sheaths keeled, glabrous on surface. Ligule an eciliate membrane. Leaf-blades filiform or linear, conduplicate, 10–20 cm long, 1–3 mm wide.

**Inflorescence.** Synflorescence compound, fastigiate.

Inflorescence composed of racemes, terminal and axillary, subtended by a spatheole. Spatheole linear. Peduncle 4–6 cm long. Racemes 1, single, sinuous, 3 cm long. Rhachis fragile at the nodes, plumose on margins. Rhachis hairs 5 mm long. Spikelet packing lax. Rhachis internodes filiform, 4 mm long. Rhachis internode tip transverse, cupuliform, with simple rim. Spikelets in pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, filiform, curved, 4–5 mm long, plumose, with 5 mm long hairs.

**Sterile Spikelets.** Companion sterile spikelets rudimentary, linear, 3–4 mm long, shorter than fertile. Companion sterile spikelet glumes chartaceous, awned, one glume awned, with 3–4 mm long awn.

**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, dorsally compressed, 5 mm long, 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 linear, 1 length of spikelet, cartilaginous. Lower glume surface concave. Upper glume lanceolate, membranous, 1-keeled. Upper glume muticous.

**Florets.** Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret oblong, hyaline. Fertile lemma lanceolate, hyaline, without keel, 0–3 -veined. Lemma apex lobed, 2 -fid, awned, 1 -awned. Principal lemma awn from a sinus, geniculate, 15–20 mm long overall, with twisted column. Column of lemma awn glabrous.

**Flower and Fruit.** Anthers 3.

**Distribution (TDWG). Continent.** North America.

**Country /Province /State.** Southeastern USA. Florida.

**Schizachyrium spicatum** (Spreng.) Herter. *Rev. Sudamer. Bot.* vi. 135 (1940).

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

**TYPE** from Uruguay. **Basionym or Replaced Name:** *Deyeuxia spicata* Spreng., *Syst. Veg.* 1: 254 (1825). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *F. Sellow s.n.*, Uruguay: Montevideo (B; IT: US-75663 (fragm. ex B)).

**Illustrations (Books):** E.G.Nicora, *Los Generos de Gramineas de America Austral* (1987) (551, Fig. 201), L.B. Smith, D.C. Wasshausen, R.M. Klein *Flora Illustrada Catarinensis Gramineas* (1981–1982) (1266, Fig. 251 & 1274, Fig. 253), A.Burkat, *Flora Illustrada de Entre Rios (Argentina)*, Pt II, Gramineas (1969) (493, Fig. 208), A.L.Cabrera, *Flora de la Provincia de Buenos Aires, IV Pt 2 Gramineas* (1970), M.N.Correa, *Flora Patagonica Parte III, Gramineae* (1978) (560, Fig 376), B.Rosengurt, *Gramineas Uruguayas I* (1970) (192, Fig. 78 & 194, Fig. 79 as var. *breviarticulatum*).

**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 erect, 20–70 cm long, 1–3 mm diam., 4–8 -noded. Lateral branches sparse. Ligule an eciliate membrane, 1–2 mm long. Leaf-blades flat or convolute, 1–15 cm long, 2–5 mm wide. Leaf-blade apex abruptly acute.

**Inflorescence.** Synflorescence compound, scanty.

Inflorescence composed of racemes, terminal and axillary, subtended by a spatheole, embraced at base by subtending leaf. Spatheole linear, 3–5.5 cm long. Peduncle 5–8.5 cm long. Racemes 1, single, flexuous, 4–5 cm long. Rhachis fragile at the nodes, semiterete, plumose on surface. Rhachis internodes filiform, 7–9.5 mm long. Rhachis internode tip crateriform, with scarious rim. Spikelets appressed, in pairs. Fertile spikelets sessile, 1 in

the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, filiform, curved, 7–9.5 mm long, plumose.

**Sterile Spikelets.** Companion sterile spikelets rudimentary, comprising 2 unequal glumes without lemmas, linear, 2.5–3 mm long, shorter than fertile, deciduous with the fertile. Companion sterile spikelet glumes chartaceous, awned, one glume awned, with 2.5–3 mm long awn.

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

**Glumes.** Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma. Lower glume lanceolate, 1 length of spikelet, chartaceous, 2-keeled, keeled all along, keeled frontally. Lower glume surface convex, smooth. Lower glume apex awned, 2 -awned, awn 1–4.5 mm long. Upper glume lanceolate, membranous, 1-keeled.

**Florets.** Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret oblong, 4–5 mm long, hyaline. Fertile lemma oblong, hyaline, without keel, 1 -veined, 0–3 -veined, one-veined. Lemma apex lobed, 2 -fid, incised 0.8 of lemma length, awned, 1 -awned. Principal lemma awn from a sinus, geniculate, 14–22 mm long overall, with twisted column. Column of lemma awn glabrous. Palea absent or minute.

**Flower and Fruit.** Caryopsis with adherent pericarp, 3.5–4.5 mm long.

**Distribution (TDWG). Continent.** South America.

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

**TDWG4.** Sao Paulo Parana, Catarina, Rio Grande do Sul. Catamarca, Jujuy, Mendoza, Salta, Santiago del Estero, San Luis, Tucuman. Buenos Aires, Cordoba, Corrientes, Entre Rios, La Pampa, Misiones, Santa Fe.

**Schizachyrium stoloniferum** Nash. Small, *Fl. S. E. U. S.* 59 (1903).

**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: HT: *Chapman s.n.*, USA: Florida (NY).

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

**Derivation** (Clifford & Bostock 2007): L. stolo, shoot; fero, bear. Plant with well developed underground stems.

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

**Habit, Vegetative Morphology.** Perennial, culms solitary. Rhizomes short, scaly. Culms 60–100 cm long. Lateral branches ample. Leaf-sheaths keeled, glabrous on surface, outer margin hairy. Ligule an eciliate membrane. Leaf-blades 10–20 cm long, 2–5 mm wide. Leaf-blade surface scabrous, rough adaxially. Leaf-blade apex abruptly acute.

**Inflorescence.** Synflorescence compound, linear.

Inflorescence composed of racemes, terminal and axillary, subtended by a spatheole, exserted. Spatheole linear, 2–3 cm long, herbaceous. Racemes 1, single, 3–4 cm long. Rhachis fragile at the nodes, semiterete, ciliate on margins. Rhachis hairs 2–3 mm long. Rhachis internodes clavate, 2–3 mm long, 0.5–0.66 length of fertile spikelet. Rhachis internode tip cupuliform, with scarious rim. Spikelets ascending, in pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, clavate, curved, 2–3 mm long, ciliate, with 2–3 mm long hairs.

**Sterile Spikelets.** Companion sterile spikelets rudimentary, linear, dorsally compressed, 2–3 mm long, shorter than fertile, deciduous with the fertile. Companion sterile spikelet glumes chartaceous, scaberulous, awned, one glume awned, with 1–2 mm long awn.

**Fertile Spikelets.** Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets lanceolate, dorsally compressed, 6–7 mm long, 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 lanceolate, 1 length of spikelet, coriaceous, 2-keeled, keeled laterally. Lower glume intercarinal veins distinct, 3 in number. Lower glume surface convex, scabrous. Upper glume lanceolate, membranous, 1-keeled.

**Florets.** Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret oblong, hyaline. Fertile lemma oblong, hyaline, without keel, 1 -veined, 0–3 -veined, one-veined. Lemma apex entire, awned, 1 -awned. Principal lemma awn geniculate, 8–10 mm long overall, with twisted column. Column of lemma awn glabrous. Palea absent or minute.

**Distribution (TDWG). Continent.** North America.

**Country /Province /State. Southeastern USA.** Alabama, Florida, Georgia.

**Schizachyrium sudhanshui** N.P. Singh. *J. Indian Bot. Soc.* 60(3–4): 359 (1981).

**TYPE** from India. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: India, Raichur to Hyderabad: Singh 141725 (CAL holo, BSI).

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

**Derivation** (Clifford & Bostock 2007): in honor of Sudhanshu Kumar Jain (1926–) Indian botanist.

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

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

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

**Schizachyrium sulcatum** (Ekman) S. T. Blake. *Proc. Roy. Soc. Queensl.* 1. 78 (1969).

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

**TYPE** from Brazil. **Basionym or Replaced Name:** *Andropogon sulcatus* Ekman, *Ark. Bot.* 10(17): 4, t. 1, f. 3, t. 6, f. 3 (1911). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *G.O. Malme* 3509, Jun 28 1903, Brazil: Mato Grosso, Cuiabá (S (photo, BRI, K); IT: US-75916 (fragm. ex S)).

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

**Derivation** (Clifford & Bostock 2007): L. sulcus, furrow; -ata, possessing. Glume or glumes grooved.

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

**Habit, Vegetative Morphology.** Annual. Culms rambling or prostrate, slender, 5–60 cm long, 0.7–1 mm diam., 11–15 -noded. Leaf-sheaths mostly shorter than adjacent culm internode. Ligule a ciliolate membrane. Leaf-blades 1–6 cm long, 2–4 mm wide. Leaf-blade apex obtuse.

**Inflorescence.** Synflorescence compound, scanty.

Inflorescence composed of racemes, terminal and axillary, subtended by a spatheole, embraced at base by subtending leaf. Spatheole linear, 2–3 cm long. Racemes 1, single, 3 cm long, 0.5 mm wide, bearing 9–12 fertile spikelets on each. Rhachis fragile at the nodes, semiterete, ciliate on margins. Rhachis internodes clavate, 2.5–3 mm long. Rhachis internode tip cupuliform, with simple rim. Spikelets squeezed between internode and pedicel, in pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, linear, 2.5–3 mm long, ciliate, tip widened.

**Sterile Spikelets.** Companion sterile spikelets rudimentary, lanceolate, dorsally compressed, 0.7–1 mm long, shorter than fertile, deciduous with the fertile. Companion sterile spikelet glumes chartaceous, awned, one glume awned, with 1.5 mm long awn.

**Fertile Spikelets.** Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets lanceolate, subterete, 3–3.6 mm long, falling entire, deciduous with accessory branch structures. Spikelet callus 0.15 mm long, glabrous, base obtuse, inserted.

**Glumes.** Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma. Lower glume lanceolate, 1 length of spikelet, coriaceous, 2-keeled, keeled above, keeled frontally. Lower glume intercarinal veins distinct, 2 in number. Lower glume surface with a longitudinal median groove, asperulous. Upper glume lanceolate, membranous, 1-keeled. Upper glume apex acuminate.

**Florets.** Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret oblong, hyaline, 2 -veined. Fertile lemma oblong, hyaline, without keel. Lemma apex lobed, 2 -fid, incised 0.9 of lemma length, awned, 1 -awned. Principal lemma awn from a sinus, geniculate, 5–7 mm long overall, with twisted column. Column of lemma awn 2.5–4 mm long, glabrous. Palea absent or minute.

**Flower and Fruit.** Anthers 3. Caryopsis with adherent pericarp, 2.3 mm long.

**Distribution (TDWG). Continent.** South America.

**Country /Province /State. Western South America, Brazil.** Bolivia, Colombia. Brazil West Central. Mato Grosso.

**Schizachyrium tenerum** Nees. *Agrost. Bras.* 336 (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: HT: *F. Sellow* s.n., Brazil: Rio Grande do Sul (B; IT: K, US-1441528).

**Illustrations (Books):** M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 25 *Poaceae*, part 2 (2003) (675), S.A.Renvoize, *Gramineas de Bolivia* (1998) (606, Fig. 144), S.A.Renvoize, *The Grasses of*

Bahia, 1984 (284, Fig. 109), J.A.Steyermark et al, *Flora of the Venezuelan Guayana* Vol. 8 (2004) (264, Fig. 215), L.B. Smith, D.C. Wasshausen, R.M. Klein *Flora Illustrada Catarinensis Gramineas* (1981–1982) (1266, Fig. 251 & 1267, Fig. 252), A.Burkat, *Flora Illustrada de Entre Rios (Argentina)*, Pt II, Gramineas (1969) (491, Fig. 207), B.Rosengurt, *Gramineas Uruguayas I* (1970) (186, Fig. 74 & 196, Fig. 80 as *S. biciliatum*).

**Illustrations (Journals):** *Ruizia* (13:447 Fig 60e-f (1993)), *Revista Brasil. Bot.* (29: 297, Fig.29 (2006) as *Andropogon palustris*).

**Derivation** (Clifford & Bostock 2007): L. thin. Culms slender.

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

**Habit, Vegetative Morphology.** Perennial, caespitose, clumped densely. Culms erect or geniculately ascending, 40–110 cm long, 1–1.5 mm diam. Culm-nodes glabrous. Lateral branches sparse, arising from mid culm. Leaf-sheaths glabrous on surface. Ligule an eciliate membrane, 0.5–0.7 mm long. Leaf-blades 10–25 cm long, 1–2.5 mm wide. Leaf-blade midrib conspicuous, keeled beneath. Leaf-blade apex attenuate.

**Inflorescence.** Inflorescence composed of racemes, terminal and axillary. Peduncle 3–5 cm long. Racemes 1, single, 3–10 cm long. Rhachis fragile at the nodes, semiterete, glabrous on margins. Rhachis internodes cuneate, 3.8–4.5 mm long. Rhachis internode tip crateriform, with scarious rim. Spikelets appressed, in pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, cuneate, 3.8–4.5 mm long, glabrous.

**Sterile Spikelets.** Companion sterile spikelets well-developed, comprising 2 subequal glumes without lemmas, lanceolate, dorsally compressed, 4.7–5.7 mm long, as long as fertile, deciduous with the fertile. Companion sterile spikelet glumes coriaceous, 7 -veined, muticous.

**Fertile Spikelets.** Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets ovate, laterally compressed, 4.5–5 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, coriaceous, 2-keeled, keeled all along, keeled laterally, 7 -veined. Lower glume surface flat. Lower glume apex dentate, 2 -fid. Upper glume lanceolate, membranous, 1-keeled, 3 -veined. Upper glume primary vein scabrous.

**Florets.** Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret oblong, 3.2–4 mm long, hyaline, 2 -veined. Fertile lemma oblong, 3.5–4 mm long, hyaline, without keel, 1 -veined, 0–3 -veined, one-veined. Lemma margins ciliate. Lemma apex lobed, 2 -fid, incised 0.5 of lemma length, awned, 1 -awned. Principal lemma awn from a sinus, geniculate, 10 mm long overall, with twisted column. Column of lemma awn glabrous. Palea absent or minute.

**Flower and Fruit.** Anthers 2 mm long.

**Distribution (TDWG). Continent.** North America, South America.

**Country /Province /State.** North-central USA, South-central USA, Southeastern USA, Mexico. Central Mexico, Northeast Mexico, Gulf (Mexico), Northwest Mexico, Southwest Mexico, Southeast Mexico. Mesoamerica, Caribbean, Northern South America, Western South America, Brazil, Southern South America. Belize, Costa Rica, Guatemala, Honduras, Nicaragua, Panama. Cuba, Dominican Republic, Haiti, Jamaica. French Guiana, Guyana, Venezuela. Bolivia, Colombia, Ecuador, Peru. Brazil West Central, Brazil Northeast, Brazil Southeast, Brazil South. Argentina Northeast, Argentina Northwest, Paraguay, Uruguay.

**TDWG4.** Goias, Bahia, Minas Gerais, Rio de Janeiro, Espirito Santo, Sao Paulo Parana, Catarina, Rio Grande do Sul. Jujuy, La Rioja, Santiago del Estero, Tucuman. Buenos Aires, Cordoba, Corrientes, Entre Rios, Misiones. Distrito Federal, Mexico State, Puebla. Aguascalientes, Chihuahua, Durango, Guanajuato, Hidalgo, Queretaro, San Luis Potosi, Tamaulipas, Zacatecas. Veracruz. Sinaloa, Sonora. Guerrero, Jalisco, Michoacan, Nayarit, Oaxaca. Chiapas.

**Schizachyrium thollonii** (Franch.) Stapf. Prain, *Fl. Trop. Afr.* ix. 200 (1918).

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

**TYPE** from DRC. **Basionym or Replaced Name:** *Andropogon thollonii* Franch., *Bull. Soc. Hist. Nat. Autun* 8: 324 (1895). T:<Type of Basionym>; *fide* TROPICOS and Kew Synonymy Database: Congo Francais: Hab. Plaine de Mpila dans les sables humides pres de Brazzaville, *Brazza & Thollon* 62IGS cites pub. date as 1893.

**Illustrations (Books):** G.V.Pope et al., *Flora Zambesiaca* 10 (4(2002):88, t. 28).

**Derivation** (Clifford & Bostock 2007): in honor of Francois-Romain Thollon (1855–1896) who collected in the Congo.

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

**Habit, Vegetative Morphology.** Perennial, caespitose. Rhizomes short. Butt sheaths persistent and investing base of culm. Culms erect, 40–100 cm long. Lateral branches sparse. Leaf-sheaths keeled. Ligule an

eciliate membrane. Leaf-blades flat or conduplicate, 5–20 cm long, 1–3 mm wide. Leaf-blade surface glabrous. Leaf-blade margins scaberulous. Leaf-blade apex acute.

**Inflorescence.** Synflorescence compound, scanty.

Inflorescence composed of racemes, terminal and axillary, subtended by a spatheole. Spatheole linear, 3–4 cm long. Racemes 1, single, 2.5–7 cm long. Rhachis fragile at the nodes, semiterete, pilose on surface, glabrous on margins or ciliate on margins. Rhachis hairs 2–4 mm long. Rhachis internodes linear or clavate, 4–6 mm long. Rhachis internode tip crateriform, with scarious rim. Spikelets appressed, in pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, linear or clavate, glabrous or ciliate.

**Sterile Spikelets.** Companion sterile spikelets well-developed, male, lanceolate, dorsally compressed, 5–7 mm long, as long as fertile, deciduous with the fertile. Companion sterile spikelet glumes chartaceous, glabrous, setaceously acuminate, muticous. Companion sterile spikelet lemmas 2, enclosed by glumes.

**Fertile Spikelets.** Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets lanceolate, dorsally compressed, 4–5 mm long, 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 lanceolate or elliptic, 1 length of spikelet, chartaceous, 2-keeled, keeled laterally, wingless. Lower glume primary vein scaberulous. Lower glume intercarinal veins distinct, 4–7 in number. Lower glume surface convex or flat, puberulous, hairy below. Lower glume apex emarginate. Upper glume lanceolate or oblong, membranous, 1-keeled, 3 -veined. Upper glume surface puberulous, hairy above. Upper glume margins ciliolate. Upper glume apex acute.

**Florets.** Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret oblong, 4 mm long, hyaline, 2 -veined. Fertile lemma oblong, 3–4 mm long, hyaline, without keel, 3 -veined, 0–3 -veined. Lemma margins ciliolate. Lemma apex dentate, 2 -fid, awned, 1 -awned. Principal lemma awn from a sinus, geniculate, 4–8 mm long overall, with a straight or slightly twisted column. Column of lemma awn 1–2.5(–3) mm long, glabrous. Palea absent or minute.

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

*N* = 10 (1 ref TROPICOS).

**Distribution (TDWG).** Continent. Africa.

**Country /Province /State.** West-central tropical Africa, South tropical Africa. Congo, Gabon, DRC. Malawi, Zambia, Zimbabwe.

**Schizachyrium urceolatum** (Hack.) Stapf. Prain, *Fl. Trop. Afr.* ix. 190 (1917).

**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:** *Andropogon urceolatus* Hack., *Flora* 68(7): 115 (1885). T:<Type of Basionym>; *fide* TROPICOS and Kew Synonymy Database: HT: *G.A. Schweinfurth 1031*, 1865, Ethiopia / Sudan (W; IT: US-76214 (ex W)).

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

**Derivation** (Clifford & Bostock 2007): *L. urceus*, jug; -ola, diminutive; -ata, possessing. Rhachis joints clavate and with a hollow apex.

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

**Habit, Vegetative Morphology.** Annual. Culms erect, 15–30 cm long. Ligule an eciliate membrane. Leaf-blades 2–5 cm long, 2–3 mm wide. Leaf-blade apex acuminate.

**Inflorescence.** Synflorescence compound, scanty.

Inflorescence composed of racemes, terminal and axillary, subtended by a spatheole, embraced at base by subtending leaf. Spatheole lanceolate, 2.5–3 cm long, red. Racemes 1, single, smoothly terete, 2.5–5 cm long. Rhachis fragile at the nodes, subterete, 2 mm wide, glabrous on surface, glabrous on margins. Rhachis internodes oblong, 6 mm long. Rhachis internode tip crateriform, with scarious rim. Spikelets squeezed between internode and pedicel, in pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, linear, glabrous.

**Sterile Spikelets.** Companion sterile spikelets well-developed, comprising 2 subequal glumes without lemmas, lanceolate, dorsally compressed, 3–4 mm long, shorter than fertile, deciduous with the fertile. Companion sterile spikelet glumes membranous, 5 -veined, awned, one glume awned, with 1–2 mm long awn.

**Fertile Spikelets.** Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets linear, dorsally compressed, 5–7 mm long, 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 linear, 1 length of spikelet, chartaceous, 2-keeled, keeled frontally. Lower glume intercarinal veins obscure, 3–5 in number. Lower glume surface glabrous. Lower glume apex dentate, 2 -fid, awned, 2 -awned, awn 1–2 mm long. Upper glume lanceolate, membranous, 1-keeled, 3 -veined. Upper glume apex acuminate, awned, 1 -awned, awn 2–3 mm long.

**Florets.** Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret oblong, hyaline, 0 -veined, without midvein, without lateral veins. Fertile lemma oblong, hyaline, without keel. Lemma apex lobed, 2 -fid, incised 0.6–0.75 of lemma length, awned, 1 -awned. Principal lemma awn from a sinus, geniculate, 14–18 mm long overall, with twisted column. Column of lemma awn glabrous. Palea absent or minute.

**Distribution (TDWG). Continent.** Africa.

**Country /Province /State.** West tropical Africa, West-central tropical Africa, Northeast tropical Africa. Ghana, Nigeria, Senegal, Togo, Niger. Chad, Ethiopia (inc. Eritrea), Sudan.

**Schizachyrium villosum** (Poir.) J.F. Veldkamp, appl incert. *Blumea*, 31(2): 306 (1986).

More checking of status required.

**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 West Indies. **Basionym or Replaced Name:** *Rottboellia villosa* Poir., *Encycl.* 6: 313 (1804). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *Commerson s.n.*, Indies (P-JU; IT: P). ["Does not seem to be an Asian species"; Veldkamp (1986)].

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

**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.

**Distribution (TDWG). Continent.** South America.

**Country /Province /State.** Caribbean. Venezuelan and Netherlands Antilles.

**Schizachyrium yangambiense** Germain. *Bull. Jard. Bot. Brux.* xxii. 139 (1952).

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

**TYPE** from DRC. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Zaire, Yangambi: *Germain 489* (BR holo, K).

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

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

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

**Habit, Vegetative Morphology.** Perennial, caespitose, clumped loosely. Rhizomes short. Culms decumbent, 100–200 cm long, rooting from lower nodes. Leaf-sheaths 4–6 cm long. Ligule a ciliate membrane. Leaf-blades 7–15 cm long, 3–4 mm wide. Leaf-blade surface glabrous. Leaf-blade apex acute.

**Inflorescence.** Synflorescence compound, scanty.

Inflorescence composed of racemes, terminal and axillary, subtended by a spatheole. Spatheole linear, 9–10 cm long. Racemes 1, single, 3.5–11 cm long. Rhachis fragile at the nodes, semiterete, ciliate on margins. Rhachis hairs mainly at internode tip. Rhachis internodes clavate, 6 mm long. Rhachis internode tip crateriform, with scarious rim. Spikelets appressed, in pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, linear, 7 mm long, ciliate, hairy at tip.

**Sterile Spikelets.** Companion sterile spikelets well-developed, containing empty lemmas or male, lanceolate, dorsally compressed, 6–7 mm long, shorter than fertile, deciduous with the fertile. Companion sterile spikelet glumes chartaceous, 3 -veined, glabrous, ciliate on margins, acute, muticous. 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, dorsally compressed, 8–10 mm long, 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 elliptic, 1 length of spikelet, chartaceous or coriaceous, 2-keeled, keeled laterally, wingless. Lower glume intercarinal veins distinct. Lower glume surface glabrous. Lower glume margins ciliate. Upper glume lanceolate, membranous, 1-keeled.

**Florets.** Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret oblong, hyaline. Fertile lemma oblong, hyaline, without keel. Lemma apex lobed, 2 -fid, incised 0.33 of lemma length,

awned, 1 -awned. Principal lemma awn from a sinus, geniculate, 10–11 mm long overall, with twisted column. Column of lemma awn glabrous. Palea absent or minute.

**Distribution (TDWG). Continent.** Africa.

**Country /Province /State.** West-central tropical Africa. DRC.

**Schizostachyum aciculare** Gamble. *Ann. Bot. Gard. Calc.* vii. 117. (1896).

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

**TYPE** from Malaysia. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Malaya, Rupayoong: Alwis 2167.

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

**Derivation** (Clifford & Bostock 2007): *L. acus*, needle; -ulus, diminutive; -are, pertaining to. Leaf-blades sharp-pointed.

**Classification.** Subfamily Bambusoideae. Tribe: Bambuseae.

**Habit, Vegetative Morphology.** Perennial, woody bamboo, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms woody. Culm-internodes terete, thin-walled, distally pubescent. Lateral branches dendroid. Branch complement many. Culm-sheaths present, 12 cm long, pubescent, with appressed hairs, with white hairs, truncate at apex, auriculate, with 4–5 mm high auricles, setose on shoulders, shoulders with curved hairs, shoulders with 3 mm long hairs. Culm-sheath ligule 1.5 mm high, ciliate. Culm-sheath blade lanceolate, reflexed, 8 cm long, 7 mm wide. Leaf-sheath oral hairs ciliate. Leaf-sheath auricles falcate. Ligule a ciliate membrane. Leaf-blade base with a brief petiole-like connection to sheath, petiole 0.5–0.8 cm long. Leaf-blades lanceolate or elliptic, 22 cm long, 50 mm wide. Leaf-blade surface glabrous or puberulous, hairy abaxially (at base).

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

Fertile spikelets sessile.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, with a barren rachilla extension. Spikelets of 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, 50 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes several.

**Florets.** Fertile lemma ovate, 27 mm long, chartaceous, without keel, more than 3-veined. Lemma surface pubescent. Lemma margins convolute, covering most of palea. Lemma apex acute. Palea tightly convolute around flower, 30 mm long, chartaceous. Palea keels contiguous above a sulcus. Palea apex dentate, 2 -fid.

**Flower and Fruit.** Lodicules absent or 1. Anthers 6, 14 mm long, anther tip penicillate. Stigmas 3. Ovary with a steeple-like appendage. Caryopsis with free brittle pericarp.

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

**Country /Province /State.** Indo-China, Malesia. Laos, Thailand, Vietnam. Malaya.

**Schizostachyum aequiramosum** Widjaja. *Reinwardtia* 11(2): 131 (1997).

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

**TYPE** from Indonesia. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Java, Curah Nongko: *Widjaja 6703* (BO holo).

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

**Derivation** (Clifford & Bostock 2007): *L. aequus*, equal; *ramus*, branch; *-osum*, abundance. Branch clusters, unlike those of related species, equal in size.

**Classification.** Subfamily Bambusoideae. Tribe: Bambuseae.

**Habit, Vegetative Morphology.** Perennial, woody bamboo, caespitose, clumped densely. Rhizomes short, pachymorph. Butt sheaths absent. Culms erect, 1000–1200 cm long, 50–80 mm diam., woody. Culm-internodes terete, thin-walled, 65–130 cm long. Lateral branches dendroid, arising from upper culm. Culm-sheaths present, persistent or tardily deciduous, without auricles, ciliate on shoulders. Culm-sheath ligule entire. Culm-sheath blade triangular, reflexed. Leaf-sheath oral hairs ciliate, 6 mm long. Leaf-sheath auricles absent. Ligule an eciliate membrane. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades oblong, 12.6–24.4 cm long, 25–46 mm wide. Leaf-blade surface scabrous, rough adaxially, puberulous, sparsely hairy, hairy abaxially. Leaf-blade margins scabrous. Leaf-blade apex acuminate. Flowering specimens unknown.

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



**Country /Province /State.** Malesia. Java.

**Schizostachyum alopecurus** (Stapf) Holttum. *Kew Bull.* xxi. 280 (1967).

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

**TYPE** from Indonesia. **Basionym or Replaced Name:** *Oxytenanthera alopecurus* Stapf, *Bull. Misc. Inform. Kew* 1909: 266 (1909). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: T: *G.M. Versteeg 1132*, 1907, Indonesia: New Guinea, Irian Jaya (L).

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

**Derivation** (Clifford & Bostock 2007): Resembling *Alopecurus*.

**Classification.** Subfamily Bambusoideae. Tribe: Bambuseae.

**Habit, Vegetative Morphology.** Perennial, woody bamboo, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms woody. Culm-internodes terete, thin-walled. Lateral branches dendroid. Culm-sheaths present. Leaf-sheath oral hairs setose, 7 mm long. Ligule an eciliate membrane. Leaf-blade base with a brief petiole-like connection to sheath, petiole 15 cm long. Leaf-blades lanceolate, 20–40 cm long, 35 mm wide.

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

Fertile spikelets sessile.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, with a barren rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, laterally compressed, 20–25 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes several, persistent, shorter than spikelet.

**Florets.** Fertile lemma ovate, 19 mm long, chartaceous, without keel, more than 3-veined. Lemma margins convolute, covering most of palea. Lemma apex acute, awned, 1 -awned. Principal lemma awn 2 mm long overall. Palea tightly convolute around flower, chartaceous, without keels. Palea apex dentate, 2 -fid, awned, awns 1 mm long. Rhachilla extension 4 mm long.

**Flower and Fruit.** Lodicules absent. Anthers 6, 6 mm long, anther tip with extended connective or pubescent. Filaments united in a tube. Stigmas 3. Styles 16–17 mm long. Ovary with a steeple-like appendage. Caryopsis with free brittle pericarp, oblong.

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

**Country /Province /State.** Malesia, Papuaasia. New Guinea.

**Schizostachyum andamanicum** M.Kumar & Remesh. *Blumea* 48(1): 187 (2003).

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

**TYPE** from Andaman Is. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Andaman Is., Saddle Peak: Remesh & Viswakumar 20780 (KFRI holo, L, MH).

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

**Classification.** Subfamily Bambusoideae. Tribe: Bambuseae.

**Habit, Vegetative Morphology.** Perennial, woody bamboo, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms arching, 300–400 cm long, 12–18 mm diam., woody. Culm-internodes terete, thin-walled, 18–22 cm long, yellow or light green, distally pubescent. Culm-nodes swollen, glabrous. Lateral branches dendroid. Branch complement many, with subequal branches. Culm-sheaths present, 13–16 cm long, 3 length of internode, green, hispid, with tawny hairs, auriculate, with 2 mm high auricles, setose on shoulders, shoulders with curved hairs. Culm-sheath ligule 2 mm high. Culm-sheath blade lanceolate, erect, 5–7 cm long, 4–8 mm wide, pubescent, acuminate. Leaf-sheaths glabrous on surface. Leaf-sheath oral hairs scanty. Leaf-sheath auricles falcate, 1 mm long. Ligule an eciliate membrane. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades lanceolate, 8–22 cm long, 26–48 mm wide. Leaf-blade surface glabrous.

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

Fertile spikelets sessile.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, with a barren rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, laterally compressed, 6–12 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes two, shorter than spikelet. Lower glume ovate, 0.33 length of spikelet. Upper glume ovate, 0.8–0.9 length of spikelet.

**Florets.** Fertile lemma ovate, 5–9 mm long, 3–4 mm wide, chartaceous, without keel, more than 3-veined. Lemma margins convolute, covering most of palea. Lemma apex acute. Palea tightly convolute around flower, 4–7 mm long, chartaceous. Palea keels contiguous above a sulcus. Palea apex dentate, 2 -fid.

**Flower and Fruit.** Lodicules 3, ovate, 1–3 mm long. Anthers 6, 2.5–3 mm long, anther tip pubescent. Stigmas 3. Ovary with a steeple-like appendage, glabrous. Caryopsis with free brittle pericarp, 18 mm long.

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

**Country /Province /State.** Indo-China. Andaman Is.

**Schizostachyum arunachalensis** H.B. Naithani. *Indian Forester*, 118(3): 230 (1992).

**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, Daporjio, Baja: Naithani 1406 ((DD holo).

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

**Classification.** Subfamily Bambusoideae. Tribe: Bambuseae.

**Habit, Vegetative Morphology.** Perennial, woody bamboo, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms scandent, pendulous at the tip, 1000–1500 cm long, 100–120 mm diam., woody. Culm-internodes terete, thin-walled, 20–100 cm long, yellow or dark green, smooth. Culm-nodes swollen, pubescent. Lateral branches dendroid. Bud complement 1. Culm-sheaths present, deciduous, 15–26 cm long, 1–2 times as long as wide, coriaceous, pubescent, hairy above, with tawny hairs, hairy on margins, convex at apex. Culm-sheath ligule entire. Culm-sheath blade triangular, 10–25 cm long, 90–110 mm wide. Leaf-sheaths glabrous on surface or pubescent. Leaf-sheath oral hairs setose. Leaf-sheath auricles falcate. Ligule an eciliate membrane. Leaf-blade base with a brief petiole-like connection to sheath, petiole 1.5 cm long. Leaf-blades oblong or ovate, 30–48 cm long, 75–180 mm wide. Leaf-blade midrib conspicuous. Leaf-blade venation with 24–36 secondary veins. Leaf-blade surface scabrous, rough adaxially, glabrous. Leaf-blade margins scabrous. Leaf-blade apex acuminate. Flowering specimens unknown.

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

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

**Schizostachyum atrocingulare** Widjaja. *Reinwardtia* 11(2): 132 (1997).

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

**TYPE** from Indonesia. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Sumatra, Kuto Rendah: *Widjaja 3899* (BO holo).

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

**Derivation** (Clifford & Bostock 2007): *L. ater*, dark; *cingulum*, girdle; *-are*, pertaining to. Culms with a prominent girdle-like scar on the nodes.

**Classification.** Subfamily Bambusoideae. Tribe: Bambuseae.

**Habit, Vegetative Morphology.** Perennial, woody bamboo, caespitose, clumped densely. Rhizomes short, pachymorph. Butt sheaths absent. Culms erect, 1500 cm long, 20–40 mm diam., woody. Culm-internodes terete, thin-walled, 45–60 cm long, light green or grey, distally glabrous or pubescent. Lateral branches dendroid, arising from mid culm. Culm-sheaths present, deciduous but leaving a persistent girdle, 12.3–13 cm long, pubescent, with white hairs or tawny hairs, convex at apex, auriculate, with 2–4 mm high auricles, setose on shoulders, shoulders with curved hairs, shoulders with 11–15 mm long hairs. Culm-sheath ligule 1 mm high, entire. Culm-sheath blade triangular, erect, 8.5–11.5 cm long, 25–35 mm wide. Leaf-sheaths pilose (on keel), hairs tawny. Leaf-sheath oral hairs setose, 12 mm long. Leaf-sheath auricles absent. Ligule an eciliate membrane, 1 mm long, erose. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades oblong, 15–23 cm long, 25–34 mm wide. Leaf-blade surface scabrous, rough adaxially, glabrous. Leaf-blade margins scabrous. Leaf-blade apex acuminate. Flowering specimens unknown.

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

**Country /Province /State.** Malesia. Sumatra.

**Schizostachyum auriculatum** Q.H. Dai & D.Y. Huang. *J. Bamboo Res.*, 16(3): 29 (1997).

**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, Nanning: Dai & Huang 961002 (GXFA holo).

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

**Classification.** Subfamily Bambusoideae. Tribe: Bambuseae.

**Habit, Vegetative Morphology.** Perennial, woody bamboo, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms erect, pendulous at the tip, 1000–1400 cm long, 30–50 mm diam., woody. Culm-internodes terete, thin-walled, 70–90 cm long, antrorsely scabrous, distally mealy and hispid. Lateral branches dendroid. Culm-sheaths present, deciduous, with basal lobes, hispid, with yellow hairs, hairy on margins, truncate at apex, without auricles, setose on shoulders, shoulders with 15–20 mm long hairs. Culm-sheath ligule 1 mm high, fimbriate. Culm-sheath blade lanceolate, reflexed, 14–18 cm long, 10–15 mm wide, pubescent. Leaves 5–8 per branch. Leaf-sheaths 7–10 cm long, pubescent. Leaf-sheath oral hairs setose, erect, 5–10 mm long. Leaf-sheath auricles absent. Ligule a ciliolate membrane, 0.5 mm long. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades lanceolate, 20–25 cm long, 20–30 mm wide. Leaf-blade venation with 12–16 secondary veins. Leaf-blade surface pubescent, hairy abaxially. Leaf-blade apex attenuate. Flowering specimens unknown.

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

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

**TDWG4.** Guangxi (+).

**Schizostachyum bamban** Widjaja. *Reinwardtia* 11(2): 134 (1997).

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

**TYPE** from Indonesia. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Sumatra, Sukarame: Widjaja 3841 (BO holo).

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

**Derivation** (Clifford & Bostock 2007): Vernacular name for the species in Sumatra, Indonesia.

**Classification.** Subfamily Bambusoideae. Tribe: Bambuseae.

**Habit, Vegetative Morphology.** Perennial, woody bamboo, caespitose, clumped densely. Rhizomes short, pachymorph. Butt sheaths absent. Culms leaning, pendulous at the tip, 800–1000 cm long, 20–80 mm diam., woody. Culm-internodes terete, thin-walled, 40–80 cm long. Culm-nodes pubescent. Lateral branches dendroid, arising from mid culm. Branch complement several, in a clump, with subequal branches. Culm-sheaths present, deciduous, 13–16 cm long, 2 times as long as wide, pubescent, with white hairs, concave at apex or truncate at apex, without auricles, setose on shoulders, shoulders with 8–10 mm long hairs. Culm-sheath ligule 1 mm high, dentate and ciliate. Culm-sheath blade lanceolate, as wide as sheath at base, erect, 12–26 cm long, 15–25 mm wide, pubescent, attenuate. Leaf-sheath oral hairs ciliate, 3–6 mm long. Leaf-sheath auricles absent. Ligule a ciliate membrane, 1 mm long. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades lanceolate, 14.5–30 cm long, 30–50 mm wide. Leaf-blade surface glabrous. Leaf-blade apex acuminate.

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

Fertile spikelets sessile.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, with diminished florets at the apex. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, laterally compressed, 7–10 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes two, persistent, shorter than spikelet. Lower glume ovate. Lower glume apex acuminate. Upper glume ovate, chartaceous. Upper glume apex acuminate.

**Florets.** Fertile lemma ovate, 10–11 mm long, chartaceous, without keel, more than 3-veined. Lemma surface glabrous. Lemma apex acuminate. Palea 8–12 mm long, chartaceous, without keels. Palea apex dentate, 2-fid. Rhachilla extension 3 mm long. Apical sterile florets 1 in number, rudimentary.

**Flower and Fruit.** Lodicules absent. Anthers 6, 4 mm long, yellow, anther tip apiculate. Stigmas 3. Ovary with a steeple-like appendage, pubescent all over. Caryopsis with free brittle pericarp.

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

**Country /Province /State. Malesia.** Sumatra.

**Schizostachyum (Teinostachyum) beddomei** (C.E.C. Fischer) R.B. Majumdar. S. Karthikeyan et al., *Fl. Ind. Enumerat. - Monocot.*: 281: (1989).

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

**TYPE** from India. **Basionym or Replaced Name:** *Teinostachyum beddomei* C.E.C.Fischer, Gamble, *Fl. Madras*, 1860 (1934). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: India, Nilgiri & Travancore hills: Coll?.

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

**Derivation** (Clifford & Bostock 2007): in honor of Richard Henry Beddome (1830–1911) English-born Indian forester.

**Classification.** Subfamily Bambusoideae. Tribe: Bambuseae.

**Habit, Vegetative Morphology.** Perennial, woody bamboo, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms leaning, 300–600 cm long, 25–37 mm diam., woody. Culm-internodes terete, thin-walled, 35–45 cm long, light green, antrorsely scabrous. Lateral branches dendroid. Culm-sheaths present, 25–30 cm long, 3–3.5 times as long as wide, chartaceous, pubescent, with appressed hairs, with dark brown hairs or black hairs, truncate at apex, without auricles. Culm-sheath ligule 2–3 mm high, entire. Culm-sheath blade linear, reflexed, 12.5–17.5 cm long, 10–12 mm wide. Leaf-sheaths striately veined, glabrous on surface. Leaf-sheath auricles absent. Ligule an eciliate membrane, erose. Leaf-blade base asymmetrical, with a brief petiole-like connection to sheath, petiole 0.7–1 cm long. Leaf-blades lanceolate or oblong, 12–38 cm long, 25–50 mm wide. Leaf-blade midrib conspicuous. Leaf-blade venation with 16–20 secondary veins, with obscure cross veins. Leaf-blade surface pilose, sparsely hairy, hairy abaxially. Leaf-blade margins scabrous. Leaf-blade apex acuminate.

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

Fertile spikelets 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, 12–25 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes sparsely hairy, hairy at tip.

**Glumes.** Glumes one the lower absent or obscure, persistent, shorter than spikelet. Upper glume ovate, 10 mm long, chartaceous, without keels, 5–7 -veined. Upper glume surface pilose. Upper glume apex acute, mucronate.

**Florets.** Fertile lemma ovate, 12–14 mm long, chartaceous, without keel, more than 3-veined. Lemma lateral veins with cross-veins. Lemma apex acute, mucronate. Palea chartaceous, 7–9 -veined. Palea keels ciliate.

**Flower and Fruit.** Lodicules 3, 2 mm long, veined, ciliate. Anthers 6, anther tip smooth. Stigmas 2. Ovary with a steeple-like appendage, glabrous. Caryopsis with free brittle pericarp, ovoid.

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

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

**Schizostachyum biflorum** McClure. *Blumea*, ii. 89 (1936).

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

**TYPE** from Indonesia. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Java, Mt. Salak: Blume (L holo).

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

**Derivation** (Clifford & Bostock 2007): L. bis, twice; flos, flower. Florets two per spikelet.

**Classification.** Subfamily Bambusoideae. Tribe: Bambuseae.

**Habit, Vegetative Morphology.** Perennial, woody bamboo, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms woody. Culm-internodes terete, thin-walled. Lateral branches dendroid. Branch complement many, with subequal branches. Culm-sheaths present, deciduous, antrorsely scabrous, truncate at apex, without auricles, ciliate on shoulders. Culm-sheath ligule fimbriate. Culm-sheath blade linear, reflexed, pubescent. Leaf-sheaths glabrous on surface. Leaf-sheath oral hairs setose, 5–10 mm long, pale. Ligule a ciliate membrane, 1–2.5 mm long, scaberulous on abaxial surface. Leaf-blade base with a brief petiole-like connection to sheath, petiole 0.5–1 cm long, petiole pubescent. Leaf-blades lanceolate, 20–40 cm long, 30–75 mm wide, mid-green or light green, discolorous with last colour beneath. Leaf-blade venation with 20–24 secondary veins, with obscure cross veins. Leaf-blade surface scabrous, rough adaxially. Leaf-blade apex attenuate.

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

Fertile spikelets 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, subterete, 15–18 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes 4.5 mm long, pilose, hairy above.

**Glumes.** Glumes several, comprising 3 gemmiferous bracts, 0 empty glumes, persistent, shorter than spikelet.

**Florets.** Fertile florets increasing in size upwards. Fertile lemma ovate, 7–11.5 mm long, chartaceous, without keel, more than 3-veined. Lemma margins convolute, covering most of palea. Lemma apex obtuse or acute. Palea tightly convolute around flower, 13 mm long, chartaceous. Palea keels scabrous. Palea surface scabrous.

**Flower and Fruit.** Lodicules absent. Anthers 6, 4–5 mm long, anther tip smooth. Filaments 1 mm long. Stigmas 3. Ovary with a steeple-like appendage. Caryopsis with free brittle pericarp.

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

**Country /Province /State.** Malesia. Java.

### **Schizostachyum blumei** Nees. *Agrost. Bras.* 535. (1829).

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

**TYPE** from Indonesia. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Java: Blume.

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

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

**Derivation** (Clifford & Bostock 2007): in honor of Carl Ludwig Blume (1796–1862) German-born Dutch botanist.

**Classification.** Subfamily Bambusoideae. Tribe: Bambuseae.

**Habit, Vegetative Morphology.** Perennial, woody bamboo, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms erect or arching, pendulous at the tip, 300–700 cm long, 10–20 mm diam., woody. Culm-internodes terete, thin-walled, 30–60 cm long, dark green, smooth or scaberulous, distally pruinose (below nodes). Lateral branches dendroid. Buds or branches absent from lower part of culm. Branch complement many, with subequal branches. Culm-sheaths present, 15–20 cm long, 4 times as long as wide, green, pubescent, with white hairs, truncate at apex, auriculate, with 4 mm high auricles, setose on shoulders, shoulders with 11 mm long hairs. Culm-sheath ligule dentate. Culm-sheath blade lanceolate, erect or reflexed, 13–15 cm long, 7–8 mm wide, pubescent. Leaf-sheaths glabrous on surface. Leaf-sheath oral hairs setose, 8–13 mm long. Leaf-sheath auricles falcate, 1 mm long. Ligule an eciliate membrane, erose. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades lanceolate, 19–39 cm long, 35–65 mm wide, dark green. Leaf-blade surface glabrous.

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

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 linear or lanceolate, laterally compressed, 20–25 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes several, 6–7 empty glumes, persistent, shorter than spikelet.

**Florets.** Fertile lemma ovate, 15–20 mm long, chartaceous, without keel, more than 3-veined. Lemma surface pubescent, hairy above. Lemma margins convolute, covering most of palea. Lemma apex attenuate. Palea tightly convolute around flower, chartaceous, without keels. Palea surface pubescent, hairy above. Palea apex dentate, 2 -fid. Apical sterile florets 1 in number, barren, rudimentary.

**Flower and Fruit.** Lodicules absent. Anthers 6. Stigmas 3. Ovary with a steeple-like appendage. Caryopsis with free brittle pericarp, oblong.

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

**Country /Province /State.** Malesia. Borneo, Java, Malaya.

### **Schizostachyum brachycladum** (Kurz) Kurz. *Journ. As. Soc. Beng.* ix. II. 89. (1870).

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

**TYPE** from Indonesia. **Basionym or Replaced Name:** *Melocanna zollingeri* var. *brachyclada* Kurz ex Munro, *Trans. Linn. Soc. London* 26(1): 134 (1868). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Java: Buitenzorg, Anon..

**Illustrations (Books):** C-C Hsu, *Taiwan Grasses* (1975) (779, Pl. 1518), S. Dransfield, & E.A. Widjaja, *Plant Resources of South-East Asia No. 7, Bamboos* (1995).

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

**Derivation** (Clifford & Bostock 2007): Gk. brachys, short; klados, stem. Inflorescence branches short.

**Classification.** Subfamily Bambusoideae. Tribe: Bambuseae.

**Habit, Vegetative Morphology.** Perennial, woody bamboo, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms erect, straight, 1000–1500 cm long, 60–80 mm diam., woody. Culm-internodes terete, thin-walled, 20–50 cm long. Lateral branches dendroid. Branch complement many. Culm-sheaths present, persistent, coriaceous, pubescent, hairy throughout, with dark brown hairs or red hairs, auriculate, setose on shoulders. Culm-sheath ligule 2 mm high. Culm-sheath blade ovate, as wide as sheath at base, 5–8 cm long, pubescent, acuminate. Leaf-sheath oral hairs scanty. Leaf-sheath auricles absent. Ligule an eciliate membrane. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades lanceolate, 20–40 cm long, 30–70 mm wide. Leaf-blade venation with distinct cross veins. Leaf-blade surface pubescent, hairy abaxially. Leaf-blade margins scabrous.

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

Fertile spikelets sessile.

**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 lanceolate, laterally compressed, 20–24 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, 11 -veined. Lower glume apex acute. Upper glume ovate, 3–5 mm long, 0.3–0.4 length of adjacent fertile lemma, chartaceous, without keels, 11 -veined. Upper glume apex acute.

**Florets.** Fertile lemma ovate, 10–12 mm long, chartaceous, without keel, 15 -veined, more than 3-veined. Lemma margins convolute, covering most of palea, ciliate, hairy above. Lemma apex acuminate, mucronate. Palea tightly convolute around flower, 1.1 length of lemma, chartaceous, 11–13 -veined, without keels. Palea surface pubescent. Rhachilla extension 0.8–0.9 length of fertile floret.

**Flower and Fruit.** Lodicules 3, 4 mm long, ciliate. Anthers 6, 6 mm long. Stigmas 3. Ovary with a steeple-like appendage. Caryopsis with free brittle pericarp, oblong.

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

**Country /Province /State.** China, Eastern Asia. Taiwan. Indo-China, Malesia. Borneo, Java, Malaya, Singapore.

### **Schizostachyum brachythyrus** (K. Schum.) Holttum. *Kew Bull.* xxi. 281 (1967).

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

**TYPE** from New Guinea. **Basionym or Replaced Name:** *Oxytenanthera brachythyrus* K. Schum., *Fl. Kais. Wilh. Land* 23 (1889). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *Hollrung 669*, New Guinea: Augustafluss (B, destroyed; IT: k).

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

**Derivation** (Clifford & Bostock 2007): Gk. brachys, short; thyrus, ornamental wand. Racemes short and congested towards the apex of a long peduncle.

**Classification.** Subfamily Bambusoideae. Tribe: Bambuseae.

**Habit, Vegetative Morphology.** Perennial, woody bamboo, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms woody. Culm-internodes terete, thin-walled. Lateral branches dendroid. Culm-sheaths present. Leaf-sheath oral hairs ciliate. Ligule an eciliate membrane. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades lanceolate, 8–16 cm long, 12–25 mm wide.

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

Fertile spikelets sessile.

**Fertile Spikelets.** Spikelets comprising 1 fertile floret, with diminished florets at the apex. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, laterally compressed, 30 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes several, persistent, shorter than spikelet.

**Florets.** Fertile lemma ovate, 27 mm long, chartaceous, without keel, more than 3-veined. Lemma margins convolute, covering most of palea. Lemma apex acute. Palea tightly convolute around flower, chartaceous, without keels. Palea apex dentate, 2 -fid. Apical sterile florets 1 in number, barren, rudimentary.

**Flower and Fruit.** Lodicules absent. Anthers 6, 12 mm long. Filaments united in groups. Stigmas 3. Ovary with a steeple-like appendage. Caryopsis with free brittle pericarp, oblong.

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

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

### **Schizostachyum castaneum** Widjaja. *Reinwardtia* 11(2): 134 (1997).

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

**TYPE** from Indonesia. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Bali, Tabanan: *Widjaja 6676* (BO holo).

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

**Derivation** (Clifford & Bostock 2007): *L. castaneum*, chestnut. Fertile lemma the color of chestnuts.

**Classification.** Subfamily Bambusoideae. Tribe: Bambuseae.

**Habit, Vegetative Morphology.** Perennial, woody bamboo, caespitose, clumped densely. Rhizomes short, pachymorph. Butt sheaths absent. Culms erect, 1500 cm long, 45–60 mm diam., woody. Culm-internodes terete, thin-walled, 45–70 cm long, distally pubescent. Lateral branches dendroid, arising from mid culm. Culm-sheaths present, tardily deciduous, 10–17 cm long, pubescent, with tawny hairs, auriculate, with 2 mm high auricles, setose on shoulders, shoulders with 4–11 mm long hairs. Culm-sheath ligule 1 mm high, dentate. Culm-sheath blade ovate, narrower than sheath, erect, 5–7 cm long, 23–27 mm wide. Leaf-sheaths pubescent, hairs white or tawny. Leaf-sheath oral hairs setose, 7–9 mm long. Leaf-sheath auricles erect, 1 mm long. Ligule an eciliate membrane, 1 mm long. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades oblong, 15.5–24 cm long, 30–45 mm wide. Leaf-blade surface scabrous, rough adaxially, pubescent, hairy abaxially. Leaf-blade margins scabrous. Leaf-blade apex acuminate. Flowering specimens unknown.

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

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

### **Schizostachyum caudatum** Backer ex K. Heyne. *Backer, Handb. Fl. Java*, 2: 284 (1928).

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

**TYPE** from Java. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Java, Bogor: Coll? (BO holo).

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

**Classification.** Subfamily Bambusoideae. Tribe: Bambuseae.

**Habit, Vegetative Morphology.** Perennial, woody bamboo, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms erect, drooping at the tip, 600–1000 cm long, woody. Culm-internodes terete, solid, 12–20 cm long. Lateral branches dendroid. Culm-sheaths present, persistent, 9–18 cm long, hispid, with dark brown hairs or black hairs, convex at apex, auriculate, setose on shoulders. Culm-sheath ligule 0.5–1 mm high, ciliolate. Culm-sheath blade triangular, erect, 3.5–6 cm long, pubescent, acuminate. Leaf-sheath oral hairs ciliate. Ligule an eciliate membrane, 0.5 mm long. Leaf-blade base with a brief petiole-like connection to sheath, petiole 0.3–0.5 cm long. Leaf-blades lanceolate, 15–30 cm long, 30–50 mm wide. Leaf-blade surface glabrous, hairless throughout. Leaf-blade margins scabrous.

**Inflorescence.** Synflorescence bractiferous, clustered at the nodes, in untidy tufts, 10–15 cm long, 0.8–2.5 cm between clusters, with glumaceous subtending bracts, with axillary buds at base of spikelet, prophyllate below lateral spikelets, leafless between clusters.

Fertile spikelets sessile.

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

**Glumes.** Glumes several. Upper glume ovate. Upper glume margins ciliate. Upper glume awned, 1 -awned.

**Florets.** Fertile lemma ovate, 7–8.5 mm long, chartaceous, without keel, 16–18 -veined, more than 3-veined. Lemma margins convolute, covering most of palea. Lemma apex acute, awned, 1 -awned. Principal lemma awn 2–2.5 mm long overall. Palea tightly convolute around flower, 8.5–10.5 mm long, chartaceous. Palea apex dentate, 2 -fid, ciliate, awned, awns 1.5 mm long. Apical sterile florets 1 in number, rudimentary.

**Flower and Fruit.** Lodicules 3, 3.5–4 mm long, ciliate. Anthers 6, 3.5–4.5 mm long, yellow. Styles 8–10 mm long. Ovary with a steeple-like appendage, pubescent all over. Caryopsis with free brittle pericarp, obovoid, 5.5–6 mm long, light brown.

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

**Country /Province /State.** Malesia. Java, Sumatra.

**Schizostachyum chinense** Rendle. *Journ. Linn. Soc.* vi. 448. (1904).

**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, Mengtze: Henry 10420 (K holo).

**Illustrations (Books):** S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 52).

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

**Classification.** Subfamily Bambusoideae. Tribe: Bambuseae.

**Habit, Vegetative Morphology.** Perennial, woody bamboo, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms 300–500 cm long, woody. Culm-internodes terete, thin-walled. Lateral branches dendroid. Culm-sheaths present, without auricles. Ligule an eciliate membrane. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades lanceolate. Leaf-blade venation with distinct cross veins. Leaf-blade surface scabrous, rough abaxially, glabrous. Leaf-blade apex attenuate.

**Inflorescence.** Synflorescence bractiferous, clustered at the nodes, in untidy tufts, with spathaceous subtending bracts, with axillary buds at base of spikelet, prophyllate below lateral spikelets, with 2-keeled prophylls.

Fertile spikelets sessile.

**Fertile Spikelets.** Spikelets comprising 1 basal sterile florets, 1 fertile florets, with a barren rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 14 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes several, comprising 3 gemmiferous bracts, 2 empty glumes, lower persistent, upper deciduous, shorter than spikelet. Upper glume lanceolate, 7–9 mm long.

**Florets.** Basal sterile florets 1, barren, without significant palea, separately deciduous (plus upper glume). Lemma of lower sterile floret ovate, acute, mucronate. Fertile lemma ovate, 10–11 mm long, chartaceous, keeled, 5 -veined, more than 3-veined. Lemma margins convolute, covering most of palea. Lemma apex truncate to acute. Palea tightly convolute around flower, 12 mm long, chartaceous. Palea surface pubescent, hairy on back. Palea apex obtuse.

**Flower and Fruit.** Lodicules 3, veined, ciliate. Anthers 6, 7–9 mm long. Stigmas 3. Ovary with a steeple-like appendage. Caryopsis with free brittle pericarp.

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

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

**TDWG4.** Yunnan.

**Schizostachyum copelandii** F. Muell. & Hack. *Oestr. Bot. Zeitschr.* 1896, 241 (1896).

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

**TYPE** from New Guinea. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: New Guinea, Pudi Mt.: Copeland King.

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

**Derivation** (Clifford & Bostock 2007): in honor of Copeland King (1863–1918) Australian cleric and amateur plant collector in New Guinea.

**Classification.** Subfamily Bambusoideae. Tribe: Bambuseae.

**Habit, Vegetative Morphology.** Perennial, woody bamboo, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms 300 cm long, woody. Culm-internodes terete, thin-walled, distally glabrous. Lateral branches dendroid. Culm-sheaths present. Leaf-sheaths glabrous on surface. Leaf-sheath oral hairs lacking. Ligule an eciliate membrane, 0.5 mm long, glabrous on abaxial surface, truncate. Collar with external ligule. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades linear, 12–15 cm long, 6–8 mm wide, stiff, glaucous. Leaf-blade midrib conspicuous. Leaf-blade venation with 4–6 secondary veins, without cross veins. Leaf-blade surface scaberulous, rough on both sides, glabrous. Leaf-blade margins scabrous. Leaf-blade apex acuminate.



**Inflorescence.** Synflorescence bractiferous, clustered at the nodes, in untidy tufts, with glumaceous subtending bracts, with axillary buds at base of spikelet, prophyllate below lateral spikelets, leafless between clusters, 15 cm long overall.

Fertile spikelets sessile.

**Fertile Spikelets.** Spikelets comprising 2 basal sterile florets, 1 fertile florets, with diminished florets at the apex. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 14 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes several, 3 empty glumes, persistent, shorter than spikelet. Lower glume ovate, 2–3 mm long, 3–7 -veined. Upper glume ovate, 2–3 mm long, 3–7 -veined.

**Florets.** Basal sterile florets 2 or more, developed. Lemma of lower sterile floret present, ovate, 5–7 mm long, 9 -veined, obtuse. Fertile lemma lanceolate, 12–13 mm long, chartaceous, without keel, 11 -veined, more than 3-veined. Lemma margins convolute, covering most of palea. Lemma apex acute. Palea tightly convolute around flower, chartaceous, 7 -veined, without keels. Apical sterile florets 1 in number, barren, rudimentary.

**Flower and Fruit.** Lodicules 3, ciliate. Anthers 6. Stigmas 3. Ovary with a steeple-like appendage. Caryopsis with free brittle pericarp.

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

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

### **Schizostachyum cornutum** Widjaja. *Reinwardtia* 11(2): 136 (1997).

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

**TYPE** from Indonesia. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Sumatra, Palupuh: *Widjaja 3977* (BO holo).

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

**Derivation** (Clifford & Bostock 2007): L. horned. Leaf-blades with horn-like auricles.

**Classification.** Subfamily Bambusoideae. Tribe: Bambuseae.

**Habit, Vegetative Morphology.** Perennial, woody bamboo, caespitose, clumped densely. Rhizomes short, pachymorph. Butt sheaths absent. Culms leaning, pendulous at the tip, 20–30 mm diam., woody. Culm-internodes terete, thin-walled, 50–60 cm long, distally pruinose or pilose. Lateral branches dendroid, arising from mid culm. Branch complement several, in a clump, with subequal branches. Culm-sheaths present, deciduous, 12.5–14.5 cm long, 1.5 times as long as wide, glabrous, truncate at apex, auriculate, with obtuse auricles, with 4 mm high auricles, setose on shoulders, shoulders with 7–8 mm long hairs. Culm-sheath ligule 6 mm high, dentate and ciliate. Culm-sheath blade triangular, narrower than sheath, erect or spreading, 12–17 cm long, 12–18 mm wide, glabrous on surface. Leaf-sheath oral hairs setose, 8–9 mm long. Leaf-sheath auricles erect, 1–2 mm long, obtuse or acute. Ligule a ciliate membrane. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades lanceolate, 17–30 cm long, 47–53 mm wide. Leaf-blade surface glabrous. Leaf-blade apex acuminate.

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

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 lanceolate, laterally compressed, 14–17 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes two or several, 2–3 empty glumes, persistent, shorter than spikelet. Lower glume ovate, 8 mm long. Lower glume apex acuminate. Upper glume ovate, 8 mm long, chartaceous. Upper glume surface glabrous. Upper glume apex acuminate.

**Florets.** Fertile lemma ovate, 10 mm long, chartaceous, without keel, more than 3-veined. Lemma surface pubescent, hairy above. Lemma margins ciliate. Lemma apex attenuate. Palea 12 mm long, chartaceous, 2-keeled. Palea apex dentate, 2 -fid. Rhachilla extension 4 mm long, glabrous. Apical sterile florets 1 in number, rudimentary.

**Flower and Fruit.** Lodicules absent. Anthers 6, 6 mm long, yellow, anther tip apiculate. Stigmas 3. Ovary with a steeple-like appendage, pubescent all over. Caryopsis with free brittle pericarp.

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

**Country /Province /State.** Malesia. Sumatra.

**Schizostachyum curranii** Gamble. *Philipp. Journ. Sci.* v. 277 (1910).

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

**TYPE** from The Philippines. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Philippine Is., Lusod to Bayabas: Curran 10849 (K iso).

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

**Derivation** (Clifford & Bostock 2007): in honor of Hugh McCollum Curran (1875–1960) United States forester.

**Classification.** Subfamily Bambusoideae. Tribe: Bambuseae.

**Habit, Vegetative Morphology.** Perennial, woody bamboo, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms scandent, woody. Culm-internodes terete, thin-walled, antrorsely scabrous. Lateral branches dendroid. Culm-sheaths present. Leaf-sheaths striately veined, glabrous on surface. Ligule a ciliate membrane. Leaf-blade base cordate, with a brief petiole-like connection to sheath, petiole 0.3 cm long. Leaf-blades lanceolate, 12–20 cm long, 20–30 mm wide. Leaf-blade venation indistinct, with 14–16 secondary veins. Leaf-blade margins scabrous. Leaf-blade apex attenuate.

**Inflorescence.** Synflorescence bractiferous, clustered at the nodes, in untidy tufts, with spathaceous subtending bracts, bracts 10–20 mm long, with axillary buds at base of spikelet, prophyllate below lateral spikelets, 70 cm long overall.

Fertile spikelets sessile.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, with a barren rachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate or oblong, laterally compressed, obtuse, 8 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes several, 2–3 empty glumes, persistent, shorter than spikelet. Lower glume ovate, chartaceous, without keels. Lower glume apex acute. Upper glume ovate, 5–6 mm long, chartaceous, without keels, 5–7 -veined. Upper glume apex acute, mucronate.

**Florets.** Fertile lemma ovate, 5 mm long, chartaceous, without keel, more than 3-veined. Lemma margins convolute, covering most of palea. Lemma apex acute. Palea tightly convolute around flower, chartaceous, without keels.

**Flower and Fruit.** Lodicules 2 to 3, 1 mm long, ciliate. Anthers 6, 3 mm long, anther tip penicillate. Stigmas 3. Ovary with a steeple-like appendage, pubescent on apex. Caryopsis with free brittle pericarp.

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

**Country /Province /State.** Malesia. Philippines.

**Schizostachyum cuspidatum** Widjaja. *Reinwardtia* 11(2): 137 (1997).

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

**TYPE** from Indonesia. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Sumatra, Kerulu: *Widjaja 3893* (BO holo).

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

**Derivation** (Clifford & Bostock 2007): *L. cuspidata*, head of a spear; -ata, possessing. Glumes or lemmas long tapering or terminating in a sharp tip.

**Classification.** Subfamily Bambusoideae. Tribe: Bambuseae.

**Habit, Vegetative Morphology.** Perennial, woody bamboo, caespitose, clumped loosely. Rhizomes short, pachymorph. Butt sheaths absent. Culms erect, 1500 cm long, 40–60 mm diam., woody. Culm-internodes terete, thin-walled, 75–90 cm long, mid-green, distally pruinose. Lateral branches dendroid, arising from mid culm. Culm-sheaths present, deciduous, 15.1–16.4 cm long, pubescent, with tawny hairs, convex at apex, auriculate, with 10 mm high auricles, with 15 mm wide auricles, setose on shoulders, shoulders with 15 mm long hairs. Culm-sheath ligule 2–3 mm high, entire. Culm-sheath blade triangular, erect, 14–17.2 cm long, 30–35 mm wide. Leaf-sheath oral hairs setose, 16 mm long. Leaf-sheath auricles falcate, 2 mm long. Ligule an eciliate membrane, 2 mm long, erose. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades oblong, 19–33 cm long, 43–60 mm wide. Leaf-blade surface scabrous, rough adaxially, glabrous. Leaf-blade margins scabrous. Leaf-blade apex acuminate. Flowering specimens unknown.

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

**Country /Province /State.** Malesia. Sumatra.

**Schizostachyum diaoluoshanense\*** N.H. Xia, L.L. Zhang & R.S. Lin. *Nordic J. Bot.* 26: 21–24, f. 1 (2008).

**TYPE** from China. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: China: Guangdong: Guangzhou, introduced from Dioluo Shan, cultivated in Bamboo Garden of South China Botanical Garden, 13 Aug. 2007 L.L. Zhang 2007081301 HT: IBSC.

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

**Classification.** Subfamily Bambusoideae. Tribe: Bambuseae.

**Habit, Vegetative Morphology.** Perennial, woody bamboo, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms erect, pendulous at the tip, 800 cm long, 25 mm diam., woody. Culm-internodes terete, thin-walled, 20–35 cm long, distally mealy. Lateral branches dendroid. Branch complement many. Culm-sheaths present, tardily deciduous, coriaceous, yellow, hispid, with appressed hairs, with white hairs, hairy on margins, truncate at apex, without auricles, setose on shoulders, shoulders with 4–10 mm long hairs. Culm-sheath ligule 2–3 mm high, fimbriate. Culm-sheath blade linear or lanceolate, reflexed, 9 cm long, hispid (beneath), acuminate. Leaves 6–12 per branch. Leaf-sheath oral hairs setose, 3–5 mm long. Leaf-sheath auricles absent. Ligule a ciliolate membrane. Leaf-blade base broadly rounded, with a brief petiole-like connection to sheath. Leaf-blades lanceolate, 12–30 cm long, 12–48 mm wide. Leaf-blade surface hispid, hairy adaxially. Leaf-blade margins serrulate. Leaf-blade apex attenuate.

**Inflorescence.** Synflorescence bractiferous, clustered at the nodes, in untidy tufts (of 1–4 spikelets, only the terminal fertile), open, with glumaceous subtending bracts, with axillary buds at base of spikelet, prophyllate below lateral spikelets, with 2-keeled prophylls, leafy between clusters or leafless between clusters.

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, 25–30 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes several, comprising 3–4 gemmiferous bracts, 0 empty glumes.

**Florets.** Fertile lemma lanceolate to oblong, 12–15 mm long, chartaceous, without keel, more than 3-veined. Lemma surface pubescent. Lemma margins convolute, covering most of palea. Lemma hairs white. Lemma apex acute, mucronate or awned, 1 -awned. Principal lemma awn 2 mm long overall. Palea lanceolate or oblong, tightly convolute around flower, 15–20 mm long, chartaceous, 2-keeled. Palea apex dentate, 2 -fid.

**Flower and Fruit.** Anthers 6, 6 mm long, yellow. Filaments united in groups (in pairs), 20–25 mm long. Stigmas 3, plumose. Ovary with a steeple-like appendage, glabrous. Caryopsis with free brittle pericarp, fusiform, 10–12 mm long, dark brown.

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

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

**Schizostachyum diffusum** (Blanco) Merrill. *Am. Journ. Bot.* iii. 62 (1916).

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

**TYPE** from The Philippines. **Basionym or Replaced Name:** *Bambusa diffusa* Blanco, *Fl. Filip.* 269 (1837). T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: Philippine Islands.,

**Illustrations (Books):** C-C Hsu, *Taiwan Grasses* (1975) (781, Pl. 1519).

**Derivation** (Clifford & Bostock 2007): L. widely spreading. Inflorescence an open panicle.

**Classification.** Subfamily Bambusoideae. Tribe: Bambuseae.

**Habit, Vegetative Morphology.** Perennial, woody bamboo, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms scandent, slender, zigzag, 4000 cm long, 5–15 mm diam., woody. Culm-internodes terete, thick-walled, 15–60 cm long, smooth. Lateral branches dendroid. Branch complement many. Culm-sheaths present, deciduous, coriaceous, pilose, with dark brown hairs, concave at apex, ciliate on shoulders. Culm-sheath ligule 0.5 mm high. Culm-sheath blade linear or lanceolate. Leaf-sheaths 5–12 cm long, glabrous on surface, outer margin hairy. Leaf-sheath oral hairs ciliate, dark. Leaf-sheath auricles absent. Ligule an eciliate membrane. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades lanceolate or oblong, 10–25 cm long, 15–25 mm wide. Leaf-blade venation with 8–10 secondary veins. Leaf-blade margins scabrous.

**Inflorescence.** Synflorescence bractiferous, clustered at the nodes, in untidy tufts, 1.8–2.5 cm long, with glumaceous subtending bracts, with axillary buds at base of spikelet, prophyllate below lateral spikelets.

Fertile spikelets sessile.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, with a barren rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, laterally compressed, 14 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes persistent, similar, shorter than spikelet. Lower glume lanceolate, 7 mm long, 1 length of upper glume, chartaceous, without keels. Lower glume apex acute. Upper glume lanceolate, 7 mm long, 0.5 length of adjacent fertile lemma, chartaceous, without keels. Upper glume apex acute.

**Florets.** Fertile lemma ovate, 14 mm long, 6 mm wide, chartaceous, without keel, 9 -veined, more than 3-veined. Lemma margins convolute, covering most of palea. Lemma apex emarginate. Palea ovate, tightly convolute around flower, 19 mm long, 1.1 length of lemma, chartaceous, 11 -veined, without keels. Palea apex dentate, 2 -fid.

**Flower and Fruit.** Lodicules 3, oblong, ciliate. Anthers 6, 9 mm long. Stigmas 3. Ovary with a steeple-like appendage. Caryopsis with free brittle pericarp, obovoid, 2–4 mm long, glabrous.

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

**Country /Province /State.** China, Eastern Asia. Taiwan. Malesia. Philippines.

**Schizostachyum distans** (Parkinson) H.B. Naithani & S.S.R. Bennet. *Indian Forester*, 117(1): 68: (1991).

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

**TYPE** from Myanmar. **Basionym or Replaced Name:** *Dendrochloa distans* C.E. Parkinson, *Indian Forester* 59: 707 (1933). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: **TYPE MATERIAL:** *M.P. Khant 13286*, 11 Jan 1932, Burma: Tenasserim, Mergui Dist. (US-2875368, US-1645150).

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

**Derivation** (Clifford & Bostock 2007): *L. disto*, be apart. Spikelets widely separated in inflorescence.

**Classification.** Subfamily Bambusoideae. Tribe: Bambuseae.

**Habit, Vegetative Morphology.** Perennial, woody bamboo, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms erect, 1500–2000 cm long, 80–100 mm diam., woody. Culm-internodes terete, thin-walled, 120–150 cm long. Lateral branches dendroid. Culm-sheaths present, 24–30 cm long, pubescent, with appressed hairs, with yellow hairs. Culm-sheath blade triangular, 35–40 cm long, 50–100 mm wide, acuminate. Leaf-sheaths glabrous on surface or pubescent. Leaf-sheath oral hairs lacking. Ligule an eciliate membrane, 3–7 mm long, obtuse. Leaf-blade base with a brief petiole-like connection to sheath, petiole 1 cm long. Leaf-blades lanceolate, 30–50 cm long, 50–60 mm wide. Leaf-blade venation with 15–16 secondary veins, with obscure cross veins. Leaf-blade surface puberulous, hairy abaxially. Leaf-blade margins scabrous. Leaf-blade apex attenuate.

**Inflorescence.** Synflorescence bractiferous, clustered at the nodes, in stellate clusters, 5–6 cm between clusters, pubescent on internodes, with glumaceous subtending bracts, with axillary buds at base of spikelet, prophyllate below lateral spikelets, leafless between clusters.

Fertile spikelets sessile.

**Fertile Spikelets.** Spikelets comprising 5–7 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, laterally compressed, 20–40 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes 20 mm long.

**Glumes.** Glumes several. Upper glume ovate, 3–10 mm long.

**Florets.** Fertile lemma ovate, 20–24 mm long, 10 mm wide, chartaceous, without keel, more than 3-veined. Lemma margins convolute, covering most of palea, ciliate, hairy above. Lemma apex acute. Palea tightly convolute around flower, 26 mm long, chartaceous, 16–18 -veined. Palea apex ciliate. Apical sterile florets resembling fertile though underdeveloped.

**Flower and Fruit.** Lodicules 3, 10–12 mm long, veined, ciliate. Anthers 6, 14 mm long. Filaments united in groups, 26 mm long. Stigmas 3. Styles 30–50 mm long. Ovary with a steeple-like appendage, glabrous. Caryopsis with free brittle pericarp.

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

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

**Schizostachyum (Teinostachyum) dullooa** (Gamble) R.B. Majumdar. S. Karthikeyan et al., *Fl. Ind. Enumerat. - Monocot.*: 281: (1989).

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

**TYPE** from India. **Basionym or Replaced Name:** *Teinostachyum dullooa* Gamble, *Ann. Bot. Gard. Calc.* 7: 101 (1896). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: India, Bhutan & Burma: Oliver (K iso).

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

**Derivation** (Clifford & Bostock 2007): Latinized form of dalu the vernacular name of the species in Assam.

**Classification.** Subfamily Bambusoideae. Tribe: Bambuseae.

**Habit, Vegetative Morphology.** Perennial, woody bamboo, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms erect or leaning or scandent, 600–900 cm long, 25–75 mm diam., woody. Culm-internodes terete, thin-walled, 40–75 cm long, dark green. Lateral branches dendroid. Culm-sheaths present, 12–30 cm long, 1.2 times as long as wide, pubescent, with appressed hairs, with white hairs, truncate at apex. Culm-sheath ligule fimbriate. Culm-sheath blade linear, reflexed, 7.5–15 cm long, 8–18 mm wide, pubescent. Leaf-sheaths striately veined, outer margin hairy. Leaf-sheath oral hairs scanty, deciduous. Ligule a ciliate membrane. Leaf-blade base asymmetrical, with a brief petiole-like connection to sheath, petiole 0.5–1 cm long. Leaf-blades lanceolate or oblong, 10–20 cm long, 20–25 mm wide. Leaf-blade midrib evident. Leaf-blade venation with 12–20 secondary veins, without cross veins. Leaf-blade surface scabrous, rough adaxially, glabrous or puberulous, hairy abaxially. Leaf-blade margins scabrous. Leaf-blade apex acuminate, antrorsely scabrous.

**Inflorescence.** Synflorescence bractiferous, linear, with spathaceous subtending bracts, with axillary buds at base of spikelet, prophyllate below lateral spikelets.

Fertile spikelets sessile.

**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 lanceolate, laterally compressed, 20–25 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes several, 2–4 empty glumes, persistent, shorter than spikelet. Upper glume ovate, chartaceous, without keels. Upper glume apex acute.

**Florets.** Fertile lemma oblong, 17–20 mm long, chartaceous, without keel, 8–10 -veined, more than 3-veined. Lemma surface pilose. Lemma apex acute, mucronate. Palea chartaceous.

**Flower and Fruit.** Lodicules 3. Anthers 6, 9 mm long, anther tip smooth. Stigmas 3, red. Ovary with a steeple-like appendage, glabrous. Caryopsis with free brittle pericarp.

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

**Country /Province /State. Indian Subcontinent, Indo-China.** Bangladesh, Eastern Himalaya. Myanmar, Vietnam.

**TDWG4.** Darjeeling.

### **Schizostachyum dumetorum** (Hance) Munro. *Seem. Bot. Voy. Herald*, 424. (1857).

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

**TYPE** from China. **Basionym or Replaced Name:** *Bambusa dumetorum* Hance ex Walp., *Ann.* 3: 781 (1852). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: China, Hongkong: Hance 597 (K iso).

**Illustrations (Books):** S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 55).

**Derivation** (Clifford & Bostock 2007): *L. dumetum*, thorn-bush; -etum, place of growth. Growing in thickets of thorn-bushes.

**Classification.** Subfamily Bambusoideae. Tribe: Bambuseae.

**Habit, Vegetative Morphology.** Perennial, woody bamboo, caespitose, clumped densely. Rhizomes short, pachymorph. Butt sheaths absent. Culms leaning, pendulous at the tip, 400–500 cm long, 10 mm diam., woody. Culm-internodes terete, thin-walled, 15–30 cm long. Lateral branches dendroid. Branch complement many. Culm-sheaths present, 10–19.5 cm long, glabrous, convex at apex, without auricles, ciliate on shoulders, shoulders with 5–7 mm long hairs. Culm-sheath ligule 1 mm high, entire. Culm-sheath blade lanceolate, deciduous, pubescent. Ligule an eciliate membrane. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades lanceolate. Leaf-blade venation with distinct cross veins. Leaf-blade surface pilose, hairy adaxially. Leaf-blade apex attenuate.

**Inflorescence.** Synflorescence bractiferous, clustered at the nodes, in untidy tufts, 5–6 cm long, with glumaceous subtending bracts, with axillary buds at base of spikelet, prophyllate below lateral spikelets.

Fertile spikelets sessile.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, with a barren rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, curved, subterete, 20 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes several, comprising 4–6 gemmiferous bracts, persistent, shorter than spikelet.

**Florets.** Fertile lemma lanceolate, 12–14 mm long, chartaceous, purple, without keel, 5 -veined, more than 3-veined. Lemma lateral veins prominent. Lemma margins convolute, covering most of palea. Lemma apex acute, awned. Palea tightly convolute around flower, 15 mm long, chartaceous, 7 -veined. Palea apex truncate. Rhachilla extension 2–4 mm long.

**Flower and Fruit.** Lodicules 3. Anthers 6, 5 mm long. Stigmas 3. Ovary with a steeple-like appendage. Caryopsis with free brittle pericarp, fusiform, 23–26 mm long.

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

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

**TDWG4.** Guangdong, Jiangxi.

**Schizostachyum flexuosum** Widjaja. *Reinwardtia* 11(2): 138 (1997).

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

**TYPE** from Malaysia. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Kalimantan, Sejangkung: *Widjaja 4853* (BO holo, K, US).

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

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

**Classification.** Subfamily Bambusoideae. Tribe: Bambuseae.

**Habit, Vegetative Morphology.** Perennial, woody bamboo, caespitose, clumped loosely. Rhizomes short, pachymorph. Butt sheaths absent. Culms leaning, pendulous at the tip, 1500 cm long, 20–40 mm diam., woody. Culm-internodes terete, thin-walled, 60–80 cm long, smooth, distally glabrous. Lateral branches dendroid, arising from mid culm. Branch complement several, in a clump, with subequal branches. Culm-sheaths present, deciduous, 15 cm long, pilose, with appressed hairs, with white hairs or tawny hairs, auriculate, with obtuse auricles, with 5 mm high auricles, ciliate on shoulders, shoulders with 3 mm long hairs. Culm-sheath ligule 3 mm high, ciliate. Culm-sheath blade linear or lanceolate, narrower than sheath, spreading, 13.4 cm long, 20 mm wide, pubescent. Leaf-sheath oral hairs ciliate, 5 mm long. Leaf-sheath auricles erect, 1 mm long. Ligule a ciliate membrane. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades lanceolate, 14–36 cm long, 22–47 mm wide. Leaf-blade surface glabrous. Leaf-blade apex acuminate.

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

Fertile spikelets sessile.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, with diminished florets at the apex. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, laterally compressed, 30 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes two, persistent, shorter than spikelet. Lower glume ovate, 13 mm long. Lower glume apex attenuate. Upper glume ovate, 13 mm long, chartaceous. Upper glume apex attenuate.

**Florets.** Fertile lemma ovate, 20 mm long, chartaceous, without keel, more than 3-veined. Lemma surface glabrous. Lemma apex attenuate. Palea 19 mm long, chartaceous. Palea apex dentate, 2 -fid. Apical sterile florets 1 in number, rudimentary.

**Flower and Fruit.** Lodicules 3, 4 mm long, glabrous. Anthers 6, 6 mm long, yellow, anther tip apiculate. Stigmas 3. Ovary with a steeple-like appendage, glabrous. Caryopsis with free brittle pericarp.

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

**Country /Province /State. Malesia.** Borneo.

**Schizostachyum funghomii** McClure. *Lingnan Sc. Journ.* xiv. 585 (1935).

**Accepted by:** R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), 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, Kwangtung, Meu-ming district: McC,ure 563 (US holo).

**Illustrations (Books):** S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 58).

**Derivation** (Clifford & Bostock 2007): in honor of Fung Hom, Chinese plant collector.

**Classification.** Subfamily Bambusoideae. Tribe: Bambuseae.

**Habit, Vegetative Morphology.** Perennial, woody bamboo, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms erect, 1000 cm long, 40–60 mm diam., woody. Culm-internodes terete, thin-walled, 20–40 cm long, antrorsely scabrous, distally glabrous or pubescent. Lateral branches dendroid. Culm-sheaths present, 15–30 cm long, pubescent, truncate at apex, without auricles, ciliate on shoulders. Culm-sheath ligule 1–2 mm high, dentate. Culm-sheath blade linear or lanceolate, pubescent. Ligule an eciliate membrane. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades lanceolate. Leaf-blade surface pubescent, hairy abaxially. Leaf-blade margins scabrous. Leaf-blade apex attenuate.

**Inflorescence.** Synflorescence bractiferous, clustered at the nodes, in untidy tufts, 2.5–4.3 cm long, with glumaceous subtending bracts, with axillary buds at base of spikelet, prophyllate below lateral spikelets.

Fertile spikelets sessile.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, with a barren rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 18–22 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes several, comprising 2–3 gemmiferous bracts, 0 empty glumes, persistent, shorter than spikelet.

**Florets.** Fertile lemma lanceolate, 15 mm long, chartaceous, without keel, more than 3-veined. Lemma margins convolute, covering most of palea. Lemma apex acute, awned, 1 -awned. Palea tightly convolute around flower, 21 mm long, chartaceous. Palea keels ciliate. Palea apex with excurrent keel veins.

**Flower and Fruit.** Lodicules 3. Anthers 6, 5 mm long. Stigmas 3. Ovary with a steeple-like appendage. Caryopsis with free brittle pericarp.

**Distribution (TDWG). Continent.** Temperate Asia, North America (+), South America (+).

**Country /Province /State. China.** China South Central, China Southeast. **Mesoamerica, Caribbean.** Guatemala, Honduras.

**TDWG4.** Guangdong, Guangxi. Yunnan.

### **Schizostachyum glaucifolium** (Rupr.) Munro. *Trans. Linn. Soc.* xxvi. 137. (1868).

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

**TYPE** from French Polynesia. **Basionym or Replaced Name:** *Bambusa glaucifolia* Rupr., *Bambuseae* 57 (1839). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: T: [18]27, [Pacific Ocean: insula] Nukahiva (LE-TRIN-3213.01, LE-TRIN-3213.02). *Schizostachyum glaucifolium* (Rupr.) Munro : sheet 2. IT: *F.J. Ruprecht 1840*, no date, French Polynesia: (US-2809296).

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

**Derivation** (Clifford & Bostock 2007): *L. glaucus*, bluish-green; *folium*, leaf. With bluish-green foliage.

**Classification.** Subfamily Bambusoideae. Tribe: Bambuseae.

**Habit, Vegetative Morphology.** Perennial, woody bamboo, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms 300–1000 cm long, woody. Culm-internodes terete, thin-walled, dark green or glaucous. Lateral branches dendroid. Branch complement one or two. Culm-sheaths present. Ligule an eciliate membrane. Leaf-blade base asymmetrical, with a brief petiole-like connection to sheath, petiole 0.5–1.5 cm long. Leaf-blades lanceolate, 21–45 cm long, 40–55 mm wide, light green. Leaf-blade venation with 22–30 secondary veins. Leaf-blade apex attenuate.

**Inflorescence.** Synflorescence bractiferous, clustered at the nodes, in stellate clusters, 1.5–3 cm long, dense, 1–2 cm between clusters, with glumaceous subtending bracts, with axillary buds at base of spikelet, prophyllate below lateral spikelets, leafless between branches, 45 cm long overall.

Fertile spikelets sessile.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, with a barren rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets linear, subterete, 10–13 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes several, persistent, shorter than spikelet.

**Florets.** Fertile lemma ovate, 10–13 mm long, chartaceous, without keel, more than 3-veined. Lemma margins convolute, covering most of palea. Lemma apex attenuate. Palea tightly convolute around flower, chartaceous, without keels.

**Flower and Fruit.** Lodicules 3. Anthers 6. Stigmas 3. Ovary with a steeple-like appendage. Caryopsis with free brittle pericarp.

**Distribution (TDWG). Continent.** Pacific.

**Country /Province /State. Southwestern Pacific, North-central Pacific.** Fiji, Samoa, Tonga, Wallis-Futuna Is. Marquesas, Society Is. Hawaii.

### **Schizostachyum glaucocladum** Widjaja. *Reinwardtia* 11(2): 140 (1997).

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

**TYPE** from Malaysia. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Kalimantan, Madang: *Widjaja 4824* (BO holo).

**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 Bambusoideae. Tribe: Bambuseae.

**Habit, Vegetative Morphology.** Perennial, woody bamboo, caespitose, clumped densely. Rhizomes short, pachymorph. Butt sheaths absent. Culms erect, pendulous at the tip, 1000–1500 cm long, 10–20 mm diam., woody. Culm-internodes terete, thin-walled, 25–35 cm long, distally pruinose. Lateral branches dendroid, arising from mid culm. Branch complement several, in a clump, with subequal branches. Culm-sheaths present, deciduous, 8–9 cm long, glabrous or pilose, hairy at the base, with tawny hairs, hairy on margins, truncate at apex, auriculate, with obtuse auricles, with 1 mm high auricles, ciliate on shoulders, shoulders with 4 mm long hairs. Culm-sheath ligule ciliate. Culm-sheath blade triangular, as wide as sheath at base, erect, 5–7.5 cm long, 30–60 mm wide, pubescent. Leaf-sheath oral hairs ciliate, 5–7 mm long. Leaf-sheath auricles absent. Ligule an eciliate membrane, 0.4 mm long. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades lanceolate, 13–20 cm long, 11–17 mm wide. Leaf-blade surface glabrous. Leaf-blade margins ciliate. Leaf-blade apex acuminate.

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

Fertile spikelets sessile.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, with diminished florets at the apex. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, laterally compressed, 11–19 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes two, persistent, shorter than spikelet. Lower glume ovate, 8 mm long. Lower glume apex acuminate. Upper glume ovate, 8 mm long, chartaceous. Upper glume apex acuminate.

**Florets.** Fertile lemma ovate, 11 mm long, chartaceous, without keel, more than 3-veined. Lemma apex attenuate. Palea 12 mm long, chartaceous, without keels. Palea apex dentate, 2 -fid. Apical sterile florets 1 in number, rudimentary.

**Flower and Fruit.** Lodicules 3, 4 mm long, glabrous. Anthers 6, 5 mm long, yellow, anther tip apiculate. Stigmas 3. Ovary with a steeple-like appendage, glabrous. Caryopsis with free brittle pericarp.

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

**Country /Province /State.** Malesia. Borneo.

**Schizostachyum gracile** (Munro) Holttum. *Kew Bull.* 1956, 206 (1956).

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

**TYPE** from Indonesia, Malaysia. **Basionym or Replaced Name:** *Melocanna gracilis* Kurz ex Munro, *Trans. Linn. Soc. London* 26(1): 133 (1868). T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: ST: *Wallich 5032*, Singapore ST: *Kurz s.n.*, Java.

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

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

**Derivation** (Clifford & Bostock 2007): L. slender. Culms or inflorescences slender.

**Classification.** Subfamily Bambusoideae. Tribe: Bambuseae.

**Habit, Vegetative Morphology.** Perennial, woody bamboo, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms arching, 300–400 cm long, 15–20 mm diam., woody. Culm-internodes terete, thin-walled, distally pubescent. Lateral branches dendroid. Branch complement many. Culm-sheaths present, pubescent, with appressed hairs, with tawny hairs, auriculate, with 10 mm high auricles, setose on shoulders, shoulders with curved hairs, shoulders with 10 mm long hairs. Culm-sheath ligule 0.5 mm high, ciliate. Culm-sheath blade ovate, erect, 3–4.5 cm long, 15–30 mm wide, pubescent (at base), acuminate. Leaf-sheath oral hairs ciliate. Leaf-sheath auricles falcate. Ligule an eciliate membrane. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades lanceolate, 10–20 cm long, 10–20 mm wide. Leaf-blade surface glabrous.

**Inflorescence.** Synflorescence bractiferous, clustered at the nodes, in untidy tufts (1–5 tufts), with glumaceous subtending bracts, with axillary buds at base of spikelet, prophyllate below lateral spikelets, leafy between clusters.

Fertile spikelets sessile.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, with diminished florets at the apex. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, laterally compressed, 12–14 mm long, breaking up at maturity, disarticulating below each fertile floret.



**Glumes.** Glumes several.

**Florets.** Fertile lemma ovate, 8–9 mm long, chartaceous, without keel, more than 3-veined. Lemma surface glabrous. Lemma margins convolute, covering most of palea. Lemma apex acute. Palea tightly convolute around flower, 10–12 mm long, chartaceous. Palea keels contiguous above a sulcus. Palea apex dentate, 2 -fid. Rhachilla extension 6–7 mm long. Apical sterile florets 1 in number, rudimentary.

**Flower and Fruit.** Lodicules 3, ciliate. Anthers 6. Stigmas 3. Ovary with a steeple-like appendage. Caryopsis with free brittle pericarp, 20 mm long. Embryo 0.05 length of caryopsis. Hilum linear, 1 length of caryopsis.

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

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

### **Schizostachyum grande** Ridley. *Journ. As. Soc. Straits*, 1 ii. 204 (1920).

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

**TYPE** from Malaysia. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Malaya, Semangkok Pass: Ridley 12043 (K syn) ; Malaya, Ginting Bidal: Ridley 7787 ; Malaya, Semangkok Pass: Ridley 8457.

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

**Derivation** (Clifford & Bostock 2007): L. tall. Plants robust with tall culms.

**Classification.** Subfamily Bambusoideae. Tribe: Bambuseae.

**Habit, Vegetative Morphology.** Perennial, woody bamboo, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms leaning, drooping at the tip, 2000 cm long, 120 mm diam., woody. Culm-internodes terete, thin-walled, 45–90 cm long, distally pubescent. Lateral branches dendroid. Branch complement many. Culm-sheaths present, 20–35 cm long, yellow or green, pubescent, with appressed hairs, with white hairs, convex at apex, auriculate, ciliate on shoulders, shoulders with 5 mm long hairs. Culm-sheath ligule 4–8 mm high, dentate. Culm-sheath blade triangular, deciduous, erect, 20–27 cm long, 100 mm wide, pubescent. Leaf-sheaths glabrous on surface or pubescent. Leaf-sheath oral hairs lacking. Leaf-sheath auricles erect. Ligule an eciliate membrane. Leaf-blade base asymmetrical, with a brief petiole-like connection to sheath, petiole 0.8 cm long. Leaf-blades lanceolate, 30–60 cm long, 40–100 mm wide. Leaf-blade surface glabrous.

**Inflorescence.** Synflorescence bractiferous, scanty, with glumaceous subtending bracts, with axillary buds at base of spikelet, prophyllate below lateral spikelets.

Fertile spikelets sessile.

**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 linear, laterally compressed, 30 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes 7 mm long.

**Glumes.** Glumes several.

**Florets.** Fertile lemma lanceolate, 10–15 mm long, chartaceous, without keel, more than 3-veined. Lemma margins convolute, covering most of palea. Lemma apex acute. Palea tightly convolute around flower, chartaceous. Palea keels contiguous above a sulcus. Palea apex dentate, 2 -fid. Apical sterile florets 1 in number, rudimentary.

**Flower and Fruit.** Lodicules 3, 3.5–5 mm long, ciliate. Anthers 6, 8 mm long, anther tip smooth. Stigmas 3. Ovary with a steeple-like appendage. Caryopsis with free brittle pericarp, 10–12 mm long.

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

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

### **Schizostachyum (Teinostachyum) griffithii** (Munro) R.B. Majumdar. S. Karthikeyan et al., *Fl. Ind. Enumerat. - Monocot.*: 281: (1989).

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

**TYPE** from Myanmar, India. **Basionym or Replaced Name:** *Teinostachyum griffithii* Munro, *Trans. Linn. Soc. London* 26(1): 143, t. 3 (1868). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: TYPE MATERIAL: *W. Griffith s.n.*, no date, Burma / India: prope Wulloboom (US-79432).

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

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

**Classification.** Subfamily Bambusoideae. Tribe: Bambuseae.

**Habit, Vegetative Morphology.** Perennial, woody bamboo, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms erect or arching, 750–1500 cm long, 50–200 mm diam., woody. Culm-internodes terete, thin-walled, 45–65 cm long, antrorsely scabrous. Lateral branches dendroid. Culm-sheaths present, 15 cm long, 4 times as long as wide, puberulous, hairy above, with appressed hairs, with white hairs, hairy on margins, auriculate, setose on shoulders, shoulders with curved hairs. Culm-sheath blade ovate, reflexed, 7.5–10 cm long. Leaf-sheaths keeled, striately veined, glabrous on surface or pubescent, outer margin hairy. Leaf-sheath oral hairs setose, deciduous, 5–10 mm long. Leaf-sheath auricles falcate. Ligule a ciliolate membrane. Leaf-blade base with a brief petiole-like connection to sheath, petiole 0.5 cm long. Leaf-blades lanceolate, 15–25 cm long, 17–40 mm wide. Leaf-blade midrib conspicuous. Leaf-blade venation with 16–20 secondary veins, without cross veins. Leaf-blade margins scabrous. Leaf-blade apex acuminate, antrorsely scabrous.

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

Fertile spikelets sessile or sessile and pedicelled. Pedicels absent or present.

**Fertile Spikelets.** Spikelets comprising 0–1 basal sterile florets, 3–5 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, laterally compressed, 50–75 mm long, 5 mm wide, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes one the lower absent or obscure, persistent, shorter than spikelet. Upper glume ovate, 7–10 mm long, chartaceous, without keels. Upper glume apex acute, mucronate.

**Florets.** Basal sterile florets absent or 1, barren. Lemma of lower sterile floret similar to upper glume. Fertile lemma ovate, 12 mm long, chartaceous, without keel, 9–11 -veined, more than 3-veined. Lemma surface pubescent. Lemma apex acute, mucronate. Palea chartaceous, 10 -veined. Palea keels ciliolate, adorned above.

**Flower and Fruit.** Lodicules 3, veined, glabrous. Anthers 6, yellow, anther tip smooth. Stigmas 2–3. Ovary with a steeple-like appendage, glabrous. Caryopsis with free brittle pericarp, ovoid.

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

**Country /Province /State. Indian Subcontinent, Indo-China.** Eastern Himalaya. Myanmar.

### **Schizostachyum hainanense** Merrill ex McClure. *Lingnan Sc. Journ.* xiv. 591 (1935).

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

**TYPE** from China. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: China, Hainan, Chim-shan: McClure 20063.

**Illustrations (Books):** D.Farrelly, *The Book of Bamboo* (1984), S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Figures 53 & 54 & 55).

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

**Classification.** Subfamily Bambusoideae. Tribe: Bambuseae.

**Habit, Vegetative Morphology.** Perennial, woody bamboo, caespitose, clumped loosely. Rhizomes short, pachymorph. Butt sheaths absent. Culms leaning or scandent, pendulous at the tip, 800–2000 cm long, 20–40 mm diam., woody. Culm-internodes terete, thin-walled, 35–75 cm long. Lateral branches dendroid. Culm-sheaths present, 12–22 cm long, without auricles, setose on shoulders, shoulders with 10–15 mm long hairs. Culm-sheath ligule 9–10 mm high, fimbriate. Culm-sheath blade linear or lanceolate, pubescent. Ligule an eciliate membrane. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades lanceolate. Leaf-blade surface scaberulous, rough on both sides. Leaf-blade apex attenuate.

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

Fertile spikelets sessile.

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

**Glumes.** Glumes several, comprising 3–4 gemmiferous bracts, persistent, shorter than spikelet.

**Florets.** Fertile lemma lanceolate, 10 mm long, chartaceous, without keel, more than 3-veined. Lemma margins convolute, covering most of palea, ciliolate, hairy above. Lemma apex acute, muticous or awned. Palea tightly convolute around flower, 12 mm long, chartaceous. Palea surface scabrous. Rhachilla extension 0.75 mm long. Apical sterile florets 1 in number, male.

**Flower and Fruit.** Lodicules 3. Anthers 6, 7 mm long. Stigmas 2–3. Ovary with a steeple-like appendage. Caryopsis with free brittle pericarp.

**Distribution (TDWG). Continent.** Temperate Asia, Tropical Asia.  
**Country /Province /State.** China. Hainan. **Indo-China.** Vietnam.

**Schizostachyum hallieri** Gamble. *Philipp. Journ. Sci.* v. 274 (1910).

Regarded by K as a synonym (*S. lima*).

**TYPE** from The Philippines. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: Philippine Is., Basilan: Hallier.

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

**Derivation** (Clifford & Bostock 2007): in honor of Hallier (fl. 1904) who collected in the Philippines.

**Classification.** Subfamily Bambusoideae. Tribe: Bambuseae.

**Habit, Vegetative Morphology.** Perennial, woody bamboo, caespitose, clumped densely. Rhizomes short, pachymorph. Butt sheaths absent. Culms 800–900 cm long, 20–40 mm diam., woody. Culm-internodes terete, thin-walled. Lateral branches dendroid. Culm-sheaths present. Leaf-sheaths striately veined, glabrous on surface. Leaf-sheath oral hairs ciliate, 4–6 mm long. Ligule a ciliate membrane. Leaf-blade base asymmetrical, with a brief petiole-like connection to sheath, petiole 0.5–1 cm long. Leaf-blades lanceolate, 15–30 cm long, 30–70 mm wide. Leaf-blade midrib prominent beneath. Leaf-blade venation with 16–18 secondary veins. Leaf-blade surface puberulous, hairy abaxially. Leaf-blade apex attenuate.

**Inflorescence.** Synflorescence bractiferous, clustered at the nodes, in globose clusters, 1–1.5 cm long, dense, with glumaceous subtending bracts, bracts 5–8 mm long, with axillary buds at base of spikelet, prophyllate below lateral spikelets, leafy between clusters.

Fertile spikelets sessile.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, with a barren rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, laterally compressed, acuminate, 15 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes several, 4 empty glumes, persistent, shorter than spikelet. Lower glume ovate, 3 mm long, chartaceous, without keels, 7–9 -veined. Lower glume apex acute, mucronate. Upper glume ovate, 10 mm long, chartaceous, without keels, 7–9 -veined. Upper glume apex acute, mucronate.

**Florets.** Fertile lemma ovate, 15 mm long, chartaceous, without keel, more than 3-veined. Lemma margins convolute, covering most of palea. Lemma apex acute, mucronate. Palea tightly convolute around flower, chartaceous, without keels.

**Flower and Fruit.** Lodicules absent. Anthers 6, 6–7 mm long, anther tip smooth. Filaments united in a tube, united for 0.5 of their length. Stigmas 3. Ovary with a steeple-like appendage. Caryopsis with free brittle pericarp.

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

**Country /Province /State.** Malesia. Philippines.

**Schizostachyum hantu** S. Dransfield. *Kew Bull.*, 38(2): 327 (1983).

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

**TYPE** from Malaysia. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: Borneo, Lundu: Dransfield SD 803 (K holo, BO, K, KEP, L, SAR, US).

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

**Derivation** (Clifford & Bostock 2007): Malay. hantu, ghost. A contraction of buluk hantu, the vernacular name of the species in Sarawak.

**Classification.** Subfamily Bambusoideae. Tribe: Bambuseae.

**Habit, Vegetative Morphology.** Perennial, woody bamboo, caespitose, clumped loosely. Rhizomes short, pachymorph. Butt sheaths absent. Culms leaning, pendulous at the tip, 1500–2000 cm long, 15–25 mm diam., woody. Culm-internodes terete, thick-walled, 80–100 cm long, light green, distally glabrous or pubescent. Culm-nodes swollen. Lateral branches dendroid. Culm-sheaths present, 10–22 cm long, pubescent, hairy above, with white hairs or tawny hairs, truncate at apex, auriculate, with 2 mm high auricles, setose on shoulders, shoulders with 13–15 mm long hairs. Culm-sheath ligule 2 mm high, ciliate. Culm-sheath blade lanceolate, erect or reflexed, 17–24 cm long, 7–13 mm wide, glabrous on surface, attenuate. Leaf-sheaths glabrous on surface, outer margin hairy. Leaf-sheath oral hairs setose, 10 mm long. Leaf-sheath auricles erect, 1 mm long. Ligule a ciliate membrane, 0.5–1 mm long. Leaf-blade base with a brief petiole-like connection to sheath, petiole 0.5–1.2 cm long. Leaf-blades lanceolate, 24–35 cm long, 32–59 mm wide. Leaf-blade surface glabrous. Leaf-blade apex attenuate.

**Inflorescence.** Synflorescence bractiferous, clustered at the nodes, in untidy tufts, with glumaceous subtending bracts, with axillary buds at base of spikelet, prophyllate below lateral spikelets, leafless between clusters, 10 cm long overall.

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

**Glumes.** Glumes several, persistent, shorter than spikelet.

**Florets.** Fertile lemma lanceolate, 15–17 mm long, chartaceous, without keel, 15 -veined, more than 3-veined. Lemma surface pubescent, hairy above. Lemma margins convolute, covering most of palea. Lemma apex acute, awned, 1 -awned. Principal lemma awn 1.5 mm long overall. Palea tightly convolute around flower, 17 mm long, chartaceous, 20 -veined, 2-keeled. Palea surface glabrous or puberulous, hairy above. Palea apex dentate, 2 -fid.

**Flower and Fruit.** Lodicules absent. Anthers 6. Stigmas 3. Ovary with a steeple-like appendage. Caryopsis with free brittle pericarp.

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

**Country /Province /State.** Malesia. Borneo.

### **Schizostachyum insulare** Ridley. *Journ. As. Soc. Straits*, lxi. 6 1 (1912).

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

**TYPE** from Malaysia. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: T: *Ridley 15931*, Pulau Rawei in the Butang Group, N of Langkawi (K. Singapore).

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

**Derivation** (Clifford & Bostock 2007): *L. insula*, island; -are, pertaining to. Island species.

**Classification.** Subfamily Bambusoideae. Tribe: Bambuseae.

**Habit, Vegetative Morphology.** Perennial, woody bamboo, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms 600–1200 cm long, 75 mm diam., woody. Culm-internodes terete, thin-walled. Lateral branches dendroid. Culm-sheaths present. Leaf-sheaths striately veined. Leaf-sheath oral hairs setose, 6 mm long. Ligule an eciliate membrane. Collar with external ligule. Leaf-blade base with a brief petiole-like connection to sheath, petiole 0.6 cm long. Leaf-blades lanceolate, 30 cm long, 37 mm wide. Leaf-blade apex acuminate.

**Inflorescence.** Synflorescence bractiferous, clustered at the nodes, in untidy tufts, with glumaceous subtending bracts, bracts 12 mm long, with axillary buds at base of spikelet, prophyllate below lateral spikelets, leafless between clusters, 30 cm long overall.

Fertile spikelets sessile.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, with diminished florets at the apex. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 25 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes two, persistent, shorter than spikelet. Lower glume ovate, 3 mm long, 1-keeled. Lower glume apex mucronate. Upper glume lanceolate, 6 mm long, 1-keeled. Upper glume mucronate.

**Florets.** Fertile lemma lanceolate, 20 mm long, chartaceous, without keel, more than 3-veined. Lemma surface hispid, hairy above. Lemma margins convolute, covering most of palea. Lemma apex acute. Palea tightly convolute around flower, chartaceous, without keels. Rhachilla extension 13 mm long. Apical sterile florets 1 in number, barren, lanceolate, 6 mm long.

**Flower and Fruit.** Lodicules 2. Anthers 4, anther tip smooth. Filaments united in a tube. Stigmas 3. Ovary with a steeple-like appendage. Caryopsis with free brittle pericarp.

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

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

### **Schizostachyum iraten** Steud. *Syn. Pl. Gram.* 332. (1854).

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

**TYPE** from Indonesia. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *H. Zollinger 3531*, Indonesia: Java (P; IT: L, US-2828189).

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

**Derivation** (Clifford & Bostock 2007): Vernacular name of the species in Java, Indonesia, and translating as "split bamboo".

**Classification.** Subfamily Bambusoideae. Tribe: Bambuseae.

**Habit, Vegetative Morphology.** Perennial, woody bamboo, caespitose, clumped densely. Rhizomes short, pachymorph. Butt sheaths absent. Culms erect, drooping at the tip, 600–1000 cm long, 20–50 mm diam., woody. Culm-internodes terete, thin-walled, 70–120 cm long, light green, distally pubescent. Culm-nodes swollen. Lateral branches dendroid. Buds or branches absent from lower part of culm. Culm-sheaths present, persistent, 20–28 cm long, 1.6–2 times as long as wide, yellow or green, pubescent, with tawny hairs, truncate at apex, auriculate, with 7 mm high auricles, ciliate on shoulders. Culm-sheath ligule 3 mm high, dentate. Culm-sheath blade linear, deciduous, spreading or reflexed, 11–30 cm long, 10–15 mm wide, pubescent (near base), attenuate. Leaf-sheaths glabrous on surface. Leaf-sheath oral hairs ciliate. Leaf-sheath auricles falcate. Ligule an eciliate membrane. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades lanceolate, 15–45 cm long, 15–90 mm wide. Leaf-blade surface glabrous.

**Inflorescence.** Synflorescence bractiferous, clustered at the nodes, in untidy tufts, 1–3 cm between clusters, with glumaceous subtending bracts, with axillary buds at base of spikelet, prophyllate below lateral spikelets.

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 lanceolate, subterete, 17–25 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes several, persistent, shorter than spikelet.

**Florets.** Fertile lemma ovate, 8–12 mm long, chartaceous, without keel, more than 3-veined. Lemma margins convolute, covering most of palea. Lemma apex acute. Palea tightly convolute around flower, chartaceous, without keels. Apical sterile florets 1 in number, barren, rudimentary.

**Flower and Fruit.** Anthers 6. Stigmas 3. Ovary with a steeple-like appendage. Caryopsis with free brittle pericarp, oblong.

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

**Country /Province /State.** Malesia. Java.

**Schizostachyum jaculans** Holttum. *Kew Bull.* 1953, 494 (1954).

**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 Malaysia. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: Malaysia: Kepong, Selangor, 60 m, 28 June 1953, *J. Wyatt-Smith Kep. 71511* (HT: ?; IT: L).

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

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

**Classification.** Subfamily Bambusoideae. Tribe: Bambuseae.

**Habit, Vegetative Morphology.** Perennial, woody bamboo, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms 600–700 cm long, 20–35 mm diam., woody. Culm-internodes terete, thin-walled, 50–80(–125) cm long, distally pruinose. Lateral branches dendroid. Branch complement many. Culm-sheaths present, 15–30 cm long, pubescent, with erect hairs, with tawny hairs, truncate at apex, auriculate, with 1 mm high auricles, setose on shoulders, shoulders with 8–12 mm long hairs. Culm-sheath ligule 2 mm high, ciliate. Culm-sheath blade linear, reflexed, 10–25 cm long, 7–18 mm wide. Leaf-sheath oral hairs scanty, 5–10 mm long. Leaf-sheath auricles falcate. Ligule an eciliate membrane. Leaf-blade base with a brief petiole-like connection to sheath, petiole 0.3–0.7 cm long. Leaf-blades lanceolate, 12–30 cm long, 12–50 mm wide. Leaf-blade surface pubescent, hairy abaxially.

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

Fertile spikelets sessile.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, laterally compressed, 10 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes several. Upper glume ovate, 6 mm long.

**Florets.** Fertile lemma ovate, 10 mm long, chartaceous, without keel, more than 3-veined. Lemma margins convolute, covering most of palea. Lemma apex acute. Palea tightly convolute around flower, 16 mm long, chartaceous. Palea apex dentate, 2 -fid.

**Flower and Fruit.** Lodicules absent. Anthers 6, 6–6.5 mm long. Filaments united in a tube. Stigmas 3, purple. Ovary with a steeple-like appendage. Caryopsis with free brittle pericarp.

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

**Country /Province /State.** China. Hainan. **Indo-China, Malesia.** Thailand. Malaya, Singapore.

### **Schizostachyum kalpongianum** M.Kumar & Remesh. *Blumea* 48(1): 189 (2003).

T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Andaman Is., Kalpong: Kumar & Remesh 20778 (KFRI holo, L, MH).

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

**Country /Province /State.** Indo-China. Andaman Is.

### **Schizostachyum khoonmengii** S. Dransfield. *Kew Bull.*, 55(2): 491 (2000).

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

**TYPE** from Malaysia. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Borneo: Brunei: Temburong Distr.: Sungai Temburung at Kuala Belalong, flowers, 22 Jun 1989, *Dransfield et al. SD998* (HT: BRUN; IT: K, KEP).

**Illustrations (Journals):** *Kew Bulletin* (55: 493, Fig.1 (2002)).

**Derivation** (Clifford & Bostock 2007): In honor of Khoon Meng Wong (1954-) Malaysian botanist and educator.

**Classification.** Subfamily Bambusoideae. Tribe: Bambuseae.

**Habit, Vegetative Morphology.** Perennial, woody bamboo, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms erect, 1500–2000 cm long, 30–80 mm diam., woody. Culm-internodes terete, thin-walled, 40–60 cm long, distally pruinose. Lateral branches dendroid. Branch complement many, with subequal branches. Culm-sheaths present, 12–15 cm long, 1 times as long as wide, yellow or green, pubescent, with appressed hairs, with dark brown hairs, hairy on margins, truncate at apex, auriculate, with 5 mm high auricles, with 9–10 mm wide auricles, setose on shoulders, shoulders with curved hairs, shoulders with 5–6 mm long hairs. Culm-sheath ligule 1 mm high, dentate. Culm-sheath blade ovate, narrower than sheath, 9–11 cm long, 50 mm wide, pubescent, acuminate. Leaf-sheaths glabrous on surface to pubescent, outer margin glabrous or hairy. Leaf-sheath oral hairs setose, curly, 8–12 mm long. Leaf-sheath auricles falcate, 3–6 mm long. Ligule an eciliate membrane, 0.5 mm long. Collar with external ligule. Leaf-blade base with a brief petiole-like connection to sheath, petiole 0.6–1 cm long, petiole glabrous or pubescent. Leaf-blades lanceolate or oblong, 30–40 cm long, 40–80 mm wide. Leaf-blade surface pubescent, hairy abaxially. Leaf-blade apex acuminate.

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

Fertile spikelets sessile.

**Fertile Spikelets.** Spikelets comprising 0–1 basal sterile florets, 1–2 fertile florets, with diminished florets at the apex. Spikelets of 1 fertile floret with or without additional sterile florets, or of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 13–14 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes 1–2 mm long.

**Glumes.** Glumes two, persistent, shorter than spikelet. Lower glume ovate. Upper glume ovate.

**Florets.** Basal sterile florets absent or 1. Lemma of lower sterile floret present, ovate, 6–7 mm long, ciliolate on margins, attenuate, awned. Awn of lower sterile floret 1–2 mm long. Fertile lemma ovate, 9–10 mm long, 6 mm wide, chartaceous, without keel, 11 -veined, more than 3-veined. Lemma surface glabrous. Lemma margins convolute, covering most of palea, ciliolate, hairy above. Lemma apex acuminate, awned, 1 -awned. Principal lemma awn 3 mm long overall. Palea tightly convolute around flower, 14 mm long, chartaceous, without keels. Palea surface pilose, hairy on margins, hairy above. Palea apex dentate, 2 -fid. Rhachilla extension 10 mm long. Apical sterile florets 1 in number, barren, rudimentary or lanceolate, 1–5 mm long.

**Flower and Fruit.** Lodicules absent. Anthers 6. Stigmas 3. Ovary with a steeple-like appendage, glabrous. Caryopsis with free brittle pericarp.

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

**Country /Province /State.** Malesia. Borneo.

**Schizostachyum latifolium** Gamble. *Ann. Bot. Gard. Calc.* vii. 117. (1896).

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

**TYPE** from Malaysia. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: Malaya, Kota Glanggi: Ridley 5602 (K iso).

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

**Derivation** (Clifford & Bostock 2007): *L. latus*, broad; folium, leaf. Leaf-blades broad or relatively broad with respect to related species.

**Classification.** Subfamily Bambusoideae. Tribe: Bambuseae.

**Habit, Vegetative Morphology.** Perennial, woody bamboo, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms erect, drooping at the tip, 300–500 cm long, 15–25 mm diam., woody. Culm-internodes terete, thin-walled, 35–55 cm long, distally pubescent. Lateral branches dendroid. Branch complement many. Culm-sheaths present, 12–14 cm long, green or brown, pubescent, with appressed hairs, with white hairs, auriculate, with 3–5 mm high auricles, setose on shoulders, shoulders with 5–10 mm long hairs. Culm-sheath ligule 1–1.5 mm high, ciliolate. Culm-sheath blade linear or lanceolate, spreading or reflexed, 6–9 cm long, 12–17 mm wide. Leaf-sheath oral hairs ciliate, 4–7 mm long. Leaf-sheath auricles absent or falcate. Ligule an eciliate membrane. Leaf-blade base with a brief petiole-like connection to sheath, petiole 0.4–0.8 cm long. Leaf-blades lanceolate, 25–40 cm long, 30–70 mm wide. Leaf-blade surface puberulous, hairy abaxially.

**Inflorescence.** Synflorescence bractiferous, clustered at the nodes, in untidy tufts, 10–25 cm long, with glumaceous subtending bracts, with axillary buds at base of spikelet, prophyllate below lateral spikelets, leafless between clusters.

Fertile spikelets sessile.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, with diminished florets at the apex. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 22–30 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes several. Upper glume ovate. Upper glume margins ciliolate. Upper glume apex setaceously acuminate.

**Florets.** Fertile lemma ovate, 16–18 mm long, chartaceous, without keel, more than 3-veined. Lemma surface pubescent, hairy above. Lemma margins convolute, covering most of palea. Lemma apex acute, awned, 1 -awned. Principal lemma awn 2.5–3 mm long overall. Palea tightly convolute around flower, 18–20 mm long, chartaceous. Palea apex dentate, 2 -fid, awned, awns 1.5–3 mm long. Rhachilla extension 4–7 mm long. Apical sterile florets 1 in number, rudimentary.

**Flower and Fruit.** Lodicules 3 or many (3–10), 5–7 mm long. Anthers 6, 9–10 mm long, anther tip apiculate. Stigmas 3. Ovary with a steeple-like appendage. Caryopsis with free brittle pericarp.

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

**Country /Province /State. Indian Subcontinent, Malesia.** Assam, Eastern Himalaya. Borneo, Sumatra, Malaya, Singapore.

**TDWG4.** Sikkim. Manipur.

**Schizostachyum lengguanii** K.M. Wong. *Bamboos Penins. Malaysia (Malayan Forest Rec., 41):* 176 (1995).

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

**TYPE** from Malaysia. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: Malaya, Pahang, Tasik Chini: Saw FRI 39926 (KEP holo).

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

**Derivation** (Clifford & Bostock 2007): In honor of Leng-guan Saw (fl. 1997) Malaysian botanist.

**Classification.** Subfamily Bambusoideae. Tribe: Bambuseae.

**Habit, Vegetative Morphology.** Perennial, woody bamboo, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms 400–600 cm long, 60–120 mm diam., woody. Culm-internodes terete, thin-walled, 25–36 cm long, glaucous. Lateral branches dendroid. Branch complement many, with subequal branches. Culm-sheaths present, green, pubescent, with appressed hairs, with white hairs or tawny hairs, auriculate, setose on shoulders, shoulders with 6–10 mm long hairs. Culm-sheath ligule 0.5–1 mm high, entire. Culm-sheath blade lanceolate, erect or spreading. Leaf-sheath oral hairs ciliate, deciduous, 1–2 mm long. Ligule an eciliate membrane. Leaf-blade base with a brief petiole-like connection to sheath, petiole 0.2–0.3 cm long. Leaf-blades lanceolate, 8–16 cm long, 8–12 mm wide.

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

Fertile spikelets sessile.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, with diminished florets at the apex. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, laterally compressed, 12–14 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes several, comprising 1 gemmiferous bracts, persistent, shorter than spikelet.

**Florets.** Fertile lemma ovate, 8–9.5 mm long, chartaceous, without keel, more than 3-veined. Lemma margins convolute, covering most of palea. Lemma apex apiculate, pubescent. Palea tightly convolute around flower, 9.5–11.5 mm long, chartaceous. Apical sterile florets 1 in number, rudimentary.

**Flower and Fruit.** Lodicules 3. Anthers 6, 3.5 mm long, anther tip smooth. Ovary with a steeple-like appendage. Caryopsis with free brittle pericarp.

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

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

**Schizostachyum lima** (Blanco) Merrill. *Am. Journ. Bot.* iii. 62 (1916).

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

**TYPE** from The Philippines. **Basionym or Replaced Name:** *Bambusa lima* Blanco, *Fl. Filip.* 271 (1837). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Philippine Is.: Coll?.

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

**Derivation** (Clifford & Bostock 2007): *L. lima*, file. Leaves or glumes scabrid.

**Classification.** Subfamily Bambusoideae. Tribe: Bambuseae.

**Habit, Vegetative Morphology.** Perennial, woody bamboo, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms erect, pendulous at the tip, 800–1000 cm long, 30–40 mm diam., woody. Culm-internodes terete, thin-walled, antrorsely scabrous, distally hispid. Lateral branches dendroid. Buds or branches absent from lower part of culm. Branch complement many, with subequal branches. Culm-sheaths present, deciduous, yellow or green, antrorsely scabrous, hispid, with appressed hairs, with white hairs, truncate at apex, without auricles, setose on shoulders, shoulders with 9–12 mm long hairs. Culm-sheath ligule ciliate. Culm-sheath blade linear or lanceolate, reflexed, hispid. Leaf-sheaths glabrous on surface or hispid. Leaf-sheath oral hairs lacking or ciliate, deciduous, pale. Leaf-sheath auricles absent. Ligule an eciliate membrane or a ciliolate membrane. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades lanceolate or oblong, 9–33 cm long, 15–48 mm wide. Leaf-blade venation indistinct, without cross veins. Leaf-blade surface smooth or scaberulous, rough abaxially, pilose, sparsely hairy, hairy adaxially. Leaf-blade margins scaberulous. Leaf-blade apex acuminate.

**Inflorescence.** Synflorescence bractiferous, linear, 10–15 cm long, with glumaceous subtending bracts, with axillary buds at base of spikelet, prophyllate below lateral spikelets.

Fertile spikelets sessile.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, with a barren rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, laterally compressed, 22 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes several, 1–5 empty glumes, persistent, shorter than spikelet. Upper glume oblong, 6–12 mm long, chartaceous, 1-keeled. Upper glume apex obtuse or acute, mucronate.

**Florets.** Fertile lemma ovate, 18–20 mm long, chartaceous, without keel, 11 -veined, more than 3-veined. Lemma margins convolute, covering most of palea. Lemma apex acute, awned, 1 -awned. Principal lemma awn 15 mm long overall. Palea tightly convolute around flower, 20–22 mm long, chartaceous. Palea apex dentate, 2 -fid, awned, awns 5–7 mm long.

**Flower and Fruit.** Lodicules absent. Anthers 6, 6–8 mm long. Stigmas 3. Ovary with a steeple-like appendage, glabrous. Caryopsis with free brittle pericarp.

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

**Country /Province /State. Malesia, Papuasia.** Philippines. New Guinea.

**Schizostachyum lumampao** (Blanco) Merrill. *Am. Journ. Bot.* 1916, iii. 63 (1916).

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



**TYPE** from The Philippines. **Basionym or Replaced Name:** *Bambusa lumampao* Blanco, *Fl. Filip.* ed. I. 272 (1837). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Philippine Is.: Coll?.

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

**Derivation** (Clifford & Bostock 2007): vernacular name of the species in the Philippines.

**Classification.** Subfamily Bambusoideae. Tribe: Bambuseae.

**Habit, Vegetative Morphology.** Perennial, woody bamboo, caespitose, clumped densely. Rhizomes short, pachymorph. Butt sheaths absent. Culms erect or arching, 1000–1500 cm long, 40–80 mm diam., woody. Culm-internodes terete, thin-walled, 25–50 cm long, distally glabrous. Lateral branches dendroid. Buds or branches absent from lower part of culm. Branch complement several or many. Culm-sheaths present, persistent, 24–26 cm long, 1 times as long as wide, hispid, with yellow hairs, without auricles. Culm-sheath ligule ciliolate. Culm-sheath blade lanceolate, reflexed, 9 cm long, 19 mm wide, pubescent. Leaf-sheaths glabrous on surface. Leaf-sheath auricles absent. Ligule an eciliate membrane, erose. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades lanceolate, 30–36 cm long, 25–30 mm wide.

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

Fertile spikelets 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 linear, laterally compressed, 15 mm long, 1.5 mm wide, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes two, persistent, shorter than spikelet.

**Florets.** Fertile lemma ovate, 12–14 mm long, chartaceous, without keel, more than 3-veined. Lemma margins convolute, covering most of palea. Lemma apex acute. Palea tightly convolute around flower, chartaceous, without keels. Apical sterile florets 1 in number, barren, rudimentary.

**Flower and Fruit.** Anthers 6. Stigmas 3. Ovary with a steeple-like appendage. Caryopsis with free brittle pericarp, oblong.

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

**Country /Province /State.** Malesia. Philippines.

### **Schizostachyum lutescens** Widjaja. *Reinwardtia* 11(2): 142 (1997).

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

**TYPE** from Indonesia. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Sumatra, Kuto Lawah: *Widjaja 3920* (BO holo).

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

**Derivation** (Clifford & Bostock 2007): *L. lutesco*, become yellow. Panicles yellowish-green.

**Classification.** Subfamily Bambusoideae. Tribe: Bambuseae.

**Habit, Vegetative Morphology.** Perennial, woody bamboo, caespitose, clumped densely. Rhizomes short, pachymorph. Butt sheaths absent. Culms erect, pendulous at the tip, 2000 cm long, 20–40 mm diam., woody. Culm-internodes terete, thin-walled, 45–60 cm long, distally glabrous or pilose. Lateral branches dendroid, arising from mid culm. Branch complement several, in a clump, with subequal branches. Culm-sheaths present, deciduous. Leaf-sheath oral hairs setose, 12–14 mm long. Leaf-sheath auricles falcate, 1 mm long. Ligule an eciliate membrane, 0.5–1 mm long. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades lanceolate, 13–22 cm long, 27–44 mm wide. Leaf-blade surface pubescent, sparsely hairy, hairy abaxially. Leaf-blade apex acuminate.

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

Fertile spikelets sessile.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, with diminished florets at the apex. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, laterally compressed, 17 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes one the lower absent or obscure, persistent, shorter than spikelet. Upper glume ovate, 14 mm long, chartaceous. Upper glume margins ciliate. Upper glume hairs white. Upper glume apex acuminate.

**Florets.** Fertile lemma ovate, 12 mm long, chartaceous, without keel, more than 3-veined. Lemma margins eciliate or ciliolate. Lemma apex attenuate. Palea 9 mm long, chartaceous. Palea apex dentate, 2 -fid. Rhachilla extension 2 mm long, glabrous. Apical sterile florets 1 in number, rudimentary.

**Flower and Fruit.** Lodicules absent. Anthers 6, 3 mm long, yellow, anther tip apiculate. Stigmas 3. Ovary with a steeple-like appendage, pubescent all over. Caryopsis with free brittle pericarp.

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

**Country /Province /State. Malesia.** Sumatra.

**Schizostachyum mampouw** Widjaja. *Reinwardtia* 11(2): 144 (1997).

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

**TYPE** from Indonesia. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Sumatra, Lahat district: *Widjaja 3837* (BO holo).

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

**Derivation** (Clifford & Bostock 2007): Vernacular name for the species in Sumatra, Indonesia.

**Classification.** Subfamily Bambusoideae. Tribe: Bambuseae.

**Habit, Vegetative Morphology.** Perennial, woody bamboo, caespitose, clumped densely. Rhizomes short, pachymorph. Butt sheaths absent. Culms erect, pendulous at the tip, 1000–1500 cm long, 25–30 mm diam., woody. Culm-internodes terete, thin-walled, 30–60 cm long. Lateral branches dendroid, arising from mid culm. Branch complement several, in a clump, with subequal branches. Culm-sheaths present, deciduous, 9.5–10 cm long, 1.5 times as long as wide, pubescent, with white hairs or tawny hairs, truncate at apex, auriculate, with obtuse auricles, with 1–2 mm high auricles, setose on shoulders, shoulders with 14 mm long hairs. Culm-sheath ligule ciliate. Culm-sheath blade triangular, narrower than sheath, erect, 6.5–9.5 cm long, 15 mm wide, pubescent. Leaf-sheaths pubescent, hairs white. Leaf-sheath oral hairs setose, 9 mm long. Ligule an eciliate membrane, 1 mm long. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades lanceolate, 19–33 cm long, 24–50 mm wide. Leaf-blade surface pilose, sparsely hairy, hairy abaxially. Leaf-blade apex acuminate.

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

Fertile spikelets sessile.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, with diminished florets at the apex. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, laterally compressed, 8–16 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes two, persistent, shorter than spikelet. Lower glume ovate, 5–8 mm long. Lower glume apex acuminate. Upper glume ovate, 5–8 mm long, chartaceous. Upper glume apex acuminate.

**Florets.** Fertile lemma ovate, 9–10 mm long, chartaceous, without keel, more than 3-veined. Lemma surface glabrous. Lemma apex acuminate. Palea 10–15 mm long, chartaceous, without keels. Palea apex dentate, 2-fid. Rhachilla extension 2 mm long. Apical sterile florets 1 in number, rudimentary.

**Flower and Fruit.** Lodicules absent. Anthers 6, yellow, anther tip apiculate. Stigmas 3. Ovary with a steeple-like appendage, pubescent all over. Caryopsis with free brittle pericarp.

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

**Country /Province /State. Malesia.** Sumatra.

**Schizostachyum merrillii** Gamble. *Philipp. Journ. Sci.* v. 278 (1910).

Regarded by K as a synonym (*S. textorium*).

**TYPE** from The Philippines. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Philippine Is., Luzon, Antipolo: Merrill 1744 (K iso).

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

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

**Classification.** Subfamily Bambusoideae. Tribe: Bambuseae.

**Habit, Vegetative Morphology.** Perennial, woody bamboo, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms 20 mm diam., woody. Culm-internodes terete, thin-walled, antrorsely scabrous. Lateral branches dendroid. Culm-sheaths present. Leaf-sheaths striately veined, glabrous on surface. Leaf-sheath oral hairs scanty. Ligule a ciliate membrane. Leaf-blade base simple, with a brief petiole-like connection to sheath, petiole 0.2–0.3 cm long. Leaf-blades linear, 7–15 cm long, 7–10 mm wide, light green. Leaf-blade venation indistinct, with 6 secondary veins. Leaf-blade surface glabrous. Leaf-blade margins scabrous. Leaf-blade apex acuminate.

**Inflorescence.** Synflorescence bractiferous, clustered at the nodes, in untidy tufts, with spathaceous subtending bracts, with axillary buds at base of spikelet, prophyllate below lateral spikelets, 10 cm long overall.

Fertile spikelets sessile.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, with a barren rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, laterally compressed, 10 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes several, 1–2 empty glumes, persistent, shorter than spikelet. Lower glume ovate, chartaceous, without keels. Lower glume apex acute, awned, 3 -awned. Upper glume ovate, chartaceous, without keels. Upper glume apex acute, mucronate.

**Florets.** Fertile lemma ovate, 10 mm long, chartaceous, without keel, more than 3-veined. Lemma surface puberulous. Lemma margins convolute, covering most of palea. Lemma apex acute, awned. Palea tightly convolute around flower, 1 length of lemma, chartaceous, without keels. Palea apex awned.

**Flower and Fruit.** Anthers 6, 5 mm long, anther tip smooth. Stigmas 3. Ovary with a steeple-like appendage. Caryopsis with free brittle pericarp.

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

**Country /Province /State.** Malesia. Philippines.

**Schizostachyum ninhthuanense** N. H. Xia, V. T. Tran et H. N. Nguyen. *Nordic J. Bot.* 28:487–492 (2010).

**Illustrations (Journals):** *Nordic J.Bot.* (28: 490, Fig.3 (2010)).

**Classification.** Subfamily Bambusoideae. Tribe: Bambuseae.

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

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

**Schizostachyum perrieri** A.Camus. *Bull. Soc. Bot. France*, lxxi. 780 (1924).

**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: Madagascar, Tsaratanana: Perrier 16149.

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

**Derivation** (Clifford & Bostock 2007): in honor of Joseph Marie Henri Alfred Perrier de la Bbthie (1872–1958) French botanist.

**Classification.** Subfamily Bambusoideae. Tribe: Bambuseae.

**Habit, Vegetative Morphology.** Perennial, woody bamboo, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms erect, 200–800 cm long, woody. Culm-internodes terete, thin-walled. Lateral branches dendroid. Culm-sheaths present. Leaf-sheaths striately veined and reticulately veined, glabrous on surface, outer margin hairy. Leaf-sheath oral hairs ciliate. Leaf-sheath auricles falcate. Ligule an eciliate membrane, truncate. Collar with external ligule. Leaf-blade base with a brief petiole-like connection to sheath, petiole 0.2–0.3 cm long. Leaf-blades linear or lanceolate, 7–10 cm long, 4–5 mm wide. Leaf-blade venation with distinct cross veins. Leaf-blade surface glabrous. Leaf-blade margins scaberulous. Leaf-blade apex attenuate.

**Inflorescence.** Synflorescence bractiferous, clustered at the nodes, in untidy tufts, with glumaceous subtending bracts, with axillary buds at base of spikelet, prophyllate below lateral spikelets, 6–8 cm long overall.

Fertile spikelets pedicelled. Pedicels present, 2–5 mm long.

**Fertile Spikelets.** Spikelets comprising 2 basal sterile florets, 1 fertile florets, with diminished florets at the apex. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 16–18 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes two, persistent, shorter than spikelet. Lower glume lanceolate, 4 mm long, 5–7 -veined. Lower glume lateral veins with cross-veins. Lower glume surface glabrous. Lower glume margins ciliate. Lower glume apex acuminate. Upper glume lanceolate, 5.5–6 mm long, 5–7 -veined. Upper glume lateral veins with cross-veins. Upper glume surface glabrous. Upper glume margins ciliate. Upper glume apex acute.

**Florets.** Basal sterile florets 2 or more. Lemma of lower sterile floret present, lanceolate, 10–11 mm long, 9 -veined, with cross-veins, emarginate or acuminate. Fertile lemma lanceolate, 7–9 mm long, chartaceous, without keel, 7 -veined, more than 3-veined. Lemma surface pilose, hairy above. Lemma margins convolute, covering most of palea. Lemma apex acute. Palea tightly convolute around flower, chartaceous, without keels. Apical sterile florets 1 in number, barren, rudimentary.

**Flower and Fruit.** Anthers 6. Stigmas 3. Ovary with a steeple-like appendage. Caryopsis with free brittle pericarp.

**Distribution (TDWG). Continent.** Africa.

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

**Schizostachyum pilosum** S. Dransfield. *Kew Bull.*, 38(2): 325 (1983).

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

**TYPE** from Indonesia. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Borneo, Nabawan: Dransfield SD 745 (K holo, L, SAN, SAR).

**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 Bambusoideae. Tribe: Bambuseae.

**Habit, Vegetative Morphology.** Perennial, woody bamboo, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms erect or leaning, 1500 cm long, 30–50 mm diam., woody. Culm-internodes terete, thin-walled, 30 cm long, distally pruinose or pubescent. Lateral branches dendroid. Culm-sheaths present, 30 cm long, pubescent, with appressed hairs, with white hairs or tawny hairs, hairy on margins, auriculate, with 1 mm high auricles, setose on shoulders. Culm-sheath ligule 6–8 mm high, dentate. Culm-sheath blade narrowly ovate, 30 cm long, 40–50 mm wide, pubescent, attenuate. Leaf-sheath oral hairs ciliate. Leaf-sheath auricles falcate. Ligule a ciliate membrane, 5 mm long. Leaf-blade base with a brief petiole-like connection to sheath, petiole 0.5–1 cm long. Leaf-blades lanceolate, 30–40 cm long, 37 mm wide. Leaf-blade surface glabrous or pilose, sparsely hairy. Leaf-blade apex attenuate.

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

Fertile spikelets 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 lanceolate, laterally compressed, 24 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes 8 mm long.

**Glumes.** Glumes several, persistent, shorter than spikelet.

**Florets.** Fertile lemma ovate, 16 mm long, chartaceous, without keel, more than 3-veined. Lemma margins convolute, covering most of palea. Lemma apex acute. Palea tightly convolute around flower, chartaceous, without keels. Apical sterile florets 1 in number, barren, rudimentary.

**Flower and Fruit.** Lodicules 3. Anthers 6. Stigmas 3. Ovary with a steeple-like appendage. Caryopsis with free brittle pericarp, oblong.

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

**Country /Province /State.** Malesia. Borneo.

**Schizostachyum pingbianense** Hsueh & Y.M.Yang ex T.P.Yi. *J. Sichuan Forest. Sci. Technol.* 28(2): 4 (2007).

**TYPE** from China. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: China, Yunnan, Pingbian, Dawei mountain: *Sun Maosheng 99001* (SWFC holo, SAUD).

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

**Classification.** Subfamily Bambusoideae. Tribe: Bambuseae.

**Habit, Vegetative Morphology.** Perennial, woody bamboo, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms arching or leaning, pendulous at the tip, 500–700 cm long, 10–20(–30) mm diam., woody, 25–30-noded. Culm-internodes terete, (10–)25–35(–60) cm long, distally pilose (when young). Culm-nodes flush with internodes. Lateral branches dendroid. Branch complement many. Culm-sheaths present, tardily deciduous, 0.5–0.8 length of internode, hispid, with grey hairs, without auricles, glabrous on shoulders. Culm-sheath ligule 0.5–1 mm high, ciliolate. Culm-sheath blade linear or lanceolate, reflexed, 3–5 mm wide, pubescent. Leaves (4–)5–7 per branch. Leaf-sheaths 7–10 cm long. Leaf-sheath oral hairs lacking. Leaf-sheath auricles erect. Ligule an eciliate membrane, 1–1.5 mm long. Leaf-blade base cuneate, with a brief petiole-like connection to sheath, petiole 0.3–0.5 cm long. Leaf-blades lanceolate or oblong, 14–15 cm long, (2.2–)3–5 mm wide. Leaf-blade venation with 12–18 secondary veins, with obscure cross veins. Leaf-blade margins scabrous.

**Inflorescence.** Synflorescence bractiferous, clustered at the nodes, in untidy tufts, 1.5–3.5 cm long, with spathaceous subtending bracts, with axillary buds at base of spikelet, prophyllate below lateral spikelets, leafless between clusters, 4.5–12 cm long overall.

Fertile spikelets sessile.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, with a barren rhachilla extension or with diminished florets at the apex. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets

one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 10–15 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes several, comprising 3–4 gemmiferous bracts, 3 empty glumes, persistent, similar, shorter than spikelet. Lower glume oblong, 5–10 mm long, 7–9(–11) -veined.

**Florets.** Fertile lemma lanceolate or ovate, 8–10 mm long, chartaceous, without keel, 7–11 -veined, more than 3-veined. Lemma margins convolute, covering most of palea. Palea ovate, tightly convolute around flower, 10–12 mm long, chartaceous, without keels or 2-keeled. Palea surface glabrous. Palea apex awned.

**Flower and Fruit.** Lodicules 3, ovate, 1–2 mm long. Anthers 6, 5 mm long, yellow. Stigmas 3, plumose. Ovary with a steeple-like appendage. Caryopsis with free brittle pericarp, oblong, 8–9 mm long, light brown.

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

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

### **Schizostachyum pleianthemum** S. Dransfield. *Kew Bull.*, 38(2): 325 (1983).

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

**TYPE** from Indonesia. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: Sumatra, Kapahiang: Dransfield JD 3638 (L holotype, BO, G).

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

**Derivation** (Clifford & Bostock 2007): Gk *pleios*, several; *antheion*, flower. Spikelets four-flowered.

**Classification.** Subfamily Bambusoideae. Tribe: Bambuseae.

**Habit, Vegetative Morphology.** Perennial, woody bamboo, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms erect, pendulous at the tip, 30 mm diam., woody. Culm-internodes terete, thick-walled, 20–90 cm long, distally pruinose. Culm-nodes flush with internodes. Lateral branches dendroid. Culm-sheaths present, 17–20 cm long, pubescent, with white hairs, hairy on margins, convex at apex or truncate at apex, auriculate, with 5 mm high auricles, ciliate on shoulders. Culm-sheath ligule 1–2 mm high, dentate. Culm-sheath blade lanceolate, erect or reflexed, 25 cm long, 24–30 mm wide, glabrous on surface, acuminate. Leaf-sheath oral hairs ciliate. Ligule an eciliate membrane. Leaf-blade base with a brief petiole-like connection to sheath, petiole 1.5 cm long. Leaf-blades lanceolate, 25–40 cm long, 35–60 mm wide. Leaf-blade surface glabrous. Leaf-blade apex attenuate.

**Inflorescence.** Synflorescence bractiferous, clustered at the nodes, in untidy tufts, with glumaceous subtending bracts, with axillary buds at base of spikelet, prophyllate below lateral spikelets, leafless between clusters, 27 cm long overall.

Fertile spikelets sessile.

**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 lanceolate, subterete, 60 mm long, breaking up at maturity, disarticulating below each fertile floret. Rachilla internodes 10 mm long.

**Glumes.** Glumes several, persistent, shorter than spikelet.

**Florets.** Fertile lemma lanceolate, 14–19 mm long, chartaceous, without keel, 9 -veined, more than 3-veined. Lemma margins convolute, covering most of palea. Lemma apex acute. Palea tightly convolute around flower, 13–16 mm long, chartaceous, 8 -veined, 2-keeled. Palea apex dentate, 2 -fid. Apical sterile florets 1 in number, rudimentary.

**Flower and Fruit.** Lodicules 3, 5–7 mm long, glabrous. Anthers 6, 4–5 mm long. Stigmas 3. Ovary with a steeple-like appendage. Caryopsis with free brittle pericarp.

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

**Country /Province /State. Malesia.** Sumatra.

### **Schizostachyum pseudolima** McClure. *Lingnan Sc. Journ.* 1940, xix. 537. (1940).

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

**TYPE** from China. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: China, Chim Shan: Fung 20078.

**Illustrations (Books):** S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Figures 56 & 57 & 58).

**Derivation** (Clifford & Bostock 2007): Gk. *pseudos*, false. Resembling *Schizostachyum lima*.

**Classification.** Subfamily Bambusoideae. Tribe: Bambuseae.

**Habit, Vegetative Morphology.** Perennial, woody bamboo, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms erect, pendulous at the tip, 1000 cm long, 40 mm diam., woody. Culm-internodes terete, thin-walled, scaberulous. Lateral branches dendroid. Culm-sheaths present, tardily deciduous, green (olive), antrorsely scabrous, glabrous on margins, truncate at apex, without auricles, setose on shoulders, shoulders with 12 mm long hairs. Culm-sheath ligule ciliolate. Culm-sheath blade lanceolate, reflexed. Leaf-sheaths striately veined, glabrous on surface or hispid. Leaf-sheath oral hairs lacking or ciliate, deciduous. Leaf-sheath auricles absent. Ligule a ciliolate membrane, 0.5 mm long. Collar with external ligule. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades oblong, 9–33 cm long, 15–48 mm wide. Leaf-blade venation without cross veins. Leaf-blade surface glabrous. Leaf-blade margins scabrous. Leaf-blade apex acuminate.

**Inflorescence.** Synflorescence bractiferous, clustered at the nodes, in untidy tufts, with glumaceous subtending bracts, with axillary buds at base of spikelet, prophyllate below lateral spikelets, leafless between clusters, 10–15 cm long overall.

Fertile spikelets sessile.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, with diminished florets at the apex. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 20–25 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes one the lower absent or obscure or two or several, 1–5 empty glumes, persistent, shorter than spikelet. Lower glume ovate, 6–12 mm long. Upper glume ovate, 6–12 mm long.

**Florets.** Fertile lemma ovate, 18–22 mm long, chartaceous, without keel, more than 3-veined. Lemma margins convolute, covering most of palea. Lemma apex acute, awned, 1 -awned. Principal lemma awn 15 mm long overall. Palea tightly convolute around flower, 1 length of lemma, chartaceous, without keels. Palea apex dentate, 2 -fid. Rhachilla extension 1–3 mm long. Apical sterile florets 1 in number, barren, rudimentary.

**Flower and Fruit.** Anthers 6, 8–10 mm long. Stigmas 3. Ovary with a steeple-like appendage, glabrous. Caryopsis with free brittle pericarp.

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

**Country /Province /State.** China. Hainan. **Indo-China.** Vietnam. **Mesoamerica.** Guatemala.

**Schizostachyum rogersii** Brandis. *Indian Trees*, 679 (1906).

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

**TYPE** from Andaman Islands. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: Andaman Is.: Rogers 69 (K iso).

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

**Derivation** (Clifford & Bostock 2007): in honor of Charles Gilbert Rogers (1864–1937) English-born Indian forester.

**Classification.** Subfamily Bambusoideae. Tribe: Bambuseae.

**Habit, Vegetative Morphology.** Perennial, woody bamboo, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms arching or leaning, 900 cm long, 19 mm diam., woody. Culm-internodes terete, thin-walled. Lateral branches dendroid. Culm-sheaths present, 7.6–10 cm long, auriculate. Culm-sheath blade lanceolate, 10 cm long. Ligule an eciliate membrane. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades lanceolate, 18–23 cm long, 25–38 mm wide. Leaf-blade venation with distinct cross veins. Leaf-blade surface pilose, hairy abaxially.

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

Fertile spikelets sessile.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, with a barren rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, laterally compressed, 12 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes several, 2–4 empty glumes.

**Florets.** Fertile lemma ovate, 10 mm long, chartaceous, without keel, more than 3-veined. Lemma margins convolute, covering most of palea. Palea tightly convolute around flower, chartaceous, 2-keeled. Palea apex dentate, 2 -fid.

**Flower and Fruit.** Lodicules 3. Anthers 6, 4 mm long, yellow. Stigmas 3. Ovary with a steeple-like appendage, glabrous. Caryopsis with free brittle pericarp, ellipsoid.

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

**Country /Province /State.** Indian Subcontinent, **Indo-China.** India. Andaman Is.

**Schizostachyum sanguineum** W.P. Zhang. *Bamboo Res.*, 1989(4): 12 (1989).

**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, Malipo county: Zhang 840335.

**Illustrations (Books):** L.K.A. Chippindall, *Grasses and Pastures of South Africa* (1955) (Plt. 22 as *S. semiberbe*).

**Derivation** (Clifford & Bostock 2007): *L. sanguineus*, dull-red. Inflorescence dull-red in color.

**Classification.** Subfamily Bambusoideae. Tribe: Bambuseae.

**Habit, Vegetative Morphology.** Perennial, woody bamboo, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms erect, 500–700 cm long, 20–30 mm diam., woody. Culm-internodes terete, thin-walled, 25–35 cm long, scaberulous. Culm-nodes flush with internodes. Lateral branches dendroid. Bud complement 1. Branch complement many, with subequal branches. Culm-sheaths present, deciduous, 23–28 cm long, 2 times as long as wide, pubescent, without auricles, glabrous on shoulders. Culm-sheath ligule 2 mm high, ciliolate. Culm-sheath blade lanceolate, 10 cm long, pubescent. Leaves 4–6 per branch. Leaf-sheaths 9–10 cm long, glabrous on surface. Ligule an eciliate membrane, 1 mm long. Leaf-blade base cuneate, with a brief petiole-like connection to sheath. Leaf-blades lanceolate or ovate, 18–20 cm long, 40–50 mm wide. Leaf-blade venation with 12–16 secondary veins. Leaf-blade surface scabrous, rough adaxially, glabrous or puberulous, hairy abaxially. Leaf-blade margins scabrous. Leaf-blade apex acuminate. Flowering specimens unknown.

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

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

**TDWG4.** Yunnan.

**Schizostachyum seshagirianum** R.B. Majumdar, appl incert. S. Karthikeyan et al., *Fl. Ind. Enumerat. - Monocot.*: 282 (1989).

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

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

**Classification.** Subfamily Bambusoideae. Tribe: Bambuseae.

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

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

**TDWG4.** Arunachal Pradesh.

**Schizostachyum silicatum** Widjaja. *Reinwardtia* 11(2): 145 (1997).

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

**TYPE** from Indonesia. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: Sumatra, Priaman: *Kurz* (BO holo).

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

**Derivation** (Clifford & Bostock 2007): English, silica; *L. -atum*, possessing. The culms possess an abundance of silica.

**Classification.** Subfamily Bambusoideae. Tribe: Bambuseae.

**Habit, Vegetative Morphology.** Perennial, woody bamboo, caespitose, clumped densely. Rhizomes short, pachymorph. Butt sheaths absent. Culms leaning, pendulous at the tip, 700–1200 cm long, 10–30 mm diam., woody. Culm-internodes terete, thin-walled, 65–75 cm long, distally pilose. Culm-nodes flush with internodes. Lateral branches dendroid, arising from mid culm. Branch complement several, in a clump, with subequal branches. Culm-sheaths present, persistent, 12.3–21 cm long, pilose, with white hairs or tawny hairs, hairy on margins, truncate at apex, without auricles, setose on shoulders. Culm-sheath ligule 1 mm high, dentate. Culm-sheath blade linear or triangular, narrower than sheath, deciduous, reflexed, 6.5–15 cm long, 4–13 mm wide, pubescent. Leaf-sheaths pubescent, outer margin hairy. Leaf-sheath oral hairs ciliate, 6 mm long. Leaf-sheath auricles falcate, 1–2 mm long. Ligule an eciliate membrane, 1 mm long. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades lanceolate, 18–28 cm long, 22–40 mm wide. Leaf-blade surface pubescent, hairy abaxially. Leaf-blade apex acuminate.

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

Fertile spikelets sessile.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, with diminished florets at the apex. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both

fertile or the upper sterile. Spikelets lanceolate, laterally compressed, 12–20 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes two, persistent, shorter than spikelet. Lower glume ovate. Lower glume apex acuminate. Upper glume ovate, chartaceous. Upper glume apex acuminate.

**Florets.** Fertile lemma ovate, 12 mm long, chartaceous, without keel, more than 3-veined. Lemma surface glabrous. Lemma apex acuminate. Palea 14 mm long, chartaceous. Palea apex dentate, 2 -fid. Rhachilla extension 5 mm long, sparsely hairy. Apical sterile florets 1 in number, rudimentary.

**Flower and Fruit.** Lodicules absent. Anthers 6, 6–6.5 mm long, yellow or green, anther tip apiculate. Stigmas 3. Ovary with a steeple-like appendage, glabrous. Caryopsis with free brittle pericarp.

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

**Country /Province /State.** Malesia. Sumatra.

### **Schizostachyum terminale** Holttum. *Gard. Bull. Singapore*, xv. 274 (1956).

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

**TYPE** from Malaysia. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Malaya, Sungei Krian: Nauen SFN 35821 (SING holo, K).

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

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

**Derivation** (Clifford & Bostock 2007): *L. terminis*, limit; *-ale*, pertaining to. Terminal branches of panicle erect.

**Classification.** Subfamily Bambusoideae. Tribe: Bambuseae.

**Habit, Vegetative Morphology.** Perennial, woody bamboo, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms 10 mm diam., woody. Culm-internodes terete, thin-walled. Lateral branches dendroid. Branch complement many. Culm-sheaths present, 13 cm long, puberulous, with appressed hairs, with white hairs, triangular at apex, auriculate, with 2 mm high auricles, ciliate on shoulders, shoulders with curved hairs, shoulders with 5 mm long hairs. Culm-sheath blade triangular, 8 cm long, 10 mm wide. Leaf-sheath oral hairs ciliate, 5 mm long. Leaf-sheath auricles falcate. Ligule an eciliate membrane. Leaf-blade base with a brief petiole-like connection to sheath, petiole 0.3–0.4 cm long. Leaf-blades lanceolate, 16–20 cm long, 27–42 mm wide. Leaf-blade surface glabrous. Leaf-blade apex acuminate.

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

Fertile spikelets sessile.

**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 linear, subterete, 40–50 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes 4–7 mm long.

**Glumes.** Glumes several.

**Florets.** Fertile lemma lanceolate, 15 mm long, chartaceous, without keel, more than 3-veined. Lemma margins convolute, covering most of palea. Lemma apex acute. Palea tightly convolute around flower, chartaceous. Palea keels ciliate. Palea apex dentate, 2 -fid. Apical sterile florets resembling fertile though underdeveloped.

**Flower and Fruit.** Lodicules 3, 5 mm long, veined, glabrous. Anthers 6. Stigmas 3. Ovary with a steeple-like appendage. Caryopsis with free brittle pericarp.

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

**Country /Province /State.** Malesia. Malaya.

### **Schizostachyum tessellatum** A.Camus. *Bull. Soc. Bot. France*, 1 i. 758 (1935).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

**TYPE** from Solomon Islands. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Solomon Is., San Cristobal: Brass 3202.

**Illustrations (Books):** No illustration found (BKS).

**Classification.** Subfamily Bambusoideae. Tribe: Bambuseae.

**Habit, Vegetative Morphology.** Perennial, woody bamboo, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms 200 cm long, woody. Culm-internodes terete, thin-walled, distally glabrous. Lateral branches dendroid. Culm-sheaths present. Leaves 5–6 per branch. Leaf-sheaths striately veined, glabrous on



surface, outer margin hairy. Ligule a ciliate membrane. Leaf-blade base cordate, with a brief petiole-like connection to sheath, petiole 0.3–0.5 cm long. Leaf-blades deciduous at the ligule, lanceolate, 25–30 cm long, 50–60 mm wide, light green or mid-green. Leaf-blade venation with 20–22 secondary veins, with distinct cross veins. Leaf-blade surface glabrous. Leaf-blade margins scabrous. Leaf-blade apex attenuate.

**Inflorescence.** Synflorescence bractiferous, linear, with glumaceous subtending bracts, with axillary buds at base of spikelet, prophyllate below lateral spikelets.

Fertile spikelets sessile.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, with diminished florets at the apex. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 15–18 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes several, 4–6 empty glumes, persistent, shorter than spikelet. Lower glume ovate, 3–4 mm long. Upper glume ovate, 9–11 mm long. Upper glume margins ciliate. Upper glume apex acute, mucous.

**Florets.** Fertile lemma ovate, 12–13 mm long, chartaceous, without keel, 11 -veined, more than 3-veined. Lemma margins convolute, covering most of palea, ciliate. Lemma apex acuminate, mucronate. Palea oblong, tightly convolute around flower, 1 length of lemma, chartaceous, 2-keeled. Palea keels ciliate. Palea apex entire. Rhachilla extension 2.5 mm long, glabrous. Apical sterile florets 1 in number, male or barren, ovate, 10–11 mm long. Apical sterile lemmas pilose (on margin), mucronate.

**Flower and Fruit.** Lodicules 3. Anthers 6, 5.5 mm long, anther tip apiculate. Stigmas 3. Ovary with a steeple-like appendage. Caryopsis with free brittle pericarp.

**Distribution (TDWG). Continent.** Tropical Asia, Pacific.

**Country /Province /State.** **Papuasiasia.** Solomon Is. **Southwestern Pacific, South-central Pacific, North-central Pacific.** Hawaii.

**Schizostachyum textorium** (Blanco) Merrill. *Am. Journ. Bot.* iii. 64 (1916).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

**TYPE** from The Philippines. **Basionym or Replaced Name:** *Bambusa textoria* Blanco, *Fl. Filip.* ed. I. 270 (1837). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Philippine Is.: Coll?.

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): L. *texo*, weave; -aria, indicating function. Leaves used for weaving mats.

**Classification.** Subfamily Bambusoideae. Tribe: Bambuseae.

**Habit, Vegetative Morphology.** Perennial, woody bamboo, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms 20 mm diam., woody. Culm-internodes terete, thin-walled, antrorsely scabrous. Lateral branches dendroid. Culm-sheaths present. Leaf-sheaths striately veined, glabrous on surface. Leaf-sheath oral hairs scanty. Ligule a ciliate membrane. Leaf-blade base simple, with a brief petiole-like connection to sheath, petiole 0.2–0.3 cm long. Leaf-blades linear, 7–15 cm long, 7–10 mm wide, light green. Leaf-blade venation indistinct, with 6 secondary veins. Leaf-blade surface glabrous. Leaf-blade margins scabrous. Leaf-blade apex acuminate.

**Inflorescence.** Synflorescence bractiferous, clustered at the nodes, in untidy tufts, with spathaceous subtending bracts, with axillary buds at base of spikelet, prophyllate below lateral spikelets, 10 cm long overall.

Fertile spikelets sessile.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, with a barren rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, laterally compressed, 10 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes several, 1–2 empty glumes, persistent, shorter than spikelet. Lower glume ovate, chartaceous, without keels. Lower glume apex acute, awned, 3 -awned. Upper glume ovate, chartaceous, without keels. Upper glume apex acute, mucronate.

**Florets.** Fertile lemma ovate, 10 mm long, chartaceous, without keel, more than 3-veined. Lemma surface puberulous. Lemma margins convolute, covering most of palea. Lemma apex acute, awned. Palea tightly convolute around flower, 1 length of lemma, chartaceous, without keels. Palea apex awned.

**Flower and Fruit.** Anthers 6, 5 mm long, anther tip smooth. Stigmas 3. Ovary with a steeple-like appendage. Caryopsis with free brittle pericarp.

**Distribution (TDWG). Continent.** Tropical Asia.

**Country /Province /State.** **Malesia.** Philippines.

**Schizostachyum undulatum** S. Dransfield. *Kew Bull.*, 38(2): 323 (1983).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

**TYPE** from Indonesia. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Sumatra, Mt. Sago: Meijer 4767 (K holo).

**Illustrations (Books):** No illustration found (BKS).

**Classification.** Subfamily Bambusoideae. Tribe: Bambuseae.

**Habit, Vegetative Morphology.** Perennial, woody bamboo, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms 30 mm diam., woody. Culm-internodes terete, thin-walled. Lateral branches dendroid. Culm-sheaths present, 8–16 cm long, pubescent, with appressed hairs, with tawny hairs, convex at apex, auriculate, with 10 mm high auricles, ciliate on shoulders, shoulders with curved hairs, shoulders with 7 mm long hairs. Culm-sheath ligule 0.5–1 mm high, entire. Culm-sheath blade ovate, erect, 9–11 cm long, 45 mm wide, glabrous on surface, acuminate. Leaf-sheath oral hairs setose, 10–15 mm long. Ligule an eciliate membrane. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades lanceolate, 10–40 cm long, 15–45 mm wide. Leaf-blade surface glabrous. Leaf-blade apex attenuate.

**Inflorescence.** Synflorescence bractiferous, clustered at the nodes, in untidy tufts, with glumaceous subtending bracts, with axillary buds at base of spikelet, prophyllate below lateral spikelets, leafless between clusters, 40 cm long overall.

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 lanceolate, subterete, 14 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes 2 mm long.

**Glumes.** Glumes several, persistent, shorter than spikelet.

**Florets.** Fertile lemma lanceolate, 10 mm long, chartaceous, without keel, 17 -veined, more than 3-veined. Lemma margins convolute, covering most of palea, ciliate. Lemma apex acute, awned, 1 -awned. Principal lemma awn 2 mm long overall. Palea tightly convolute around flower, 15–16 mm long, chartaceous, 12 -veined, 2-keeled. Palea keels ciliate, adorned above. Palea apex dentate, 2 -fid. Apical sterile florets 1 in number, rudimentary.

**Flower and Fruit.** Lodicules 3, 4 mm long, ciliate. Anthers 6, 4 mm long. Stigmas 3. Ovary with a steeple-like appendage. Caryopsis with free brittle pericarp.

**Distribution (TDWG). Continent.** Tropical Asia.

**Country /Province /State.** Malesia. Sumatra.

**Schizostachyum whitei** Holttum. *Kew Bull.* xxi. 280 (1967).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

**TYPE** from New Guinea. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: New Guinea, Bisiatabe: White 627 (BRI holo).

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): in honor of Cyril Tenison White (1890–1950) Australian botanist.

**Classification.** Subfamily Bambusoideae. Tribe: Bambuseae.

**Habit, Vegetative Morphology.** Perennial, woody bamboo, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms scandent, woody. Culm-internodes terete, thin-walled. Lateral branches dendroid. Branch complement many. Culm-sheaths present. Leaf-sheath oral hairs lacking. Ligule an eciliate membrane. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades lanceolate, 5–10 cm long, 5–10 mm wide. Leaf-blade surface puberulous, hairy abaxially.

**Inflorescence.** Synflorescence bractiferous, clustered at the nodes, in untidy tufts, with glumaceous subtending bracts, with axillary buds at base of spikelet, prophyllate below lateral spikelets.

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 linear, laterally compressed, 15 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes several, persistent, shorter than spikelet.

**Florets.** Fertile lemma ovate, 14 mm long, chartaceous, without keel, more than 3-veined. Lemma margins convolute, covering most of palea. Lemma apex acute. Palea tightly convolute around flower, 12 mm long, chartaceous, without keels. Rhachilla extension 6 mm long. Apical sterile florets 1 in number, barren, rudimentary.

**Flower and Fruit.** Lodicules absent. Anthers 6. Filaments free or united in groups. Stigmas 3. Styles 2.5 mm long. Ovary with a steeple-like appendage. Caryopsis with free brittle pericarp, oblong.

**Distribution (TDWG). Continent.** Tropical Asia.

**Country /Province /State.** Malesia, Papuaia. New Guinea.

**Schizostachyum xinwuense** T.H. Wen & J.Y. Chin. *J. Bamboo Res.*, 1(1): 28 (1982).

Regarded by K as a synonym (*S. dumetorum*).

**Accepted by:** U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

**TYPE** from China. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: China, Xinwu: Chin JW 81502.

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): L. -ense, denoting origin. From Xinwu, Jiangxi Province, China.

**Classification.** Subfamily Bambusoideae. Tribe: Bambuseae.

**Distribution (TDWG). Continent.** Temperate Asia.

**Country /Province /State.** China. China Southeast.

**TDWG4.** Jiangxi.

**Schizostachyum yalyense** N. H. Xia, V. T. Tran et H. N. Nguyen. *Nordic J. Bot.* 28:487–492 (2010).

**Illustrations (Journals):** *Nordic J.Bot.* (28: 488, Fig. 1 (2010)).

**Classification.** Subfamily Bambusoideae. Tribe: Bambuseae.

**Distribution (TDWG). Continent.** Tropical Asia.

**Country /Province /State.** Indo-China. Vietnam.

**Schizostachyum zollingeri** Steud. *Syn. Pl. Gram.* 332 (1854).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

**TYPE** from Indonesia. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: Java: Zollinger 3529.

**Illustrations (Books):** S.Dransfield, & E.A. Widjaja, *Plant Resources of South-East Asia No. 7, Bamboos* (1995).

**Images:** H.B.Gilliland et al., *Flora of Malaya Vol. 3 Grasses* (1971);

**Derivation** (Clifford & Bostock 2007): in honor of Heinrich Zollinger (1818–1859) Swiss botanist.

**Classification.** Subfamily Bambusoideae. Tribe: Bambuseae.

**Habit, Vegetative Morphology.** Perennial, woody bamboo, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms erect, drooping at the tip, 1500 cm long, 20–100 mm diam., woody. Culm-internodes terete, thin-walled, 20–40 cm long. Lateral branches dendroid. Branch complement many. Culm-sheaths present, persistent, 10–15 cm long, brown, pubescent, with appressed hairs, with dark brown hairs, convex at apex, auriculate, with 7 mm high auricles, ciliate on shoulders. Culm-sheath ligule 4 mm high, entire or ciliate. Culm-sheath blade triangular, erect, 7–9 cm long, 70–90 mm wide, pubescent. Leaf-sheaths pubescent. Leaf-sheath oral hairs ciliate. Leaf-sheath auricles falcate. Ligule an eciliate membrane. Leaf-blade base cuneate, with a brief petiole-like connection to sheath, petiole 0.5 cm long. Leaf-blades lanceolate, 15–30 cm long, 20–40 mm wide. Leaf-blade surface scabrous, rough abaxially.

**Inflorescence.** Synflorescence bractiferous, clustered at the nodes, in untidy tufts, with glumaceous subtending bracts, with axillary buds at base of spikelet, prophyllate below lateral spikelets, leafless between clusters.

Fertile spikelets sessile.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, with diminished florets at the apex. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, laterally compressed, 15–30 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes several. Upper glume ovate. Upper glume margins ciliate. Upper glume awned, 1 -awned, awn 1.5 mm long.

**Florets.** Fertile lemma ovate, 8–9 mm long, chartaceous, without keel, more than 3-veined. Lemma margins convolute, covering most of palea, ciliate, hairy above. Lemma apex acute. Palea tightly convolute around flower, 10–11 mm long, chartaceous. Palea apex dentate, 2 -fid, ciliate. Rhachilla extension 5–9 mm long. Apical sterile florets 1 in number, rudimentary.

**Flower and Fruit.** Lodicules 3, 2.5–4 mm long, ciliate. Anthers 6, 3.5–5 mm long. Stigmas 3. Ovary with a steeple-like appendage. Caryopsis with free brittle pericarp.

**Distribution (TDWG). Continent.** Tropical Asia.

**Country /Province /State.** Indo-China, Malasia. Vietnam. Java, Sumatra, Malaya, Singapore.

**Schmidtia kalahariensis** Stent. *Bothalia*, ii. 421, 423 (1928).

**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, Upington: Nat. herb. 21469 (PRE syn, K) ; South Africa, Upington: Nat. herb. 21522 (PRE syn).

**Illustrations (Books):** L.K.A. Chippindall, *Grasses and Pastures of South Africa* (1955) (233, Fig 207), M.A.N.Muller, *Grasses of South West Africa/Namibia* (1984).

**Images:** F.van Oudtshoorn, *Guide to Grasses of Southern Africa* (1999).

**Derivation** (Clifford & Bostock 2007): L. -ense, denoting origin. From Kalahari Desert, south-west Africa.

**Classification.** Subfamily Chloridoideae. Tribe: Eragrostideae.

**Habit, Vegetative Morphology.** Annual, caespitose. Rhizomes absent. Stolons absent. Culms decumbent or prostrate, 8–70(–90) cm long. Culm-internodes distally pubescent, with capitate hairs. Leaf-sheaths viscid, pubescent, with capitate hairs. Ligule a fringe of hairs. Leaf-blades flat or involute, 2.5–14 cm long, 7–17.5 mm wide, glaucous, viscid. Leaf-blade surface pubescent, hairy on both sides, with capitate hairs. Leaf-blade apex acute.

**Inflorescence.** Inflorescence a panicle. Panicle open or contracted, oblong, (2.5–)4–12(–15) cm long, 1.5–3(–4) cm wide. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**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 obovate, laterally compressed, 10–17 mm long, breaking up at maturity, disarticulating above glumes but not between florets. Floret callus bearded, acute.

**Glumes.** Glumes persistent, similar, shorter than spikelet, thinner than fertile lemma. Lower glume elliptic, 4.8–9(–11) mm long, 0.6–0.7 length of upper glume, membranous, grey, without keels, (7–)9–11(–13) -veined. Lower glume surface glabrous or pubescent. Lower glume apex obtuse or acute. Upper glume ovate, 6.6–15 mm long, 0.8–1 length of adjacent fertile lemma, membranous, grey, without keels, (7–)9–11(–13) -veined. Upper glume surface glabrous or pubescent. Upper glume apex acute.

**Florets.** Fertile lemma cuneate, 7.75–15 mm long, coriaceous, much thinner above, without keel, 9 -veined, more than 3-veined. Lemma surface villous, hairy below. Lemma apex lobed, 6 -fid, incised 0.33 of lemma length, awned, 5 -awned. Principal lemma awn from a sinus, (3.2–)5–10.5 mm long overall. Lateral lemma awns present, arising between lobes, subequal to principal. Palea 0.5 length of lemma. Palea keels ciliolate. Palea surface villous, hairy on flanks. Apical sterile florets resembling fertile though underdeveloped.

**Flower and Fruit.** Lodicules 2. Anthers 3, 1.75–3 mm long. Caryopsis with adherent pericarp. Hilum punctiform.

**Distribution (TDWG). Continent.** Europe (\*), Africa.

**Region.** Northern Europe (\*).

**Country /Province /State.** : GB Aliens (Ryves et al). **Northeast tropical Africa, South tropical Africa, Southern Africa.** Chad, Sudan. Angola. Namibia, Botswana, North-West, Northern Cape, Western Cape.

**Schmidtia pappophoroides** Steud. J. A. Schmidt, *Beitr. Fl. Cap. Verd. Ins.* 145 (1852).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

**TYPE** from Cape Verde Island. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Cape Verde Is., Boa Vista: Schmidt (P iso).

**Illustrations (Books):** H.Jacques-Felix, *Les Graminees d'Afrique tropicale* (1962) (227, Fig. 151), R.M.Phillips, F.T.E.A., *Gramineae* (1970):166, Fig. 54), G.V.Pope et al., *Flora Zambesiaca* 10 (1971):152, T. 40), L.K.A. Chippindall, *Grasses and Pastures of South Africa* (1955) (232, Fig. 206 as *S. bulbosa*), M.A.N.Muller, *Grasses of South West Africa/Namibia* (1984), G.E.Gibbs Russell et al, *Grasses of Southern Africa* (1990) (290, Fig. 185), L.Boulos, *Flora of Egypt* 4 (2005) (242, Pl. 71), T.A.Cope, in M.Thulin, *Poaceae* (Gramineae). *Flora of Somalia* (1995) (169, Fig. 83).

**Images:** F.van Oudtshoorn, *Guide to Grasses of Southern Africa* (1999).

**Derivation** (Clifford & Bostock 2007): Gk. -oides, resembling. Resembling species of *Pappophorum* in the form of the lemma.

**Classification.** Subfamily Chloridoideae. Tribe: Eragrostideae.

**Habit, Vegetative Morphology.** Perennial. Rhizomes short. Stolons absent or present. Butt sheaths thickened and forming a bulb. Culms erect or geniculately ascending, 30–90 cm long, wiry. Culm-internodes distally pubescent, with capitate hairs. Leaf-sheaths viscid, pubescent, with capitate hairs. Ligule a fringe of hairs. Leaf-blades flat or involute, 5–16 cm long, 2–7 mm wide, glaucous, without exudate or viscid. Leaf-blade surface pubescent, hairy on both sides, with capitate hairs. Leaf-blade apex attenuate.

**Inflorescence.** Inflorescence a panicle. Panicle open or contracted, oblong, 6–12 cm long, 2–4.5 cm wide. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**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 obovate, laterally compressed, 10–15 mm long, breaking up at maturity, disarticulating above glumes but not between florets. Floret callus bearded, acute.

**Glumes.** Glumes persistent, similar, shorter than spikelet, thinner than fertile lemma. Lower glume elliptic, 4.6–7.5 mm long, 0.7–0.8 length of upper glume, membranous, grey, without keels, (7–)9–11(–13) -veined. Lower glume surface glabrous or pubescent. Lower glume apex obtuse or acute. Upper glume ovate, 6–9 mm long, 0.7–0.8 length of adjacent fertile lemma, membranous, grey, without keels, (7–)9–11(–13) -veined. Upper glume surface glabrous or pubescent. Upper glume apex acute.

**Florets.** Fertile lemma cuneate, 8.5–14 mm long, coriaceous, much thinner above, without keel, 9 -veined, more than 3-veined. Lemma surface villous, hairy below. Lemma apex lobed, 6 -fid, incised 0.33 of lemma length, awned, 5 -awned. Principal lemma awn from a sinus, 4.5–8 mm long overall. Lateral lemma awns present, arising between lobes, subequal to principal. Palea 0.5 length of lemma. Palea keels ciliate. Palea surface villous, hairy on flanks. Apical sterile florets resembling fertile though underdeveloped.

**Flower and Fruit.** Lodicules 2. Anthers 3, 2.5–3.5 mm long. Caryopsis with adherent pericarp. Hilum punctiform.

**Distribution (TDWG). Continent.** Africa, Tropical Asia.

**Country /Province /State.** Northern Africa, Macaronesia, West tropical Africa, Northeast tropical Africa, East tropical Africa, South tropical Africa, Southern Africa. Algeria, Egypt. Canary Is, Cape Verde. Mauritania, Senegal. Chad, 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. **Indian Subcontinent.** Pakistan.

### **Schoenefeldia gracilis** Kunth. *Rev. Gram.* 283 (1830).

**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 Senegal. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: Senegal: Roger (K iso).

**Illustrations (Books):** H.Jacques-Felix, *Les Graminees d'Afrique tropicale* (1962) (213, Fig. 138), J.Bosser, *Graminees des Paturage et des Cultures a Madagascar* (1969) (75, Fig. 17), S.Phillips, *Poaceae* (Gramineae) in I.Hedberg & S.Edwards, *Flora of Ethiopia and Eritrea* (1995) (164, Fig. 67), L.Boulos, *Flora of Egypt* 4 (2005) (281, Pl. 83).

**Derivation** (Clifford & Bostock 2007): L. slender. Culms or inflorescences slender.

**Classification.** Subfamily Chloridoideae. Tribe: Cynodonteae.

**Habit, Vegetative Morphology.** Annual, caespitose. Culms geniculately ascending or decumbent, 15–90 cm long. Ligule a ciliate membrane. Leaf-blades convolute, 1–3 mm wide. Leaf-blade apex attenuate, filiform.

**Inflorescence.** Inflorescence composed of racemes. Racemes 1–4, digitate, unilateral, 6–15 cm long. Rhachis flattened. Spikelet packing broadside to rhachis, crowded, 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 cuneate, laterally compressed, 3–5 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, 2–3.5 mm long, 0.7 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume primary vein scabrous. Lower glume lateral veins absent. Lower glume apex acuminate, awned, 1 -awned, awn 0.5–1 mm long. Upper glume lanceolate, 3–5 mm long, 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, awned, 1 -awned, awn 0.5–1 mm long.

**Florets.** Fertile lemma elliptic, 1.5–2.5 mm long, membranous, keeled, 3 -veined, 0–3 -veined. Lemma lateral veins close to margins. Lemma surface pilose. Lemma apex dentate, 2 -fid, awned, 1 -awned. Principal lemma awn from a sinus, flexuous, 10–30 mm long overall, limb scaberulous. Palea hyaline, 2 -veined.

**Flower and Fruit.** Anthers 3. Caryopsis with tardily free pericarp, ellipsoid, laterally compressed, 1.7 mm long. Embryo 0.5–0.6 length of caryopsis. Hilum punctiform.

**Distribution (TDWG). Continent.** Africa, Temperate Asia, Tropical Asia.

**Country /Province /State.** Northern Africa, West tropical Africa, West-central tropical Africa, Northeast tropical Africa, Western Indian ocean. Algeria, Egypt, Burkina, Ghana, Mali, Mauritania, Nigeria, Senegal, Togo, Niger. Chad, Eritrea, Ethiopia (inc. Eritrea), Sudan. Madagascar. **Arabian Peninsula.** Saudi Arabia. **Indian Subcontinent.** India, Pakistan.

**TDWG4.** Gujarat. Madhya Pradesh, Rajasthan, Uttah Pradesh.

**Schoenefeldia transiens** (Pilg.) Chiov. *Result. Sc. Miss. Stefan.-Paoli Somal. Ital.* i. 186 1916) (1916).

**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:** *Chloris transiens* Pilger, *Engl. Jahrb.* 51: 418 (1914). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Tanzania, Kwa Sengiwa to Maji ya Juu: Uhlig 882 (B holo, EA).

**Illustrations (Books):** R.M.Pohill, F.T.E.A., *Gramineae* (2(1974):310, Fig.86), G.V.Pope et al., *Flora Zambesiaca* 10 (2(1999):242, t. 74), G.E.Gibbs Russell et al., *Grasses of Southern Africa* (1990) (291, Fig 186), T.A.Cope, in M.Thulin, *Poaceae* (Gramineae). *Flora of Somalia* (1995) (213, Fig 119).

**Derivation** (Clifford & Bostock 2007): *L. transeo*, pass by. Pass through a generation within a year.

**Classification.** Subfamily Chloridoideae. Tribe: Cynodonteae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Culms geniculately ascending or decumbent, 70–120 cm long. Ligule a ciliate membrane. Leaf-blades flat, 5–35 cm long, 1–5 mm wide. Leaf-blade apex attenuate, filiform.

**Inflorescence.** Inflorescence composed of racemes. Racemes 2–4, digitate, unilateral, 10–20 cm long. Rhachis flattened, 0.5–0.8 mm wide. Spikelet packing broadside to rhachis, crowded, regular, 2 -rowed. 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, 3.5–5 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, 2–3 mm long, 0.6 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume primary vein scabrous. Lower glume lateral veins absent. Lower glume apex acuminate, awned, 1 -awned, awn 1–1.5 mm long. Upper glume lanceolate, 3.5–5 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.

**Florets.** Fertile lemma elliptic, 3–4 mm long, membranous, keeled, 3 -veined, 0–3 -veined. Lemma lateral veins close to margins. Lemma surface glabrous. Lemma margins ciliate. Lemma apex dentate, 2 -fid, awned, 1 -awned. Principal lemma awn from a sinus, flexuous, 25–40 mm long overall, limb scaberulous. Palea hyaline, 2 -veined. Apical sterile florets 1 in number, barren, lanceolate, 0.5–1 mm long. Apical sterile lemmas awned, 1 -awned. Apical sterile lemma awns 10–16 mm long.

**Flower and Fruit.** Anthers 3, 0.1–0.15 mm long, retained within floret. Caryopsis with tardily free pericarp, ellipsoid, laterally compressed. Hilum punctiform.

**Distribution (TDWG). Continent.** Africa.

**Country /Province /State.** Northeast tropical Africa, East tropical Africa, South tropical Africa, Southern Africa. Ethiopia (inc. Eritrea), Somalia, Sudan. Kenya, Tanzania, Uganda. Mozambique, Zimbabwe. Mpumalanga.

**Sclerochloa dura** (L.) Beauv. *Agrost.* 98. (1812).

**Accepted by:** R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), D.Sharp, D. & B.K.Simon, *AusGrass* (2002), S-L Chen et al, *Flora of China* 22 (Poaceae) (2006), N.L.Bor, *Grasses of Burma, Ceylon, India and Pakistan* (1960), T.G.Tutin et al, *Flora Europaea* 5 (1980), N.Tsvelev, *Grasses of the Soviet Union* (1983).

**TYPE** from Europe. **Basionym or Replaced Name:** *Cynosurus durus* L., *Sp. Pl.* 1: 72 (1753). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: LT: *Gramen arvense, polypodii panicula crassiore*, in Barrelier, Pl. per Galliam, Hispaniam et Italiam observ. 1213, t.50 (1714), LT designated by Stace & Jarvis, Bot. J. Linn. Soc. 91: 438 (1985).

**Illustrations (Books):** N.Feinbrun-Dothan, *Flora Palaestina* 4 (1986) (Pl. 326), N.L.Bor, *Gramineae* in K.H.Rechinger, *Flora Iranica*. No. 70/30 (1970) (Tab. 14), N.L.Bor, *Gramineae* in *Flora of Iraq* (1968) (107, Pl. 36), T.A.Cope, *Flora of Pakistan* 143: *Poaceae* (1982) (435, Fig 45), J.P.Jessop, G.R.M. Dashorst & F.M.James, *Grasses of South Australia* (2006) (167, Fig 118), N.Walsh & T.Entwistle, *Flora of Victoria* Vol 2 (1994) (437, Fig 85), S.W.L.Jacobs, R.D.B.Whalley & D.J.B.Wheeler., *Grasses of New South Wales*, 4th edn (2008) (365), A.Wilson (ed.), *Flora of Australia*, Vol 44A. *Poaceae* (2009) (298, 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 24 *Poaceae*, part 1 (2007) (481), E.G.Nicora, *Los Generos de Gramineas de America Austral* (1987) (325, Fig. 111), S-L Chen et al, *Flora of China*, Illustrations, *Poaceae* (2007) (Fig. 434).

**Images:** D.Sharp & B.K.Simon, *AusGrass*. Grasses of Australia. CD-Rom Version 1.0. (2002);.

**Derivation** (Clifford & Bostock 2007): L. hard. Lemmas hard or tough.

**Classification.** Subfamily Pooideae. Tribe: Poeae.

**Habit, Vegetative Morphology.** Annual, caespitose. Culms 4–10(–18) cm long. Ligule an eciliate membrane, 1–2 mm long. Leaf-blades 2–7 cm long, 1–3 mm wide. Leaf-blade apex abruptly acute.

**Inflorescence.** Inflorescence a panicle or composed of racemes. Panicle contracted, oblong, second, 1–3(–4.5) cm long, contracted about primary branches. Primary panicle branches simple, 0.2–1 cm long, bearing spikelets almost to the base. Panicle branches stiff, angular. Racemes 1, single, oblong, unilateral, 1–4 cm long. Rhachis angular. Spikelet packing broadside to rhachis, crowded. 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, 6–11 mm long, breaking up at maturity, disarticulating between fertile florets but the lowest falling with glumes attached. Rhachilla internodes elongated between glumes (and swollen), clavate, obscured by lemmas.

**Glumes.** Glumes deciduous with pedicel attached, dissimilar, shorter than spikelet, thinner than fertile lemma. Lower glume oblong, 0.5 length of upper glume, herbaceous, much thinner on margins, 1-keeled, 3-veined. Lower glume lateral veins ribbed. Lower glume apex obtuse. Upper glume oblong, 0.8 length of adjacent fertile lemma, herbaceous, with membranous margins, 1-keeled, 5–7-veined. Upper glume lateral veins ribbed. Upper glume apex obtuse.

**Florets.** Fertile lemma oblong, 4–5 mm long, coriaceous, much thinner on margins, keeled, 5–7-veined, more than 3-veined. Lemma midvein without distinctive roughness or scaberulous. Lemma lateral veins ribbed. Lemma apex obtuse. Palea keels scabrous. Apical sterile florets resembling fertile though underdeveloped.

**Flower and Fruit.** Caryopsis with adherent pericarp, apex rostrate. Hilum punctiform.

$N = 7$  (1 ref TROPICOS).  $2n = 14$  (1 ref TROPICOS).

**Distribution (TDWG). Continent.** Europe, Africa, Temperate Asia, Tropical Asia, Australasia (\*), North America, South America.

**Region.** Northern Europe (\*), Middle Europe, Southwestern Europe, Southeastern Europe, Eastern Europe.

**Country /Province /State.** : GB Aliens (Ryves et al). : Austria, Czechoslovakia, Germany, Hungary, Poland, Switzerland. : France, Spain. : Bulgaria, Greece, Italy, Romania, Turkey Europe, Yugoslavia. Belarus, Krym, Central European Russia, East European Russia, South European Russia, Northwest European Russia, Ukraine. **Northern Africa.** Algeria, Morocco, Tunisia. **Middle Asia, Caucasus, Western Asia, China, Russia.** Kazakhstan, Kirgizistan, Turkmenistan, Tadjikistan, Uzbekistan. Afghanistan, Iran, Iraq. Xinjiang. **Indian Subcontinent.** Pakistan, West Himalaya. **Australia.** South Australia (\*), New South Wales (\*), A.C.T. (\*), Victoria (\*), Tasmania (\*). **Western Canada, Northwest USA, North-central USA, Northeast USA, Southwestern USA, South-central USA, Southeastern USA.** British Columbia. Colorado, Oregon, Washington. Illinois, Kansas, Missouri, Nebraska, Oklahoma, Wisconsin. Michigan, Ohio, New York. Arizona, Utah. New Mexico, Texas. Arkansas. **Southern South America.** Argentina Northeast.

**TDWG4.** Jammu Kashmir. Southern. Tablelands. Buenos Aires.

**Sclerochloa woronowii** (Hack.) Tsvelev. *Not. Syst. Herb. Inst. Bot. Acad. Sci. URSS*, 18: 27 (1957).

**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:** *Scleropoa woronowii* Hack., *Monil. Jard Bot. Tiflis*, 24: 15 (1912). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Russia, Baku, Lake Sorgiol: Woronow (W holo, K).

**Illustrations (Books):** N.L.Bor, *Gramineae* in *Flora of Iraq* (1968) (109, Pl. 37).

**Derivation** (Clifford & Bostock 2007): in honor of Georg Jierii Nikolaewitsch Voronov (1874–1931) Russian botanist.

**Classification.** Subfamily Pooideae. Tribe: Poeae.

**Habit, Vegetative Morphology.** Annual, caespitose. Culms 6–20 cm long. Ligule an eciliate membrane. Leaf-blades 3–8 cm long, 0.5–1 mm wide. Leaf-blade surface scaberulous, rough on both sides. Leaf-blade apex acute.

**Inflorescence.** Inflorescence a panicle. Panicle contracted, oblong, secund, 2–4 cm long, 1–1.5 cm wide, contracted about primary branches. Primary panicle branches simple, bearing spikelets almost to the base. Panicle branches stiff, angular. 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 linear, laterally compressed, 5–10 mm long, breaking up at maturity, disarticulating between fertile florets but the lowest falling with glumes attached. Rhachilla internodes elongated between glumes (and swollen), clavate, eventually visible between lemmas.

**Glumes.** Glumes deciduous with pedicel attached, dissimilar, shorter than spikelet, thinner than fertile lemma. Lower glume oblong, 0.5 length of upper glume, herbaceous, 1-keeled, 3 -veined. Lower glume lateral veins ribbed. Lower glume apex obtuse. Upper glume oblong, 1 length of adjacent fertile lemma, herbaceous, 1-keeled, 7 -veined. Upper glume lateral veins ribbed. Upper glume apex acute.

**Florets.** Fertile lemma oblong, 5 mm long, coriaceous, keeled, 5–7 -veined, more than 3-veined. Lemma lateral veins ribbed. Lemma apex obtuse. Palea keels scabrous. Apical sterile florets resembling fertile though underdeveloped.

**Flower and Fruit.** Anthers 0.8–1 mm long. Caryopsis with adherent pericarp, fusiform, dorsally compressed, concavo-convex, apex rostrate. Hilum punctiform.

**Distribution (TDWG). Continent.** Temperate Asia.

**Country /Province /State.** Middle Asia, Caucasus, Western Asia. Kirgizistan, Tadjikistan, Uzbekistan. Afghanistan, Iraq.

**TDWG4.**

**Sclerodactylon macrostachyum** (Benth.) A.Camus. *Bull. Soc. Bot. France*, lxxix. 38 (1932).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

**TYPE** from Madagascar. **Basionym or Replaced Name:** *Eleusine macrostachya* Benth., *Journ. Linn. Soc.* 19: 107 (1881). T:<Type of Basionym>; *vide* TROPICOS and Kew Synonymy Database: Madagascar: Herb. Gay.

**Illustrations (Books):** G.V.Pope et al., *Flora Zambesiaca* 10 (2(1999):161 t. 48), J.Bosser, *Graminees des Paturage et des Cultures a Madagascar* (1969) (109, Fig 32).

**Derivation** (Clifford & Bostock 2007): Gk. makros, large; stachys, ear of corn. Inflorescence large.

**Classification.** Subfamily Chloridoideae. Tribe: Cynodonteae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Stolons present. Culms erect, 40–60 cm long. Ligule a fringe of hairs. Leaf-blades terete, 10–30 cm long, 2–3 mm wide, stiff. Leaf-blade apex acuminate, pungent.

**Inflorescence.** Inflorescence composed of racemes. Racemes 2(–3), paired, unilateral, 7–12 cm long. Rhachis angular, terminating in a sterile spikelet. Spikelet packing broadside to rhachis, crowded, regular, 2 -rowed. Spikelets solitary. Fertile spikelets sessile.

**Sterile Spikelets.** Apical sterile spikelets rudimentary.

**Fertile Spikelets.** Spikelets comprising 5–40 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 or ovate, laterally compressed, compressed strongly, 5–20 mm long, breaking up at maturity, disarticulating below each fertile floret or below groups of fertile florets.

**Glumes.** Glumes persistent, similar, shorter than spikelet, similar to fertile lemma in texture. Lower glume ovate, 0.75 length of upper glume, coriaceous, 1-keeled, 1 -veined. Lower glume primary vein scabrous. Lower glume lateral veins absent. Lower glume apex acute. Upper glume ovate, 0.5 length of adjacent fertile lemma, coriaceous, 1-keeled, 1 -veined. Upper glume primary vein scabrous. Upper glume lateral veins absent. Upper glume apex acute, muticous or mucronate, awn subapical.

**Florets.** Fertile lemma ovate, 2.5–3 mm long, coriaceous, 3 -veined, more than 3-veined. Lemma midvein scaberulous. Lemma lateral veins obscure. Lemma apex acute. Palea keels winged, conspicuously winged, scaberulous. Apical sterile florets resembling fertile though underdeveloped.

**Flower and Fruit.** Lodicules 2, cuneate, fleshy. Caryopsis with free soft pericarp, ellipsoid, laterally compressed, trigonous. Embryo 0.3 length of caryopsis.

**Distribution (TDWG). Continent.** Africa, Tropical Asia.

**Country /Province /State.** East tropical Africa, South tropical Africa, Western Indian ocean. Tanzania. Mozambique. Aldabra, Comoros, Mauritius, Madagascar, Reunion, Seychelles. **Indo-China.** Andaman Is, Nicobar Is.



**Scleropogon brevifolius** Phil. *Sert. Mendoc.* ii. 48. (1870).

**Accepted by:** R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

**TYPE** from Argentina. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: Argentina: Mendoza (SGO; II: SGO-45714, SGO-37103, US- (photo SGO-45714), US- (photo SGO-37103)).

**Illustrations (Books):** M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 25 *Poaceae*, part 2 (2003) (46), F.W.Gould, *The Grasses of Texas* (1975) (241, Fig. 128), E.G.Nicora, *Los Generos de Gramineas de America Austral* (1987) (389, Fig. 136).

**Derivation** (Clifford & Bostock 2007): *L. brevis*, short; folium, leaf. Leaf-blades shorter than those of some other species in the genus or relative to the length of the culm.

**Classification.** Subfamily Chloridoideae. Tribe: Cynodonteae.

**Habit, Vegetative Morphology.** Perennial. Stolons present. Culms 10–25 cm long. Leaves mostly basal. Ligule a fringe of hairs. Leaf-blades flat or conduplicate, 2–8 cm long, 1–2 mm wide. Monoecious or dioecious, with male and female spikelets in the same inflorescence or with male and female spikelets in different inflorescences.

**Inflorescence.** Inflorescence composed of racemes, bracteate at pedicel base. Racemes 1, single, 1–5 cm long, bearing few fertile spikelets, bearing 2–8 fertile spikelets on each, secondarily branched (lowest spikelet on a minute branchlet bearing a rudimentary companion whose subtending bract simulates a fourth glume). Spikelet packing crowded. Spikelets solitary. Fertile spikelets sessile. Male spikelets pedicelled.

**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 linear, subterete, 25–30 mm long, breaking up at maturity, disarticulating above glumes but not between florets. Floret callus elongated, 1–2 mm long, pilose, pungent.

**Glumes.** Glumes persistent, dissimilar, shorter than spikelet, thinner than fertile lemma. Lower glume lanceolate, 0.5 length of upper glume, membranous, without keels, 3 -veined. Lower glume apex acuminate. Upper glume lanceolate, 1–1.1 length of adjacent fertile lemma, membranous, without keels, 3 -veined. Upper glume apex acuminate.

**Florets.** Fertile florets female. Fertile lemma oblong, subterete, 10–15 mm long, coriaceous, without keel, 3 -veined, 0–3 -veined. Lemma margins convolute (around floret above). Lemma apex awned, 3 -awned. Principal lemma awn 50–100 mm long overall. Lateral lemma awns present, subequal to principal. Palea 2 -veined. Palea apex awned, awns 0.5 mm long. Apical sterile florets 1–3 in number, barren, in a clump, rudimentary. Apical sterile lemmas awned, 3 -awned. Apical sterile lemma awns 50–100 mm long.

**Flower and Fruit.** Lodicules absent.

Male inflorescence terminal, unlike female, a panicle or a single raceme. Male spikelets 5–10(–20) flowered, persistent, oblong, 20–30 mm long, glabrous. Male spikelet glumes 2, muticous. Male spikelet lemma 3 -veined, muticous.

**Distribution (TDWG). Continent.** North America, South America.

**Country /Province /State.** Northwest USA, Southwestern USA, South-central USA, Mexico. Colorado. Arizona, California, Nevada. New Mexico, Texas. Central Mexico, Northeast Mexico, Gulf (Mexico), Northwest Mexico. Southern South America. Argentina Northwest, Chile Central.

**TDWG4.** Catamarca, La Rioja, Mendoza, Salta, San Juan. Puebla. Aguascalientes, Coahuila, Chihuahua, Durango, Guanajuato, Hidalgo, Neuvo Leon, Queretaro, San Luis Potosi, Tamaulipas, Zacatecas. Veracruz. Sonora.

**Scolochloa festucea** (Willd.) Link. *Hort. Berol.* i. 136 (1827).

**Accepted by:** R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), 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 Germany. **Basionym or Replaced Name:** *Arundo festucea* Willd., *Enum. Pl.* 1: 126 (1809). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *Willdenow*, Germany: prope Rummelsburg in reg. Berl. (B-WILD-2234).

**Illustrations (Books):** G.Hegi, *Flora von Mitteleuropa* 1 (1909) (as *Grapphorum arundinaceum*), N.N.Tsvelev, *Grasses of the Soviet Union* (1983) (563 (377), Pl.7), K.F.Best, et al, *Prairie Grasses* (1971) (207), M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 24 *Poaceae*, part 1 (2007) (733), S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 342).

**Derivation** (Clifford & Bostock 2007): *L. -acea*, resembling. Resembling *Festuca* in some respect, usually the habit or inflorescence.

**Classification.** Subfamily Pooideae. Tribe: Poeae.

**Habit, Vegetative Morphology.** Perennial. Rhizomes elongated, fleshy. Culms erect, 100–150 cm long. Ligule an eciliate membrane, 2–6 mm long, lacerate. Leaf-blades 15–30 cm long, 5–10 mm wide. Leaf-blade surface scabrous, rough adaxially. Leaf-blade apex filiform.

**Inflorescence.** Inflorescence a panicle. Panicle open, lanceolate or ovate, 15–25 cm long. Panicle branches angular, 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 ovate, laterally compressed, 8 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus pilose. Floret callus hairs 0.1–0.2 length of lemma.

**Glumes.** Glumes persistent, dissimilar, reaching apex of florets or shorter than spikelet, thinner than fertile lemma. Lower glume lanceolate, 4–5.5 mm long, 0.75 length of upper glume, membranous, without keels, 3 -veined. Lower glume apex acute. Upper glume elliptic, 5–6 mm long, 0.75–1 length of adjacent fertile lemma, membranous, without keels, 5 -veined. Upper glume apex acute.

**Florets.** Fertile lemma elliptic, 6 mm long, scarious, without keel, 7 -veined, 0–3 -veined. Lemma surface smooth or granulose. Lemma apex erose, acute. Apical sterile florets resembling fertile though underdeveloped.

**Flower and Fruit.** Lodicules 2, membranous. Anthers 3. Ovary pubescent on apex. Caryopsis with adherent pericarp. Hilum linear.

$2n = 28$  (3 refs TROPICOS).

**Distribution (TDWG). Continent.** Europe, Temperate Asia, North America.

**Region.** Northern Europe, Eastern Europe, Middle Europe.

**Country /Province /State.** : Finland, Sweden. : Germany, Poland. Belarus, Estonia, Latvia, Lithuania, Baltic States, Central European Russia, East European Russia, North European Russia, South European Russia, Northwest European Russia, Moldova, Ukraine. Siberia, **Middle Asia, Caucasus, Western Asia, China, Mongolia.** Buryatiya, Chita, Irkutsk, Tuva. Kazakhstan. Transcaucasus. Inner Mongolia, Manchuria. Mongolia. **Subarctic America, Western Canada, Northwest USA, North-central USA, Southwestern USA.** Yukon, Northwest Territories. Alberta, British Columbia, Manitoba, Saskatchewan. Montana, Oregon, Wyoming. Iowa, Minnesota, North Dakota, Nebraska, South Dakota. Arizona.

**TDWG4.** Nei Mongol. Heilongjiang, or Jilin, or Liaoning.

**Scribneria bolanderi** (Thurb.) Hack. *Coult. Bot. Gaz.* xi.105 (1886).

**Accepted by:** R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

**TYPE** from USA. **Basionym or Replaced Name:** *Lepturus bolanderi* Thurb., *Proc. Amer. Acad. Arts* 7: 401 (1868). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: [USA]: California: dry gravelly soil, Russian River Valley, *Bolander s.n.*.

**Illustrations (Books):** M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 24 *Poaceae*, part 1 (2007) (690).

**Derivation** (Clifford & Bostock 2007): in honor of Henry Nicholas Bolander (1831–1897) United States botanist.

**Classification.** Subfamily Pooideae. Tribe: Poaeae.

**Habit, Vegetative Morphology.** Annual. Culms erect or geniculately ascending, 7–30 cm long. Ligule an eciliate membrane, 3 mm long. Leaf-blades filiform, 1–5 cm long, 0.5 mm wide.

**Inflorescence.** Inflorescence composed of racemes. Racemes 1, single, smoothly terete, bilateral, 5–15 cm long. Rhachis semiterete. Spikelet packing broadside to rhachis. Rhachis internodes linear, 4–6 mm long. Spikelets sunken, solitary. Fertile spikelets sessile.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets linear, laterally compressed, 5–7 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus pubescent.

**Glumes.** Glumes collateral, persistent, similar, exceeding apex of florets, firmer than fertile lemma. Lower glume linear, 1 length of upper glume, chartaceous, 1-keeled, 3 -veined. Lower glume lateral veins ribbed. Lower glume apex acute. Upper glume linear, 5–7 mm long, 1.2 length of adjacent fertile lemma, chartaceous, 1-keeled, 3 -veined. Upper glume lateral veins ribbed. Upper glume apex acute.

**Florets.** Fertile lemma lanceolate, 4–6 mm long, membranous, keeled, 3 -veined, 0–3 -veined. Lemma apex dentate, 2 -fid, awned. Principal lemma awn 2–4 mm long overall.

**Flower and Fruit.** Anthers 1. Ovary glabrous.

**Distribution (TDWG). Continent.** North America.

**Country /Province /State.** Northwest USA, Southwestern USA. Oregon. California.

**Scrotochloa tararaensis** (P. Jansen) E.J.Judziewicz. *Phytologia*, 56(4): 300 (1984).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), D.Sharp, D. & B.K.Simon, *AusGrass* (2002), J.F.Veldkamp, Poaceae ms (*Flora Malesiana*).

**TYPE** from Papua New Guinea. **Basionym or Replaced Name:** *Leptaspis tararaensis* Jansen, *Reinwardtia* 2(2): 304 (1953). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: IT: *L.J. Brass* 8587, Jan 1937, Papua New Guinea: New Guinea I., Western Div. (US-1723653).

**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. -ensis*, denoting origin. From Tarara, Papua New Guinea.

**Classification.** Subfamily Pharoideae. Tribe: Phareae.

**Habit, Vegetative Morphology.** Perennial. Rhizomes short. Culms erect, 40–45 cm long. Culm-internodes thin-walled. Ligule a ciliolate membrane. Leaf-blade base with a false petiole, petiole 2–4 cm long, petiole glabrous. Leaf-blades inverted, linear, 10–40 cm long, 4–8 mm wide. Leaf-blade venation slanting obliquely from midrib, with distinct cross veins. Leaf-blade surface scabrous, rough adaxially. Leaf-blade margins scabrous. Leaf-blade apex acuminate. Monoecious, with male and female spikelets in the same inflorescence.

**Inflorescence.** Inflorescence a panicle or composed of racemes, deciduous as a whole. Panicle open, ovate, 7–10 cm long. Primary panicle branches whorled at most nodes, sparsely divided, 4–8 cm long. Panicle branches stiff, straight, angular, glabrous. Racemes 2–7, borne along a central axis, in several whorls, spreading, straight, 4–8 cm long. Central inflorescence axis 3–5 cm long. Rhachis glabrous on surface. Spikelet packing lax. Sexes mixed. Spikelets in pairs. Fertile spikelets pedicelled, 1 in the cluster, on shorter pedicels than sterile. Male spikelets pedicelled, 1 in a cluster. Pedicels present, filiform (male) or cuneate (female).

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets obovate, urceolate, laterally compressed, 4 mm long, falling entire, deciduous with accessory branch structures.

**Glumes.** Glumes similar, reaching apex of florets, thinner than fertile lemma. Lower glume ovate, 4 mm long, 1 length of upper glume, scarious, dark brown, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume surface pubescent, with hooked hairs. Lower glume apex acute. Upper glume ovate, 4 mm long, 1 length of adjacent fertile lemma, scarious, dark brown, without keels, 1 -veined. Upper glume surface pubescent, with hooked hairs. Upper glume apex acute.

**Florets.** Fertile florets female. Fertile lemma obovate, 4 mm long, coriaceous, without keel. Lemma lateral veins obscure. Lemma surface pubescent, with hooked hairs. Lemma margins closed except for an apical pore, covering most of palea. Lemma apex rostrate. Palea linear, 1.1 length of lemma. Palea surface pubescent, with hooked hairs.

**Flower and Fruit.** Lodicules absent. Anthers 6, 1.5–2 mm long. Stigmas 3, terminally exerted, plumose. Styles connate below. Caryopsis with adherent pericarp.

Male spikelets similar to female but less developed, 1 flowered, lanceolate, 3 mm long, hairy. Male spikelet glumes 2.

**Distribution (TDWG). Continent.** Tropical Asia, Australasia.

**Country /Province/State. Papuaasia.** New Guinea PNG. New Guinea. **Australia.** Queensland.

**TDWG4.** North.

**Scrotochloa urceolata** (Roxburgh) E.J.Judziewicz. *Phytologia*, 56(4): 300 (1984).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), D.Sharp, D. & B.K.Simon, *AusGrass* (2002), J.F.Veldkamp, Poaceae ms (*Flora Malesiana*), N.L.Bor, Grasses of Burma, Ceylon, India and Pakistan (1960) (as *Leptaspis*), W.D.Clayton & N.Snow, Key to Pacific Grasses (2010).

**TYPE** from Malaysia. **Basionym or Replaced Name:** *Pharus urceolatus* Roxb., *Fl. Ind.* 3: 611–612 (1832). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *Anon.*, Malaysia: Pulo Pinang (BM). Herb. Roxburgh.

**Recent Synonyms:** *Leptaspis urceolata* (Roxburgh) R. Br., *Benn. Pl. Jav. Rar.* 23. (1838).

**Illustrations (Books):** H.B.Gilliland, *Grasses of Malaya* (1971) (48, Fig 2 as *Leptaspis*), H.Duistermaat, *Field Guide to the Grasses of Singapore* (2005) (123, Fig. 125), E.E.Henty, *A Manual of the Grasses of New Guinea* (1969) (as *Leptaspis*), A.Wilson (ed.), *Flora of Australia*, Vol 44A. *Poaceae* (2009) (8, Fig 1), D.Sharp & B.K.Simon, *AusGrass*. Grasses of Australia. CD-Rom Version 1.0. (2002).

**Images:** D.Sharp & B.K.Simon, *AusGrass*. Grasses of Australia. CD-Rom Version 1.0. (2002);, H.B.Gilliland et al., *Flora of Malaya Vol. 3 Grasses* (1971); (as *Leptaspis*).

**Derivation** (Clifford & Bostock 2007): *L. urceus*, jug; -ola, diminutive; -ata, possessing. Lower glume inflated and contracted towards its apex.

**Classification.** Subfamily Pharoideae. Tribe: Phareae.

**Habit, Vegetative Morphology.** Perennial. Rhizomes elongated. Culms geniculately ascending, 20–50 cm long, rooting from lower nodes. Culm-internodes thin-walled. Ligule a ciliolate membrane, 0.5 mm long, pubescent on abaxial surface. Leaf-blade base with a false petiole. Leaf-blades inverted, elliptic, 15–25 cm long, 40–60 mm wide. Leaf-blade venation slanting obliquely from midrib, with distinct cross veins. Leaf-blade apex acuminate. Monoecious, with male and female spikelets in the same inflorescence.

**Inflorescence.** Inflorescence a panicle, deciduous as a whole. Panicle open, ovate, 10–12 cm long, contracted about primary branches. Primary panicle branches 3–6-nate, whorled at most nodes, 6–14 cm long. Panicle branches stiff, straight, angular, pubescent, with hooked hairs. Sexes mixed. Spikelets in pairs. Fertile spikelets pedicelled, 1 in the cluster, on shorter pedicels than sterile. Male spikelets pedicelled, 1 in a cluster. Pedicels present, filiform (male) or cuneate (female).

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets obovate, urceolate, laterally compressed, 4–6 mm long, falling entire, deciduous with accessory branch structures.

**Glumes.** Glumes similar, reaching apex of florets, thinner than fertile lemma. Lower glume obovate, 0.8 length of upper glume, scarious, without keels, 7–9-veined. Lower glume surface pubescent, with hooked hairs. Lower glume apex acute. Upper glume obovate, 4–6 mm long, 1 length of adjacent fertile lemma, scarious, 2-keeled, 7-veined. Upper glume lateral veins with cross-veins. Upper glume surface pubescent, with hooked hairs. Upper glume apex acute.

**Florets.** Fertile florets female. Fertile lemma obovate, 4–6 mm long, coriaceous, without keel, 13-veined, more than 3-veined. Lemma lateral veins obscure. Lemma surface pubescent, with hooked hairs. Lemma margins closed except for an apical pore, covering most of palea. Lemma apex rostrate. Palea linear, 1.1 length of lemma. Palea surface pubescent, with hooked hairs.

**Flower and Fruit.** Lodicules absent. Anthers 6, 3 mm long. Stigmas 3, terminally exerted, plumose. Styles connate below. Caryopsis with adherent pericarp, sulcate on hilar side.

Male spikelets similar to female but less developed, 3–4 mm long. Male spikelet glumes 2.

**Distribution (TDWG). Continent.** Tropical Asia, Australasia, Pacific.

**Country /Province /State. Indian Subcontinent, Indo-China, Malesia, Papuasiasia.** India, Sri Lanka. Thailand, Vietnam. Java, Lesser Sunda Is, Malaya, Philippines, Singapore. New Guinea PNG, or West Papua (Irian Jaya). New Guinea, Solomon Is. **Australia.** Queensland.

**TDWG4.** Kerala. North.

**Scutachne amphistemom** (Wright) Hitchcock & Chase. *Proc. Biol. Soc. Washington*, xxiv. 149 (1911).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

**TYPE** from Cuba. **Basionym or Replaced Name:** *Panicum amphistemom* C. Wright, *Anales Acad. Ci. Med. Habana* 8: 207 (1871). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: C. Wright 3464, 2 Aug, Cuba: Mayari-abajo, in dense tufts (GH, IT: NY-71091 (fragm. ex GH), US-80455 (fragm. ex GH & photo)).

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): Gk. *amphi*, double; *stemom*, thread. Two of the rhachilla internodes are elongated and thread-like.

**Classification.** Subfamily Panicoideae. Tribe: Paniceae. Subtribe MELINIDINAE.

**Habit, Vegetative Morphology.** Perennial, caespitose. Culms erect, 25–40 cm long, wiry. Leaves mostly basal. Ligule a fringe of hairs. Leaf-blades flat or conduplicate, 10–20 cm long, 2–4 mm wide, coriaceous, stiff. Leaf-blade surface ribbed. Leaf-blade apex obtuse.

**Inflorescence.** Inflorescence a panicle. Panicle contracted, linear, 3–12 cm long, contracted about primary branches. Primary panicle branches appressed, simple, 1–2 cm long, bearing spikelets almost to the base. Spikelets solitary or in pairs. Fertile spikelets pedicelled, 1–2 in the cluster. Pedicels present, angular, unequal.

**Fertile Spikelets.** Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets elliptic, dorsally compressed, acute, 7–8 mm long, falling entire. Spikelet callus square, incorporating lowest rhachilla internode with adnate lower glume, base obtuse. Rhachilla internodes elongated between glumes.

**Glumes.** Glumes dissimilar, reaching apex of florets, thinner than fertile lemma. Lower glume ovate, 0.33–0.75 length of spikelet, chartaceous, without keels, 3-veined. Lower glume lateral veins with cross-veins. Lower

glume surface pubescent, hairy at apex. Lower glume apex acute or acuminate. Upper glume ovate, chartaceous, without keels, 5 -veined. Upper glume lateral veins with cross-veins. Upper glume surface pubescent, hairy at apex. Upper glume apex acute or acuminate.

**Florets.** Basal sterile florets 1, barren, with palea. Lemma of lower sterile floret similar to upper glume, ovate, 1 length of spikelet, chartaceous, 5 -veined, with cross-veins, pubescent, hairy at apex, acute or acuminate. Palea of lower sterile floret 0.25 length of lemma. Fertile lemma ovate, 5–6 mm long, coriaceous, without keel, 5 -veined, more than 3-veined. Lemma surface striate. Lemma margins involute. Lemma apex rostrate, pubescent. Palea 1 length of lemma, coriaceous, 2 -veined.

**Distribution (TDWG). Continent.** South America.

**Country /Province /State.** Caribbean. Cuba.

**Scutachne dura** (Griseb.) Hitchcock & Chase. *Proc. Biol. Soc. Washington*, xxiv. 149 (1911).

**Accepted by:** R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

**TYPE** from Cuba. **Basionym or Replaced Name:** *Panicum durum* Griseb., *Mem. Amer. Acad. Arts, n.s.*, 8: 533 (1862). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *Wright 1539*, 1859, Cuba (GOET). IT: *C. Wright 1539*, Cuba (US-80639 (photo)). IT: *C. Wright 1539*, 1860, Cuba (MO!). IT: *C. Wright 1539*, 1860, Cuba (MO!).

**Illustrations (Books):** A.S.Hitchcock, *Manual of the Grasses of the West Indies* (1936) (316, Fig. 293).

**Derivation** (Clifford & Bostock 2007): L. hard. Lemmas hard or tough.

**Classification.** Subfamily Panicoideae. Tribe: Paniceae. Subtribe MELINIDINAE.

**Habit, Vegetative Morphology.** Perennial, caespitose. Culms erect, 40–70 cm long. Culm-nodes glabrous or pubescent. Leaves basal and cauline. Ligule a ciliolate membrane. Leaf-blades 5–30 cm long, 4–6 mm wide, coriaceous, stiff. Leaf-blade surface ribbed. Leaf-blade margins cartilaginous, spinulose. Leaf-blade apex acuminate, pungent.

**Inflorescence.** Inflorescence a panicle. Panicle open, ovate, 6–10 cm long, contracted about primary branches. Panicle branches stiff, straight. Spikelets solitary or in pairs. Fertile spikelets pedicelled, 1–2 in the cluster. Pedicels present, filiform or oblong, unequal, 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 elliptic, dorsally compressed, acuminate, 4–5 mm long, falling entire. Spikelet callus square, incorporating lowest rhachilla internode with adnate lower glume, 0.5 mm long, base obtuse. Rhachilla internodes elongated between glumes.

**Glumes.** Glumes dissimilar, reaching apex of florets, thinner than fertile lemma. Lower glume oblong, 0.5 length of spikelet, membranous, without keels, 5 -veined. Lower glume surface glabrous or pubescent. Lower glume apex acute. Upper glume ovate, coriaceous, dark brown, without keels, 5 -veined. Upper glume surface pubescent. Upper glume apex acuminate.

**Florets.** Basal sterile florets 1, male, with palea. Lemma of lower sterile floret similar to upper glume, ovate, coriaceous, 5 -veined, pubescent, acuminate. Fertile lemma elliptic, 3.5–4.5 mm long, indurate, without keel. Lemma margins involute. Lemma apex rostrate, pubescent. Palea 1 length of lemma, indurate, 2 -veined. Palea apex acuminate.

**Distribution (TDWG). Continent.** South America.

**Country /Province /State.** Caribbean. Cuba, Dominican Republic, Haiti, Jamaica.

**Secale africanum** Stapf. *Hook. Ic. Pl. t.* 2601. (1899).

**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: Cape Colony: Calvinia Div.: "Lowermost Roggeveld," near Wilhelm Stenkamps Farm (Elands Fontein of Burchell's map, ca. 20 mi SE of Calvinia), *Thunberg s.n.* (HT: UPS).

**Illustrations (Books):** L.K.A. Chippindall, *Grasses and Pastures of South Africa* (1955) (71, Fig 43), G.E.Gibbs Russell et al, *Grasses of Southern Africa* (1990) (292, Fig 187).

**Illustrations (Journals):** *Hooker's Icones Plantarum* (t.2601 (1899)).

**Derivation** (Clifford & Bostock 2007): L. -ana, indicating location. From Africa.

**Classification.** Subfamily Pooideae. Tribe: Triticeae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Culms 50–100 cm long. Leaf-sheath oral hairs lacking. Leaf-sheath auricles falcate. Ligule an eciliate membrane. Leaf-blades 20–35 cm long, 4–9 mm wide.

**Inflorescence.** Inflorescence composed of racemes. Racemes 1, single, bilateral, 8–12 cm long. Rhachis fragile at the nodes, ciliate on margins. Spikelet packing broadside to rhachis, crowded. Rhachis internodes oblong, 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 or cuneate, laterally compressed, 10–15 mm long, falling entire, deciduous with accessory branch structures.

**Glumes.** Glumes similar, reaching apex of florets, thinner than fertile lemma. Lower glume subulate, 10–15 mm long, 1 length of upper glume, membranous, 1 -veined. Lower glume primary vein scaberulous. Lower glume lateral veins absent. Upper glume subulate, 10–15 mm long, 1 length of adjacent fertile lemma, membranous, 1 -veined. Upper glume primary vein scaberulous. Upper glume lateral veins absent.

**Florets.** Fertile lemma elliptic, 10–15 mm long, coriaceous, keeled, 5 -veined, more than 3-veined. Lemma midvein eciliate. Lemma apex acuminate, awned, 1 -awned. Principal lemma awn 10–20 mm long overall, limb scabrous. Palea 2 -veined. Palea keels scabrous. Apical sterile florets 1 in number, barren.

**Flower and Fruit.** Lodicules 2, ciliate. Anthers 3. Ovary with a fleshy appendage below style insertion, pubescent on apex. Caryopsis with adherent pericarp. Hilum linear.

$N = 7$  (1 ref TROPICOS).  $2n = 14$  (6 refs TROPICOS).

**Distribution (TDWG). Continent.** Africa.

**Country /Province /State.** Southern Africa. Northern Cape.

**Secale anatolicum** Boiss. *Diagn. Ser. I*. v. 76 (1844).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

**TYPE** from Turkey. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Turkey, Bozdagh: Boissier (G holo).

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): L. -ica, belonging to. From Anatolia, Turkey.

**Classification.** Subfamily Pooideae. Tribe: Triticeae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Culms erect, 50–70 cm long. Leaf-sheaths glabrous on surface. Leaf-sheath oral hairs lacking. Leaf-sheath auricles falcate. Ligule an eciliate membrane. Leaf-blades 10–20 cm long, 3–6 mm wide. Leaf-blade surface scabrous, rough adaxially. Leaf-blade margins smooth or scaberulous.

**Inflorescence.** Inflorescence composed of racemes. Peduncle pubescent above. Racemes 1, single, bilateral, 4–8 cm long, 6–7 mm wide. Rhachis fragile at the nodes, ciliate on margins. Spikelet packing broadside to rhachis. Rhachis internodes oblong, 2.5–3 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 cuneate, laterally compressed, 16–18 mm long, falling entire, deciduous with accessory branch structures.

**Glumes.** Glumes similar, shorter than spikelet, thinner than fertile lemma. Lower glume oblong, 11 mm long, 1 length of upper glume, membranous, 1-keeled, keeled all along, 1 -veined. Lower glume primary vein scabrous. Lower glume lateral veins absent. Lower glume surface puberulous. Lower glume apex acuminate, awned, 1 -awned, awn 1–2.5 mm long. Upper glume oblong, 11 mm long, 0.8–0.9 length of adjacent fertile lemma, membranous, 1-keeled, keeled all along, 1 -veined. Upper glume primary vein scabrous. Upper glume lateral veins absent. Upper glume surface puberulous. Upper glume apex acuminate, awned, 1 -awned, awn 1–2.5 mm long.

**Florets.** Fertile lemma elliptic, 12–14 mm long, coriaceous, shiny, keeled, 5 -veined, more than 3-veined. Lemma midvein pectinately ciliate. Lemma surface smooth or scaberulous. Lemma apex acuminate, awned, 1 -awned. Principal lemma awn 20–30 mm long overall, limb scabrous. Palea 2 -veined. Apical sterile florets 1 in number, barren.

**Flower and Fruit.** Lodicules 2, ciliate. Anthers 3. Ovary with a fleshy appendage below style insertion, pubescent on apex. Caryopsis with adherent pericarp. Hilum linear.

$2n = 14$  (2 refs TROPICOS).

**Distribution (TDWG). Continent.** Temperate Asia.

**Country /Province /State.** Caucasus, Western Asia. Iran.

**Secale cereale** L. *Sp. Pl.* 84. (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), T.Koyama, *Grasses of Japan and its neighboring regions* (1987).

**TYPE** from Unknown. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: LT: (LINN-102.1). LT designated by Bowden, *Canad. J. Bot.* 40: 1704 (1962).

**Recent Synonyms:** *Secale strictum* (C. Presl) C. Presl, *Flora Sicula (Presl)* 46 (1826).

**Illustrations (Books):** G.Hegi, *Flora von Mitteleuropa* 1 (1909), C-C Hsu, *Flora of Taiwan*, Vol 5 (1978) (362), C-C Hsu, *Taiwan Grasses* (1975), J.P.Jessop, G.R.M. Dashorst & F.M.James, *Grasses of South Australia* (2006) (274, Fig. 213), C.A.Gardner, *Flora of Western Australia*, Vol 1, Part 1, *Gramineae* (1952) (196, Pl 58), S.W.L.Jacobs, R.D.B.Whalley & D.J.B.Wheeler, *Grasses of New South Wales*, 4th edn (2008) (366), A.Wilson (ed.), *Flora of Australia*, Vol 44A. *Poaceae* (2009) (109, Fig. 16), 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) (260), F.W.Gould, *The Grasses of Texas* (1975) (174, Fig. 89), E.G.Nicora, *Los Generos de Gramineas de America Austral* (1987) (252, Fig. 80), L.B. Smith, D.C. Wasshausen, R.M. Klein *Flora Illustrada Catarinensis Gramineas* (1981–1982) (301, Fig. 67 & 307, Fig. 69), A.Burkat, *Flora Illustrada de Entre Rios (Argentina)*, Pt II, *Gramineas* (1969), A.L.Cabrera, *Flora de la Provincia de Buenos Aires, IV Pt 2 Gramineas* (1970) (168, Fig. 46), M.N.Correa, *Flora Patagonica* Parte III, *Gramineae* (1978) (454, Fig. 301), S-L Chen et al, *Flora of China*, *Illustrations, Poaceae* (2007) (Fig. 618).

**Illustrations (Journals):** *Ruizia* (13:214, Fig 23f-g (1993)).

**Images:** D.Sharp & B.K.Simon, *AusGrass*. *Grasses of Australia*. CD-Rom Version 1.0. (2002);

**Derivation** (Clifford & Bostock 2007): L. *Ceres*, Roman Goddess of the Harvest; *-ale*, pertaining to. Applying to cultivated grain.

**Classification.** Subfamily Pooideae. Tribe: Triticeae.

**Habit, Vegetative Morphology.** Annual, caespitose. Culms 60–150 cm long, 6–7 -noded. Leaf-sheaths glabrous on surface or hirsute. Leaf-sheath oral hairs lacking. Leaf-sheath auricles falcate. Ligule an eciliate membrane, 1 mm long, truncate. Leaf-blades 10–20 cm long, 6–10 mm wide. Leaf-blade surface glabrous or pilose, sparsely hairy.

**Inflorescence.** Inflorescence composed of racemes. Peduncle pubescent above. Racemes 1, single, bilateral, 5–15 cm long. Rhachis tough, pubescent on surface, ciliate on margins. Spikelet packing broadside to rhachis. Rhachis internodes oblong, 2–3 mm long. 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 cuneate, laterally compressed, 12–15 mm long, persistent on plant.

**Glumes.** Glumes similar, shorter than spikelet. Lower glume linear, 10–12 mm long, 1 length of upper glume, coriaceous, 1-keeled, keeled all along, 1 -veined. Lower glume primary vein scabrous. Lower glume lateral veins absent. Lower glume surface puberulous. Lower glume apex acuminate, mucronate, 1 -awned, awn 1–3 mm long. Upper glume linear, 10–12 mm long, 0.6–0.7 length of adjacent fertile lemma, coriaceous, 1-keeled, keeled all along, 1 -veined. Upper glume primary vein scabrous. Upper glume lateral veins absent. Upper glume apex acuminate, mucronate, 1 -awned, awn 1–3 mm long.

**Florets.** Fertile lemma lanceolate, 14–15(–18) mm long, coriaceous, keeled, 5 -veined, more than 3-veined. Lemma midvein pectinately ciliate. Lemma margins ciliate, hairy above. Lemma apex acuminate, awned, 1 -awned. Principal lemma awn 20–50 mm long overall, limb scabrous. Palea 0.6–0.7 length of lemma, 2 -veined. Palea keels scaberulous. Apical sterile florets resembling fertile though underdeveloped.

**Flower and Fruit.** Lodicules 2, ciliate. Anthers 3, 7 mm long. Ovary with a fleshy appendage below style insertion, pubescent on apex. Caryopsis with adherent pericarp, obovoid, sulcate on hilar side, 8–10 mm long. Embryo 0.33 length of caryopsis. Hilum linear.

$N = 7$  (2 refs TROPICOS), or 14 (8 refs TROPICOS).  $2n = 14$  (32 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.** : Great Britain (\*). Belarus, Estonia, Latvia, Lithuania, Central European Russia, East European Russia, North European Russia, South European Russia, Northwest European Russia, Ukraine. **Northern Africa, Middle Atlantic ocean.** Morocco. Siberia, Russian far east, **Middle Asia, Caucasus, Western Asia, Arabian Peninsula, China (+), Mongolia, Eastern Asia.** Altay, Buryatiya, Chita, Irkutsk, Krasnoyarsk, Tuva. Amur, Kamchatka, Khabarovsk, Kuril Is, Magadan, Primorye, Sakhalin.

Kazakhstan, Kirgizistan, Turkmenistan, Tadjikistan, Uzbekistan. Iran, Iraq. China South Central, Inner Mongolia, Manchuria, China North-Central, China Southeast, Xinjiang. Japan, Taiwan. Japan Hokkaido, or Honshu, or Shikoku, or Kyushu. **Indian Subcontinent, Malesia.** Java. **Australia, New Zealand.** Western Australia (\*), South Australia (\*), New South Wales (\*), Victoria (\*), Tasmania (\*). New Zealand North I, New Zealand South I. **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. Colorado, Idaho, Montana, Oregon, Washington, Wyoming. Kansas, North Dakota, Nebraska. 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), Southwest Mexico. **Mesoamerica, Western South America, Brazil, Southern South America.** Costa Rica. Colombia, Ecuador, Peru. Brazil South. Argentina Northeast, Argentina South, Uruguay.

**TDWG4.** Hebei, Shaanxi. Anhui, Fujian, Henan. Guizhou, Hubei, Yunnan. Bhutan. South-West. Southern. Central, South East. Tablelands, Western Slopes, Western Plains. Buenos Aires, Entre Rios. Río Negro. Distrito Federal, Mexico State, Morelos. Guanajuato, Hidalgo, Neuvo Leon, Tamaulipas. Veracruz. Guerrero, Jalisco, Michoacan, Nayarit.

**Secale ciliatiglume** (Boiss.) Grossheim. *Bull. Applied Bot.* xiii. No. 2, 473 (1924).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

**TYPE** from Iran. **Basionym or Replaced Name:** *Secale montanum* var. *ciliatiglume* Boiss., *Fl. Or.* 5:670 (1884). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Iran, Zagros Mts.: Haussknecht (G hol).

**Illustrations (Books):** No illustration found (BKS).

**Classification.** Subfamily Pooideae. Tribe: Triticeae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Culms 60–110 cm long. Culm-internodes distally glabrous or pilose. Leaf-sheaths pubescent. Leaf-sheath oral hairs lacking. Leaf-sheath auricles falcate. Ligule an eciliate membrane. Leaf-blades 7–26 cm long, 2–5(–10) mm wide. Leaf-blade surface pubescent or pilose. Leaf-blade margins smooth or scaberulous.

**Inflorescence.** Inflorescence composed of racemes. Peduncle pubescent above. Racemes 1, single, bilateral, 3.5–5 cm long, 5–10 mm wide. Rhachis fragile at the nodes, ciliate on margins. Spikelet packing broadside to rhachis. Rhachis internodes oblong, 2.5–3.5 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 cuneate, laterally compressed, 16–18 mm long, falling entire, deciduous with accessory branch structures.

**Glumes.** Glumes similar, shorter than spikelet, thinner than fertile lemma. Lower glume linear, 10–11 mm long, 1 length of upper glume, membranous, 1-keeled, keeled all along, 1 -veined. Lower glume primary vein ciliate. Lower glume lateral veins absent. Lower glume surface pubescent. Lower glume apex acuminate, awned, 1 -awned, awn 2 mm long. Upper glume linear, 10–11 mm long, 0.6–1 length of adjacent fertile lemma, membranous, 1-keeled, keeled all along, 1 -veined. Upper glume primary vein ciliate. Upper glume lateral veins absent. Upper glume surface pubescent. Upper glume apex acuminate, awned, 1 -awned, awn 2 mm long.

**Florets.** Fertile lemma elliptic, 10–18 mm long, coriaceous, keeled, 5 -veined, more than 3-veined. Lemma midvein pectinately ciliate. Lemma surface smooth or scabrous. Lemma apex acuminate, awned, 1 -awned. Principal lemma awn (11–)25–35 mm long overall, limb scabrous. Palea 8–16 mm long, 2 -veined. Palea keels ciliolate. Apical sterile florets 1 in number, barren.

**Flower and Fruit.** Lodicules 2, ciliate. Anthers 3, 5 mm long, yellow. Ovary with a fleshy appendage below style insertion, pubescent on apex. Caryopsis with adherent pericarp. Hilum linear.

**Distribution (TDWG). Continent.** Temperate Asia.

**Country /Province /State.** Western Asia. Iran.

**Secale montanum** Guss. *Ind. Sem. Hort. Boccad.; ex ej. Fl. Sic. Prod.* i. 145 (1825).

**Accepted by:** R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), 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 Sicily. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Sicily, Pizzuta: Gussone (NAP syn).

**Illustrations (Books):** N.Feinbrun-Dothan, *Flora Palaestina* 4 (1986) (Pl 220), N.L.Bor, *Gramineae* in K.H.Rechinger, *Flora Iranica*. No. 70/30 (1970) (Tab. 32), N.L.Bor, *Gramineae* in *Flora of Iraq* (1968) (261, Pl. 90), T.A.Cope, *Flora of Pakistan* 143: *Poaceae* (1982) (601, Fig 70).

**Derivation** (Clifford & Bostock 2007): L. mons, mountain; -ana, indicating location. Growing on mountains.

**Classification.** Subfamily Pooideae. Tribe: Triticeae.

**Habit, Vegetative Morphology.** Perennial. Butt sheaths glabrous or pilose (sparsely). Culms erect or decumbent, (35–)60–100 cm long. Leaf-sheaths glabrous on surface. Leaf-sheath oral hairs lacking. Leaf-sheath auricles falcate. Ligule an eciliate membrane. Leaf-blades 10–20 cm long, 2–5 mm wide. Leaf-blade surface glabrous or pilose, hairy adaxially. Leaf-blade margins scaberulous.

**Inflorescence.** Inflorescence composed of racemes. Peduncle pilose above. Racemes 1, single, bilateral, 4–10 cm long. Rhachis fragile at the nodes, ciliate on margins. Spikelet packing broadside to rhachis. Rhachis internodes oblong, 3 mm long, falling with spikelet above. Spikelets ascending, 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 cuneate, laterally compressed, 8–12 mm long, falling entire, deciduous with accessory branch structures, readily shedding fertile florets.

**Glumes.** Glumes similar, reaching apex of florets or shorter than spikelet, thinner than fertile lemma. Lower glume lanceolate, 8–10 mm long, 1 length of upper glume, membranous, 1-keeled, keeled all along, 1 -veined. Lower glume lateral veins absent. Lower glume apex acuminate, mucronate, 1 -awned, awn 1–2.5 mm long. Upper glume lanceolate, 8–12 mm long, 0.7–1 length of adjacent fertile lemma, membranous, 1-keeled, keeled all along, 1 -veined. Upper glume lateral veins absent. Upper glume apex acuminate, awned, 1 -awned, awn 1–2.5 mm long.

**Florets.** Fertile lemma elliptic, 8–14 mm long, coriaceous, keeled, 5 -veined, more than 3-veined. Lemma midvein pectinately ciliate. Lemma surface smooth or scaberulous. Lemma margins ciliate, hairy above. Lemma apex acuminate, awned, 1 -awned. Principal lemma awn 20–25 mm long overall, limb scabrous. Palea 1 length of lemma, 2 -veined. Palea keels scaberulous. Apical sterile florets 1 in number, barren, linear, 5–6 mm long. Apical sterile lemmas awned, 1 -awned.

**Flower and Fruit.** Lodicules 2, obovate, ciliate. Anthers 3. Ovary with a fleshy appendage below style insertion, pubescent on apex. Caryopsis with adherent pericarp, ellipsoid. Embryo 0.25 length of caryopsis. Hilum linear, 1 length of caryopsis.

$N = 7$  (3 refs TROPICOS).  $2n = 14$  (6 refd TROPICOS).

**Distribution (TDWG). Continent.** Europe, Africa, Temperate Asia, Tropical Asia, North America.

**Region.** Northern Europe (\*), Southwestern Europe, Southeastern Europe.

**Country /Province /State.** : GB Aliens (Ryves et al). : Spain. : Albania, Bulgaria, Greece, Italy, Romania, Sicily, Yugoslavia. **Northern Africa.** Libya, Morocco. **Caucasus, Western Asia.** Iran, Iraq. **Indian Subcontinent.** Pakistan. **Northwest USA.** Washington.

**TDWG4.**

**Secale segetale** (Zhuk.) Roshev. *Acta Inst. Bot. Acad. Sci. URSS, Ser. 1, Fasc. 6*, 143 (1947).

**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) (as *S. afghanicum*), N.Tsvelev, *Grasses of the Soviet Union* (1983).

**TYPE** from Afghanistan. **Basionym or Replaced Name:** *Secale afghanicum*, *Secale cereale* subsp. *segetale* Zhuk., *Tr. Prikl. Bot. Gen. Sel.* 19:56 (1928). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Afghanistan: Vavilov.

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): L. seges, cornfield; -alis, pertaining to. Growing amongst cultivated cereals.

**Classification.** Subfamily Pooideae. Tribe: Triticeae.

**Habit, Vegetative Morphology.** Annual, caespitose. Culms erect or geniculately ascending, 50–100 cm long. Leaf-sheath oral hairs lacking. Leaf-sheath auricles falcate. Ligule an eciliate membrane. Leaf-blades flat or convolute, 10–20 cm long, 3–8 mm wide, glaucous. Leaf-blade surface scabrous, pubescent, sparsely hairy, hairy adaxially. Leaf-blade margins scabrous.

**Inflorescence.** Inflorescence composed of racemes. Peduncle glabrous or pubescent above. Racemes 1, single, bilateral, 4–13 cm long, 10 mm wide. Rhachis tough (below) or fragile at the nodes, ciliate on margins.

Spikelet packing broadside to rhachis. Rhachis internodes oblong, falling with spikelet above. Spikelets solitary. Fertile spikelets sessile.

**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 lanceolate, laterally compressed, 12–15(–17) mm long, falling entire or breaking up at maturity, deciduous when fragile with accessory branch structures, disarticulating when tough below each fertile floret.

**Glumes.** Glumes similar, shorter than spikelet, thinner than fertile lemma. Lower glume lanceolate, 9–12 mm long, 1 length of upper glume, membranous, 1-keeled, keeled all along, 1 -veined. Lower glume primary vein ciliate. Lower glume lateral veins absent. Lower glume surface glabrous or puberulous. Lower glume apex acuminate, mucicous or awned, 1 -awned, awn 0–5 mm long. Upper glume lanceolate, 9–12 mm long, 0.9–1 length of adjacent fertile lemma, membranous, 1-keeled, keeled all along, 1 -veined. Upper glume primary vein ciliate. Upper glume lateral veins absent. Upper glume surface glabrous or puberulous. Upper glume apex acuminate, mucicous or awned, 1 -awned, awn 0–5 mm long.

**Florets.** Fertile lemma elliptic, 8–12 mm long, coriaceous, keeled, 5 -veined, more than 3-veined. Lemma midvein pectinately ciliate. Lemma apex acuminate, awned, 1 -awned. Principal lemma awn 20–70 mm long overall, limb scabrous. Palea 1 length of lemma, 2 -veined. Palea keels ciliolate, adorned above. Apical sterile florets 1 in number, barren.

**Flower and Fruit.** Lodicules 2, ciliate. Anthers 3. Ovary with a fleshy appendage below style insertion, pubescent on apex. Caryopsis with adherent pericarp, 6.5–8 mm long. Hilum linear.

$2n = 14$  (2 refs TROPICOS).

**Distribution (TDWG). Continent.** Europe, Temperate Asia, Tropical Asia.

**Region. Eastern Europe.**

**Country /Province /State.** South European Russia. Siberia, **Middle Asia, Caucasus, Western Asia, China.** Altay. Kazakhstan, Kirgizistan, Turkmenistan, Tadjikistan, Uzbekistan. Afghanistan, Iran, Iraq. Xinjiang. **Indian Subcontinent.** Pakistan.

**TDWG4.** Jammu Kashmir.

**Secale sylvestre** Host. *Gram.* iv. 7. t. 11 (1809).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), S-L Chen et al, *Flora of China* 22 (Poaceae) (2006), T.G.Tutin et al, *Flora Europaea* 5 (1980), N.Tsvelev, *Grasses of the Soviet Union* (1983).

**TYPE** from Hungary. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Hungary, czeled: Kitaibel (PR syn).

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): *L. silva*, wood; -estris, place of growth. Plants of woodlands.

**Classification.** Subfamily Pooideae. Tribe: Triticeae.

**Habit, Vegetative Morphology.** Annual, culms solitary or caespitose. Culms erect or geniculately ascending, 15–30 cm long. Leaf-sheaths puberulous. Leaf-sheath oral hairs lacking. Leaf-sheath auricles falcate. Ligule an eciliate membrane. Leaf-blades flat or involute, 5–10 cm long, 1.5–3 mm wide. Leaf-blade surface glabrous or puberulous.

**Inflorescence.** Inflorescence composed of racemes. Peduncle pubescent above. Racemes 1, single, bilateral, 2–3.5 cm long, 8–10 mm wide. Rhachis fragile at the nodes, ciliate on margins. Spikelet packing broadside to rhachis. Rhachis internodes oblong, 3–3.5 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 cuneate, laterally compressed, 12–14 mm long, falling entire, deciduous with accessory branch structures.

**Glumes.** Glumes similar, shorter than spikelet, thinner than fertile lemma. Lower glume linear, 11–12 mm long, 1 length of upper glume, membranous, 1-keeled, keeled all along, 1 -veined. Lower glume primary vein ciliate. Lower glume lateral veins absent. Lower glume apex acuminate, awned, 1 -awned, awn 25–50 mm long. Upper glume linear, 11–12 mm long, 1 length of adjacent fertile lemma, membranous, 1-keeled, keeled all along, 1 -veined. Upper glume primary vein ciliate. Upper glume lateral veins absent. Upper glume apex acuminate, awned, 1 -awned, awn 25–50 mm long.

**Florets.** Fertile lemma elliptic, 10–12 mm long, coriaceous, keeled, 5 -veined, more than 3-veined. Lemma midvein pectinately ciliate. Lemma surface scaberulous. Lemma apex acuminate, awned, 1 -awned. Principal lemma awn 35–70 mm long overall, limb scabrous. Palea 2 -veined. Apical sterile florets 1 in number, barren.

**Flower and Fruit.** Lodicules 2, ciliate. Anthers 3. Ovary with a fleshy appendage below style insertion, pubescent on apex. Caryopsis with adherent pericarp. Hilum linear.

$2n = 14$  (2 refs TROPICOS).

**Distribution (TDWG). Continent.** Europe, Temperate Asia.

**Region.** Middle Europe, Southeastern Europe, Eastern Europe.

**Country /Province /State.** : Hungary. : Bulgaria, Romania, Yugoslavia. Belarus, Krym, Central European Russia, East European Russia, South European Russia, Northwest European Russia, Moldova, Ukraine. Siberia, Middle Asia, Caucasus, Western Asia, China (+), Russia. Kazakhstan, Kirgizistan, Turkmenistan, Tadzhikistan, Uzbekistan. Iran.

**TDWG4.**

**Secale vavilovii** Grossheim. *Bull. Applied Bot.* xiii. No. 2, 473 (1924).

**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, Ordubad to Migry: Grossheim 104 (LE holo, K. TGM).

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): in honor of Nikolai Ivanovich Vavilov (1887–1942) Russian plant geneticist.

**Classification.** Subfamily Pooideae. Tribe: Triticeae.

**Habit, Vegetative Morphology.** Annual. Culms erect or geniculately ascending, 20–50 cm long. Leaf-sheath auricles falcate. Ligule an eciliate membrane. Leaf-blades flat or convolute, 10–20 cm long, 2–5 mm wide, glaucous. Leaf-blade surface scabrous, rough adaxially, pilose, hairy on both sides.

**Inflorescence.** Inflorescence composed of racemes. Racemes 1, single, erect, bilateral, 4–8 cm long, 6–8 mm wide. Rhachis fragile at the nodes, ciliate on margins. Spikelet packing broadside to rhachis, crowded. Rhachis internodes oblong, 2–2.5 mm long, falling with spikelet above. Spikelets solitary. Fertile spikelets sessile.

**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 lanceolate, laterally compressed, 10–12 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes similar, shorter than spikelet, thinner than fertile lemma. Lower glume linear, 6–8 mm long, 1 length of upper glume, membranous, 1-keeled, keeled all along, 1 -veined. Lower glume primary vein ciliate. Lower glume lateral veins absent. Lower glume apex acuminate, awned, 1 -awned, awn 2–2.5 mm long. Upper glume linear, 6–8 mm long, membranous, 1-keeled, keeled all along, 1 -veined. Upper glume primary vein ciliate. Upper glume lateral veins absent. Upper glume apex acuminate, awned, 1 -awned, awn 2–2.5 mm long.

**Florets.** Fertile lemma lanceolate, 10–11 mm long, coriaceous, keeled, 5 -veined, more than 3-veined. Lemma midvein pectinately ciliate. Lemma apex acuminate, awned, 1 -awned. Principal lemma awn 10–20 mm long overall, limb scabrous. Palea 1 length of lemma, 2 -veined. Palea keels ciliolate. Apical sterile florets 1 in number, barren.

**Flower and Fruit.** Lodicules 2, ciliate. Anthers 3, 5–6 mm long. Ovary with a fleshy appendage below style insertion, pubescent on apex. Caryopsis with adherent pericarp. Hilum linear.

$N = 7$  (1 ref TROPICOS).  $2n = 14$  (3 refs TROPICOS).

**Distribution (TDWG). Continent.** Temperate Asia.

**Country /Province /State.** Caucasus. Transcaucasus.

**TDWG4.**

**Sehima galpinii** Stent. *Bothalia*, i. 239 (1924). (1924).

**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, Waterberg: Galpin 557.

**Illustrations (Books):** L.K.A. Chippindall, *Grasses and Pastures of South Africa* (1955) (Plt. 17), G.E.Gibbs Russell et al, *Grasses of Southern Africa* (1990) (293, Fig 188).

**Images:** F.van Oudtshoorn, *Guide to Grasses of Southern Africa* (1999).

**Derivation** (Clifford & Bostock 2007): in honor of Ernest Edward Galpin (1858–1941) banker and amateur botanist.

**Classification.** Subfamily Panicoideae. Tribe: Andropogoneae. Subtribe ISCHAEMINAE.

**Habit, Vegetative Morphology.** Perennial, caespitose. Butt sheaths pubescent. Culms 100–180 cm long. Ligule a fringe of hairs. Leaf-blades 15–30 cm long, 3–6 mm wide, glaucous. Leaf-blade surface scabrous, rough adaxially. Leaf-blade margins cartilaginous, scabrous. Leaf-blade apex attenuate, filiform.

**Inflorescence.** Inflorescence composed of racemes. Racemes 1, single, 7–19 cm long. Rhachis fragile at the nodes, flattened, ciliate on margins. Rhachis internodes columnar. Rhachis internode tip oblique, cupuliform. Spikelets squeezed between internode and pedicel, in pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, linear, flattened, ciliate, tip rectangular.

**Sterile Spikelets.** Companion sterile spikelets well-developed, male, lanceolate, dorsally compressed, 10–12 mm long, shorter than fertile, separately deciduous. Companion sterile spikelet glumes coriaceous, distinctly veined, 9 -veined, acute. 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 lanceolate, dorsally compressed, 12–15 mm long, falling entire, deciduous with accessory branch structures. Spikelet callus square, pilose, base obtuse, attached obliquely.

**Glumes.** Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma. Lower glume ovate, 1 length of spikelet, coriaceous, much thinner above, 2-keeled, keeled laterally. Lower glume lateral veins branching above (obscurely), intercarinal veins distinct. Lower glume surface convex or flat, scabrous. Lower glume apex dentate, 2 -fid. Upper glume lanceolate, chartaceous, 1-keeled. Upper glume margins ciliate. Upper glume apex acute, awned, 1 -awned, awn 3–10 mm long.

**Florets.** Basal sterile florets 1, male, with palea. Lemma of lower sterile floret lanceolate, hyaline, 2 -veined, ciliolate on margins. Palea of lower sterile floret 1 length of lemma. Fertile lemma oblong, 5 mm long, hyaline, without keel, 3 -veined, 0–3 -veined. Lemma margins ciliate. Lemma apex lobed, 2 -fid, incised 0.5 of lemma length, awned, 1 -awned. Principal lemma awn from a sinus, geniculate, 24–40 mm long overall, with twisted column. Column of lemma awn glabrous. Palea 1 length of lemma, hyaline.

**Flower and Fruit.** Anthers 3.

**Distribution (TDWG), Continent.** Africa.

**Country /Province /State.** South tropical Africa, Southern Africa. Angola, Mozambique. Limpopo, Gauteng, Mpumalanga, Swaziland, Kwazulu-Natal.

**Sehima ischaemoides** Forsk. *Fl. Aegypt. Arab.* 178 (1775).

**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 Yemen. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: Yemen, Hadie: Forsskal.

**Illustrations (Books):** H.Jacques-Felix, *Les Graminees d'Afrique tropicale* (1962) (275, Fig. 208), S.Phillips, *Poaceae* (Gramineae) in I.Hedberg & S.Edwards, *Flora of Ethiopia and Eritrea* (1995) (315, Fig 127).

**Derivation** (Clifford & Bostock 2007): Gk. -oides, resembling. Similar to *Ischaemum*.

**Classification.** Subfamily Panicoideae. Tribe: Andropogoneae. Subtribe ISCHAEMINAE.

**Habit, Vegetative Morphology.** Annual, caespitose. Culms geniculately ascending, 20–60 cm long. Ligule a fringe of hairs. Leaf-blades 5–30 cm long, 1–3 mm wide, glaucous. Leaf-blade apex attenuate, filiform.

**Inflorescence.** Inflorescence composed of racemes. Racemes 1, single, straight or arcuate, 3–15 cm long. Rhachis fragile at the nodes, flattened, villous on margins. Rhachis internodes cuneate. Rhachis internode tip oblique, crateriform. Spikelets squeezed between internode and pedicel, in pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, cuneate, flattened, villous, tip rectangular.

**Sterile Spikelets.** Companion sterile spikelets well-developed, containing empty lemmas or male, lanceolate, dorsally compressed, 7–15 mm long, as long as fertile, separately deciduous. Companion sterile spikelet glumes coriaceous, distinctly veined, 5–7 -veined, ciliate on margins, acute, muticous. 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, laterally compressed, 9–15 mm long, falling entire, deciduous with accessory branch structures. Spikelet callus square, pilose, base obtuse, inserted.

**Glumes.** Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma. Lower glume linear, asymmetrical, 1 length of spikelet, coriaceous, much thinner above, 2-keeled, keeled dorsally below, flaring to lateral above, winged on keel, winged narrowly, winged near apex. Lower glume lateral veins branching above, intercarinal veins absent below, prominent above. Lower glume surface deeply depressed. Lower glume apex

dentate, 2 -fid, mucronate. Upper glume elliptic, chartaceous, 1-keeled, 5 -veined. Upper glume margins ciliate. Upper glume apex acute, awned, 1 -awned, awn 20–25 mm long.

**Florets.** Basal sterile florets 1, male, with palea. Lemma of lower sterile floret oblong, 6 mm long, hyaline, 2 -veined, ciliate on margins. Fertile lemma lanceolate, 5 mm long, hyaline, without keel, 3 -veined, 0–3 -veined. Lemma margins ciliate. Lemma apex lobed, 2 -fid, incised 0.25 of lemma length, awned, 1 -awned. Principal lemma awn from a sinus, geniculate, 40–70 mm long overall, with twisted column. Column of lemma awn ciliate, hairy on the spiral. Palea 1 length of lemma, hyaline, without keels.

**Distribution (TDWG).** **Continent.** Africa, Temperate Asia, Tropical Asia.

**Country /Province /State.** Macaronesia, West tropical Africa, West-central tropical Africa, Northeast tropical Africa, East tropical Africa, South tropical Africa, Southern Africa. Cape Verde. Mali, Nigeria, Niger. Central African Republic. Chad, Ethiopia (inc. Eritrea), Sudan. Kenya, Tanzania. Angola, Malawi, Mozambique, Zambia, Zimbabwe. Namibia, Botswana, Limpopo. **Arabian Peninsula.** Oman. **Indian Subcontinent.** India, Pakistan.

**TDWG4.** Maharashtra, Tamilnadu.

**Sehima nervosum** (Rottler) Stapf. Prain, *Fl. Trop. Afr.* ix. 36 (1917).

**Accepted by:** R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, 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).

**TYPE** from India. **Basionym or Replaced Name:** *Andropogon nervosus* Rottler ex Roem. & Schult., *Syst. Veg.* 2: 812 (1817). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Philippine Islands: Luzon: July 1918, *M. Ramos Bur. of Sci.* 32946 (HT: ?; IT: US-1263212).

**Illustrations (Books):** R.M.Phillips, F.T.E.A., *Gramineae* (3(1982):751, Fig. 176), G.V.Pope et al., *Flora Zambesiaca* 10, S.Phillips, *Poaceae* (Gramineae) in I.Hedberg & S.Edwards, *Flora of Ethiopia and Eritrea* (1995) (315, Fig. 127), T.A.Cope, in M.Thulin, *Poaceae* (Gramineae). *Flora of Somalia* (1995) (258, Fig. 152), K.M.Matthew, Illustrations on the *Flora of Tamilnadu Carnatic* (1982) (Pl. 933 & 934), E.E.Henty, *A Manual of the Grasses of New Guinea* (1969) (175, Pl. 65), C.A.Gardner, *Flora of Western Australia*, Vol 1, Part 1, *Gramineae* (1952) (303, Pl 88), J.R.Wheeler et al, *Flora of the Kimberley Region* (1992) (1217, Fig. 345), S.W.L.Jacobs, R.D.B.Whalley & D.J.B.Wheeler, *Grasses of New South Wales*, 4th edn (2008) (367), J.C.Tothill, & J.B.Hacker. *The grasses of southern Queensland* (1983) (372), 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. 855).

**Illustrations (Journals):** *Hooker's Icones Plantarum* (t.3076 (1916)).

**Images:** D.Sharp & B.K.Simon, *AusGrass*. Grasses of Australia. CD-Rom Version 1.0. (2002);

**Derivation** (Clifford & Bostock 2007): L. nervus, nerve; -osa, abundance. With conspicuous nerves in the glumes or lemmas.

**Classification.** Subfamily Panicoideae. Tribe: Andropogoneae. Subtribe ISCHAEMINAE.

**Habit, Vegetative Morphology.** Perennial, caespitose. Culms erect, 30–100 cm long, wiry. Ligule a fringe of hairs. Leaf-blades 5–40 cm long, 2–7 mm wide, glaucous. Leaf-blade apex attenuate, filiform.

**Inflorescence.** Inflorescence composed of racemes. Racemes 1, single, straight or arcuate, 3–12 cm long. Rhachis fragile at the nodes, flattened, ciliate on margins. Rhachis internodes cuneate. Rhachis internode tip oblique, crateriform. Spikelets squeezed between internode and pedicel, in pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, cuneate, flattened, ciliate, tip rectangular.

**Sterile Spikelets.** Companion sterile spikelets well-developed, containing empty lemmas or male, lanceolate, dorsally compressed, 6–10 mm long, as long as fertile, separately deciduous. Companion sterile spikelet glumes coriaceous, distinctly veined, 5–7 -veined, ciliate on margins, acute, muticous. 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 elliptic, laterally compressed, 6–10 mm long, falling entire, deciduous with accessory branch structures. Spikelet callus square, pilose, base obtuse, inserted.

**Glumes.** Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma. Lower glume elliptic, asymmetrical, 1 length of spikelet, coriaceous, much thinner above, 2-keeled, keeled dorsally below, flaring to lateral above, winged on keel, winged narrowly, winged near apex. Lower glume lateral veins branching above, intercarinal veins absent below, prominent above. Lower glume surface deeply depressed. Lower glume apex dentate, 2 -fid, mucronate. Upper glume elliptic, chartaceous, 1-keeled, 5 -veined. Upper glume margins ciliate. Upper glume apex acute, awned, 1 -awned, awn 14–16 mm long.

**Florets.** Basal sterile florets 1, male, with palea. Lemma of lower sterile floret oblong, 6 mm long, hyaline, 2 -veined, ciliate on margins. Fertile lemma lanceolate, 5 mm long, hyaline, without keel, 3 -veined, 0–3 -veined. Lemma margins ciliate. Lemma apex lobed, 2 -fid, incised 0.3 of lemma length, awned, 1 -awned. Principal lemma awn from a sinus, geniculate, 20–40 mm long overall, with twisted column. Column of lemma awn hispidulous, hairy on the spiral. Palea 1 length of lemma, hyaline, without keels.

**Flower and Fruit.**  $N = 20$  (1 ref TROPICOS).  $2n = 40$  (1 ref TROPICOS).

**Distribution (TDWG). Continent.** Africa, Temperate Asia, Tropical Asia, Australasia.

**Country /Province /State.** **Northeast tropical Africa, East tropical Africa, South tropical Africa.** Eritrea, Ethiopia (inc. Eritrea), Somalia, Sudan. Kenya, Tanzania, Uganda. Malawi, Mozambique. **Western Asia, Arabian Peninsula, China.** China South Central, Hainan. **Indian Subcontinent, Indo-China, Malesia, Papuasiasia.** India, Pakistan, Sri Lanka. Laos, Myanmar, Thailand, Vietnam. Java, Lesser Sunda Is, Philippines, Sulawesi. New Guinea PNG. New Guinea. **Australia.** Western Australia, Northern Territory, Queensland, New South Wales.

**TDWG4.** Yunnan. Manipur. Tamilnadu. Kimberley. Darwin & Gulf, Victoria R & Barkly Tableland, Central Australia. North, Central, South East, Inland. Western Slopes.

**Sehima notatum** (Hack.) A.Camus. *Bull. Mus. Hist. Nat. Paris*, xxvii. 373 (1921).

**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 notatum* Hack., *DC. Monog. Phan.* 6 :246 (1889). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: India, Kumaon: Duthie 5057 (K iso) ; India, Dunagiri: Duthie 6166 (K iso).

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): L. noto, mark. Spikelets multi-colored.

**Classification.** Subfamily Panicoideae. Tribe: Andropogoneae. Subtribe ISCHAEMINAE.

**Habit, Vegetative Morphology.** Perennial. Butt sheaths glabrous or pubescent. Culms 50–120 cm long. Culm-nodes glabrous. Leaf-sheaths glabrous on surface or hispid. Leaf-sheath oral hairs bearded. Ligule a fringe of hairs. Leaf-blades flat or involute, 10–40 cm long, 3–6 mm wide. Leaf-blade surface hispid, hairy on both sides. Leaf-blade apex acuminate.

**Inflorescence.** Inflorescence composed of racemes. Racemes 1, single, 9–15 cm long. Rhachis fragile at the nodes, flattened, ciliate on margins. Rhachis internodes cuneate, 5–5.5 mm long. Rhachis internode tip oblique, crateriform. Spikelets appressed, in pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, cuneate, flattened, ciliate, tip rectangular.

**Sterile Spikelets.** Companion sterile spikelets well-developed, male, lanceolate, dorsally compressed, 11.5–12 mm long, as long as fertile, separately deciduous. Companion sterile spikelet glumes coriaceous, distinctly veined, 9 -veined, dentate, 2 -fid, setaceously acuminate. 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 lanceolate, dorsally compressed, 12–12.5 mm long, falling entire, deciduous with accessory branch structures. Spikelet callus square, glabrous, base obtuse, inserted.

**Glumes.** Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma. Lower glume lanceolate, asymmetrical, 1 length of spikelet, coriaceous, much thinner above, 2-keeled, keeled dorsally below, flaring to lateral above, winged on keel, winged narrowly, 8 -veined. Lower glume lateral veins branching above, intercarinal veins absent below, prominent above. Lower glume surface flat or concave. Lower glume apex dentate, 2 -fid, awned, 1 -awned (on 1 tooth). Upper glume lanceolate, chartaceous, 1-keeled, winged on keel, winged near apex, 7 -veined. Upper glume margins ciliate. Upper glume apex acute, awned, 1 -awned, awn 10–11 mm long.

**Florets.** Basal sterile florets 1, male, with palea. Lemma of lower sterile floret lanceolate, 9.5–10 mm long, hyaline, 2 -veined, ciliate on margins. Palea of lower sterile floret 1 length of lemma. Fertile lemma oblong, hyaline, without keel, 3 -veined, 0–3 -veined. Lemma margins ciliate. Lemma apex lobed, 2 -fid, incised 0.33 of lemma length, awned, 1 -awned. Principal lemma awn from a sinus, geniculate, 42–45 mm long overall, with twisted column. Column of lemma awn glabrous. Palea 1 length of lemma, hyaline.

**Flower and Fruit.** Anthers 3, 4–5 mm long.

**Distribution (TDWG). Continent.** Tropical Asia.

**Country /Province /State.** **Indian Subcontinent.** India.

**TDWG4.** Uttah Pradesh.

**Sehima sulcatum** (Hack.) A. Camus. *Bull. Mus. Hist. Nat. Paris*, xxvii. 373. (1921).

**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 sulcatum* Hack., *DC. Monog. Phan.* 6 : 248 (1889). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: India, Narsingpur: Kuntze.

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): *L. sulcus*, furrow; -ata, possessing. Glume or glumes grooved.

**Classification.** Subfamily Panicoideae. Tribe: Andropogoneae. Subtribe ISCHAEMINAE.

**Habit, Vegetative Morphology.** Perennial, caespitose. Culms 50–120 cm long. Culm-nodes glabrous. Ligule a fringe of hairs. Leaf-blades 8–28 cm long, 2–5 mm wide. Leaf-blade surface glabrous. Leaf-blade margins scabrous. Leaf-blade apex acuminate.

**Inflorescence.** Inflorescence composed of racemes. Racemes 1, single, 4–9 cm long. Rhachis fragile at the nodes, semiterete, ciliate on margins. Rhachis internodes columnar, 4.5–5 mm long. Rhachis internode tip oblique, crateriform. Spikelets appressed, in pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, cuneate, flattened, ciliate, tip rectangular.

**Sterile Spikelets.** Companion sterile spikelets well-developed, male, lanceolate, dorsally compressed, 9.5–10 mm long, as long as fertile, separately deciduous. Companion sterile spikelet glumes coriaceous, distinctly veined, 7 -veined, setaceously acuminate. 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 lanceolate, dorsally compressed, 9.5–10 mm long, falling entire, deciduous with accessory branch structures. Spikelet callus square, glabrous, base obtuse, inserted.

**Glumes.** Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma. Lower glume lanceolate, 1 length of spikelet, coriaceous, much thinner above, 2-keeled, keeled above, keeled laterally, 5 -veined. Lower glume primary vein scaberulous. Lower glume lateral veins branching above (obscurely), intercarinal veins absent below, prominent above. Lower glume surface convex or with a longitudinal median groove. Lower glume apex dentate, 2 -fid, setaceously acuminate. Upper glume lanceolate, chartaceous, 1-keeled, 3–5 -veined. Upper glume apex acute, awned, 1 -awned, awn 12–14 mm long.

**Florets.** Basal sterile florets 1, male, with palea. Lemma of lower sterile floret lanceolate, 5.8–6.3 mm long, hyaline, 2 -veined, ciliolate on margins. Palea of lower sterile floret 1 length of lemma. Fertile lemma oblong, 4.3–4.8 mm long, hyaline, without keel, 3 -veined, 0–3 -veined. Lemma margins ciliate. Lemma apex lobed, 2 -fid, incised 0.33 of lemma length, awned, 1 -awned. Principal lemma awn from a sinus, geniculate, 30–35 mm long overall, with twisted column. Column of lemma awn glabrous. Palea 1 length of lemma, hyaline.

**Flower and Fruit.** Anthers 3, 3.3–3.8 mm long.

**Distribution (TDWG). Continent.** Tropical Asia.

**Country /Province /State.** Indian Subcontinent, Indo-China. Myanmar.

**TDWG4.** Andhra Pradesh, Bihar. Madhya Pradesh, Maharashtra, Rajasthan, Tamilnadu.

**Semiarundinaria densiflora** (Rendle) T.H. Wen. *J. Bamboo Res.*, 8(1): 24 (1989).

**Accepted by:** W.D. Clayton & K. Harman, *GrassBase* (2008) and online, U. Quattrocchi, *CRC World Dictionary of Grasses* (2006), S-L Chen et al, *Flora of China* 22 (Poaceae) (2006).

**TYPE** from China. **Basionym or Replaced Name:** *Arundinaria densiflora* Rendle, *J. Linn. Soc., Bot.* 36(254): 434–435 (1904). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: ST: *E. Faber* 19, no date, China: Kiangsu: Kiangsu Hills (US-2808841).

**Recent Synonyms:** *Brachystachyum densiflorum* (Rendle) Keng, *J. Bamboo Res.*, 8(1): 24 (1989).

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): *L. densus*, dense; *flos*, flower. Inflorescences congested.

**Classification.** Subfamily Bambusoideae. Tribe: Bambuseae.

**Habit, Vegetative Morphology.** Perennial, woody bamboo. Rhizomes elongated, leptomorph. Butt sheaths absent. Culms erect, woody. Culm-internodes terete, thin-walled, distally glabrous. Lateral branches dendroid. Culm-sheaths present. Leaves cauline. Leaf-sheath oral hairs ciliate. Ligule a ciliolate membrane, truncate. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades lanceolate, 6–10 cm long, 18 mm wide. Leaf-blade venation with 10 secondary veins, with distinct cross veins. Leaf-blade margins scaberulous.

**Inflorescence.** Synflorescence bractiferous, fasciculate, with spathaceous subtending bracts, without 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 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 linear, laterally compressed, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes clavate, pubescent.

**Glumes.** Glumes one the lower absent or obscure or two, persistent, shorter than spikelet.

**Florets.** Fertile lemma ovate, 9 mm long, chartaceous, without keel, 9 -veined, more than 3-veined. Lemma surface puberulous. Lemma apex cuspidate. Palea 1 length of lemma. Palea keels ciliolate. Palea apex dentate, 2 -fid. Apical sterile florets resembling fertile though underdeveloped.

**Flower and Fruit.** Lodicules 3, 3 mm long, ciliate. Anthers 3, 5 mm long. Stigmas 3. Ovary glabrous. Caryopsis with adherent pericarp.

**Distribution (TDWG). Continent.** Temperate Asia.

**Country /Province /State.** China. China South Central, China Southeast.

**TDWG4.** Anhui, Guangdong, Jiangsu, Jiangxi, Zhejiang, Hubei.

### **Semiarundinaria fastuosa** (Mitf.) Makino. *Journ. Jap. Bot.* ii. 8 (1918).

**Accepted by:** R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), E.Edgar, & H.Connor, *Flora of New Zealand Gramineae* 5 (2000), S-L Chen et al, *Flora of China* 22 (Poaceae) (2006), T.G.Tutin et al, *Flora Europaea* 5 (1980) (as *Arundinaria*), N.Tsvelev, *Grasses of the Soviet Union* (1983).

**TYPE** from Japan. **Basionym or Replaced Name:** *Bambusa fastuosa* Mitford, *Garden (London)* 46: 547 (1894). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Japan, Cult. in France: Marliac.

**Illustrations (Books):** C-C Hsu, *Taiwan Grasses* (1975) (736, Pl. 1496), D.Farrelly, *The Book of Bamboo* (1984) (& as *Semiarundinaria viridis*), S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 203).

**Derivation** (Clifford & Bostock 2007): *L. fastus*, proud; *-osa*, abundance. Habit more luxuriant than that of related species.

**Classification.** Subfamily Bambusoideae. Tribe: Bambuseae.

**Habit, Vegetative Morphology.** Perennial, woody bamboo. Rhizomes elongated, leptomorph. Butt sheaths absent. Culms erect, 500–800 cm long, 20–40 mm diam., woody. Culm-internodes channelled, thin-walled, 10–30 cm long. Lateral branches dendroid. Branch complement three, in a horizontal line, with subequal branches or 3 branches dominant, thinner than stem. Culm-sheaths present, deciduous, coriaceous, pubescent, hairy at the base, without auricles, glabrous on shoulders. Culm-sheath blade linear. Leaves cauline, 3–7 per branch. Leaf-sheaths pubescent. Leaf-sheath oral hairs setose. Ligule a ciliolate membrane. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades lanceolate, 18–24 cm long, 15–25 mm wide. Leaf-blade venation with distinct cross veins. Leaf-blade margins scabrous.

**Inflorescence.** Synflorescence bractiferous, fasciculate, 3–5 cm long, lax, with spathaceous subtending bracts, bracts 20–40 mm long, without 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 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 linear, laterally compressed, 50–100 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes persistent, similar, shorter than spikelet. Lower glume elliptic, 0.8–0.9 length of upper glume, chartaceous, without keels, 7 -veined. Lower glume apex acute. Upper glume elliptic, 0.7–0.8 length of adjacent fertile lemma, chartaceous, without keels, 7 -veined. Upper glume apex acute.

**Florets.** Fertile lemma elliptic, 15–17 mm long, chartaceous, without keel, 7–11 -veined, more than 3-veined. Lemma apex acuminate. Palea 1 length of lemma, 6 -veined. Palea keels ciliate. Apical sterile florets resembling fertile though underdeveloped.

**Flower and Fruit.** Lodicules 3, 3.5 mm long, veined, ciliate. Anthers 3, 9–10 mm long. Stigmas 3. Ovary umbonate, glabrous. Caryopsis with adherent pericarp.

**Distribution (TDWG). Continent.** Europe, Temperate Asia, Australasia, North America (+).

**Region.** Northern Europe.

**Country /Province /State.** : GB Aliens (Ryves et al), Ireland, Northern Ireland. **Caucasus, China** (\*), **Eastern Asia.** Japan, Taiwan (\*). **New Zealand.** New Zealand North I.

### **Semiarundinaria fortis** Koidz. *Acta Phytotax. & Geobot., Kyoto*, x. 63 (1941).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online.



**TYPE** from Japan. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: ST: *K.Mayebar* 4054, Japan: Prov. Higo, Kumagun, Ichibu ST: *K.Mayebar* 4055, Japan: Prov. Higo, Kumagun, Ichibu.

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): *L. fortis*, strong. Culms robust.

**Classification.** Subfamily Bambusoideae. Tribe: Bambuseae.

**Habit, Vegetative Morphology.** Perennial, woody bamboo. Rhizomes elongated, leptomorph. Butt sheaths absent. Culms erect, 600–800 cm long, woody. Culm-internodes terete, thin-walled, distally pubescent, with reflexed hairs. Culm-nodes pubescent. Lateral branches dendroid. Branch complement three or several, in a horizontal line. Culm-sheaths present, coriaceous, puberulous, with reflexed hairs, without auricles. Leaves cauline, 3–4 per branch. Leaf-sheaths puberulous. Leaf-sheath oral hairs setose. Ligule a ciliolate membrane, 0.5–1.5 mm long, truncate. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades lanceolate or elliptic, 18–25 cm long, 30–45 mm wide. Leaf-blade surface glabrous, hairless except near base. Leaf-blade apex acuminate.

**Inflorescence.** Synflorescence bractiferous, fasciculate, with spathaceous subtending bracts, bracts 30–40 mm long, without 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 2–3 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, laterally compressed, 30–40 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes 7–9 mm long, sparsely hairy.

**Glumes.** Glumes persistent, similar, shorter than spikelet. Lower glume ovate, 1 length of upper glume, chartaceous, without keels. Lower glume apex acute. Upper glume ovate, 5–7 mm long, chartaceous, without keels. Upper glume apex acute.

**Florets.** Fertile lemma ovate, 10–17 mm long, chartaceous, without keel, 13 -veined, more than 3-veined. Lemma lateral veins with cross-veins. Lemma surface scabrous. Lemma apex acuminate. Palea 1 length of lemma, coriaceous, 11–13 -veined. Palea keels ciliolate. Palea apex with excurrent keel veins. Apical sterile florets resembling fertile though underdeveloped.

**Flower and Fruit.** Lodicules 3, lanceolate, 4 mm long, veined, ciliate. Anthers 3, 9 mm long. Stigmas 3. Caryopsis with adherent pericarp.

**Distribution (TDWG). Continent.** Temperate Asia.

**Country /Province /State.** Eastern Asia. Japan.

**Semiarundinaria kagamiana** Makino. *Journ. Jap. Bot.* v. 2 (1928).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

**TYPE** from Japan. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: ST: *T.Makino*, Nov 1927, Japan: Rikuchu: Yonai cult.. ST: *T.Makino*, Nov 1927, Japan: Morioka cult..

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): *L. -ana*, indicating connection. In honor of Jasunosuki Kagami (-), Japanese agriculturalist and forester.

**Classification.** Subfamily Bambusoideae. Tribe: Bambuseae.

**Habit, Vegetative Morphology.** Perennial, woody bamboo. Rhizomes elongated, leptomorph. Butt sheaths absent. Culms erect, 800–1000 cm long, 30–40 mm diam., woody. Culm-internodes terete, thin-walled, mid-green or purple. Lateral branches dendroid. Branch complement three or several, in a horizontal line. Culm-sheaths present, coriaceous, glabrous or pilose, with dark brown hairs, truncate at apex, without auricles, glabrous on shoulders. Culm-sheath ligule 1 mm high, ciliolate. Culm-sheath blade lanceolate, acuminate. Leaves cauline, 3–5 per branch. Leaf-sheaths glabrous on surface or puberulous. Leaf-sheath oral hairs setose. Ligule a ciliolate membrane, 1–2 mm long, truncate. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades lanceolate or elliptic, 15–25 cm long, 25–35 mm wide. Leaf-blade surface puberulous, densely hairy, hairy abaxially. Leaf-blade apex acuminate.

**Inflorescence.** Synflorescence bractiferous, fasciculate, with spathaceous subtending bracts, bracts 25–40 mm long, without 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 4–5 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile.

Spikelets lanceolate, laterally compressed, 50–60 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes 8 mm long, sparsely hairy.

**Glumes.** Glumes one the lower absent or obscure, persistent, shorter than spikelet. Upper glume lanceolate, 20–22 mm long, chartaceous, without keels. Upper glume apex acute.

**Florets.** Fertile lemma oblong, 13–25 mm long, chartaceous, without keel, 11–13 -veined, more than 3-veined. Lemma lateral veins with cross-veins. Lemma surface scabrous. Lemma apex acuminate. Palea 12–16 mm long, coriaceous, 11–13 -veined. Palea keels ciliolate. Palea surface pubescent, hairy on back. Palea apex with excurrent keel veins. Apical sterile florets resembling fertile though underdeveloped.

**Flower and Fruit.** Lodicules 3, lanceolate, 6 mm long, veined, ciliate. Anthers 3, 9 mm long. Stigmas 3. Caryopsis with adherent pericarp.

**Distribution (TDWG). Continent.** Temperate Asia.

**Country /Province /State.** Eastern Asia. Japan.

### **Semiarundinaria nuspicula** McClure. *Lingnan Univ. Sci. Bull.*, No. 9, 50 (1940).

**TYPE** from China. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: China: Hainan: forested slopes, 500–1500 m, 4 May 1932, *F.A. McClure 20060* (HT: ?; IT: L, US).

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): *L. nuto*, nod; *spica*, thorn; *-ula*, diminutive. Inflorescence of nodding spikelets.

**Classification.** Subfamily Bambusoideae. Tribe: Bambuseae.

**Habit, Vegetative Morphology.** Perennial, woody bamboo. Butt sheaths absent. Culms erect, 200 cm long, 10 mm diam., woody. Culm-internodes terete, thin-walled, distally glabrous. Culm-nodes swollen, glabrous. Lateral branches dendroid. Branch complement three or several, with 1 branch dominant, thinner than stem. Culm-sheaths present. Leaves cauline. Leaf-sheaths striately veined, glabrous on surface. Leaf-sheath oral hairs lacking. Ligule a ciliolate membrane, pubescent on abaxial surface. Leaf-blade base simple, with a brief petiole-like connection to sheath, petiole 0.1–0.3 cm long, petiole glabrous. Leaf-blades linear or lanceolate, 5–14.5 cm long, 5–10 mm wide. Leaf-blade margins scabrous. Leaf-blade apex acuminate.

**Inflorescence.** Synflorescence bractiferous, fasciculate, with spathaceous subtending bracts, bracts 50 mm long, without axillary buds at base of spikelet, with ultimate bract subtending a compact bracteolate fascicle of spikelets, prophyllate below lateral spikelets.

Fertile spikelets pedicelled. Pedicels present, 12–20 mm long, smooth, glabrous.

**Fertile Spikelets.** Spikelets comprising 2 basal sterile florets, 6–10 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, laterally compressed, 50–70 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes 6 mm long, pilose, hairy at tip.

**Glumes.** Glumes two, 2 empty glumes, persistent, similar, shorter than spikelet. Lower glume elliptic, 3.5–5 mm long, chartaceous, 1-keeled above. Lower glume surface smooth or asperulous. Lower glume apex obtuse, mucronate. Upper glume elliptic, 5–6 mm long, chartaceous, without keels. Upper glume surface smooth or asperulous. Upper glume apex acute, mucronate.

**Florets.** Basal sterile florets 2 or more. Lemma of lower sterile floret 7.5–10 mm long. Fertile lemma elliptic, 12 mm long, chartaceous, without keel, more than 3-veined. Lemma surface asperulous. Lemma apex acute, awned, 1 -awned. Principal lemma awn 1–2 mm long overall. Palea 9–9.5 mm long. Palea keels ciliate, adorned above. Palea surface glabrous. Palea apex obtuse. Apical sterile florets resembling fertile though underdeveloped.

**Flower and Fruit.** Lodicules 3, ciliate. Anthers 3. Stigmas 3. Ovary umbonate, glabrous. Caryopsis with adherent pericarp.

**Distribution (TDWG). Continent.** Temperate Asia.

**Country /Province /State.** China. Hainan.

### **Semiarundinaria shapoensis** McClure. *Lingnan Univ. Sci. Bull.*, No. 9, 54 (1940).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

**TYPE** from China. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: ST: *H. Fung 20661* (*BG 1980*), 24 Apr 1929, China: Kwangtung (US-22886, US-45577). These specimens are living syntypes which were cultivated and collected at Lingnan Univ. bamboo garden on 26 Apr 1933..

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): *L. -ensis*, denoting origin. From Sha Po Ling, Hainan, China.

**Classification.** Subfamily Bambusoideae. Tribe: Bambuseae.

**Habit, Vegetative Morphology.** Perennial, woody bamboo. Rhizomes elongated, leptomorph. Butt sheaths absent. Culms erect, 200 cm long, 10 mm diam., woody. Culm-internodes terete, thin-walled, distally glabrous. Culm-nodes glabrous. Lateral branches dendroid, spreading. Branch complement three or several, in a horizontal line, with subequal branches. Culm-sheaths present, deciduous, pubescent, without auricles, setose on shoulders. Culm-sheath blade linear, reflexed. Leaves cauline, 5–10 per branch. Leaf-sheaths glabrous on surface. Leaf-sheath oral hairs lacking. Leaf-sheath auricles absent. Ligule a ciliolate membrane. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades lanceolate. Leaf-blade venation with distinct cross veins. Leaf-blade surface scaberulous, rough abaxially, glabrous. Leaf-blade apex acuminate. Flowering specimens unknown.

**Distribution (TDWG). Continent.** Temperate Asia.

**Country /Province /State.** China. Hainan.

**Semiarundinaria sinica** T.H. Wen. *J. Bamboo Res.*, 8(1): 13 (1989).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), S-L Chen et al, *Flora of China* 22 (Poaceae) (2006).

**TYPE** from China. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: China, Zhejiang, Hangzhou: Wen 88501 (ZJFI holo).

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): L. -ica, belonging to. From Sina, now China.

**Classification.** Subfamily Bambusoideae. Tribe: Bambuseae.

**Habit, Vegetative Morphology.** Perennial, woody bamboo. Rhizomes elongated, leptomorph. Butt sheaths absent. Culms erect, 400–500 cm long, 10–15 mm diam., woody. Culm-internodes channelled, thin-walled, 10–15 cm long, distally glabrous. Lateral branches dendroid. Branch complement three, in a horizontal line. Culm-sheaths present, deciduous, coriaceous, pilose, glabrous on margins, auriculate, ciliate on shoulders, shoulders with 4 mm long hairs. Culm-sheath ligule entire. Culm-sheath blade linear, erect. Leaves cauline, 2–3 per branch. Leaf-sheaths 3.5–4 cm long, glabrous on surface. Leaf-sheath oral hairs ciliate, erect, 2–3 mm long. Leaf-sheath auricles falcate. Ligule an eciliate membrane, 2 mm long. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades lanceolate, 9–16 cm long, 14–22 mm wide. Leaf-blade venation with 8–10 secondary veins, with distinct cross veins. Leaf-blade surface glabrous. Leaf-blade margins scabrous. Leaf-blade apex acuminate.

**Inflorescence.** Synflorescence bractiferous, fasciculate, with spathaceous subtending bracts, bracts 25 mm long, without 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 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 linear, laterally compressed, 55–60 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes persistent, similar, shorter than spikelet. Lower glume elliptic, chartaceous, without keels. Lower glume apex acute. Upper glume elliptic, chartaceous, without keels. Upper glume apex acute.

**Florets.** Fertile lemma elliptic, 17–18 mm long, 6 mm wide, chartaceous, without keel, 9 -veined, more than 3-veined. Lemma lateral veins without cross-veins. Lemma surface glabrous. Lemma apex acuminate. Palea 14 mm long. Apical sterile florets resembling fertile though underdeveloped.

**Flower and Fruit.** Lodicules 3, ciliate. Anthers 3. Stigmas 2. Ovary glabrous. Caryopsis with adherent pericarp.

**Distribution (TDWG). Continent.** Temperate Asia.

**Country /Province /State.** China. China Southeast.

**TDWG4.** Jiangsu, Zhejiang.

**Semiarundinaria yashadake** (Makino) Makino. *Journ. Jap. Bot.* v. 3 (1928).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

**TYPE** from Japan. **Basionym or Replaced Name:** *Arundinaria fastuosa* var. *yashadake* Makino, *Bot. Mag. Tokyo* 26:26 (1912). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Japan, Mino, Kusafuka: Tsuboi.

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): vernacular name for the species in Japan.

**Classification.** Subfamily Bambusoideae. Tribe: Bambuseae.

**Habit, Vegetative Morphology.** Perennial, woody bamboo. Rhizomes elongated, leptomorph. Butt sheaths absent. Culms erect, 700–800 cm long, 30–40 mm diam., woody. Culm-internodes terete, thin-walled, 3–5 cm long, mid-green or purple. Lateral branches dendroid. Branch complement three or several, in a horizontal line. Culm-sheaths present, coriaceous, pilose, with dark brown hairs, without auricles, setose on shoulders. Culm-sheath ligule 1.5 mm high, ciliolate. Culm-sheath blade linear or lanceolate, acuminate. Leaves cauline, 3–5 per branch. Leaf-sheath oral hairs setose. Ligule a ciliolate membrane. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades lanceolate or elliptic. Leaf-blade surface glabrous. Leaf-blade apex acuminate.

**Inflorescence.** Synflorescence bractiferous, fasciculate, with spathaceous subtending bracts, bracts 20–25 mm long, without 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 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, 30–40 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes 5 mm long, glabrous.

**Glumes.** Glumes one the lower absent or obscure, persistent, shorter than spikelet. Upper glume ovate, 5–7 mm long, chartaceous, without keels. Upper glume apex acute.

**Florets.** Fertile lemma oblong, 15 mm long, chartaceous, without keel, 13 -veined, more than 3-veined. Lemma lateral veins with cross-veins. Lemma apex acute. Palea 14 mm long, coriaceous, 7 -veined. Palea keels ciliolate, adorned above. Palea apex with excurrent keel veins. Apical sterile florets resembling fertile though underdeveloped.

**Flower and Fruit.** Lodicules 3, ovate, 3 mm long, veined, ciliate. Anthers 3, 7 mm long. Stigmas 3. Caryopsis with adherent pericarp.

**Distribution (TDWG). Continent.** Temperate Asia.

**Country /Province /State.** Eastern Asia. Japan.

## Serchloa Genus

**Sesleria alba** Sibth. & Sm. *Fl. Graec.* i. 56. t. 72 (1806).

**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) (& as *S.anatolica*).

**TYPE** from Turkey. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: Turkey, Belgrad: Coll?.

**Recent Synonyms:** *Sesleria anatolica* Deyl, *Op. Bot. Cech.* 3: 104 (1946).

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): L. white. Usually of spikelets, often due to the pale indumentum.

**Classification.** Subfamily Pooideae. Tribe: Poeae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Butt sheaths thickened and forming a bulb, persistent and investing base of culm, with compacted dead sheaths. Culms erect, 10–40 cm long. Leaf-sheaths pubescent. Ligule an eciliate membrane, 1–1.5 mm long. Leaf-blades 12–20 cm long, 3–5 mm wide, light green or glaucous. Leaf-blade surface glabrous. Leaf-blade margins smooth or scaberulous. Leaf-blade apex acute or acuminate.

**Inflorescence.** Inflorescence a panicle. Peduncle pilose above, tipped by a glumaceous appendage (treated as sterile spikelets). Panicle capitate, oblong, 3–8.5 cm long, 0.5–0.8 cm wide. Primary panicle branches accrescent to a central axis, with evident branchlets on axis or with lateral stumps on axis. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Sterile Spikelets.** Basal sterile spikelets represented by a single scale, 2 in number, ovate. Basal sterile spikelet glumes membranous.

**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.

**Glumes.** Glumes persistent, similar, reaching apex of florets. Lower glume lanceolate, 6–9 mm long, 1 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume primary vein ciliolate. Lower glume lateral veins absent. Lower glume apex acuminate, awned, 1 -awned, awn 1–2 mm long. Upper glume lanceolate, 6–9 mm long, 1.1–1.5 length of adjacent fertile lemma, membranous, 1-keeled, 1 -veined. Upper glume primary vein ciliolate. Upper glume lateral veins absent. Upper glume apex acuminate, awned, 1 -awned, awn 1–2 mm long.

**Florets.** Fertile lemma elliptic or oblong, 5.5–6 mm long, membranous, without keel, rounded except near apex, 3–5 -veined, 0–3 -veined or more than 3-veined. Lemma apex dentate, 3–5 -fid, awned, 3–5 -awned. Principal lemma awn 1–1.7 mm long overall. Lateral lemma awns present, arising on apex of lobes, shorter than principal. Palea 1 length of lemma, 2 -veined. Palea keels pubescent. Palea apex dentate, 2 -fid, awned, awns 0.2–0.5 mm long.

**Flower and Fruit.** Anthers 3, 3–4 mm long, yellow. Stigmas 2, terminally exerted. Ovary pubescent all over. Caryopsis with adherent pericarp, 2 mm long, hairy all over. Hilum punctiform.

$2n = 28$  (2 refs TROPICOS).

**Distribution (TDWG). Continent.** Europe, Temperate Asia.

**Region. Southeastern Europe.**

**Country /Province /State.** : Bulgaria, Turkey Europe. **Western Asia.** East Aegean Is, Lebanon-Syria, Turkey.

**Sesleria araratica** Kit Tan. *Fl. Turkey & E. Aegean Is.*, 9: 625, 524 (1985).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

**TYPE** from Turkey. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Turkey, Serdar Bulak: Davis 46963 (E holo).

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): L. -ica, belonging to. From Mt. Ararat on the border of Turkey and former Soviet Union.

**Classification.** Subfamily Pooideae. Tribe: Poeae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Butt sheaths thickened and forming a bulb, persistent and investing base of culm, with compacted dead sheaths. Culms erect, 10–40 cm long. Leaf-sheaths pubescent. Ligule an eciliate membrane, 1 mm long. Leaf-blades 12–15 cm long, 1.5–2.5 mm wide. Leaf-blade surface pubescent. Leaf-blade margins scaberulous. Leaf-blade apex acuminate.

**Inflorescence.** Inflorescence a panicle. Peduncle tipped by a glumaceous appendage (treated as sterile spikelets). Panicle spiciform, oblong, 1.8–2 cm long, 0.7 cm wide. Primary panicle branches accrescent to a central axis, with evident branchlets on axis or with lateral stumps on axis. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Sterile Spikelets.** Basal sterile spikelets represented by a single scale, 2 in number, ovate. Basal sterile spikelet glumes membranous.

**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 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes persistent, similar, shorter than spikelet. Lower glume ovate, 3 mm long, 1 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume lateral veins absent. Lower glume surface pubescent. Lower glume margins ciliolate. Lower glume apex acuminate, awned, 1 -awned, awn 1–1.8 mm long. Upper glume ovate, 3 mm long, 0.6 length of adjacent fertile lemma, membranous, 1-keeled, 1 -veined. Upper glume lateral veins absent. Upper glume surface pubescent. Upper glume margins ciliolate. Upper glume apex acuminate, awned, 1 -awned, awn 1–1.5 mm long.

**Florets.** Fertile lemma elliptic or oblong, 5 mm long, membranous, without keel, rounded except near apex, 3–5 -veined, 0–3 -veined or more than 3-veined. Lemma apex dentate, 5 -fid, awned, 5 -awned. Principal lemma awn 2.5–3.5 mm long overall. Lateral lemma awns present, arising on apex of lobes, shorter than principal. Palea 1 length of lemma, 2 -veined. Palea keels pubescent. Palea apex dentate, 2 -fid, ciliate, awned, awns 1–1.2 mm long.

**Flower and Fruit.** Anthers 3. Stigmas 2, terminally exerted. Ovary pubescent on apex. Caryopsis with adherent pericarp, hairy at apex. Hilum punctiform.

**Distribution (TDWG). Continent.** Temperate Asia.

**Country /Province /State.** **Western Asia.** Turkey.

**Sesleria argentea** (Savi) Savi. *Bot. Etrusc.* i. 68. (1808).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), T.G.Tutin et al, *Flora Europaea* 5 (1980).

**TYPE** from Italy. **Basionym or Replaced Name:** *Festuca argentea* Savi, Usteri, *Ann.* 24: 49 (1800). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Italy, Etrusca: Coll?.

**Illustrations (Books):** No illustration found (BKS).

**Images:** R.Darke, *The Encyclopaedia of Grasses for Liveable Landscapes* (2007);

**Derivation** (Clifford & Bostock 2007): L. silvery. Glumes or lemmas silvery.

**Classification.** Subfamily Pooideae. Tribe: Poeae.

**Habit, Vegetative Morphology.** Perennial, caespitose, clumped loosely. Culms erect, 35–55 cm long. Lateral branches lacking. Leaf-sheaths tubular for much of their length, glabrous on surface. Ligule a ciliolate membrane, 0.5–1 mm long. Leaf-blades conduplicate or convolute, 10–20 cm long, 3–5 mm wide, 3–10 cm long at summit of culm, glaucous. Leaf-blade surface glabrous. Leaf-blade apex acute, simple or apiculate.

**Inflorescence.** Inflorescence a panicle. Peduncle tipped by a glumaceous appendage (treated as sterile spikelets). Panicle spiciform, linear, 3.5–5.5 cm long, 0.5–0.7 cm wide. Primary panicle branches accrescent to a central axis. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Sterile Spikelets.** Basal sterile spikelets represented by a single scale, 2 in number. Basal sterile spikelet glumes membranous.

**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, 5.5–7.5 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes persistent, similar, shorter than spikelet. Lower glume lanceolate, 5–7 mm long, 1 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 acuminate, awned, 1 -awned, awn 1–2.5 mm long. Upper glume lanceolate, 5–7 mm long, membranous, 1-keeled, 1–3 -veined. Upper glume primary vein ciliate. Upper glume lateral veins absent or distinct. Upper glume apex acuminate, awned, 1 -awned, awn 1–2.5 mm long.

**Florets.** Fertile lemma ovate, 4.5–5.5 mm long, membranous, without keel, 3–5 -veined, 0–3 -veined or more than 3-veined. Lemma midvein eciliate or ciliolate. Lemma surface glabrous. Lemma margins eciliate or ciliolate. Lemma apex dentate, 3–5 -fid, awned, 1–3 -awned. Principal lemma awn 1–1.5 mm long overall. Lateral lemma awns absent or present. Palea 2 -veined. Palea keels ciliolate. Palea apex mucicous or awned, awns 0.5 mm long.

**Flower and Fruit.** Anthers 3. Stigmas 2, terminally exerted, pubescent. Caryopsis with adherent pericarp. Hilum elliptic.

**Distribution (TDWG), Continent.** Europe, Africa.

**Region.** Southwestern Europe, Southeastern Europe.

**Country /Province /State.** : France, Spain. : Italy. **Northern Africa.** Morocco.

### **Sesleria autumnalis** (Scop.) F. Schultz. *Arch. Fl.* 318 (1861).

**Accepted by:** R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), T.G.Tutin et al, *Flora Europaea* 5 (1980), N.Tsvelev, *Grasses of the Soviet Union* (1983).

**TYPE** from Yugoslavia. **Basionym or Replaced Name:** *Phleum autumnale* Scop., *Fl. Carn.* ed. II. 1: 56 (1772). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Yugoslavia, Medea: Scop.

**Illustrations (Books):** M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 24 *Poaceae*, part 1 (2007) (680).

**Images:** R.Darke, *Ornamental Grasses* (2004);, R.Darke, *The Encyclopaedia of Grasses for Liveable Landscapes* (2007);

**Derivation** (Clifford & Bostock 2007): L. of the autumn. Flowering in autumn.

**Classification.** Subfamily Pooideae. Tribe: Poeae.

**Habit, Vegetative Morphology.** Perennial, caespitose, clumped loosely. Stolons present. Culms erect, 25–40 cm long. Lateral branches lacking. Leaf-sheaths tubular for much of their length, glabrous on surface. Ligule a ciliolate membrane, 0.2–0.4 mm long. Leaf-blades flat, 25–35 cm long, 2–4 mm wide, 4–8 cm long at summit of culm, glaucous. Leaf-blade surface scabrous. Leaf-blade apex acuminate.

**Inflorescence.** Inflorescence a panicle. Peduncle tipped by a glumaceous appendage (treated as sterile spikelets). Panicle spiciform, linear, loose, 4–9 cm long, 0.5–0.7 cm wide. Primary panicle branches accrescent to a central axis. Spikelets solitary. Fertile spikelets sessile.

**Sterile Spikelets.** Basal sterile spikelets represented by a single scale, 2 in number. Basal sterile spikelet glumes membranous.

**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, 5.5–6.5 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes persistent, similar, shorter than spikelet. Lower glume lanceolate, 5–6 mm long, 1 length of upper glume, membranous, 1-keeled, 1–3 -veined. Lower glume lateral veins absent or distinct. Lower glume

apex acuminate, awned, 1 -awned, awn 1–2 mm long. Upper glume lanceolate, 5–6 mm long, membranous, 1-keeled, 1–3 -veined. Upper glume lateral veins absent or distinct. Upper glume apex acuminate, awned, 1 -awned, awn 1–2 mm long.

**Florets.** Fertile lemma lanceolate, 3–4.5 mm long, membranous, without keel, 3–5 -veined, 0–3 -veined or more than 3-veined. Lemma surface pilose, hairy at base. Lemma apex dentate, 3–5 -fid, awned, 1–3 -awned. Principal lemma awn 0.5–1.5 mm long overall. Lateral lemma awns absent or present, 0.3–0.5 mm long. Palea 4–5 mm long, 2 -veined. Palea keels ciliolate. Palea apex with excurrent keel veins.

**Flower and Fruit.** Anthers 3. Stigmas 2, terminally exerted, pubescent. Caryopsis with adherent pericarp. Hilum elliptic.

**Distribution (TDWG).** Continent. Europe, Temperate Asia.

**Region.** Southeastern Europe.

**Country /Province /State.** : Albania, Italy, Yugoslavia. **Caucasus.** Transcaucasus.

**TDWG4.**

**Sesleria bielzii** Schur. *Verh. Siebenb. Ver. Naturw.* i. 109 (1850).

**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 Rumania. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Rumania, Rodna: Biels.

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): in honor of Eduard Albert Bielz (1827–1898) German teacher.

**Classification.** Subfamily Pooideae. Tribe: Poeae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Culms erect, 30–50 cm long. Lateral branches lacking. Leaf-sheaths tubular for much of their length, glabrous on surface. Ligule an eciliate membrane, 0.2–0.4 mm long. Leaf-blades flat or convolute, 1.5–2.5 mm wide, 2–3 cm long at summit of culm.

**Inflorescence.** Inflorescence a panicle. Peduncle tipped by a glumaceous appendage (treated as sterile spikelets). Panicle capitate, oblong or ovate, 1.1–3 cm long, 0.7–1 cm wide. Primary panicle branches accrescent to a central axis, with evident branchlets on axis or with lateral stumps on axis. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Sterile Spikelets.** Basal sterile spikelets represented by a single scale, 2 in number, lanceolate or ovate. Basal sterile spikelet glumes membranous.

**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 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes persistent, similar, reaching apex of florets. Lower glume lanceolate or ovate, 4–5 mm long, 1 length of upper glume, membranous, 1-keeled, 1–3 -veined. Lower glume lateral veins absent or distinct. Lower glume margins ciliate. Lower glume apex acute, awned, 1 -awned, awn 2–4 mm long. Upper glume lanceolate or ovate, 4–5 mm long, membranous, 1-keeled, 1–3 -veined. Upper glume lateral veins absent or distinct. Upper glume margins ciliate. Upper glume apex acute, awned, 1 -awned, awn 2–4 mm long.

**Florets.** Fertile lemma ovate, 4–5 mm long, membranous, without keel, 3–5 -veined, 0–3 -veined or more than 3-veined. Lemma surface pubescent, hairy on back. Lemma apex dentate, 5 -fid, awned, 5 -awned. Principal lemma awn 2–3 mm long overall. Lateral lemma awns present, 0.5–1 mm long. Palea 3–6 mm long, 2 -veined. Palea keels ciliolate. Palea surface pubescent. Palea apex muticous or awned, awns 0–0.5 mm long.

**Flower and Fruit.** Anthers 3. Stigmas 2, terminally exerted, pubescent. Caryopsis with adherent pericarp. Hilum elliptic.

**Distribution (TDWG).** Continent. Europe.

**Region.** Southeastern Europe, Eastern Europe.

**Country /Province /State.** : Albania, Bulgaria, Greece, Romania, Yugoslavia. Ukraine.

**Sesleria caerulea** (L.) Arduin. *Animad.* ii. 18. t. 6. f. 3–5. (1764).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

**TYPE** from Europe. **Basionym or Replaced Name:** *Cynosurus caeruleus* L., *Sp. Pl.* 72 (1753). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Europe: Coll?.

**Recent Synonyms:** *Sesleria albicans* Kit., *Schult. Oestr. Fl.* ed. 2. 1, 216. (1814).

**Illustrations (Books):** C.E.Hubbard, *Grasses* (1968) (228), N.N.Tsvelev, *Grasses of the Soviet Union* (1983) (787 (519), Pl.9 as *S.coerulea*), M.E.Barkworth et al, *Flora of North America north of Mexico Vol 24 Poaceae*, part 1 (2007) (680).

**Images:** R.Darke, *Ornamental Grasses* (2004);, R.Darke, *The Encyclopaedia of Grasses for Liveable Landscapes* (2007);.

**Derivation** (Clifford & Bostock 2007): L. bluish. Often with bluish-green leaf-blades.

**Classification.** Subfamily Pooideae. Tribe: Poeae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Rhizomes short. Butt sheaths persistent and investing base of culm, with compacted dead sheaths. Culms erect, 10–45 cm long, wiry. Ligule an eciliate membrane. Leaf-blades 5–20 cm long, 2–6 mm wide. Leaf-blade apex abruptly acute, hooded.

**Inflorescence.** Inflorescence a panicle. Peduncle tipped by a glumaceous appendage (treated as sterile spikelets). Panicle capitate, oblong or ovate, 1–3 cm long, 0.5–1 cm wide. Primary panicle branches accrescent to a central axis, with evident branchlets on axis or with lateral stumps on axis. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, oblong.

**Sterile Spikelets.** Basal sterile spikelets represented by a single scale, 2 in number, ovate, 1.5–3 mm long. Basal sterile spikelet glumes membranous.

**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, 4.5–7 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes persistent, similar, reaching apex of florets or shorter than spikelet. Lower glume ovate, 3–6 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 ovate, 3–6 mm long, 0.8–1.2 length of adjacent fertile lemma, membranous, 1-keeled, 1 -veined. Upper glume apex acuminate.

**Florets.** Fertile lemma elliptic or oblong, 4–5 mm long, membranous, without keel, rounded except near apex, 3–5 -veined, 0–3 -veined or more than 3-veined. Lemma surface puberulous. Lemma apex dentate, 3–5 -fid, awned, 1 -awned (with mucronate lobes). Principal lemma awn 0.5–1 mm long overall. Palea 1 length of lemma, 2 -veined. Palea keels pubescent. Palea apex dentate, 2 -fid.

**Flower and Fruit.** Anthers 3, 2–2.5 mm long. Stigmas 2, terminally exerted, pubescent. Ovary pubescent on apex. Caryopsis with adherent pericarp, ovoid, 2 mm long, hairy at apex. Hilum elliptic.

$2n = 28$  (2 refs TROPICOS).

**Distribution (TDWG). Continent.** Europe.

**Region. Northern Europe, Middle Europe, Southeastern Europe, Eastern Europe.**

**Country /Province /State.** : Finland, Sweden. : Austria, Czechoslovakia, Germany, Hungary, Poland, Switzerland. : Bulgaria, Italy, Romania, Yugoslavia. Estonia, Latvia, Lithuania, Baltic States, Central European Russia, Northwest European Russia.

**TDWG4.**

## **Sesleria calabrica\***

**Habit, Vegetative Morphology.** Perennial, caespitose, clumped densely. Butt sheaths persistent and investing base of culm, with compacted dead sheaths. Culms erect, (25–)30–50(–60) cm long. Culm-internodes distally glabrous. Leaf-sheaths glabrous on surface. Leaf-sheath oral hairs ciliate. Ligule a ciliolate membrane, 0.3–0.5 mm long. Leaf-blades curved, conduplicate, (10–)15–35(–60) cm long, (1.6–)2.2–2.8(–3.2) mm wide, pruinose. Leaf-blade venation comprising (8–)10–13(–17) vascular bundles, with 9–11 subepidermal sclerenchyma strands, without layer of subepidermal sclerenchyma masking vein striation. Leaf-blade surface glabrous. Leaf-blade apex acute, pungent.

**Inflorescence.** Inflorescence a panicle, comprising 6–12 fertile spikelets. Peduncle tipped by a glumaceous appendage. Panicle spiciform, linear, (1.2–)3–3.5(–4.2) cm long. Panicle branches smooth or 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, (6–)6.5–7(–9.2) mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes persistent, similar, reaching apex of florets. Lower glume ovate, (5.5–)6–6.5(–7) mm long, 1 length of upper glume, scarious, much thinner on margins, 1-keeled, 1 -veined. Lower glume lateral veins absent. Lower glume apex acute or acuminate, awned, 1 -awned, awn (1–)1.5–2.5(–3) mm long. Upper glume ovate, (5.5–)6–6.5(–7) mm long, 0.9 length of adjacent fertile lemma, scarious, with membranous margins, 1-keeled, 1 -veined. Upper glume apex acuminate, awned, 1 -awned, awn (1–)1.5–2.5(–3) mm long.



**Florets.** Fertile lemma ovate, (5–)5.5–6.2(–6.9) mm long, membranous, without keel, 5 -veined, more than 3-veined. Lemma surface scabrous, rough above, glabrous. Lemma margins ciliate. Lemma hairs 0.1–0.25 mm long. Lemma apex dentate, 5 -fid, awned, 5 -awned. Principal lemma awn 1–2.7 mm long overall. Lateral lemma awns present, 0.2–1.2 mm long. Palea 1 length of lemma. Palea surface puberulous, hairy on margins. Palea apex dentate, 2 -fid.

**Flower and Fruit.** Anthers 3, (2–)2.9–3.5(–4.2) mm long. Stigmas 2, pubescent. Styles 3–4 mm long. Ovary pubescent on apex.

**Distribution (TDWG). Continent.** Europe.

**Region.** Southeastern Europe.

**Sesleria coerulans** Frivald. *Flora*, xix. 438. (1836).

**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 Bulgaria. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Bulgaria: Frivaldski (K iso, LE).

**Illustrations (Books):** No illustration found (BKS).

**Classification.** Subfamily Pooideae. Tribe: Poeae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Culms erect, 30–50 cm long. Lateral branches lacking. Leaf-sheaths tubular for much of their length, hirsute. Ligule an eciliate membrane, 0.2–0.4 mm long. Leaf-blades flat or convolute, 1.5–2.5 mm wide, 2–3 cm long at summit of culm, flaccid. Leaf-blade venation with 13–15 secondary veins. Leaf-blade surface glabrous.

**Inflorescence.** Inflorescence a panicle. Peduncle tipped by a glumaceous appendage (treated as sterile spikelets). Panicle capitate, ovate, 1.1–3 cm long, 0.7–1.4 cm wide. Primary panicle branches accrescent to a central axis, with evident branchlets on axis or with lateral stumps on axis. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Sterile Spikelets.** Basal sterile spikelets represented by a single scale, 2 in number. Basal sterile spikelet glumes membranous.

**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, 4.5–10 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes persistent, similar, shorter than spikelet or reaching apex of florets or exceeding apex of florets. Lower glume lanceolate or ovate, 4–10 mm long, 1 length of upper glume, membranous, 1-keeled, 1–3 -veined. Lower glume lateral veins absent or distinct. Lower glume surface glabrous or pubescent. Lower glume apex acute, awned, 1 -awned, awn 2 mm long. Upper glume lanceolate or ovate, 4–10 mm long, membranous, 1-keeled, 1–3 -veined. Upper glume lateral veins absent or distinct. Upper glume surface glabrous or pubescent. Upper glume apex acute, awned, 1 -awned, awn 2 mm long.

**Florets.** Fertile lemma ovate, 4.5–5 mm long, membranous, without keel, 5 -veined, more than 3-veined. Lemma surface pubescent, hairy on back. Lemma apex dentate, 5 -fid, awned, 3–5 -awned. Principal lemma awn 2 mm long overall. Lateral lemma awns present, 0.5–1.5 mm long. Palea 3–6 mm long, 2 -veined. Palea keels ciliate. Palea surface pubescent. Palea apex awned, awns 0.5–1.5 mm long.

**Flower and Fruit.** Anthers 3. Stigmas 2, terminally exerted, pubescent. Ovary pubescent on apex. Caryopsis with adherent pericarp, obovoid, hairy at apex. Hilum elliptic.

$2n = 28$  (1 ref TROPICOS).

**Distribution (TDWG). Continent.** Europe.

**Region.** Northern Europe, Southeastern Europe, Eastern Europe.

**Country /Province /State.** : Great Britain. Ukraine.

**TDWG4.**

**Sesleria comosa** Velen. *Abh. Boehm. Ges. Wiss.* vii. I. 44 (1886).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online, T.G.Tutin et al, *Flora Europaea* 5 (1980).

**TYPE** from Bulgaria. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Bulgaria, Vitos: Coll?.

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): *L. coma*, hair of the head; -osa, abundance. Lemmas and glumes bearded.

**Classification.** Subfamily Pooideae. Tribe: Poeae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Culms erect, 20–50 cm long, 1 mm diam. Lateral branches lacking. Leaf-sheaths tubular for much of their length, glabrous on surface. Ligule an eciliate membrane, 0.2–0.4 mm long. Leaf-blades conduplicate or convolute, 10–20 cm long, 2–3 mm wide, 1.5–4 cm long at summit of culm. Leaf-blade surface glabrous. Leaf-blade apex acute.

**Inflorescence.** Inflorescence a panicle. Peduncle tipped by a glumaceous appendage (treated as sterile spikelets). Panicle capitate, ovate or globose, 0.7–1.7 cm long, 0.7–1.2 cm wide. Primary panicle branches accrescent to a central axis, with evident branchlets on axis or with lateral stumps on axis. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Sterile Spikelets.** Basal sterile spikelets represented by a single scale, 2 in number, lanceolate or ovate. Basal sterile spikelet glumes membranous.

**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, 3–4 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes persistent, similar, shorter than spikelet. Lower glume lanceolate, 2–3 mm long, 1 length of upper glume, membranous, 1-keeled, 1–3 -veined. Lower glume lateral veins absent or distinct. Lower glume margins ciliate. Lower glume apex acute, awned, 1 -awned, awn 2–3 mm long. Upper glume lanceolate, 2–3 mm long, membranous, 1-keeled, 1–3 -veined. Upper glume lateral veins absent or distinct. Upper glume margins ciliate. Upper glume apex acute, awned, 1 -awned, awn 2–3 mm long.

**Florets.** Fertile lemma ovate, 3 mm long, membranous, without keel, 3–5 -veined, 0–3 -veined or more than 3-veined. Lemma surface pilose. Lemma hairs 0.2–0.5 mm long. Lemma apex dentate, 5 -fid, awned, 5 -awned. Principal lemma awn 3–4.5 mm long overall. Lateral lemma awns present, 2–3 mm long. Palea 1 length of lemma, 2 -veined. Palea keels ciliolate. Palea surface pilose. Palea apex awned, awns 2–3 mm long.

**Flower and Fruit.** Anthers 3, 1.5–2.5 mm long. Stigmas 2, terminally exerted, pubescent. Ovary pubescent on apex. Caryopsis with adherent pericarp, ovoid, hairy at apex. Hilum elliptic.

$2n = 14$  (2 refs TROPICOS), or 28 (1 ref TROPICOS).

**Distribution (TDWG). Continent.** Europe.

**Region. Southeastern Europe.**

**Country /Province /State. :** Albania, Bulgaria, Yugoslavia.

**Sesleria doerfleri** Hayek. *Oesterr. Bot. Zeitschr.* lxiv. 360. (1914).

**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 Crete. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Crete, Sphakia: Dorfler.

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): in honor of Ignaz Dvrfler (1866–1950) Austrian botanist and publisher.

**Classification.** Subfamily Pooideae. Tribe: Poeae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Culms erect, 40–70 cm long. Lateral branches lacking. Leaf-sheaths tubular for much of their length, glabrous on surface. Ligule an eciliate membrane, 0.2–0.4 mm long. Leaf-blades flat, 3–5.5 mm wide, 6–8 cm long at summit of culm, glaucous. Leaf-blade venation with 25–35 secondary veins. Leaf-blade margins scaberulous. Leaf-blade apex pungent.

**Inflorescence.** Inflorescence a panicle. Peduncle tipped by a glumaceous appendage (treated as sterile spikelets). Panicle capitate, oblong or ovate, 2.5–3 cm long, 1.5 cm wide. Primary panicle branches accrescent to a central axis, with evident branchlets on axis or with lateral stumps on axis. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Sterile Spikelets.** Basal sterile spikelets represented by a single scale, 2 in number. Basal sterile spikelet glumes membranous.

**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.

**Glumes.** Glumes persistent, similar, reaching apex of florets. Lower glume lanceolate, 6 mm long, 1 length of upper glume, membranous, 1-keeled, 3 -veined. Lower glume lateral veins obscure. Lower glume apex acute, awned, 1 -awned, awn 2–4 mm long. Upper glume lanceolate, 6 mm long, membranous, 1-keeled, 3 -veined. Upper glume lateral veins obscure. Upper glume apex acute, awned, 1 -awned, awn 2–4 mm long.

**Florets.** Fertile lemma lanceolate, 4.5–5.5 mm long, membranous, without keel, 3–5 -veined, 0–3 -veined or more than 3-veined. Lemma midvein ciliate. Lemma surface puberulous. Lemma margins ciliate. Lemma apex dentate, 5 -fid, awned, 5 -awned. Principal lemma awn 4–5 mm long overall. Lateral lemma awns present, 2.5 mm long. Palea 5–6.5 mm long, 2 -veined. Palea keels ciliolate. Palea surface puberulous. Palea apex awned, awns 2–3 mm long.

**Flower and Fruit.** Anthers 3, 4 mm long. Stigmas 2, terminally exerted, pubescent. Caryopsis with adherent pericarp. Hilum elliptic.

**Distribution (TDWG). Continent.** Europe.

**Region.** Southeastern Europe.

**Country /Province /State. :** Crete.

**Sesleria heufleriana** Schur. *Verh. Siebenb. Ver. Naturw.* iv. 84. (1853).

**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 Rumania. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Rumania, Transylvania: Pavai (K iso).

**Illustrations (Books):** M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 24 *Poaceae*, part 1 (2007) (680).

**Images:** R.Darke, *Ornamental Grasses* (2004);, R.Darke, *The Encyclopaedia of Grasses for Liveable Landscapes* (2007);

**Derivation** (Clifford & Bostock 2007): L. -ana, indicating connection. In honor of Ludwig Samuel Joseph David Alexander Heufler zu Rasen (1817–1885) Austrian botanist.

**Classification.** Subfamily Pooideae. Tribe: Poeae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Culms erect, 30–70 cm long. Lateral branches lacking. Leaf-sheaths tubular for much of their length, glabrous on surface. Ligule an eciliate membrane, 0.2–0.4 mm long. Leaf-blades conduplicate or convolute, 20–35 cm long, 2–3(–7) mm wide, 0.8–5.5 cm long at summit of culm, pruinose. Leaf-blade apex acute or acuminate.

**Inflorescence.** Inflorescence a panicle. Peduncle tipped by a glumaceous appendage (treated as sterile spikelets). Panicle capitate, oblong or ovate, 1–3 cm long, 0.7–1.1 cm wide. Primary panicle branches accrescent to a central axis, with evident branchlets on axis or with lateral stumps on axis. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Sterile Spikelets.** Basal sterile spikelets represented by a single scale, 2 in number. Basal sterile spikelet glumes membranous.

**Fertile Spikelets.** Spikelets comprising 3 fertile florets, with a barren rhachilla extension. Spikelets of 2 or more fertile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets oblong, laterally compressed, 3–5 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes persistent, similar, shorter than spikelet or reaching apex of florets. Lower glume lanceolate, 3.5–4.5 mm long, 1 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume lateral veins absent. Lower glume margins ciliate. Lower glume apex acute, awned, 1 -awned, awn 0.5–2.5 mm long. Upper glume lanceolate, 3.5–4.5 mm long, membranous, 1-keeled, 1 -veined. Upper glume lateral veins absent. Upper glume margins ciliate. Upper glume apex acute, awned, 1 -awned, awn 0.5–2.5 mm long.

**Florets.** Fertile lemma ovate, 3–4 mm long, membranous, without keel, 3–5 -veined, 0–3 -veined or more than 3-veined. Lemma surface pubescent. Lemma hairs 0.1–0.25 mm long. Lemma apex dentate, 5 -fid, awned, 5 -awned. Principal lemma awn 1–3.5 mm long overall. Lateral lemma awns present. Palea 3–5 mm long, 2 -veined. Palea keels ciliolate. Palea surface pubescent. Palea apex awned, awns 0.2–1.5 mm long.

**Flower and Fruit.** Anthers 3. Stigmas 2, terminally exerted, pubescent. Ovary pubescent on apex. Caryopsis with adherent pericarp, hairy at apex. Hilum elliptic.

$2n = 28$  (1 ref TROPICOS).

**Distribution (TDWG). Continent.** Europe, Temperate Asia.

**Region.** Middle Europe, Southeastern Europe, Eastern Europe.

**Country /Province /State. :** Czechoslovakia, Hungary. : Romania. Northwest European Russia, Ukraine. Caucasus. North Caucasus.

**TDWG4.**

**Sesleria insularis** Sommier. *Bull. Soc. Bot. Ital.* 1905, 126. (1905).

**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. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Sardinia, Capo Figari: Coll?.

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): *L. insula*, island; -are, pertaining to. Island species.

**Classification.** Subfamily Pooideae. Tribe: Poeae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Culms decumbent, 30–65 cm long. Lateral branches lacking. Leaf-sheaths tubular for much of their length, glabrous on surface. Ligule a ciliate membrane, 0.2–0.4 mm long. Leaf-blades flat or convolute, 1.5–3 mm wide, 1–10 cm long at summit of culm, without exudate or pruinose. Leaf-blade venation with 13–21 secondary veins. Leaf-blade surface glabrous or pubescent, sparsely hairy.

**Inflorescence.** Inflorescence a panicle. Peduncle tipped by a glumaceous appendage (treated as sterile spikelets). Panicle capitate, oblong, dense, 1.5–4.5 cm long, 0.7–0.8 cm wide. Primary panicle branches accrescent to a central axis. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Sterile Spikelets.** Basal sterile spikelets represented by a single scale, 2 in number. Basal sterile spikelet glumes membranous.

**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.

**Glumes.** Glumes persistent, similar, reaching apex of florets. Lower glume lanceolate, 4–6 mm long, 1 length of upper glume, membranous, 1-keeled, 1–3 -veined. Lower glume lateral veins absent or distinct. Lower glume margins ciliate. Lower glume apex acuminate, awned, 1 -awned, awn 1–3 mm long. Upper glume lanceolate, 4–6 mm long, membranous, 1-keeled, 1–3 -veined. Upper glume primary vein ciliate. Upper glume lateral veins absent or distinct. Upper glume apex acuminate, awned, 1 -awned, awn 1–3 mm long.

**Florets.** Fertile lemma ovate, 5–6 mm long, membranous, without keel, 3–5 -veined, 0–3 -veined or more than 3-veined. Lemma surface pubescent, hairy between veins. Lemma margins ciliate. Lemma apex dentate, 5 -fid, awned, 5 -awned. Principal lemma awn 1–4.5 mm long overall. Lateral lemma awns present. Palea 4–5.5 mm long, 2 -veined. Palea keels ciliate. Palea apex awned.

**Flower and Fruit.** Anthers 3. Stigmas 2, terminally exerted, pubescent. Caryopsis with adherent pericarp. Hilum elliptic.

**Distribution (TDWG). Continent.** Europe.

**Region.** Southwestern Europe, Southeastern Europe.

**Country /Province /State.** : Balears, Corsica, Sardinia. : Albania, Italy, Yugoslavia.

**Sesleria korabensis** (Kumm. & Javorka) Deyl. *Op. Bot. Cech.* iii. 141 (1946).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online, T.G.Tutin et al, *Flora Europaea* 5 (1980).

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): *L. -ensis*, denoting origin. From Mt. Korab, Serbia.

**Classification.** Subfamily Pooideae. Tribe: Poeae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Culms erect, 15–30 cm long. Lateral branches lacking. Leaf-sheaths tubular for much of their length, hirsute. Ligule an eciliate membrane, 0.2–0.4 mm long. Leaf-blades flat or convolute, 10–25 cm long, 2–3 mm wide, 1–1.5 cm long at summit of culm, without exudate or pruinose. Leaf-blade venation without layer of subepidermal sclerenchyma masking vein striation or with continuous uniform subepidermal sclerenchyma layer on the underside. Leaf-blade surface pilose. Leaf-blade margins ciliate.

**Inflorescence.** Inflorescence a panicle. Peduncle tipped by a glumaceous appendage (treated as sterile spikelets). Panicle capitate, ovate, 1–1.5 cm long, 0.8–1 cm wide. Primary panicle branches accrescent to a central axis, with lateral stumps on axis. Spikelets solitary. Fertile spikelets sessile.

**Sterile Spikelets.** Basal sterile spikelets represented by a single scale, 2 in number. Basal sterile spikelet glumes membranous.

**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 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes persistent, similar, shorter than spikelet or reaching apex of florets. Lower glume lanceolate or ovate, 3–4.5 mm long, 1 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume primary vein ciliate. Lower glume lateral veins absent. Lower glume margins ciliate. Lower glume apex acute, awned, 1 -awned, awn 1–3 mm long. Upper glume lanceolate or ovate, 3–4.5 mm long, membranous, 1-keeled,

1 -veined. Upper glume primary vein ciliate. Upper glume lateral veins absent. Upper glume margins ciliate. Upper glume apex acute, awned, 1 -awned, awn 1–3 mm long.

**Florets.** Fertile lemma ovate, 3.5–4.5 mm long, membranous, without keel, 3–5 -veined, 0–3 -veined or more than 3-veined. Lemma surface pubescent, hairy on back. Lemma apex dentate, 5 -fid, awned, 3–5 -awned. Principal lemma awn 2–3 mm long overall. Lateral lemma awns present, 0.5–1.5 mm long. Palea 1.1 length of lemma, 2 -veined. Palea keels ciliolate. Palea apex awned, awns 1–1.5 mm long.

**Flower and Fruit.** Anthers 3. Stigmas 2, terminally exerted, pubescent. Ovary pubescent on apex. Caryopsis with adherent pericarp, obovoid, hairy at apex. Hilum elliptic.

$2n = 56$  (1 ref TROPICOS).

**Distribution (TDWG). Continent.** Europe.

**Region.** Southeastern Europe.

**Country /Province /State.** : Albania, Bulgaria, Greece, Yugoslavia.

**Sesleria latifolia** (Adamovic) Degen. *Magyar Bot. Lap.* iv. 133. (1905).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online, T.G.Tutin et al, *Flora Europaea* 5 (1980).

**TYPE** from Hungary. **Basionym or Replaced Name:** *Sesleria heufleriana* var. *latifolia* Adamovic, *Mag. Bot. Lapok* 3:138 (1904). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Hungary, Etanj: Coll?.

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): L. latus, broad; folium, leaf. Leaf-blades broad or relatively broad with respect to related species.

**Classification.** Subfamily Pooideae. Tribe: Poeae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Culms erect, 20–40 cm long. Lateral branches lacking. Leaf-sheaths tubular for much of their length, glabrous on surface. Ligule a ciliolate membrane, 0.2–0.4 mm long. Leaf-blades flat, 15–20 cm long, 3–4 mm wide, 4–6.5 cm long at summit of culm. Leaf-blade surface glabrous. Leaf-blade apex acute or acuminate.

**Inflorescence.** Inflorescence a panicle. Peduncle tipped by a glumaceous appendage (treated as sterile spikelets). Panicle spiciform, linear, loose, 3–5 cm long, 0.7 cm wide. Primary panicle branches accrescent to a central axis. Spikelets solitary. Fertile spikelets sessile.

**Sterile Spikelets.** Basal sterile spikelets represented by a single scale, 2 in number. Basal sterile spikelet glumes membranous.

**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, 5.5–6.5 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes persistent, similar, shorter than spikelet. Lower glume lanceolate or ovate, 5–6 mm long, 1 length of upper glume, membranous, 1-keeled, 1–3 -veined. Lower glume lateral veins absent or distinct. Lower glume surface puberulous, hairy on veins. Lower glume apex acuminate, awned, 1 -awned, awn 1 mm long. Upper glume lanceolate or ovate, 5–6 mm long, membranous, 1-keeled, 1–3 -veined. Upper glume lateral veins absent or distinct. Upper glume surface puberulous, hairy on veins. Upper glume apex acuminate, awned, 1 -awned, awn 1 mm long.

**Florets.** Fertile lemma ovate, 5 mm long, membranous, without keel, 3–5 -veined, 0–3 -veined or more than 3-veined. Lemma surface glabrous. Lemma apex dentate, 5 -fid, awned, 3–5 -awned. Principal lemma awn 1–2 mm long overall. Lateral lemma awns present, 0.3–0.7 mm long. Palea 5 mm long, 2 -veined. Palea keels ciliolate.

**Flower and Fruit.** Anthers 3. Stigmas 2, terminally exerted, pubescent. Caryopsis with adherent pericarp. Hilum elliptic.

$2n = 56$  (3 refs TROPICOS).

**Distribution (TDWG). Continent.** Europe.

**Region.** Southeastern Europe.

**Country /Province /State.** : Bulgaria, Greece, Yugoslavia.

**Sesleria leucocephala** DC. *Fl. Fr.* iii. 76 (1805).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), T.G.Tutin et al, *Flora Europaea* 5 (1980).

**TYPE** from France. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: France: Coll?.

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): Gk. leukos, white; kephale, head. Inflorescences pale as if blanched.

**Classification.** Subfamily Pooideae. Tribe: Poeae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Culms erect, 4–15 cm long. Leaf-sheaths open for most of their length, glabrous on surface. Ligule an eciliate membrane, 1.5 mm long. Leaf-blades flat or convolute, 1–10 cm long, 1–2 mm wide. Leaf-blade surface glabrous. Leaf-blade apex obtuse.

**Inflorescence.** Inflorescence a panicle. Peduncle tipped by a glumaceous appendage (treated as sterile spikelets). Panicle capitate, globose, 0.8–1.3 cm long, 0.8–1.2 cm wide. Primary panicle branches accrescent to a central axis, with evident branchlets on axis or with lateral stumps on axis. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, oblong.

**Sterile Spikelets.** Basal sterile spikelets represented by a single scale, 2 in number, orbicular. Basal sterile spikelet glumes membranous, acuminate.

**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, 5–5.5 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes persistent, similar, shorter than spikelet. Lower glume ovate, 4.5–5 mm long, 1 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume lateral veins absent. Lower glume apex acute. Upper glume ovate, 4.5–5 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, 4–4.5 mm long, membranous, without keel, 3–5 -veined, 0–3 -veined or more than 3-veined. Lemma surface pilose, hairy below. Lemma apex entire, obtuse, muticous or mucronate, 1 -awned. Principal lemma awn 0.5–1 mm long overall. Palea 0.9 length of lemma, 2 -veined. Palea keels ciliolate.

**Flower and Fruit.** Anthers 3, 1.5–2 mm long. Stigmas 2, terminally exerted, pubescent. Ovary glabrous. Caryopsis with adherent pericarp, fusiform, 1.8–2.1 mm long, glabrous. Hilum elliptic.

**Distribution (TDWG). Continent.** Europe.

**Region.** Middle Europe, Southeastern Europe.

**Country /Province /State.** : Austria, Switzerland. : Italy, Yugoslavia.

**Sesleria nitida** Tenore. *Prod. Fl. Nap.* p. x. (1811).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), T.G.Tutin et al, *Flora Europaea* 5 (1980).

**Illustrations (Books):** M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 24 *Poaceae*, part 1 (2007) (680).

**Images:** R.Darke, *Ornamental Grasses* (2004);, R.Darke, *The Encyclopaedia of Grasses for Liveable Landscapes* (2007);.

**Derivation** (Clifford & Bostock 2007): L. niteo, shine; Spikelets or lemmas shiny.

**Classification.** Subfamily Pooideae. Tribe: Poeae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Basal innovations intravaginal. Culms erect, 20–70 cm long. Culm-internodes smooth or scaberulous. Lateral branches lacking. Leaf-sheaths tubular for much of their length, keeled, glabrous on surface. Ligule an eciliate membrane, 0.2–0.4 mm long. Leaf-blades flat, 10–27 cm long, 3.5–6 mm wide, 3.5–7.5 cm long at summit of culm, glaucous. Leaf-blade surface glabrous. Leaf-blade margins scabrous. Leaf-blade apex acute, hooded.

**Inflorescence.** Inflorescence a panicle. Peduncle tipped by a glumaceous appendage (treated as sterile spikelets). Panicle spiciform or capitate, oblong or ovate, 2–3 cm long, 0.9–1.2 cm wide. Primary panicle branches accrescent to a central axis, with evident branchlets on axis or with lateral stumps on axis. Spikelets solitary. Fertile spikelets sessile.

**Sterile Spikelets.** Basal sterile spikelets represented by a single scale, 2 in number. Basal sterile spikelet glumes membranous.

**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, 5.5–6.5 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes persistent, similar, shorter than spikelet. Lower glume lanceolate, 5–5.5 mm long, 1 length of upper glume, membranous, 1-keeled, 1–3 -veined. Lower glume primary vein eciliate or ciliate. Lower glume lateral veins absent or distinct. Lower glume margins eciliate or ciliolate. Lower glume apex acute, awned, 1 -awned, awn 1–2 mm long. Upper glume lanceolate, 5–5.5 mm long, membranous, 1-keeled, 1–3 -veined. Upper glume primary vein eciliate or ciliate. Upper glume lateral veins absent or distinct. Upper glume margins eciliate or ciliolate. Upper glume apex acute, awned, 1 -awned, awn 1–2 mm long.

**Florets.** Fertile lemma lanceolate or ovate, 5–6 mm long, membranous, without keel, 3–5 -veined, 0–3 -veined or more than 3-veined. Lemma midvein ciliate. Lemma margins ciliate. Lemma apex dentate, 5 -fid, awned, 3–5 -awned. Principal lemma awn 1–2 mm long overall. Lateral lemma awns present, 0.5 mm long. Palea 5.5–6.5 mm long, 2 -veined. Palea keels ciliolate. Palea apex awned, awns 0.5 mm long.

**Flower and Fruit.** Anthers 3. Stigmas 2, terminally exerted, pubescent. Caryopsis with adherent pericarp, 3 mm long. Hilum elliptic.

**Distribution (TDWG). Continent.** Europe.

**Region.** Southeastern Europe.

**Country /Province /State.** : Italy, Sicily.

**Sesleria ovata** (Hoppe) Kern. *Sched. Fl. Exsicc.* i. 109 (1881).

**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:** *Cynosurus ovatus* Hoppe, Sturm, *Deutschl. Fl. Heft* 6: (1799). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Austria, Salzburg Alps: Hoppe.

**Illustrations (Books):** G.Hegi, *Flora von Mitteleuropa* 1 (1909).

**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.** Perennial, caespitose. Culms erect, 3–10(–20) cm long. Leaf-sheaths open for most of their length, smooth, glabrous on surface. Ligule an eciliate membrane, 1–1.8 mm long. Leaf-blades flat or convolute, 2–9 cm long, 1–1.5 mm wide, flaccid. Leaf-blade surface glabrous or pilose, sparsely hairy, hairy adaxially.

**Inflorescence.** Inflorescence a panicle. Peduncle tipped by a glumaceous appendage (treated as sterile spikelets). Panicle capitate, globose, 0.6–1 cm long, 0.4–0.6 cm wide. Primary panicle branches accrescent to a central axis, with evident branchlets on axis or with lateral stumps on axis. Spikelets solitary. Fertile spikelets sessile.

**Sterile Spikelets.** Basal sterile spikelets represented by a single scale, 2 in number, lanceolate or ovate. Basal sterile spikelet glumes membranous.

**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, 2.5 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes persistent, similar, shorter than spikelet. Lower glume ovate, 2 mm long, 1 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume lateral veins absent. Lower glume margins ciliate. Lower glume apex acute, awned, 1 -awned, awn 1–2 mm long. Upper glume ovate, 2 mm long, 1 length of adjacent fertile lemma, membranous, 1-keeled, 1 -veined. Upper glume lateral veins absent. Upper glume margins ciliate. Upper glume apex acute, awned, 1 -awned, awn 1–2 mm long.

**Florets.** Fertile lemma ovate, 2 mm long, membranous, glaucous, without keel, 3–5 -veined, 0–3 -veined or more than 3-veined. Lemma surface glabrous or pilose. Lemma margins eciliate or ciliate. Lemma apex dentate, 5 -fid, awned, 5 -awned. Principal lemma awn 1.8–2.5 mm long overall. Lateral lemma awns present, 1 mm long. Palea 1.1 length of lemma, 2 -veined. Palea keels ciliolate. Palea apex awned, awns 1–1.5 mm long.

**Flower and Fruit.** Anthers 3, 1.5 mm long. Stigmas 2, terminally exerted, pubescent. Ovary pubescent on apex. Caryopsis with adherent pericarp, obovoid, 1–1.5 mm long, hairy at apex. Hilum elliptic.

**Distribution (TDWG). Continent.** Europe.

**Region.** Middle Europe, Southwestern Europe, Southeastern Europe.

**Country /Province /State.** : Austria, Germany. : France. : Italy, Yugoslavia.

**Sesleria phleoides** Stev. ex Roem. & Schult. *Syst.* ii. 604. (1817).

**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: Russia, Caucasus: Bieberstein (LE holo).

**Illustrations (Books):** No illustration found (BKS).

**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. Butt sheaths thickened and forming a bulb, persistent and investing base of culm, with compacted dead sheaths. Culms erect, 10–40 cm long. Leaf-sheaths pubescent or hirsute. Ligule an eciliate membrane, 0.5–0.7 mm long. Leaf-blades 8–15 cm long, 1.5–4 mm wide. Leaf-blade surface pilose, hairy adaxially. Leaf-blade margins cartilaginous, scaberulous. Leaf-blade apex acute, hooded.

**Inflorescence.** Inflorescence a panicle. Peduncle tipped by a glumaceous appendage (treated as sterile spikelets). Panicle capitate, ovate, 1–2 cm long, 1–1.5 cm wide. Primary panicle branches accrescent to a central axis, with evident branchlets on axis or with lateral stumps on axis. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Sterile Spikelets.** Basal sterile spikelets represented by a single scale, 2 in number, ovate. Basal sterile spikelet glumes membranous.

**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, acute to acuminate, 4.5–7 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes persistent, similar, shorter than spikelet. Lower glume ovate, 3–4 mm long, 1 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume primary vein ciliolate. Lower glume lateral veins absent. Lower glume apex acuminate, awned, 1 -awned, awn 1.5–2 mm long. Upper glume ovate, 3–4 mm long, 1 length of adjacent fertile lemma, membranous, 1-keeled, 1 -veined. Upper glume primary vein ciliolate. Upper glume lateral veins absent. Upper glume apex acuminate, awned, 1 -awned, awn 1.5–2 mm long.

**Florets.** Fertile lemma elliptic or oblong, 3–4 mm long, membranous, without keel, rounded except near apex, 3–5 -veined, 0–3 -veined or more than 3-veined. Lemma apex dentate, 3–5 -fid, awned, 3–5 -awned. Principal lemma awn 1.5–2 mm long overall. Lateral lemma awns present, arising on apex of lobes, shorter than principal. Palea 1 length of lemma, 2 -veined. Palea keels pubescent. Palea apex dentate, 2 -fid, awned, awns 0.5–1 mm long.

**Flower and Fruit.** Anthers 3, linear or oblong, 1.6–3.2 mm long, yellow. Stigmas 2, terminally exserted. Ovary pubescent on apex. Caryopsis with adherent pericarp, obovoid, 2 mm long, hairy at apex. Hilum punctiform.

**Distribution (TDWG). Continent.** Temperate Asia.

**Country /Province /State.** Caucasus, Western Asia. Iran.

**TDWG4.**

**Sesleria rigida** Heuff. ex Reichb. *Fl. Germ. Excurs.* 1403. (1831).

**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 Hungary. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Hungary, Mehadia: Heuffel (K iso).

**Illustrations (Books):** No illustration found (BKS).

**Images:** R.Darke, *The Encyclopaedia of Grasses for Liveable Landscapes* (2007);.

**Derivation** (Clifford & Bostock 2007): L. stiff. Culms, spikelets or inflorescence branches held stiffly erect.

**Classification.** Subfamily Pooideae. Tribe: Poeae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Culms erect, 15–45 cm long. Lateral branches lacking. Leaf-sheaths tubular for much of their length, pubescent. Ligule a ciliolate membrane, 0.2–0.4 mm long. Leaf-blades convolute, 1–2 mm wide, 0.5–1 cm long at summit of culm, pruinose. Leaf-blade venation with 7–11 secondary veins, without layer of subepidermal sclerenchyma masking vein striation or with continuous uniform subepidermal sclerenchyma layer on the underside. Leaf-blade surface pubescent, hairy adaxially.

**Inflorescence.** Inflorescence a panicle. Peduncle tipped by a glumaceous appendage (treated as sterile spikelets). Panicle capitate, oblong or ovate, loose, 1.5–3 cm long, 0.7 cm wide. Primary panicle branches accrescent to a central axis. Spikelets solitary. Fertile spikelets sessile.

**Sterile Spikelets.** Basal sterile spikelets represented by a single scale, 2 in number. Basal sterile spikelet glumes membranous.

**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.

**Glumes.** Glumes persistent, similar, reaching apex of florets. Lower glume lanceolate, 5–6 mm long, 1 length of upper glume, membranous, 1-keeled, 1–3 -veined. Lower glume lateral veins absent or distinct. Lower glume surface glabrous or pubescent, hairy on veins. Lower glume margins eciliate or ciliolate. Lower glume



apex acute, mucicous. Upper glume lanceolate, 5–6 mm long, membranous, 1-keeled, 1–3 -veined. Upper glume lateral veins absent or distinct. Upper glume surface glabrous or pubescent, hairy on veins. Upper glume margins eciliate or ciliate. Upper glume apex acute, mucicous.

**Florets.** Fertile lemma lanceolate or ovate, 4–5 mm long, membranous, without keel, 3–5 -veined, 0–3 -veined or more than 3-veined. Lemma surface glabrous or pubescent, hairy on veins. Lemma margins ciliate. Lemma apex dentate, 3 -fid, awned, 1–3 -awned. Principal lemma awn 0.5–1.5 mm long overall. Lateral lemma awns absent or present. Palea 2 -veined. Palea keels ciliolate. Palea apex awned.

**Flower and Fruit.** Anthers 3. Stigmas 2, terminally exerted, pubescent. Ovary pubescent on apex. Caryopsis with adherent pericarp, hairy at apex. Hilum elliptic.

**Distribution (TDWG). Continent.** Europe.

**Region.** Southeastern Europe.

**Country /Province /State.** : Bulgaria, Greece, Romania, Yugoslavia.

**Sesleria robusta** Schott, Nym. & Kotschy. *Analect. Bot.* 1 (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).

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): *L. robust.* Culms tall, or leaf-blades or spikelets large.

**Classification.** Subfamily Pooideae. Tribe: Poeae.

**Habit, Vegetative Morphology.** Perennial, caespitose, clumped densely. Rootstock evident. Basal innovations extravaginal or intravaginal. Culms erect, robust, 20–60 cm long, 2 mm diam. Culm-internodes scaberulous. Lateral branches lacking. Leaf-sheaths tubular for much of their length, glabrous on surface. Ligule an eciliate membrane, 0.5 mm long. Leaf-blades flat or conduplicate, 20–40 cm long, 3–4.5 mm wide, 3–10 cm long at summit of culm, stiff, glaucous. Leaf-blade surface glabrous or puberulous, moderately hairy. Leaf-blade apex acute, apiculate.

**Inflorescence.** Inflorescence a panicle. Peduncle tipped by a glumaceous appendage (treated as sterile spikelets). Panicle spiciform or capitate, oblong, 3–5.5 cm long, 0.7–0.9 cm wide. Primary panicle branches accrescent to a central axis, with evident branchlets on axis or with lateral stumps on axis. Panicle axis with scattered hairs or pilose. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Sterile Spikelets.** Basal sterile spikelets represented by a single scale, 2 in number. Basal sterile spikelet glumes membranous, ciliate on margins.

**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.

**Glumes.** Glumes persistent, similar, reaching apex of florets. Lower glume lanceolate, 5–6 mm long, 1 length of upper glume, membranous, 1-keeled, 1–3 -veined. Lower glume primary vein ciliate. Lower glume lateral veins absent or distinct. Lower glume margins ciliate. Lower glume apex acute, mucicous or awned, 1 -awned, awn 1–2 mm long. Upper glume lanceolate, 5–6 mm long, membranous, 1-keeled, 1–3 -veined. Upper glume primary vein ciliate. Upper glume lateral veins absent or distinct. Upper glume margins ciliate. Upper glume apex acute, mucicous or awned, 1 -awned, awn 1–2 mm long.

**Florets.** Fertile lemma ovate, 3.5–4.5 mm long, membranous, shiny, without keel, 3–5 -veined, 0–3 -veined or more than 3-veined. Lemma surface pilose, hairy on veins. Lemma apex entire or dentate, 3–5 -fid, awned, 1–5 -awned. Principal lemma awn 1–1.5 mm long overall. Lateral lemma awns absent or present. Palea 3.5–4.5 mm long, 2 -veined. Palea keels ciliolate. Palea apex mucicous or with excurrent keel veins.

**Flower and Fruit.** Anthers 3. Stigmas 2, terminally exerted, pubescent. Caryopsis with adherent pericarp. Hilum elliptic.

$2n = 28$  (1 ref TROPICOS), or 42 (1 ref TROPICOS).

**Distribution (TDWG). Continent.** Europe.

**Region.** Southeastern Europe.

**Country /Province /State.** : Albania, Bulgaria, Yugoslavia.

**Sesleria sadleriana** Janka. *Oestr. Bot. Zeitschr.* ii. (1882).

**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 Hungary. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Hungary, Budapest: Coll?.

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): L. -ana, indicating connection. In honor of Josef Sadler (1791–1849) Hungarian physician and botanist.

**Classification.** Subfamily Pooideae. Tribe: Poeae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Culms erect, 30–55 cm long. Lateral branches lacking. Leaf-sheaths tubular for much of their length, glabrous on surface or hirsute. Ligule an eciliate membrane, 0.2–0.4 mm long. Leaf-blades flat or conduplicate, 20–30 cm long, 4–5 mm wide, 0.8–1.5 cm long at summit of culm, stiff. Leaf-blade venation with 17–19 secondary veins. Leaf-blade margins scabrous.

**Inflorescence.** Inflorescence a panicle. Peduncle tipped by a glumaceous appendage (treated as sterile spikelets). Panicle capitate, oblong, 1.5–2.5 cm long, 0.9 cm wide. Primary panicle branches accrescent to a central axis, with evident branchlets on axis or with lateral stumps on axis. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Sterile Spikelets.** Basal sterile spikelets represented by a single scale, 2 in number. Basal sterile spikelet glumes membranous.

**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.

**Glumes.** Glumes persistent, similar, shorter than spikelet. Lower glume ovate, 4–5 mm long, 1 length of upper glume, membranous, 1-keeled, 1–3 -veined. Lower glume lateral veins absent or distinct. Lower glume apex acute, awned, 1 -awned, awn 1 mm long. Upper glume ovate, 4–5 mm long, membranous, 1-keeled, 1–3 -veined. Upper glume lateral veins absent or distinct. Upper glume apex acute, awned, 1 -awned, awn 1 mm long.

**Florets.** Fertile lemma ovate, 4–5 mm long, membranous, without keel, 3–5 -veined, 0–3 -veined or more than 3-veined. Lemma surface glabrous or pilose, hairy on veins. Lemma margins ciliate. Lemma apex dentate, 3–5 -fid, awned, 1–3 -awned. Principal lemma awn 1–2 mm long overall. Lateral lemma awns absent or present, 0.5 mm long. Palea 5 mm long, 2 -veined. Palea keels ciliolate. Palea apex muticous or awned, awns 0–0.3 mm long.

**Flower and Fruit.** Anthers 3. Stigmas 2, terminally exerted, pubescent. Caryopsis with adherent pericarp. Hilum elliptic.

$2n = 56$  (3 refs TROPICOS).

**Distribution (TDWG). Continent.** Europe.

**Region.** Middle Europe, Southeastern Europe.

**Country /Province /State.** : Austria, Hungary, Poland. : Yugoslavia.

**Sesleria sphaerocephala** Arduin. *Animad.* ii. 20. t. 7. (1764).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online, T.G.Tutin et al, *Flora Europaea* 5 (1980).

**TYPE** from Europe. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Europe, Alps: Coll?.

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): Gk. sphaera, ball; kephale, head. Inflorescence a contracted globose panicle.

**Classification.** Subfamily Pooideae. Tribe: Poeae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Culms erect, 2–12 cm long. Leaf-sheaths open for most of their length, glabrous on surface. Ligule an eciliate membrane, 0.5–1 mm long. Leaf-blades flat or convolute, 1–7 cm long, 1 mm wide. Leaf-blade surface glabrous. Leaf-blade margins ciliate. Leaf-blade apex obtuse, hooded.

**Inflorescence.** Inflorescence a panicle. Peduncle tipped by a glumaceous appendage (treated as sterile spikelets). Panicle capitate, globose, 0.5–0.7 cm long, 0.5–0.7 cm wide. Primary panicle branches accrescent to a central axis, with evident branchlets on axis or with lateral stumps on axis. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, oblong, 1–1.5 mm long.

**Sterile Spikelets.** Basal sterile spikelets represented by a single scale, 2 in number, orbicular. Basal sterile spikelet glumes membranous.

**Fertile Spikelets.** Spikelets comprising 4 fertile florets, with a barren rhachilla extension. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets oblong, laterally compressed, 4.5 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes persistent, similar, shorter than spikelet. Lower glume ovate, 4 mm long, 1 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume lateral veins absent. Lower glume margins ciliolate.

Lower glume apex acute, awned, 1 -awned, awn 1.5 mm long. Upper glume ovate, 4 mm long, 1 length of adjacent fertile lemma, membranous, 1-keeled, 1 -veined. Upper glume lateral veins absent. Upper glume margins ciliolate. Upper glume apex acute, awned, 1 -awned, awn 1.5 mm long.

**Florets.** Fertile lemma ovate, 3.5–4 mm long, membranous, grey, without keel, 3–5 -veined, 0–3 -veined or more than 3-veined. Lemma surface pilose, hairy below. Lemma margins ciliate. Lemma apex dentate, 3 -fid, awned, 1 -awned. Principal lemma awn 0.5–1 mm long overall. Palea 1 length of lemma, 2 -veined. Palea keels ciliolate.

**Flower and Fruit.** Anthers 3, 1.8 mm long. Stigmas 2, terminally exerted, pubescent. Ovary glabrous. Caryopsis with adherent pericarp, 1.5 mm long, glabrous. Hilum elliptic.

**Distribution (TDWG). Continent.** Europe.

**Region.** Middle Europe, Southeastern Europe.

**Country /Province /State.** : Austria. : Italy, Yugoslavia.

**Sesleria taygetea** Hayek. *Denkschr. Akad. Wiss. Wien*, xciv, 207 (1918).

**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 Greece. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Greece, Taygeto Mts.: Adamovic.

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): from Mt Taygeto, Laconia, Greece.

**Classification.** Subfamily Pooideae. Tribe: Poeae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Culms erect, 15–25 cm long. Lateral branches lacking. Leaf-sheaths tubular for much of their length, glabrous on surface. Ligule an eciliate membrane, 0.2–0.4 mm long. Leaf-blades filiform, convolute, 0.5 mm wide, 1–3 cm long at summit of culm. Leaf-blade venation with continuous uniform subepidermal sclerenchyma layer on the underside. Leaf-blade surface pilose, hairy abaxially.

**Inflorescence.** Inflorescence a panicle. Peduncle tipped by a glumaceous appendage (treated as sterile spikelets). Panicle capitate, oblong or ovate, 1–1.5 cm long, 0.7–1.1 cm wide. Primary panicle branches accrescent to a central axis. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Sterile Spikelets.** Basal sterile spikelets represented by a single scale, 2 in number, ovate, 11 mm long. Basal sterile spikelet glumes membranous.

**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.

**Glumes.** Glumes persistent, similar, reaching apex of florets. Lower glume lanceolate, 6–7 mm long, 1 length of upper glume, membranous, 1-keeled, 1–3 -veined. Lower glume lateral veins absent or distinct. Lower glume apex acuminate, muticous or awned, 1 -awned. Upper glume lanceolate, 6–7 mm long, membranous, 1-keeled, 1–3 -veined. Upper glume lateral veins absent or distinct. Upper glume apex acuminate, muticous or awned, 1 -awned.

**Florets.** Fertile lemma ovate, 5–6 mm long, membranous, without keel, 3–5 -veined, 0–3 -veined or more than 3-veined. Lemma surface glabrous or pubescent, hairy on veins. Lemma margins ciliate. Lemma apex dentate, 5 -fid, awned, 1–3 -awned. Principal lemma awn 0.5–1 mm long overall. Lateral lemma awns absent or present. Palea 2 -veined. Palea keels ciliolate.

**Flower and Fruit.** Anthers 3. Stigmas 2, terminally exerted, pubescent. Caryopsis with adherent pericarp. Hilum elliptic.

**Distribution (TDWG). Continent.** Europe.

**Region.** Southeastern Europe.

**Country /Province /State.** : Greece.

**Sesleria tenerrima** (Fritsch) Hayek. *Denkschr. Akad. Wiss. Wien, Math.-Nat.* xciv. 206 (1918).

**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 Rumania. **Basionym or Replaced Name:** *Sesleria coeruleans* var. *tenerrima* Fritsch, *Bull. Herb. Boiss.* 4:652 (1896). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Rumania: Coll?.

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): L. very thin. Culms or inflorescence branches thin.

**Classification.** Subfamily Pooideae. Tribe: Poeae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Culms erect, slender, 10–30 cm long. Culm-internodes smooth. Lateral branches lacking. Leaf-sheaths tubular for much of their length, hirsute. Ligule an eciliate membrane, 0.2–0.4 mm long. Leaf-blades filiform, convolute, 6–12 cm long, 1–1.5 mm wide, 0.5–1.2 cm long at summit of culm, pruinose. Leaf-blade venation with 7 secondary veins. Leaf-blade surface glabrous or puberulous. Leaf-blade apex obtuse, apiculate.

**Inflorescence.** Inflorescence a panicle. Peduncle tipped by a glumaceous appendage (treated as sterile spikelets). Panicle capitate, oblong or ovate, 0.9–1.2 cm long, 0.7–0.8 cm wide. Primary panicle branches accrescent to a central axis, with evident branchlets on axis or with lateral stumps on axis. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Sterile Spikelets.** Basal sterile spikelets represented by a single scale, 2 in number, ovate. Basal sterile spikelet glumes membranous.

**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, 4.4–6 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes persistent, similar, shorter than spikelet. Lower glume lanceolate, 2–3 mm long, 1 length of upper glume, membranous, 1-keeled, 1–3 -veined. Lower glume lateral veins absent or distinct. Lower glume apex acute, awned, 1 -awned, awn 1–4 mm long. Upper glume lanceolate, 2–3 mm long, membranous, 1-keeled, 1–3 -veined. Upper glume lateral veins absent or distinct. Upper glume apex acute, awned, 1 -awned, awn 1–4 mm long.

**Florets.** Fertile lemma ovate, 3–4 mm long, membranous, without keel, 3–5 -veined, 0–3 -veined or more than 3-veined. Lemma surface pilose. Lemma apex dentate, 5 -fid, awned, 5 -awned. Principal lemma awn 2–4.5 mm long overall. Lateral lemma awns present, 1–2.5 mm long. Palea 3.5–4.5 mm long, 2 -veined. Palea keels ciliolate. Palea surface pilose. Palea apex awned, awns 1–2.5 mm long.

**Flower and Fruit.** Anthers 3. Stigmas 2, terminally exerted, pubescent. Caryopsis with adherent pericarp. Hilum elliptic.

**Distribution (TDWG). Continent.** Europe.

**Region. Southeastern Europe.**

**Country /Province /State.** : Albania, Greece, Yugoslavia.

**Sesleria tenuifolia** Schrad. *Fl. Germ.* i. 272. (1806).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), T.G.Tutin et al, *Flora Europaea* 5 (1980).

**Illustrations (Books):** G.Hegi, *Flora von Mitteleuropa* 1 (1909).

**Derivation** (Clifford & Bostock 2007): *L. tenuis*, slender; folium, leaf. Leaf-blades narrow.

**Classification.** Subfamily Pooideae. Tribe: Poeae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Butt sheaths persistent and investing base of culm, with reticulate dead sheaths. Culms erect, 20–30 cm long. Leaf-sheaths tubular for much of their length, glabrous on surface. Ligule an eciliate membrane. Leaf-blades filiform, 15–30 cm long, 0.4–0.6 mm wide, pruinose. Leaf-blade surface pubescent, hairy adaxially.

**Inflorescence.** Inflorescence a panicle, comprising 5–15 fertile spikelets. Peduncle tipped by a glumaceous appendage (treated as sterile spikelets). Panicle spiciform, linear or oblong, loose, 1–3 cm long. Spikelets solitary. Fertile spikelets sessile or pedicelled. Pedicels absent or present, oblong.

**Sterile Spikelets.** Basal sterile spikelets represented by a single scale, 2 in number. Basal sterile spikelet glumes membranous.

**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, 5–6 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes persistent, similar, shorter than spikelet. 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 or acuminate. 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 or acuminate.

**Florets.** Fertile lemma ovate, 4–5 mm long, membranous, grey, without keel, 3–5 -veined, 0–3 -veined or more than 3-veined. Lemma surface pubescent. Lemma margins ciliate. Lemma apex entire or dentate, 3–5 -fid, awned, 1–3 -awned. Principal lemma awn 1.5 mm long overall. Lateral lemma awns absent or present, 0–1.5 mm long. Palea 1.1 length of lemma, 2 -veined. Palea keels ciliolate.

**Flower and Fruit.** Anthers 3. Stigmas 2, terminally exerted, pubescent. Ovary pubescent on apex. Caryopsis with adherent pericarp, hairy at apex. Hilum elliptic.

**Distribution (TDWG). Continent.** Europe.

**Region. Southeastern Europe.**

**Country /Province /State. :** Albania, Italy, Yugoslavia.

**Sesleria vaginalis** Boiss. & Orph. *Diagn. Ser.* II. iv. 130 (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>: *fide* TROPICOS and Kew Synonymy Database: Greece, Levadi: Heldreich.

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): *L. vagina*, sheath; -alis, pertaining to. Leaf-sheath densely hirsute.

**Classification.** Subfamily Pooideae. Tribe: Poeae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Culms erect, 30–40 cm long. Lateral branches lacking. Leaf-sheaths tubular for much of their length, glabrous on surface or pubescent. Ligule an eciliate membrane, 0.2–0.4 mm long. Leaf-blades curved, conduplicate, 10–20 cm long, 3–4 mm wide, 3–6 cm long at summit of culm, glaucous. Leaf-blade venation with 11 secondary veins. Leaf-blade surface pilose. Leaf-blade apex acute, simple or apiculate.

**Inflorescence.** Inflorescence a panicle. Peduncle tipped by a glumaceous appendage (treated as sterile spikelets). Panicle capitate, oblong or ovate, 3–4 cm long, 0.7–1 cm wide. Primary panicle branches accrescent to a central axis, with evident branchlets on axis or with lateral stumps on axis. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Sterile Spikelets.** Basal sterile spikelets represented by a single scale, 2 in number. Basal sterile spikelet glumes membranous.

**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.

**Glumes.** Glumes persistent, similar, reaching apex of florets. Lower glume ovate, 5–6 mm long, 1 length of upper glume, membranous, 1-keeled, 1–3 -veined. Lower glume lateral veins absent or distinct. Lower glume surface pubescent, hairy on veins. Lower glume margins ciliate. Lower glume apex acute, awned, 1 -awned, awn 1–2 mm long. Upper glume ovate, 5–6 mm long, membranous, 1-keeled, 1–3 -veined. Upper glume lateral veins absent or distinct. Upper glume surface pubescent, hairy on veins. Upper glume margins ciliate. Upper glume apex acute, awned, 1 -awned, awn 1–2 mm long.

**Florets.** Fertile lemma ovate, 4–5.5 mm long, membranous, without keel, 3–5 -veined, 0–3 -veined or more than 3-veined. Lemma surface pubescent, hairy between veins. Lemma margins ciliate. Lemma apex dentate, 5 -fid, awned, 3 -awned. Principal lemma awn 1–2 mm long overall. Lateral lemma awns present, 0.5–1 mm long. Palea 4.5–6 mm long, 2 -veined. Palea keels ciliate. Palea apex muticous.

**Flower and Fruit.** Anthers 3. Stigmas 2, terminally exerted, pubescent. Caryopsis with adherent pericarp. Hilum elliptic.

$2n = 28$  (1 ref TROPICOS).

**Distribution (TDWG). Continent.** Europe.

**Region. Southeastern Europe.**

**Country /Province /State. :** Greece.

**Sesleria wettsteinii** Dorfler & Hayek. *Denkschr. Akad. Wiss. Wien*, xciv, 206 (1918).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online, T.G.Tutin et al, *Flora Europaea* 5 (1980).

**TYPE** from Yugoslavia. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Yugoslavia, Buni Jezerce: Dorfler 537.

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): in honor of Richard Wettstein Westerheim (1863–1931) Austrian botanist.

**Classification.** Subfamily Pooideae. Tribe: Poeae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Culms erect, 25–75 cm long. Lateral branches lacking. Leaf-sheaths tubular for much of their length, glabrous on surface. Ligule an eciliate membrane, 0.5–1

mm long. Leaf-blades flat, 25–50 cm long, 4–5 mm wide, 4–8 cm long at summit of culm. Leaf-blade margins scaberulous.

**Inflorescence.** Inflorescence a panicle. Peduncle tipped by a glumaceous appendage (treated as sterile spikelets). Panicle capitate, ovate, 2–2.5 cm long, 1.1–1.4 cm wide. Primary panicle branches accrescent to a central axis, with evident branchlets on axis or with lateral stumps on axis. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Sterile Spikelets.** Basal sterile spikelets represented by a single scale, 2 in number. Basal sterile spikelet glumes membranous.

**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, 4.5–5 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes persistent, similar, shorter than spikelet. Lower glume ovate, 4 mm long, 1 length of upper glume, membranous, 1-keeled, 1–3 -veined. Lower glume primary vein ciliate. Lower glume lateral veins absent or distinct. Lower glume margins ciliate. Lower glume apex acute, awned, 1 -awned, awn 1–2 mm long. Upper glume ovate, 4 mm long, membranous, 1-keeled, 1–3 -veined. Upper glume primary vein ciliate. Upper glume lateral veins absent or distinct. Upper glume margins ciliate. Upper glume apex acute, awned, 1 -awned, awn 1–2 mm long.

**Florets.** Fertile lemma ovate, 4–4.5 mm long, membranous, without keel, 3 -veined, 0–3 -veined. Lemma surface pubescent, hairy between veins. Lemma margins ciliate. Lemma apex entire or dentate, 3 -fid, awned, 1–3 -awned. Principal lemma awn 1.5–2.5 mm long overall. Lateral lemma awns absent or present, 0.5 mm long. Palea 4.5 mm long, 2 -veined. Palea keels ciliolate. Palea apex with excurrent keel veins.

**Flower and Fruit.** Anthers 3. Stigmas 2, terminally exerted, pubescent. Caryopsis with adherent pericarp. Hilum elliptic.

**Distribution (TDWG). Continent.** Europe.

**Region.** Southeastern Europe.

**Country /Province /State.** : Albania, Yugoslavia.

## **Setaria acromelaena** (Hochst.) Th. Dur. & Schinz. *Consp. Fl. Afr.* v. 772 (1895).

**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:** *Panicum acromelaenum* Hochst., *Flora* 38: 198 (1855)

. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Abyssinia [in 1853], *Schimper in Herb. Buchinger 1513* (HT: STR).

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): Gk. akros, at the tip; melaeno, make black. Apex of anthoecium darkly pigmented.

**Classification.** Subfamily Panicoideae. Tribe: Paniceae. Subtribe SETARIINAE.

**Habit, Vegetative Morphology.** Annual, caespitose. Culms geniculately ascending, 15–150 cm long. Culm-nodes pubescent. Ligule a fringe of hairs. Leaf-blades 3–30 cm long, 4–12 mm wide.

**Inflorescence.** Inflorescence a panicle. Panicle spiciform, linear, 1–20 cm long. Primary panicle branches accrescent to a central axis, with evident branchlets on axis. Panicle axis pubescent or pilose. Spikelets subtended by an involucre. Fertile spikelets sessile, 2–3 in the cluster. Involucre composed of bristles, 3–10 mm long. Involucral bristles persistent, few, 6–7 in principal whorl, flexible, antrorsely scaberulous, glabrous.

**Fertile Spikelets.** Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets elliptic, dorsally compressed, gibbous, 2–3 mm long, falling entire.

**Glumes.** Glumes reaching apex of florets or shorter than spikelet, thinner than fertile lemma. Lower glume ovate, 0.4–0.5 length of spikelet, membranous, without keels, 3–5 -veined. Lower glume apex obtuse. Upper glume ovate, 0.66–1 length of spikelet, membranous, without keels, 5–7 -veined. Upper glume apex obtuse.

**Florets.** Basal sterile florets 1, male or barren, with palea. Lemma of lower sterile floret ovate, 1 length of spikelet, membranous, 5 -veined, obtuse. Fertile lemma ovate, dorsally compressed, gibbous, 1.5–2.5 mm long, indurate, without keel. Lemma surface punctate, unwrinkled or rugulose. Lemma margins involute. Lemma apex obtuse. Palea involute, indurate.

**Distribution (TDWG). Continent.** Africa.

**Country /Province /State.** West-central tropical Africa, Northeast tropical Africa, East tropical Africa. DRC. Eritrea, Ethiopia (inc. Eritrea), Somalia, Sudan. Kenya, Tanzania, Uganda.

**Setaria adhaerens** (Forsk.) Chiov. *Nuov. Giorn. Bot. Ital.*, n. s., 26: 77 (1919).

Regarded by K as a synonym (*S. verticillata*).

**Accepted by:** R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), T.G.Tutin et al, *Flora Europaea* 5 (1980).

**TYPE** from Yemen. **Basionym or Replaced Name:** *Panicum adhaerens* Forssk., *Fl. Aegypt.-Arab.* 20 (1775). T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: LT: *Forsskål s.n.*, 1763, Yemen: Al Hadiyah (LD). LT designated by Veldkamp, *Blumea* 39: 383 (1994).

**Illustrations (Books):** M.E.Barkworth et al, *Flora of North America north of Mexico Vol 25 Poaceae*, part 2 (2003) (555), F.W.Gould, *The Grasses of Texas* (1975) (553, Fig. 289), R.McVaugh, *Flora Nova-Galiciana Vol.14 Gramineae* (1983), L.B. Smith, D.C. Wasshausen, R.M. Klein *Flora Illustrada Catarinensis Gramineae* (1981–1982) (788, Fig. 163), M.N.Correa, *Flora Patagonica Parte III, Gramineae* (1978) (536, Fig 363).

**Derivation** (Clifford & Bostock 2007): *L. adhaero*, cling. Culms scrambling.

**Classification.** Subfamily Panicoideae. Tribe: Paniceae. Subtribe SETARIINAE.

**Distribution (TDWG). Continent.** North America, South America.

**Country /Province /State. Mexico.** Central Mexico, Northeast Mexico, Northwest Mexico, Southwest Mexico. **Southern South America.** Chile North.

**TDWG4.** Tarapaca, Atacama. Distrito Federal, Puebla. Aguascalientes, Coahuila, Chihuahua, Guanajuato, Neuvo Leon, Queretaro, Zacatecas. Baja California. Jalisco, Oaxaca.

**Setaria alonsoi** J.F. Pensiero & A.M. Anton. *Novon*, 4(3): 287 (1994).

**Accepted by:** R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

**TYPE** from Argentina. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: Argentina: Córdoba: Dpto. Sobremonte: Sierra del Norte, a ca. 6 km al O. de San Francisco del Chañar, camino a Lucio V. Mansilla, ca. 700 m, 30 Jan 1987, frecuente aquí y allá, en palmar degradado, *Hunziker A. & R. Sublis 24982* (HT: CORD).

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): in honor of Josi Mario Alonso (1926–1991) Argentinian geneticist.

**Classification.** Subfamily Panicoideae. Tribe: Paniceae. Subtribe SETARIINAE.

**Habit, Vegetative Morphology.** Perennial, caespitose. Basal innovations intravaginal, flabellate. Culms erect or geniculately ascending, 20–45 cm long, 1–2 mm diam., 2–4 -noded. Culm-internodes 4–15 cm long. Culm-nodes glabrous or pubescent. Lateral branches ample. Leaf-sheaths 2–6 cm long, without keel or keeled, outer margin glabrous or hairy. Leaf-sheath oral hairs bearded, 1–3(–5) mm long. Ligule a ciliate membrane, 2.1–4 mm long. Leaf-blades flat or conduplicate or involute, 3–15 cm long, 2–3 mm wide, stiff, glaucous. Leaf-blade surface scaberulous, glabrous. Leaf-blade apex acuminate.

**Inflorescence.** Inflorescence a panicle. Panicle spiciform, linear, 5–12 cm long, 0.6–1 cm wide. Primary panicle branches sterile at the tips. Panicle axis scaberulous, glabrous. Spikelets subtended by an involucre. Fertile spikelets pedicelled, 1 in the cluster. Involucre composed of bristles, 10–13 mm long. Involucral bristles persistent, 1 per spikelet, antrorsely scaberulous, glabrous. Pedicels present, oblong, 0.2–0.3 mm long, scabrous.

**Fertile Spikelets.** Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets ovate, dorsally compressed, gibbous, 3 mm long, 2 mm wide, falling entire.

**Glumes.** Glumes shorter than spikelet or reaching apex of florets, thinner than fertile lemma. Lower glume ovate, 0.33–0.5 length of spikelet, membranous, without keels, 3–5 -veined. Lower glume apex acute. Upper glume ovate, gibbous, 0.75–1 length of spikelet, membranous, without keels, 5–7 -veined. Upper glume apex acute.

**Florets.** Basal sterile florets 1, barren, with palea. Lemma of lower sterile floret ovate, 1 length of spikelet, membranous, 5–7 -veined, acute. Palea of lower sterile floret 0.7–0.8 length of lemma. Fertile lemma ovate, dorsally compressed, gibbous, 3 mm long, 2 mm wide, indurate, yellow or light brown, without keel. Lemma surface rugulose. Lemma margins involute. Lemma apex apiculate. Palea involute, indurate.

**Flower and Fruit.** Lodicules 2, 0.3–0.5 mm long. Caryopsis with adherent pericarp, 1.5 mm long. Embryo 0.75 length of caryopsis. Hilum punctiform.

**Distribution (TDWG). Continent.** South America.

**Country /Province /State. Southern South America.** Argentina Northeast, Argentina Northwest.

**TDWG4.** La Rioja. Cordoba.

**Setaria apiculata** (Scribn. & Merr.) K. Schum. *Just's Jahresb.* xxviii. I. 417 (1902).

**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:** *Chaetochloa apiculata* Scribn. & Merr., *Bull. Div. Agrostol., U.S.D.A.* 21: 9 (1900). T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: IT: *F.J.H. von Mueller s.n.*, 18??, Australia: Queensland: Victoria River (US-978059).

**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);.

**Derivation** (Clifford & Bostock 2007): *L. apiculum*, small point; -ata, possessing. Glumes or lemmas sharp-pointed.

**Classification.** Subfamily Panicoideae. Tribe: Paniceae. Subtribe SETARIINAE.

**Habit, Vegetative Morphology.** Annual, caespitose. Culms erect or geniculately ascending, slender, 30–60 cm long. Culm-internodes antrorsely scabrous. Culm-nodes black, glabrous. Lateral branches ample. Leaf-sheaths longer than adjacent culm internode, smooth or scaberulous, outer margin glabrous. Ligule a fringe of hairs. Leaf-blades 8–15 cm long, 2–4 mm wide, light green or glaucous. Leaf-blade surface smooth or scaberulous, glabrous or pilose, sparsely hairy. Leaf-blade apex attenuate.

**Inflorescence.** Inflorescence a panicle. Peduncle scaberulous above. Panicle spiciform, linear, 2–5 cm long. Primary panicle branches not whorled or whorled at most nodes, bearing 1 fertile spikelets on each lower branch, sterile at the tips. Panicle axis pubescent. Spikelets subtended by an involucre. Fertile spikelets pedicelled, 1 in the cluster. Involucre composed of bristles. Involucral bristles persistent, 4–8 in principal whorl, 8–12 mm long, flexible, antrorsely scaberulous, glabrous. Pedicels present, reduced to a stump, tip cupuliform.

**Fertile Spikelets.** Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets elliptic or obovate, dorsally compressed, compressed slightly, gibbous, 2.5–3 mm long, falling entire.

**Glumes.** Glumes shorter than spikelet, thinner than fertile lemma. Lower glume ovate, 0.5–0.75 length of spikelet, membranous, without keels, 3–5 -veined. Lower glume apex acute or acuminate. Upper glume elliptic or ovate, 0.75–0.8 length of spikelet, membranous, without keels, 5–7 -veined. Upper glume apex acuminate.

**Florets.** Basal sterile florets 1, barren, with palea. Lemma of lower sterile floret ovate, 1 length of spikelet, membranous, 5–7 -veined, acute. Fertile lemma ovate, dorsally compressed, 2.5–3 mm long, indurate, dark brown, without keel, 5 -veined, more than 3-veined. Lemma surface rugose. Lemma margins involute. Lemma apex acute or apiculate. Palea involute, indurate. Palea surface rugose.

**Flower and Fruit.** Anthers 3, 1.3–1.5 mm long. Caryopsis with adherent pericarp, ovoid or orbicular, 1.5 mm long, green. Hilum punctiform.

**Distribution (TDWG). Continent.** Australasia.

**Country /Province /State.** Australia. Western Australia, Northern Territory, Queensland.

**TDWG4.** Kimberley. Darwin & Gulf, Victoria R & Barkly Tableland. North, Central, Inland.

**Setaria appendiculata** (Hack.) Stapf. Dyer, *Fl. Cap.* vii. 422. (1899).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

**TYPE** from Namibia. **Basionym or Replaced Name:** *Panicum appendiculatum* Hack., *Bull. Herb. Boissier* 4(Append. 3): 13 (1896). T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: Namibia, Onanis R.: Belck 63c (W holotype).

**Recent Synonyms:** *Setaria haareri* Stapf & C.E.Hubb.in Prain, *Fl. Trop. Afr.* 9: 834 [Aug] (1930).

**Illustrations (Books):** L.K.A. Chippindall, *Grasses and Pastures of South Africa* (1955) (344, Fig 298), M.A.N.Muller, *Grasses of South West Africa/Namibia* (1984).

**Illustrations (Journals):** *Hooker's Icones Plantarum* (t.3140 (1930) as *S. haareri*).

**Derivation** (Clifford & Bostock 2007): *L. appendix*, appendage; -ulus, diminutive. -ata, possessing. Lemma of the terminal spikelet drawn out into an appendage.

**Classification.** Subfamily Panicoideae. Tribe: Paniceae. Subtribe SETARIINAE.

**Habit, Vegetative Morphology.** Perennial, caespitose. Culms geniculately ascending or decumbent, 50–100 cm long. Ligule a fringe of hairs. Leaf-blade base sagittate. Leaf-blades 7–30 cm long, 3–12 mm wide.

**Inflorescence.** Inflorescence a panicle. Panicle contracted, linear or lanceolate, interrupted, 10–25 cm long, contracted about primary branches. Primary panicle branches appressed, bearing spikelets almost to the base, sterile at the tips. Panicle axis glabrous or pubescent. Spikelets solitary or subtended by an involucre. Fertile spikelets sessile, 1–3 in the cluster. Involucre composed of bristles, 3–12 mm long. Involucral bristles persistent, 0–1 in principal whorl, flexible, antrorsely scaberulous, glabrous.



**Fertile Spikelets.** Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets elliptic, dorsally compressed, 2–2.7 mm long, falling entire.

**Glumes.** Glumes reaching apex of florets or shorter than spikelet, thinner than fertile lemma. Lower glume ovate, 0.25–0.5 length of spikelet, membranous, without keels, 3–5 -veined. Lower glume apex obtuse. Upper glume ovate, 0.66–1 length of spikelet, membranous, without keels, 7–9 -veined. Upper glume apex acute.

**Florets.** Basal sterile florets 1, male, with palea. Lemma of lower sterile floret ovate, 1 length of spikelet, membranous, 5–7 -veined, acute. Palea of lower sterile floret 1 length of lemma. Fertile lemma ovate, dorsally compressed, not gibbous, 2–2.5 mm long, indurate, without keel. Lemma surface rugose. Lemma margins involute. Palea involute, indurate. Palea surface rugose.

**Distribution (TDWG). Continent.** Africa.

**Country /Province /State.** Northeast tropical Africa, East tropical Africa, Southern Africa. Ethiopia (inc. Eritrea). Kenya, Tanzania, Uganda. Namibia, Northern Cape.

**Setaria arenaria** Kitagawa. *Rep. Inst. Sc. Research Manchoukuo*, 4: 77 (1940).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), S-L Chen et al, *Flora of China* 22 (Poaceae) (2006).

**TYPE** from China. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: China: Heilongjiang: Xing-an, in arenosis circa Hailar, 1000–1300 m, 19 Aug. 1938, *M. Kitagawa s.n.* (HT: ?; ST: ?).

**Illustrations (Books):** S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 746).

**Derivation** (Clifford & Bostock 2007): *L. arena*, sandy place; *-aria*, pertaining to. Of sandy habitats.

**Classification.** Subfamily Panicoideae. Tribe: Paniceae. Subtribe SETARIINAE.

**Habit, Vegetative Morphology.** Annual, caespitose, clumped densely. Culms geniculately ascending, 30–100 cm long. Culm-internodes smooth, distally glabrous. Leaf-sheaths loose, pubescent, with tubercle-based hairs, outer margin hairy. Leaf-sheath oral hairs ciliate. Ligule a fringe of hairs. Leaf-blade base broadly rounded. Leaf-blades 5–15 cm long, 2–7 mm wide. Leaf-blade surface scabrous, rough on both sides, glabrous. Leaf-blade apex attenuate.

**Inflorescence.** Inflorescence a panicle. Panicle spiciform, linear, continuous or interrupted, 2–9 cm long, 0.5–0.8 cm wide. Primary panicle branches accrescent to a central axis, with evident branchlets on axis. Panicle axis hispid or pilose. Spikelets subtended by an involucre. Fertile spikelets pedicelled, 2–6 in the cluster. Involucre composed of bristles, free throughout, 2–8 mm long. Involucral bristles persistent, few, in one whorl, 1–4 per spikelet, flexible, glabrous. 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 elliptic, dorsally compressed, 2.5–3 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. Lower glume apex acuminate. Upper glume ovate, 1 length of spikelet, membranous, without keels.

**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. Fertile lemma elliptic, dorsally compressed, 2.5–3 mm long, indurate, yellow or light green, without keel. Lemma surface rugulose. Lemma margins involute. Lemma apex acuminate. Palea involute, indurate.

**Distribution (TDWG). Continent.** Temperate Asia.

**Country /Province /State.** China. Inner Mongolia, Manchuria, China North-Central.

**TDWG4.** Hebei, Shanxi.

**Setaria arizonica** Rominger. *Illinois Biol. Monogr.*, No. 29, 66 (1962).

**Accepted by:** R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

**TYPE** from USA. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: USA: Arizona: Pima Co.: western slopes of Baboquivari Mts., *L. Gooding 3754* (HT: ARIZ; IT: US).

**Illustrations (Books):** M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 25 *Poaceae*, part 2 (2003) (553).

**Derivation** (Clifford & Bostock 2007): *L. -ica*, belonging to. From Arizona, USA.

**Classification.** Subfamily Panicoideae. Tribe: Paniceae. Subtribe SETARIINAE.

**Habit, Vegetative Morphology.** Annual. Culms erect or geniculately ascending, 25–50 cm long. Culm-nodes pubescent. Leaf-sheaths glabrous on surface, outer margin hairy. Ligule a fringe of hairs, 1–2 mm long.

Leaf-blades 7–15 cm long, 5–8 mm wide. Leaf-blade surface scabrous, rough adaxially, pilose, hairy adaxially, with tubercle-based hairs.

**Inflorescence.** Inflorescence a panicle. Peduncle scaberulous above. Panicle spiciform, linear, loose, tapering above, 5–12 cm long. Primary panicle branches 0.5–1.5 cm long, sterile at the tips. Panicle axis angular, scabrous. Panicle branches scabrous. Spikelets subtended by an involucre. Fertile spikelets pedicelled, 1 in the cluster. Involucre composed of bristles, 5–15 mm long. Involucral bristles persistent, 1 per spikelet, flexible, antrorsely scaberulous, glabrous. Pedicels present, oblong.

**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, 1.8–2 mm long, falling entire.

**Glumes.** Glumes shorter than spikelet, thinner than fertile lemma. Lower glume ovate, 0.5 length of spikelet, membranous, without keels, 3 -veined. Lower glume apex acute. Upper glume ovate, 0.66 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 ovate, 1 length of spikelet, membranous, 5 -veined, acute. Palea of lower sterile floret 1 length of lemma. Fertile lemma ovate, dorsally compressed, gibbous, 1.8–2 mm long, indurate, without keel. Lemma surface corrugate. Lemma margins involute. Palea involute, indurate. Palea surface rugose.

**Distribution (TDWG). Continent.** North America.

**Country /Province /State.** Southwestern USA, Mexico. Arizona. Northwest Mexico. Baja California Sur, Sonora.

**Setaria atrata** Hack. ex Engl. *Abh. Preuss. Akad. Wiss.* ii. 122, et 64. (1892).

**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>: *vide* TROPICOS and Kew Synonymy Database: Ethiopia, Debra Tabor: Schimper 1209 (K iso).

**Illustrations (Books):** S.Phillips, *Poaceae* (Gramineae) in I.Hedberg & S.Edwards, *Flora of Ethiopia and Eritrea* (1995) (237, Fig 95).

**Derivation** (Clifford & Bostock 2007): L. ater, dark; -ata, possessing. Anthoecia dark-colored.

**Classification.** Subfamily Panicoideae. Tribe: Paniceae. Subtribe SETARIINAE.

**Habit, Vegetative Morphology.** Perennial, caespitose, clumped densely. Culms 60–250 cm long. Ligule a fringe of hairs. Leaf-blades flat or convolute, 10–60 cm long, 1–5 mm wide, stiff. Leaf-blade apex pungent.

**Inflorescence.** Inflorescence a panicle. Panicle spiciform, linear, 6–40 cm long. Primary panicle branches accrescent to a central axis, with evident branchlets on axis. Panicle axis pubescent or pilose. Spikelets subtended by an involucre. Fertile spikelets pedicelled, 3–9 in the cluster. Involucre composed of bristles, 3–10 mm long. Involucral bristles persistent, 1–3 per spikelet, flexible, antrorsely scaberulous, ciliate. 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, 2–3 mm long, falling entire.

**Glumes.** Glumes shorter than spikelet, thinner than fertile lemma. Lower glume ovate, 0.25–0.33 length of spikelet, membranous, without keels, 1–3 -veined. Lower glume apex obtuse or acute. Upper glume ovate, 0.33–0.5 length of spikelet, membranous, without keels, 3 -veined. Upper glume apex obtuse or acute.

**Florets.** Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret oblong, 1 length of spikelet, membranous, 5 -veined, sulcate, acute. Fertile lemma ovate, dorsally compressed, gibbous, 1.5–2.5 mm long, indurate, without keel. Lemma surface punctate. Lemma margins involute. Palea involute, indurate.

**Distribution (TDWG). Continent.** Africa.

**Country /Province /State.** Northeast tropical Africa, East tropical Africa, South tropical Africa. Ethiopia (inc. Eritrea), Sudan. Kenya, Tanzania, Uganda. Angola, Malawi.

**Setaria australiensis** (Scribn. & Merrill) Vickery. *Contrib. N. S. Wales Nat. Herb.* i. 335 (1951).

**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:** *Chaetochloa australiensis* Scribn. & Merr., *Bull. Div. Agrostol., U.S.D.A.* 21: 29 (1900). T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: HT: *S.M. Tracy s.n.*, 1889, Australia (US-978063).

**Illustrations (Books):** S.W.L.Jacobs, R.D.B.Whalley & D.J.B.Wheeler., *Grasses of New South Wales*, 4th edn (2008) (366).

**Images:** D.Sharp & B.K.Simon, *AusGrass*. Grasses of Australia. CD-Rom Version 1.0. (2002);

**Derivation** (Clifford & Bostock 2007): *L. -ensis*, denoting origin. From Australia.

**Classification.** Subfamily Panicoideae. Tribe: Paniceae. Subtribe SETARIINAE.

**Habit, Vegetative Morphology.** Perennial, caespitose. Rhizomes short. Culms 100–210 cm long, 3–6 mm diam., 6 -noded. Culm-internodes elliptical in section. Culm-nodes black, glabrous. Lateral branches lacking or sparse. Leaf-sheaths keeled, outer margin glabrous or hairy. Ligule a fringe of hairs, 2–3 mm long. Leaf-blades lanceolate, flat or plicate, 15–30 cm long, 5–20 mm wide. Leaf-blade midrib prominent beneath. Leaf-blade surface scaberulous. Leaf-blade margins cartilaginous, scabrous. Leaf-blade apex acuminate.

**Inflorescence.** Inflorescence a panicle. Peduncle antrorsely scabrous above. Panicle contracted, linear or lanceolate, 6–20 cm long, 1.5–2 cm wide. Primary panicle branches appressed or ascending, 1–2.2 cm long, sterile at the tips. Panicle axis pubescent or pilose. Panicle branches scabrous, glabrous or pubescent. Spikelets subtended by an involucre. Fertile spikelets pedicelled, 1 in the cluster. Involucre composed of bristles. Involucral bristles persistent, 1–3 per spikelet, 8–20 mm long, antrorsely scaberulous, glabrous. Pedicels present, reduced to a stump, tip cupuliform.

**Fertile Spikelets.** Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets elliptic or ovate, dorsally compressed, gibbous, acute, 3–4 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, 3–5 -veined. Lower glume apex acute. Upper glume ovate, 0.75–0.9 length of spikelet, membranous, without keels, 7–11 -veined. Upper glume apex acute.

**Florets.** Basal sterile florets 1, barren, with palea. Lemma of lower sterile floret elliptic, 1 length of spikelet, membranous, 5–7 -veined, acute. Fertile lemma ovate, dorsally compressed, gibbous, 3–4 mm long, indurate, without keel. Lemma surface rugose. Lemma margins involute. Lemma apex acute. Palea involute, indurate. Palea surface rugose.

**Flower and Fruit.** Anthers 3, 1–1.5 mm long. Caryopsis with adherent pericarp, ellipsoid, 2.25 mm long. Embryo 0.5 length of caryopsis. Hilum punctiform.

**Distribution (TDWG). Continent.** Australasia.

**Country /Province /State.** Australia. Northern Territory, Queensland, New South Wales.

**TDWG4.** Darwin & Gulf. North, Central, South East, Inland. Coast, Tablelands.

**Setaria austrocaledonica** (Bal.) A.Camus. *Bull. Mus. Hist. Nat. Paris*, iv. 181 (1928).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online, W.D.Clayton & N.Snow, Key to Pacific Grasses (2010).

**TYPE** from New Caledonia. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: New Caledonia, Noumea: *Balansa 711* ; New Caledonia, Uraï: *Vieillard 3341* .

**Illustrations (Books):** No illustration found (BKS).

**Classification.** Subfamily Panicoideae. Tribe: Paniceae. Subtribe SETARIINAE.

**Habit, Vegetative Morphology.** Perennial, caespitose. Culms geniculately ascending, of moderate stature, 50–100 cm long, 2–3 mm diam. Culm-nodes glabrous or pubescent. Lateral branches ample. Ligule a ciliate membrane. Leaf-blades linear, flat, 25–30 cm long, 4–6 mm wide, herbaceous, firm.

**Inflorescence.** Inflorescence a panicle. Panicle open, linear, continuous or interrupted, 6–20 cm long, contracted about primary branches. Primary panicle branches appressed or ascending, moderately spaced, 1–1.5 cm long, bearing spikelets almost to the base, sterile at the tips. Spikelets subtended by an involucre. Fertile spikelets sessile, 1 in the cluster. Involucre composed of bristles, 6–8 mm long. Involucral bristles persistent, 1 per spikelet, flexible, antrorsely scaberulous, glabrous.

**Fertile Spikelets.** Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets ovate, dorsally compressed, acute, 3–4 mm long, falling entire. Floret callus glabrous.

**Glumes.** Glumes shorter than spikelet, thinner than fertile lemma. Lower glume ovate, 0.66 length of spikelet, membranous, without keels, 3 -veined. Lower glume apex acute. Upper glume ovate, 0.75 length of spikelet, membranous, without keels, 7 -veined. Upper glume apex acute.

**Florets.** Basal sterile florets 1, barren, with palea. Lemma of lower sterile floret ovate, 1 length of spikelet, membranous, 5 -veined, acute. Fertile lemma ovate, dorsally compressed, 3–4 mm long, indurate, without keel. Lemma surface striate, unwrinkled. Lemma margins involute. Palea involute, indurate. Palea keels eciliate.

**Flower and Fruit.** Lodicules 2. Anthers 3.

**Distribution (TDWG). Continent.** Pacific.

**Country /Province /State. Southwestern Pacific.** New Caledonia.

**Setaria barbata** (Lam.) Kunth. *Rev. Gram.* i. 47 (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), 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 Mauritius. **Basionym or Replaced Name:** *Panicum barbatum* Lam., *Tabl. Encycl.* 1: 171 (1791). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *P. Commerson s.n.*, no date, Mauritius (P; IT: US-80482 (fragm. ex P-LA)). IT: *P. Commerson 136*, Mauritius (L).

**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 (291, Pl. 46), J.Bosser, *Graminees des Paturage et des Cultures a Madagascar* (1969) (281, Fig 103), S.Phillips, *Poaceae* (Gramineae) in I.Hedberg & S.Edwards, *Flora of Ethiopia and Eritrea* (1995) (241, Fig 97), H.J.Noltie, *The Grasses of Bhutan* (2000), H.Duistermaat, *Field Guide to the Grasses of Singapore* (2005) (123, Fig. 126), 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) (544), A.S.Hitchcock, *Manual of the Grasses of the West Indies* (1936) (335, Fig. 305), S.A.Renvoize, *The Grasses of Bahia*, 1984, E.Hafliger & E.Schultz, *Grass Weeds, CIBA-GEIGY* (1:122(1980)).

**Illustrations (Journals):** *Darwiniana* (37: 50, fig.1 (1999)).

**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);

**Derivation** (Clifford & Bostock 2007): L. bearded, barbed. With spikelets subtended by bristles.

**Classification.** Subfamily Panicoideae. Tribe: Paniceae. Subtribe SETARIINAE.

**Habit, Vegetative Morphology.** Annual, caespitose. Culms 10–150(–200) cm long, without nodal roots or rooting from lower nodes. Ligule a fringe of hairs. Leaf-blades linear or lanceolate, plicate, 5–30 cm long, 5–20(–30) mm wide, dark green.

**Inflorescence.** Inflorescence a panicle. Panicle open, elliptic, 3–25 cm long, contracted about primary branches. Primary panicle branches bearing spikelets almost to the base, sterile at the tips. Panicle branches pubescent or pilose. Spikelets subtended by an involucre. Fertile spikelets pedicelled, 1 in the cluster. Involucre composed of bristles, 1–15 mm long. Involucral bristles persistent, 6–8 in principal whorl, flexible, antrorsely scaberulous, glabrous. 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, 2–3.2 mm long, falling entire.

**Glumes.** Glumes shorter than spikelet, thinner than fertile lemma. Lower glume ovate, 0.25–0.33 length of spikelet, membranous, without keels, 3–5 -veined. Lower glume apex obtuse. Upper glume elliptic, 0.66–0.8 length of spikelet, membranous, without keels, 5–9 -veined. Upper glume apex obtuse.

**Florets.** Basal sterile florets 1, male or barren, with palea. Lemma of lower sterile floret oblong, 1 length of spikelet, membranous, 7 -veined, without grooves or sulcate, obtuse. Fertile lemma ovate, dorsally compressed, gibbous, 2–3 mm long, indurate, without keel. Lemma surface rugose. Lemma margins involute. Lemma apex apiculate. Palea involute, indurate. Palea surface rugose.

**Distribution (TDWG). Continent.** Africa, Temperate Asia, Tropical Asia, Australasia (\*), Pacific, North America, South America.

**Country /Province /State. Macaronesia, West tropical Africa, West-central tropical Africa, Northeast tropical Africa, East tropical Africa, South tropical Africa, Western Indian ocean.** Cape Verde. Benin, Burkina, Ghana, Guinea, Ivory Coast, Mali, Nigeria, Senegal, Togo. Cameroon, Annobon, Principe & Sao Tome, Bioko, DRC. Chad, Eritrea, Ethiopia (inc. Eritrea), Sudan. Kenya, Tanzania, Uganda. Mozambique. Mauritius (\*), Madagascar (\*), Rodrigues (\*), Seychelles. **Arabian Peninsula, Eastern Asia.** Kazan-retto, Ogosawara-shoto. **Indian Subcontinent, Indo-China, Malesia, Papuasia.** Eastern Himalaya, Sri Lanka. Andaman Is, Myanmar, Vietnam. Java, Lesser Sunda Is, Malaya, Philippines, Sumatra, Singapore. New Guinea West Papua (Irian Jaya). Solomon Is (\*). **Australia.** Queensland (\*), Victoria. **Southwestern Pacific.** Fiji (\*), New Caledonia. **Southeastern USA.** Florida. **Mesoamerica, Caribbean, Northern South America, Western South America, Brazil.** Panama. Dominican Republic, Jamaica, Leeward Is, Windward Islands, Puerto Rico, Trinidad-Tobago. French Guiana, Venezuela. Brazil Northeast, Brazil North.

**TDWG4.** Bhutan, Sikkim. Assam. Kerala. Tamilnadu, West Bengal. Central.

**Setaria barbinodis** Herrm. Rosen, *Beitr. Biol. Pflanzen*, x. 60 (1910).

**Accepted by:** R.J.Soreng et al., *Catalogue of New World 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: *G. Mandon 1261*, 1859, Bolivia: La Paz: Prov. Larecaja, am Sorata bei San Pedro, 800–900 m" (B; IT: BAA-2787 (fragm. ex B), K, NY-38236, NY-38237, NY-431492, NY-431491, US-82076, US-977917, US-1715472).

**Illustrations (Books):** S.A.Renvoize, *Gramineas de Bolivia* (1998) (519, Fig 117).

**Derivation** (Clifford & Bostock 2007): *L. barba*, beard; nodus, knot. Nodes bearded.

**Classification.** Subfamily Panicoideae. Tribe: Paniceae. Subtribe SETARIINAE.

**Habit, Vegetative Morphology.** Perennial. Rhizomes short. Butt sheaths persistent and investing base of culm, with compacted dead sheaths. Culms geniculately ascending, 50–100 cm long. Culm-nodes bearded. Leaf-sheaths without keel, antrorsely scabrous, outer margin hairy. Ligule a ciliate membrane. Leaf-blades 15–30 cm long, 3–6 mm wide. Leaf-blade midrib prominent beneath. Leaf-blade surface scabrous, rough on both sides, glabrous. Leaf-blade apex acuminate.

**Inflorescence.** Inflorescence a panicle. Panicle spiciform, linear, 6–15 cm long. Primary panicle branches 0.5–1.5 cm long, sterile at the tips. Panicle axis pilose. Spikelets subtended by an involucre. Fertile spikelets pedicelled, 1 in the cluster. Involucre composed of bristles, 8–15 mm long. Involucral bristles persistent, 1 per spikelet, antrorsely scaberulous, glabrous. Pedicels present, oblong.

**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, gibbous, 3 mm long, falling entire.

**Glumes.** Glumes shorter than spikelet, thinner than fertile lemma. Lower glume ovate, 0.5 length of spikelet, membranous, without keels, 5 -veined. Lower glume apex acute. Upper glume elliptic, 0.9 length of spikelet, membranous, without keels, 9 -veined. Upper glume apex obtuse.

**Florets.** Basal sterile florets 1, barren, with palea. Lemma of lower sterile floret ovate, 1 length of spikelet, membranous, 5 -veined, obtuse. Fertile lemma ovate, dorsally compressed, gibbous, 3 mm long, indurate, without keel. Lemma surface rugose. Lemma margins involute. Palea involute, indurate.

**Flower and Fruit.** Caryopsis with adherent pericarp.

**Distribution (TDWG). Continent.** South America.

**Country /Province /State.** Western South America. Bolivia.

**Setaria bathiei** A.Camus. *Not. Syst.*, ed. Humbert, xii. 153 (1946).

**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 (centre): Mont Analamamy, a l'0. d'Itremo; endroits humides, quartz, vers 2.000m. d'alt., *Perrier de la Bathie 12477*.

**Illustrations (Books):** J.Bosser, *Graminees des Paturage et des Cultures a Madagascar* (1969) (391, Fig 148).

**Derivation** (Clifford & Bostock 2007): in honor of Joseph Marie Henri Alfred Perrier de la Bbthie (fl. 1921–1932) French botanist.

**Classification.** Subfamily Panicoideae. Tribe: Paniceae. Subtribe SETARIINAE.

**Habit, Vegetative Morphology.** Perennial, caespitose. Rhizomes elongated. Culms erect, 50–80 cm long. Culm-internodes distally glabrous. Ligule a ciliate membrane. Leaf-blades filiform, terete, 10–45 cm long, 1–1.5 mm wide. Leaf-blade surface glabrous, hairless except near base.

**Inflorescence.** Inflorescence a panicle. Panicle spiciform, linear, 3–12 cm long, 0.3–0.5 cm wide. Spikelets subtended by an involucre. Fertile spikelets sessile, 2–4 in the cluster. Involucre composed of bristles, 3–7 mm long. Involucral bristles persistent, 5–7 in principal whorl, 2–3 per spikelet, flexible, ciliate.

**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, gibbous, 2.5 mm long, falling entire.

**Glumes.** Glumes shorter than spikelet, thinner than fertile lemma. Lower glume ovate or orbicular, 0.33–0.5 length of spikelet, membranous, without keels, 1–3 -veined. Lower glume apex truncate. Upper glume orbicular, 0.5–0.66 length of spikelet, membranous, without keels, 3 -veined. Upper glume apex obtuse.

**Florets.** Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret elliptic, 1 length of spikelet, membranous, 5 -veined, obtuse. Fertile lemma elliptic or oblong, dorsally compressed, gibbous, 2.5 mm long, indurate, yellow, without keel. Lemma surface rugulose. Lemma margins involute. Palea involute, indurate.

**Distribution (TDWG). Continent.** Africa.

**Country /Province /State.** Western Indian ocean. Madagascar.

**Setaria bosseri** A. Camus. *Bull. Soc. Bot. France*, 101: 29 (1954).

**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: Sud-Ouest, Ifoetay, bush xerophile", *Bosser 160*.

**Illustrations (Books):** No illustration found (BKS).

**Classification.** Subfamily Panicoideae. Tribe: Paniceae. Subtribe SETARIINAE.

**Habit, Vegetative Morphology.** Perennial, caespitose. Rhizomes short, hairy. Butt sheaths villous, persistent and investing base of culm, with compacted dead sheaths. Culms erect or geniculately ascending, 30–50 cm long. Culm-internodes distally glabrous. Leaf-sheaths keeled, pilose. Leaf-sheath oral hairs ciliate. Ligule a ciliate membrane, 1.5–1.8 mm long. Leaf-blades erect, involute, 7–8 cm long. Leaf-blade surface hirsute (at base). Leaf-blade apex acute.

**Inflorescence.** Inflorescence a panicle. Panicle contracted, linear, 9–13 cm long, 0.3–0.5 cm wide. Primary panicle branches appressed, 0.5–2 cm long, sterile at the tips. Panicle axis angular, glabrous. Panicle branches scaberulous. Fertile spikelets sessile.

**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, gibbous, 2 mm long, falling entire.

**Glumes.** Glumes shorter than spikelet, thinner than fertile lemma. Lower glume orbicular, 1 mm long, 0.5 length of spikelet, membranous, without keels, 3 -veined. Lower glume apex obtuse. Upper glume ovate, 1.3–1.5 mm long, 0.75 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 elliptic, 1 length of spikelet, membranous, 5–7 -veined, acute. Fertile lemma oblong, dorsally compressed, gibbous, 1.5 mm long, indurate, without keel. Lemma surface smooth. Lemma margins involute. Lemma apex acute. Palea involute, indurate.

**Distribution (TDWG). Continent.** Africa.

**Country /Province /State.** Western Indian ocean. Madagascar.

**Setaria carinata** S. Nozawaw & Pensiero. *Novon* 18: 233 (2008).

**TYPE** from Venezuela. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Anzoategui: alrededores de Pariaguan, A. *Hernandez 65* (Holo: VEN; iso: MO).

**Illustrations (Journals):** *Novon* (18: 234, fig.1 (2008)).

**Classification.** Subfamily Panicoideae. Tribe: Paniceae. Subtribe SETARIINAE.

**Habit, Vegetative Morphology.** Annual. Basal innovations intravaginal. Culms geniculately ascending, 11–28 cm long, 1–2 mm diam., without nodal roots or rooting from lower nodes. Lateral branches ample. Leaf-sheaths keeled, glabrous on surface, outer margin glabrous. Ligule a fringe of hairs, 0.6–0.8 mm long. Leaf-blades flat or convolute, 2.5–12 cm long, 3–7 mm wide. Leaf-blade surface glabrous, hairless except near base. Leaf-blade apex acute.

**Inflorescence.** Inflorescence a panicle. Panicle spiciform, linear, 1–5 cm long, 0.7–1.1 cm wide. Primary panicle branches sterile at the tips. Panicle axis angular, scabrous. Spikelets subtended by an involucre. Fertile spikelets pedicelled, 1 in the cluster. Involucre composed of bristles. Involucral bristles persistent, 9–10 per spikelet, with longest bristle scarcely emergent, (2–)4–5 mm long, antrorsely scaberulous, glabrous. Pedicels present, reduced to a stump.

**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 mm long, 1.2–1.3 mm wide, with hairs extending 1.2–1.3 mm beyond apex, falling entire.

**Glumes.** Glumes shorter than spikelet, thinner than fertile lemma. Lower glume ovate, 0.33–0.5 length of spikelet, membranous, without keels, 3 -veined. Lower glume lateral veins transversely connected at apex. Lower glume apex acute. Upper glume ovate, 0.5–0.66 length of spikelet, membranous, without keels, 5(–7) -veined. Upper glume apex acute.

**Florets.** Basal sterile florets 1, barren, with palea. Lemma of lower sterile floret ovate, 1 length of spikelet, membranous, 7 -veined, acute. Palea of lower sterile floret 1 length of lemma. Fertile lemma ovate, dorsally compressed, 2 mm long, 1.2–1.3 mm wide, indurate, yellow, keeled. Lemma surface rugose. Lemma margins involute. Lemma apex apiculate. Palea involute, indurate. Palea surface rugose.

**Flower and Fruit.** Caryopsis with adherent pericarp, ovoid, plano-convex, 1.3 mm long. Embryo 0.8 length of caryopsis. Hilum punctiform.

**Distribution (TDWG). Continent.** South America.

**Country /Province /State.** Northern South America. Venezuela.

**Setaria cernua** H. B. & K. *Nov. Gen. et Sp.* i. 111. (1815).

**Accepted by:** R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

**TYPE** from Ecuador. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *Coll. Ukn. s.n.*, no date, Ecuador: Pichincha (P; IT: BAA-2793 (fragm. ex P), US-3049692). Several collectors and number accompany US fragment; protologue not seen..

**Illustrations (Books):** G.Harling & C.Persson, *Flora of Ecuador* (2006) (78: 112, Fig. 5 (2006)).

**Illustrations (Journals):** *Darwiniana* (37: 52, fig.2 (1999)).

**Derivation** (Clifford & Bostock 2007): *L. nodding*. Panicle branches pendant.

**Classification.** Subfamily Panicoideae. Tribe: Paniceae. Subtribe SETARIINAE.

**Habit, Vegetative Morphology.** Perennial. Culms erect, 50–100 cm long. Leaf-sheaths keeled, glabrous on surface or pilose, outer margin hairy. Leaf-sheath oral hairs ciliate. Ligule a ciliate membrane. Leaf-blades lanceolate, 20–40 cm long, 8–20 mm wide. Leaf-blade apex acuminate.

**Inflorescence.** Inflorescence a panicle. Panicle contracted, lanceolate, 10–30 cm long, contracted about primary branches. Primary panicle branches appressed or ascending, 0.5–3 cm long, bearing spikelets almost to the base, sterile at the tips. Panicle branches terminating in a 3–4 mm long bristle. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, oblong.

**Fertile Spikelets.** Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets ovate, dorsally compressed, gibbous, 3 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, 3 -veined. Lower glume apex acute. Upper glume ovate, 0.9 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 ovate, 1 length of spikelet, membranous, 3–5 -veined, acute. Fertile lemma ovate, dorsally compressed, gibbous, 1.7 mm long, indurate, without keel. Lemma surface rugulose. Lemma margins involute. Palea involute, indurate.

**Flower and Fruit.** Caryopsis with adherent pericarp.

**Distribution (TDWG).** Continent. South America.

**Country /Province /State.** Western South America. Colombia, Ecuador.

**Setaria chondrachne** (Steud.) Honda. *Journ. Fac. Sc. Tokyo, Sect. III. Bot.* iii. 234 (1930).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), S-L Chen et al, *Flora of China* 22 (Poaceae) (2006), T.Koyama, *Grasses of Japan and its neighboring regions* (1987).

**TYPE** from Japan. **Basionym or Replaced Name:** *Panicum chondrachne* Steud., *Syn. Pl. Glumac.* 1: 51 (1853). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: "Ex Hrbo. Musei Lugd. Batav. Japonia.",.

**Illustrations (Books):** T.Koyama, *Grasses of Japan and its neighbouring regions* (1987) (325, Fig 125), S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 743).

**Derivation** (Clifford & Bostock 2007): *Gk. chondros*, grain; *achne*, scale. The grain is shed along with the glumes and sterile lemma.

**Classification.** Subfamily Panicoideae. Tribe: Paniceae. Subtribe SETARIINAE.

**Habit, Vegetative Morphology.** Perennial, culms solitary. Rhizomes elongated, scaly. Culms geniculately ascending, 70–130 cm long, 2–3 mm diam., 6–9 -noded. Culm-internodes 4–12 cm long, distally glabrous. Leaves cauline. Leaf-sheaths glabrous on surface, outer margin hairy. Ligule a fringe of hairs, 0.5 mm long. Leaf-blades linear or lanceolate, 6–30 cm long, 7–15 mm wide, dark green. Leaf-blade surface glabrous. Leaf-blade apex attenuate.

**Inflorescence.** Inflorescence a panicle. Panicle open, lanceolate, 12–30 cm long, 1.5–3 cm wide, contracted about primary branches. Primary panicle branches 0.3–3 cm long, bearing spikelets almost to the base, sterile at the tips. Panicle axis angular, scabrous. Spikelets subtended by an involucre. Fertile spikelets pedicelled, 1 in the cluster. Involucre composed of bristles, 4–10 mm long. Involucral bristles persistent, 1 per spikelet, flexible, antrorsely scaberulous, glabrous. 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 elliptic or ovate, dorsally compressed, compressed slightly, 2.5–2.8 mm long, 1–1.25 mm wide, falling entire.

**Glumes.** Glumes shorter than spikelet, thinner than fertile lemma. Lower glume ovate, 0.33–0.5 length of spikelet, membranous, without keels, 3 -veined. Lower glume apex acute. Upper glume ovate, 0.66–0.75 length of spikelet, membranous, without keels, 5 -veined. Upper glume apex acute.

**Florets.** Basal sterile florets 1, barren, with palea or without significant palea. Lemma of lower sterile floret ovate, 1 length of spikelet, membranous, 5 -veined, acute. Palea of lower sterile floret 0–0.1 length of lemma. Fertile lemma ovate, dorsally compressed, gibbous, 2.5–2.8 mm long, indurate, shiny, without keel. Lemma surface smooth. Lemma margins involute. Lemma apex acute. Palea involute, indurate.

**Distribution (TDWG). Continent.** Temperate Asia.

**Country /Province /State.** China, Eastern Asia. China South Central, China Southeast. Japan, Korea. Japan Honshu, or Kyushu.

**TDWG4.** Anhui, Guangxi, Henan, Hunan, Jiangsu, Jiangxi, Zhejiang. Guizhou, Hubei, Sichuan, Yunnan.

**Setaria clivalis** (Ridl.) J.F. Veldkamp. *Misc. Pap. Landbouwhoges. Wageningen*, 19: 317 (1980).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), J.F.Veldkamp, *Poaceae ms (Flora Malesiana)*.

**TYPE** from Christmas Is. **Basionym or Replaced Name:** *Panicum clivale* Ridl., *J. Straits Branch Roy. Asiat. Soc.* 45: 242 (1906)

. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *Ridley 99*, Christmas Island: ca. 300 km S of Java (SING; IT: BM, L).

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): *L. clivis*, hill; -alis, pertaining to. Growing on hillsides.

**Classification.** Subfamily Panicoideae. Tribe: Paniceae. Subtribe SETARIINAE.

**Habit, Vegetative Morphology.** Annual. Culms rambling, weak, 50–150 cm long, rooting from lower nodes. Culm-nodes brown. Lateral branches ample. Leaf-sheaths glabrous on surface or pilose, outer margin hairy. Ligule a fringe of hairs, 0.5–0.75 mm long. Leaf-blade base without a false petiole or with a false petiole. Leaf-blades (4–)19–28 cm long, (3–)5–9 mm wide, flaccid. Leaf-blade surface scaberulous, rough on both sides, pilose, hairy on both sides. Leaf-blade apex acuminate.

**Inflorescence.** Inflorescence a panicle. Panicle open, ovate, 12–38 cm long. Primary panicle branches ascending, sterile at the tips. Panicle branches scaberulous, glabrous or pilose. Spikelets subtended by an involucre. Fertile spikelets sessile, 1 in the cluster. Involucre composed of bristles. Involucral bristles persistent, 1 per spikelet, 3–14 mm long, flexible, glabrous.

**Fertile Spikelets.** Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets oblong or ovate, dorsally compressed, plano-convex, 2–2.4 mm long, falling entire.

**Glumes.** Glumes shorter than spikelet, thinner than fertile lemma. Lower glume orbicular, clasping, 0.6–0.75 mm long, 0.33 length of spikelet, membranous, without keels, 3 -veined. Lower glume apex obtuse. Upper glume elliptic, 1.15–1.5 mm long, 0.5–0.66 length of spikelet, membranous, without keels, 5–7 -veined. Upper glume apex obtuse.

**Florets.** Basal sterile florets 1, barren, with palea. Lemma of lower sterile floret elliptic, 1 length of spikelet, membranous, 5 -veined, sulcate, acute. Fertile lemma elliptic, dorsally compressed, gibbous, 2–2.4 mm long, indurate, without keel. Lemma surface rugulose. Lemma margins involute. Lemma apex rostrate. Palea involute, indurate. Palea surface rugose.

**Flower and Fruit.** Anthers 3, 1–1.2 mm long. Caryopsis with adherent pericarp, ovoid, dorsally compressed, plano-convex, 1.75 mm long. Embryo 0.5–0.6 length of caryopsis. Hilum punctiform.

**Distribution (TDWG). Continent.** Tropical Asia.

**Country /Province /State.** Malesia. Borneo, Java, Lesser Sunda Is, Sumatra, Christmas I.

**Setaria cordobensis** Herrm. Rosen, *Beitr. Biol. Pflanzen*, x. 53 (1910).

**Accepted by:** R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

**TYPE** from Argentina. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *G. Hieronymus & G. Niederlein 138*, 25 Mar 1879, Argentina: Córdoba: zwischen der Sierra Suela und Pinchana (B; IT: BAA-2839 (fragm. ex B), CORD, K (photo), US-82079).

**Illustrations (Journals):** *Darwiniana* (37: 55, fig.3 (1999) as var. *cordobensis*).

**Derivation** (Clifford & Bostock 2007): *L. -ensis*, denoting origin. From Cordoba, Argentina.

**Classification.** Subfamily Panicoideae. Tribe: Paniceae. Subtribe SETARIINAE.

**Habit, Vegetative Morphology.** Perennial, caespitose. Basal innovations flabellate. Culms geniculately ascending, 30–100 cm long, 0.5–1 mm diam., 3–5 -noded. Culm-internodes 8–11 cm long, distally glabrous. Culm-nodes glabrous. Lateral branches lacking or sparse. Leaf-sheaths keeled, outer margin glabrous. Ligule a



ciliate membrane, 1.5–2 mm long. Leaf-blades linear or lanceolate, flat or conduplicate, 12–30 cm long, 4–13 mm wide. Leaf-blade midrib conspicuous. Leaf-blade surface scaberulous, glabrous. Leaf-blade margins scabrous.

**Inflorescence.** Inflorescence a panicle. Panicle spiciform, linear, continuous or interrupted, 5–15 cm long, 1.5–2 cm wide. Primary panicle branches sterile at the tips. Panicle axis scabrous. Spikelets subtended by an involucre. Fertile spikelets pedicelled, 1 in the cluster. Involucre composed of bristles, 6–12 mm long. Involucral bristles persistent, 1–2 per spikelet, antrorsely scaberulous, glabrous. 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 ovate, dorsally compressed, gibbous, 3–3.3 mm long, 1.7–2.1 mm wide, falling entire.

**Glumes.** Glumes shorter than spikelet or reaching apex of florets, thinner than fertile lemma. Lower glume ovate, 0.33–0.5 length of spikelet, membranous, without keels, 3–5 -veined. Lower glume apex obtuse. Upper glume ovate, gibbous, 0.75–1 length of spikelet, membranous, without keels, 5–7 -veined. Upper glume apex acute.

**Florets.** Basal sterile florets 1, barren, with palea. Lemma of lower sterile floret ovate, 1 length of spikelet, membranous, 5 -veined, acute. Palea of lower sterile floret 0.25–1 length of lemma. Fertile lemma ovate, dorsally compressed, gibbous, 3–3.3 mm long, indurate, without keel. Lemma surface rugulose. Lemma margins involute. Lemma apex apiculate. Palea involute, indurate.

**Flower and Fruit.** Caryopsis with adherent pericarp, ovoid, 2 mm long. Embryo 0.8 length of caryopsis.  $2n = 36$  (1 ref TROPICOS).

**Distribution (TDWG). Continent.** South America.

**Country /Province /State.** Western South America, Southern South America. Peru. Argentina Northwest.

**TDWG4.** Catamarca, Jujuy, La Rioja, Salta, Santiago del Estero, San Juan, San Luis, Tucuman. Cordoba, Formosa, Santa Fe.

### **Setaria corrugata** (Ell.) Schult. *Mant.* ii. 276. (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:** *Panicum corrugatum* Elliott, *Sketch Bot. S. Carolina* 1(2): 113 (1816). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *W. Baldwin s.n.*, no date, USA: Georgia: Chatham Co.: Savannah (CHARL; IT: US-80579 (fragm.)).

**Illustrations (Books):** M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 25 *Poaceae*, part 2 (2003) (553), A.S.Hitchcock, *Manual of the Grasses of the West Indies* (1936) (346, Fig. 316).

**Derivation** (Clifford & Bostock 2007): *L. corrugo*, wrinkle up. Fertile lemma transversely rugose.

**Classification.** Subfamily Panicoideae. Tribe: Paniceae. Subtribe SETARIINAE.

**Habit, Vegetative Morphology.** Annual. Culms erect or geniculately ascending, 50–100 cm long. Culm-nodes pubescent. Leaf-sheaths glabrous on surface, outer margin hairy. Ligule a fringe of hairs, 1 mm long. Leaf-blades 15–30 cm long, 4–7 mm wide. Leaf-blade surface scabrous, rough on both sides, glabrous to pubescent, hairy on both sides. Leaf-blade apex acuminate.

**Inflorescence.** Inflorescence a panicle. Peduncle scaberulous above. Panicle spiciform, linear, dense, 3–15 cm long. Primary panicle branches sterile at the tips. Panicle axis angular, scabrous, villous. Spikelets subtended by an involucre. Fertile spikelets pedicelled, 1 in the cluster. Involucre composed of bristles, 5–15 mm long. Involucral bristles persistent, 1–3 per spikelet, flexible, antrorsely scaberulous, glabrous. 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 ovate, dorsally compressed, compressed slightly, 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, 3–5 -veined. Lower glume apex acute. Upper glume ovate, 0.75 length of spikelet, membranous, without keels, 5–7 -veined. Upper glume apex acute.

**Florets.** Basal sterile florets 1, barren, with palea. Lemma of lower sterile floret ovate, 1 length of spikelet, membranous, 5 -veined, acute. Palea of lower sterile floret 0.75 length of lemma. Fertile lemma ovate, dorsally compressed, gibbous, 2 mm long, indurate, without keel. Lemma surface corrugate. Lemma margins involute. Palea involute, indurate.

**Distribution (TDWG). Continent.** North America, South America.

**Country /Province /State.** South-central USA, Southeastern USA. Texas. Alabama, Florida, Georgia, Mississippi, North Carolina, South Carolina, Tennessee. **Caribbean.** Cuba.

**Setaria dielsii** Herrm. Rosen, *Beitr. Biol. Pflanzen*, x. 52 (1910).

**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: *Koch 170*, May 1898, Australia: South Australia: am Mt. Lindhurst (B, US-2435844 (fragm.)). ST: *Diels 3664*, Australia: West-Australien, Gascogne bei Carmarvon (US). ST: *A. Cunningham s.n.*, Australia: Nordwest-Australien, ohne Standortsangabe (B).

**Illustrations (Books):** J.P.Jessop, G.R.M. Dashorst & F.M.James, *Grasses of South Australia* (2006) (480, Fig 412), C.A.Gardner, *Flora of Western Australia*, Vol 1, Part 1, *Gramineae* (1952) (269, Pl 77), 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 Friedrich Ludwig Emil Diels (1874–1945), German botanist.

**Classification.** Subfamily Panicoideae. Tribe: Paniceae. Subtribe SETARIINAE.

**Habit, Vegetative Morphology.** Annual. Stolons absent or present. Culms erect or geniculate ascending, 40–80 cm long, 3–6 -noded. Culm-nodes glabrous. Leaf-sheaths keeled, glabrous on surface, outer margin glabrous. Ligule a fringe of hairs, 0.5–1.3 mm long. Leaf-blades 5–28 cm long, 3.5–11 mm wide. Leaf-blade surface scabrous.

**Inflorescence.** Inflorescence a panicle. Panicle open, lanceolate, 2.5–17 cm long, contracted about primary branches. Primary panicle branches ascending or spreading, 0.7–3.5 cm long, bearing 7–15 fertile spikelets on each lower branch, bearing spikelets almost to the base, sterile at the tips. Panicle axis scabrous. Panicle branches scabrous. Spikelets solitary. Fertile spikelets sessile.

**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, 2.1–2.8 mm long, 1–1.3 mm wide, falling entire.

**Glumes.** Glumes reaching apex of florets, thinner than fertile lemma. Lower glume ovate, 1–1.9 mm long, 0.5–0.66 length of spikelet, membranous, without keels, 3 -veined. Lower glume apex acute. Upper glume elliptic, 2.1–2.3 mm long, 0.9–1 length of spikelet, membranous, without keels, 7–9 -veined. Upper glume apex obtuse.

**Florets.** Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret elliptic, 1 length of spikelet, membranous, 5–7 -veined, obtuse. Fertile lemma elliptic, dorsally compressed, gibbous, 2.1–2.8 mm long, indurate, without keel. Lemma surface rugose. Lemma margins involute. Lemma apex acute. Palea involute, indurate. Palea surface rugose.

**Distribution (TDWG). Continent.** Europe (\*), Tropical Asia, Australasia.

**Region. Northern Europe** (\*).

**Country /Province /State.** : GB Aliens (Ryves et al). **Malesia.** Lesser Sunda Is. **Australia.** Western Australia, Northern Territory, South Australia, Queensland.

**TDWG4.** Kimberley, Eremean, South-West. Central Australia. NW & Lake Eyre, Southern. North, Central, South East.

**Setaria faberi** Herrm. Rosen, *Beitr. Biol. Pflanzen*, x. 51 (1910).

**Accepted by:** R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), S-L Chen et al, *Flora of China* 22 (Poaceae) (2006), N.Tsvelev, *Grasses of the Soviet Union* (1983), T.Koyama, *Grasses of Japan and its neighboring regions* (1987).

**TYPE** from China. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: China: Sichuan:, *Faber 582=1182* (HT: W; IT: US).

**Illustrations (Books):** T.Koyama, *Grasses of Japan and its neighbouring regions* (1987) (330, Fig 127), C-C Hsu, *Flora of Taiwan*, Vol 5 (1978) (612), C-C Hsu, *Taiwan Grasses* (1975) (as *S. faberii*), M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 25 *Poaceae*, part 2 (2003) (557), S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 745), E.Hafliger & E.Schultz, *Grass Weeds*, CIBA-GEIGY (1:123(1980)).

**Derivation** (Clifford & Bostock 2007): in honor of Ernst Faber (1839–1899) English cleric who collected in China.

**Classification.** Subfamily Panicoideae. Tribe: Paniceae. Subtribe SETARIINAE.

**Habit, Vegetative Morphology.** Annual, culms solitary. Culms geniculately ascending, 60–130 cm long, 2–4 mm diam., rooting from lower nodes. Culm-internodes 4–15 cm long. Lateral branches ample. Leaf-sheaths 5–12 cm long, outer margin hairy. Ligule a fringe of hairs, 1–2 mm long. Leaf-blades 10–40 cm long, 7–18 mm wide. Leaf-blade surface glabrous or pilose, sparsely hairy, hairy adaxially. Leaf-blade apex attenuate.

**Inflorescence.** Inflorescence a panicle. Panicle spiciform, linear, nodding, 5–17 cm long, 1–2.5 cm wide. Primary panicle branches sterile at the tips. Panicle axis pilose. Spikelets subtended by an involucre. Fertile spikelets sessile, 1 in the cluster. Involucre composed of bristles. Involucral bristles persistent, 1–3 per spikelet, 12–18 mm long, flexible, glabrous.

**Fertile Spikelets.** Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets ovate, dorsally compressed, 2.7–3 mm long, 1.5–1.7 mm wide, falling entire.

**Glumes.** Glumes shorter than spikelet, thinner than fertile lemma. Lower glume ovate, 1–1.3 mm long, 0.33–0.5 length of spikelet, membranous, without keels, 3 -veined. Lower glume apex acute. Upper glume ovate, 2–2.5 mm long, 0.66–0.75 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 elliptic, 1 length of spikelet, membranous, 7 -veined, acute. Fertile lemma elliptic, dorsally compressed, gibbous, 2.7–3 mm long, indurate, without keel. Lemma surface rugulose. Lemma margins involute. Lemma apex acute. Palea involute, indurate. Palea surface rugose.

**Flower and Fruit.**  $2n = 36$  (3 refs TROPICOS).

**Distribution (TDWG). Continent.** Europe (\*), Temperate Asia, North America (\*).

**Region. Northern Europe** (\*).

**Country /Province /State.** : Great Britain (\*). Russian far east, **Caucasus, China, Eastern Asia.** Primorye, Sakhalin. China South Central, Manchuria, China North-Central, China Southeast. Japan, Korea, Nansei-Shoto, Taiwan. Japan Hokkaido, or Honshu, or Shikoku, or Kyushu. **Eastern Canada, North-central USA, Northeast USA, Southeastern USA.** Ontario. Illinois, Iowa, Kansas, Minnesota, Missouri, Nebraska. New York, Pennsylvania. Alabama, Arkansas, Delaware, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, North Carolina, South Carolina, Tennessee, Virginia, District of Columbia.

**TDWG4.** Shandong. Anhui, Fujian, Guangxi, Henan, Hunan, Jiangsu, Jiangxi, Zhejiang. Guizhou, Hubei, Sichuan, Yunnan.

**Setaria fiebrigii** Herrm. Rosen, *Beitr. Biol. Pflanzen*, x. 56 (1910).

**Accepted by:** R.J.Soreng et al., *Catalogue of New World 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: HT: *K. Fiebrig 539*, Nov 1902, Paraguay: dpto. Cordillera: Cordillera de Altos bei Loma (B; IT: BAA-2811 (fragm. ex B), K (photo), US-3049709 (fragm.), US-1720186).

**Illustrations (Books):** L.B. Smith, D.C. Wasshausen, R.M. Klein *Flora Illustrada Catarinensis Gramineas* (1981–1982) (806, Fig. 166), A.Burkat, *Flora Illustrada de Entre Rios (Argentina)*, Pt II, Gramineas (1969) (426, Fig 179), B.Rosengurtt, *Gramineas Uruguayas I* (1970) (392, Fig. 174).

**Illustrations (Journals):** *Darwiniana* (37: 57, fig.4 (1999)).

**Derivation** (Clifford & Bostock 2007): in honor of Karl Fiebrig Gertz (1869–1951) German-born South American botanist.

**Classification.** Subfamily Panicoideae. Tribe: Paniceae. Subtribe SETARIINAE.

**Habit, Vegetative Morphology.** Perennial, caespitose. Culms erect, 60–120 cm long. Culm-nodes glabrous. Leaf-sheaths smooth or antrorsely scabrous, outer margin hairy. Ligule a ciliate membrane, 1–1.8 mm long. Leaf-blades convolute, 10–20 cm long, 2–4 mm wide, stiff. Leaf-blade midrib conspicuous. Leaf-blade surface smooth or scaberulous, rough adaxially. Leaf-blade apex attenuate.

**Inflorescence.** Inflorescence a panicle. Panicle spiciform, linear, interrupted, 15–30 cm long. Primary panicle branches 0.5–3 cm long, sterile at the tips. Spikelets subtended by an involucre. Fertile spikelets pedicelled, 1 in the cluster. Involucre composed of bristles, 4–12 mm long. Involucral bristles persistent, 1–2 per spikelet, antrorsely scaberulous, glabrous. 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 orbicular, dorsally compressed, gibbous, 1.6–2 mm long, falling entire.

**Glumes.** Glumes shorter than spikelet, thinner than fertile lemma. Lower glume ovate, 0.33 length of spikelet, membranous, without keels, 3–5 -veined. Lower glume apex acute. Upper glume elliptic, 0.66 length of spikelet, membranous, without keels, 5–7 -veined. Upper glume apex acute.

**Florets.** Basal sterile florets 1, barren, with palea. Lemma of lower sterile floret ovate, 0.9–1 length of spikelet, membranous, 5 -veined, acute. Palea of lower sterile floret 1 length of lemma. Fertile lemma orbicular or trullate, dorsally compressed, gibbous, 1.6–2 mm long, indurate, without keel. Lemma surface rugose. Lemma margins involute. Lemma apex acute. Palea involute, indurate.

**Flower and Fruit.** Caryopsis with adherent pericarp, orbicular, 1 mm long.

*N* = 18 (3 refs TROPICOS).

**Distribution (TDWG). Continent.** South America.

**Country /Province /State.** Western South America, Brazil, Southern South America. Bolivia. Brazil South. Argentina Northeast, Paraguay, Uruguay.

**TDWG4.** Sao Paulo Parana, Catarina, Rio Grande do Sul. Chaco, Cordoba, Corrientes, Distrito Federal, Entre Rios, Formosa, Misiones, Santa Fe.

**Setaria finita** Launert. *Prodr. Fl. Sudwestafr.*, Lief. 34, 160 :227, 173 (1970).

**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, Okahandja: de Winter & Giess 7122.

**Illustrations (Books):** M.A.N.Muller, *Grasses of South West Africa/Namibia* (1984).

**Classification.** Subfamily Panicoideae. Tribe: Paniceae. Subtribe SETARIINAE.

**Habit, Vegetative Morphology.** Annual, caespitose, clumped loosely. Culms erect or geniculately ascending, 35–100 cm long, without nodal roots or rooting from lower nodes. Culm-nodes glabrous. Ligule a fringe of hairs. Leaf-blades 10–35 cm long, 4–12 mm wide.

**Inflorescence.** Inflorescence a panicle. Panicle open, lanceolate or elliptic, 10–25 cm long. Primary panicle branches sterile at the tips. Panicle branches scabrous, terminating in a 6–10 mm long bristle. 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, acute, 3.2–3.5 mm long, falling entire.

**Glumes.** Glumes shorter than spikelet, thinner than fertile lemma. Lower glume ovate, clasping, 1.5 mm long, 0.33 length of spikelet, membranous, without keels, 3 -veined. Lower glume apex acuminate. Upper glume ovate, 3 mm long, 1.1 length of adjacent fertile lemma, 0.75 length of spikelet, membranous, without keels, 5 -veined. Upper glume apex acuminate.

**Florets.** Basal sterile florets 1, male, with palea. Lemma of lower sterile floret ovate, 1 length of spikelet, membranous, 7 -veined, setaceous acuminate. Fertile lemma ovate, dorsally compressed, 1.7–2.2 mm long, indurate, without keel. Lemma surface rugulose. Lemma margins involute. Lemma apex obtuse. Palea involute, indurate.

**Distribution (TDWG). Continent.** Africa.

**Country /Province /State.** Southern Africa. Namibia.

**Setaria forbesiana** (Nees ex Steud.) Hook. f. *Fl. Brit. Ind.* vii. 81. (1896).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online, S-L Chen et al, *Flora of China* 22 (Poaceae) (2006), N.L.Bor, *Grasses of Burma, Ceylon, India and Pakistan* (1960).

**TYPE** from Nepal. **Basionym or Replaced Name:** *Panicum forbesianum* Nees ex Steud., *Syn. Pl. Gram.* 98 (1854). T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: Nepal: Royle 31.

**Illustrations (Books):** H.J.Noltie, *The Grasses of Bhutan* (2000) (721, Fig. 43), S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 743 as *Setaria forbesiana* var. *forbesiana*).

**Derivation** (Clifford & Bostock 2007): L. -ana, indicating connection. In honor of John Forbes Royle (1799–1858) English physician in service of East India Company.

**Classification.** Subfamily Panicoideae. Tribe: Paniceae. Subtribe SETARIINAE.

**Habit, Vegetative Morphology.** Perennial. Culms erect, 90–140 cm long. Culm-nodes glabrous. Lateral branches lacking. Leaf-sheaths 9–13 cm long, glabrous on surface, outer margin glabrous. Ligule an eciliate membrane, 3–3.5 mm long. Leaf-blades lanceolate, 20–45 cm long, 15–35 mm wide. Leaf-blade surface hispid, densely hairy. Leaf-blade margins scabrous. Leaf-blade apex acuminate.

**Inflorescence.** Inflorescence a panicle. Panicle open, oblong or pyramidal, 15–26 cm long. Primary panicle branches ascending or spreading or reflexed, 2–3.5 cm long, sterile at the tips. Panicle branches angular,

scaberulous. Spikelets subtended by an involucre. Fertile spikelets pedicelled, 1 in the cluster. Involucre composed of bristles. Involucral bristles persistent, 1–2 per spikelet, 8–12 mm long, antrorsely scaberulous, glabrous. Pedicels present, reduced to a stump, tip cupuliform.

**Fertile Spikelets.** Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets oblong or ovate, dorsally compressed, acute, 2.7–3 mm long, falling entire.

**Glumes.** Glumes shorter than spikelet, thinner than fertile lemma. Lower glume ovate, 1–1.2 mm long, 0.33 length of spikelet, membranous, without keels, 5 -veined. Lower glume apex acute. Upper glume ovate, 1.7–2 mm long, 0.66 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 ovate, 1 length of spikelet, membranous, 5 -veined, acute. Fertile lemma ovate, dorsally compressed, 2.5–2.7 mm long, indurate, without keel. Lemma surface rugulose. Lemma margins involute. Lemma apex acute. Palea involute, indurate. Palea surface rugose.

**Flower and Fruit.** Anthers 3. Caryopsis with adherent pericarp, 2.5 mm long.

*N* = 18 (1 ref TROPICOS).

**Distribution (TDWG). Continent.** Temperate Asia, Tropical Asia.

**Country /Province /State. China.** China South Central, China North-Central, China Southeast. **Indian Subcontinent, Indo-China.** Eastern Himalaya, India, Nepal. Myanmar, Vietnam.

**TDWG4.** Gansu, Shaanxi, Anhui, Guangdong, Guangxi, Henan, Hunan, Zhejiang. Guizhou, Hubei, Sichuan, Yunnan. Darjeeling, Bhutan, Sikkim. Meghalaya, Nagaland.

**Setaria globulifera** (Steud.) Griseb. *Goett. Abh.* xxiv. 307 (1879).

**Accepted by:** R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

**TYPE** from Uruguay. **Basionym or Replaced Name:** *Panicum globuliferum* Steud., *Syn. Pl. Gram.* 51. (1854). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *Deloche s.n.*, Uruguay: Montevideo (FB; IT: US-2608689 (fragm.)).

**Illustrations (Books):** A.Burkat, *Flora Illustrada de Entre Rios (Argentina)*, Pt II, Gramineas (1969) (4, Fig. 3 & 424, Fig. 178), B.Rosengurt, *Gramineas Uruguayas I* (1970) (392, Fig. 174).

**Derivation** (Clifford & Bostock 2007): *L. globus*, sphere; *-ulus*, diminutive; *fero*, carry or bear. The spicate inflorescence is interrupted to produce clusters of spikelets.

**Classification.** Subfamily Panicoideae. Tribe: Paniceae. Subtribe SETARIINAE.

**Habit, Vegetative Morphology.** Perennial. Culms robust, 120–180 cm long. Culm-nodes glabrous. Leaf-sheaths glabrous on surface, outer margin hairy. Ligule a ciliate membrane, 1.5–2 mm long. Leaf-blades 4–10 mm wide. Leaf-blade midrib prominent beneath.

**Inflorescence.** Inflorescence a panicle. Panicle spiciform, linear, 12–22 cm long, 1 cm wide. Primary panicle branches sterile at the tips. Spikelets subtended by an involucre. Fertile spikelets pedicelled, 1 in the cluster. Involucre composed of bristles, 8–10 mm long. Involucral bristles persistent, 1 per spikelet, antrorsely scaberulous, glabrous. 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 ovate, dorsally compressed, gibbous, 2.5–3 mm long, falling entire.

**Glumes.** Glumes shorter than spikelet, thinner than fertile lemma. Lower glume orbicular, 0.33 length of spikelet, membranous, without keels, 3 -veined. Lower glume apex obtuse. Upper glume elliptic, 0.5 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 ovate, 1 length of spikelet, membranous, 5 -veined, acute. Fertile lemma elliptic, dorsally compressed, gibbous, 2.5–3 mm long, indurate, shiny, without keel. Lemma surface unwrinkled or rugulose (below). Lemma margins involute. Palea involute, indurate.

**Flower and Fruit.** Caryopsis with adherent pericarp.

**Distribution (TDWG). Continent.** South America.

**Country /Province /State. Brazil, Southern South America.** Brazil Southeast, Brazil South. Argentina Northeast, Paraguay, Uruguay.

**TDWG4.** Minas Gerais, Rio de Janeiro, Espirito Santo, Sao Paulo Parana. Chaco, Corrientes, Entre Rios, Formosa, Misiones, Santa Fe.

**Setaria gracillima** Hook. f. *Fl. Brit. Ind.* vii. 81. (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 Sri Lanka. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: Sri Lanka: Gardner 968 (K holotype).

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): L. very delicate. Of slender habit.

**Classification.** Subfamily Panicoideae. Tribe: Paniceae. Subtribe SETARIINAE.

**Habit, Vegetative Morphology.** Perennial. Culms geniculately ascending, 20–45 cm long. Culm-internodes distally pubescent. Culm-nodes pubescent. Leaf-sheaths keeled, pubescent, outer margin hairy. Ligule a fringe of hairs, 0.5 mm long. Leaf-blades 10–17 cm long, 2–4 mm wide. Leaf-blade surface pubescent. Leaf-blade apex acuminate.

**Inflorescence.** Inflorescence a panicle. Peduncle pubescent above. Panicle spiciform, linear, 6–11 cm long, 0.6 cm wide. Primary panicle branches 0.1–0.5 cm long, bearing 2–4 fertile spikelets on each lower branch, sterile at the tips. Panicle axis pubescent. Spikelets subtended by an involucre. Fertile spikelets pedicelled, 1 in the cluster. Involucre composed of bristles. Involucral bristles persistent, 1 per spikelet, 5–10 mm long, antrorsely scaberulous, glabrous. Pedicels present, reduced to a stump, tip cupuliform.

**Fertile Spikelets.** Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets elliptic, dorsally compressed, acute, 2.1–2.2 mm long, falling entire.

**Glumes.** Glumes shorter than spikelet, thinner than fertile lemma. Lower glume ovate, 1.1 mm long, 0.5 length of spikelet, membranous, without keels, 3–5 -veined. Lower glume apex acute. Upper glume ovate, 1.3 mm long, 0.5–0.6 length of spikelet, membranous, without keels, 7–9 -veined. Upper glume apex acute.

**Florets.** Basal sterile florets 1, male, with palea. Lemma of lower sterile floret ovate, 1 length of spikelet, membranous, 7 -veined, acute. Fertile lemma elliptic, dorsally compressed, 2 mm long, indurate, without keel. Lemma surface rugose. Lemma margins involute. Lemma apex acute. Palea involute, indurate. Palea surface rugose.

**Flower and Fruit.** Anthers 3, 1.5 mm long. Caryopsis with adherent pericarp.

**Distribution (TDWG). Continent.** Tropical Asia.

**Country /Province /State. Indian Subcontinent.** Sri Lanka.

**Setaria grandis** Stapf. Prain, *Fl. Trop. Afr.* ix. 832 (1930).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online.

**TYPE** from Malawi. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: Malawi, Nyika Plateau: Henderson (BM holotype).

**Illustrations (Books):** G.V.Pope et al., *Flora Zambesiaca* 10 (3(1989):102, t. 25).

**Derivation** (Clifford & Bostock 2007): L. tall. Plants robust with tall culms.

**Classification.** Subfamily Panicoideae. Tribe: Paniceae. Subtribe SETARIINAE.

**Habit, Vegetative Morphology.** Perennial, caespitose. Basal innovations flabellate. Culms erect, robust, 200–300 cm long. Ligule absent. Leaf-blades conduplicate, 20–30 cm long, 10–15 mm wide, stiff. Leaf-blade margins scabrous. Leaf-blade apex acute, hardened.

**Inflorescence.** Inflorescence a panicle. Peduncle antrorsely scabrous above. Panicle open, lanceolate, 20–30 cm long, contracted about primary branches. Primary panicle branches ascending or spreading, 1–3 cm long, bearing spikelets almost to the base, sterile at the tips. Panicle branches stiff, secund. Spikelets subtended by an involucre. Fertile spikelets sessile, 1 in the cluster. Involucre composed of bristles, 10–25 mm long. Involucral bristles persistent, 4 in principal whorl, rigid, antrorsely scaberulous, glabrous.

**Fertile Spikelets.** Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets ovate, dorsally compressed, 3.5–4 mm long, falling entire.

**Glumes.** Glumes reaching apex of florets or shorter than spikelet, thinner than fertile lemma. Lower glume ovate, 0.5 length of spikelet, membranous, without keels, 3 -veined. Lower glume apex acute. Upper glume ovate, 0.8–1 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 ovate, 1 length of spikelet, membranous, 5 -veined, acute. Fertile lemma ovate, dorsally compressed, gibbous, 3–3.5 mm long, indurate, without keel. Lemma surface rugulose. Lemma margins involute. Lemma apex acute. Palea involute, indurate.

**Distribution (TDWG). Continent.** Africa.

**Country /Province /State. South tropical Africa.** Malawi.

**Setaria grisebachii** Fourn. *Mex. Pt Enum., Gram.* 45 (1886).

**Accepted by:** R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

**TYPE** from Mexico. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: LT: *Schaffner 36*, Mexico: Veracruz: Orizaba (GOET; ILT: US-977745 (fragm.)). LT designated by Hitchcock, *Contr. U.S. Natl. Herb.* 22: 182 (1920). ST: *Berlandier 622*, Mexico: ca Mejico (P; IST: US-3448853 (fragm. ex P)).

**Illustrations (Books):** M.E.Barkworth et al, *Flora of North America north of Mexico Vol 25 Poaceae*, part 2 (2003) (553).

**Derivation** (Clifford & Bostock 2007): in honor of August Heinrich Rudolf Grisebach (1814–1879) German botanist.

**Classification.** Subfamily Panicoideae. Tribe: Paniceae. Subtribe SETARIINAE.

**Habit, Vegetative Morphology.** Annual. Culms erect or geniculately ascending, slender, 50–100 cm long. Culm-internodes smooth or scaberulous. Culm-nodes pubescent. Leaf-sheaths antrorsely scabrous, outer margin hairy. Ligule a fringe of hairs. Collar pilose. Leaf-blades lanceolate, 7–25 cm long, 5–15 mm wide. Leaf-blade surface scabrous, rough on both sides, puberulous, hairy on both sides. Leaf-blade apex acuminate.

**Inflorescence.** Inflorescence a panicle. Peduncle smooth or scaberulous above. Panicle spiciform, linear, interrupted, loose, 3–18 cm long. Primary panicle branches 0.5–2.5 cm long, sterile at the tips. Panicle axis angular, scabrous, pubescent. Spikelets subtended by an involucre. Fertile spikelets pedicelled, 1 in the cluster. Involucre composed of bristles, 5–15 mm long. Involucral bristles persistent, 1 per spikelet, flexible, antrorsely scaberulous, glabrous. Pedicels present, oblong.

**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, 1.5–2.2 mm long, falling entire.

**Glumes.** Glumes reaching apex of florets, thinner than fertile lemma. Lower glume ovate, clasping, 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 obtuse.

**Florets.** Basal sterile florets 1, barren, with palea. Lemma of lower sterile floret ovate, 1 length of spikelet, membranous, 5 -veined, sulcate, acute. Palea of lower sterile floret 0.2–0.33 length of lemma. Fertile lemma ovate, dorsally compressed, gibbous, 1.4–2 mm long, indurate, without keel. Lemma surface rugulose. Lemma margins involute. Palea involute, indurate.

**Distribution (TDWG). Continent.** North America, South America.

**Country /Province /State.** Southwestern USA, South-central USA, Mexico. Arizona. New Mexico, Texas. Central Mexico, Northeast Mexico, Gulf (Mexico), Northwest Mexico, Southwest Mexico, Southeast Mexico. Mesoamerica, Western South America. Belize. Colombia, Ecuador, Galapagos.

Distrito Federal, Mexico State, Morelos, Puebla. Aguascalientes, Coahuila, Chihuahua, Durango, Guanajuato, Hidalgo, Neuvo Leon, Queretaro, San Luis Potosi, Tamaulipas, Zacatecas. Veracruz. Baja California Sur, Sinaloa, Sonora. Colima, Guerrero, Jalisco, Michoacan, Nayarit, Oaxaca. Campeche, Chiapas, Quintana Roo, Tabasco, Yucatan.

**Setaria guizhouensis** S.L. Chen & G.Y. Sheng. *Bull. Bot. Res. North-East. Forest. Inst.*, 4(1): 62 (1984).

**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, Bijie Xian: Ye 75483.

**Illustrations (Books):** S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 743 as *Setaria guizhouensis* var. *guizhouensis*).

**Derivation** (Clifford & Bostock 2007): L. -ensis, denoting origin. From Guizhou Province, China.

**Classification.** Subfamily Panicoideae. Tribe: Paniceae. Subtribe SETARIINAE.

**Habit, Vegetative Morphology.** Perennial. Rhizomes short, scaly. Culms erect, 37 cm long. Culm-nodes pubescent. Leaf-sheaths pilose, with tubercle-based hairs, outer margin hairy. Ligule a fringe of hairs, 1.5 mm long. Leaf-blades linear or lanceolate, 10–15 cm long, 4–6 mm wide. Leaf-blade surface scabrous, rough on both sides. Leaf-blade apex acuminate.

**Inflorescence.** Inflorescence a panicle. Panicle spiciform, linear, 11 cm long, 0.8 cm wide. Primary panicle branches appressed, 0.5–0.8 cm long. Panicle axis angular, pubescent. Spikelets subtended by an involucre. Fertile spikelets sessile, 1 in the cluster. Involucre composed of bristles, 2–3 mm long. Involucral bristles persistent, 1–2 in principal whorl, 1–2 per spikelet, flexible, antrorsely scaberulous, glabrous.

**Fertile Spikelets.** Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret

male or barren, the upper fertile. Spikelets lanceolate or oblong, dorsally compressed, acute, 2.5 mm long, falling entire.

**Glumes.** Glumes shorter than spikelet, thinner than fertile lemma. Lower glume ovate, 0.33 length of spikelet, membranous, without keels, 3 -veined. Lower glume apex acute. Upper glume ovate, 0.5–0.66 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 ovate, 1 length of spikelet, membranous, 5 -veined, acute. Fertile lemma ovate, dorsally compressed, gibbous, 2.5 mm long, indurate, without keel, 3 -veined, 0–3 -veined. Lemma surface rugulose. Lemma margins involute. Lemma apex acute. Palea involute, indurate.

**Flower and Fruit.** Anthers 3.

**Distribution (TDWG). Continent.** Temperate Asia.

**Country /Province /State. China.** China South Central.

**TDWG4.** Guizhou, Yunnan.

### **Setaria hassleri** Hack. *Bull. Herb. Boiss.* Ser. II. iv. 275. (1904).

**Accepted by:** R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

**TYPE** from Paraguay. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Paraguay, Cordillera de Altos: Hassler 3565 (W holo, G).

**Illustrations (Books):** L.B. Smith, D.C. Wasshausen, R.M. Klein *Flora Illustrada Catarinensis Gramineas* (1981–1982).

**Illustrations (Journals):** *Darwiniana* (37: 63, fig.5 (1999)).

**Derivation** (Clifford & Bostock 2007): in honor of Emil Hassler (1861–1939) Swiss-born Paraguayan botanist.

**Classification.** Subfamily Panicoideae. Tribe: Paniceae. Subtribe SETARIINAE.

**Habit, Vegetative Morphology.** Annual. Culms geniculately ascending, 20–100 cm long, rooting from lower nodes. Culm-internodes purple. Lateral branches ample. Leaf-sheaths keeled, outer margin hairy. Ligule a ciliate membrane, 2.5 mm long, pubescent on abaxial surface. Leaf-blade base cordate. Leaf-blades lanceolate, 6–25 cm long, 6–15 mm wide. Leaf-blade surface pilose, hairy abaxially or on both sides, with tubercle-based hairs. Leaf-blade apex acute.

**Inflorescence.** Inflorescence a panicle. Peduncle hirsute above. Panicle spiciform, linear, 5–22 cm long, 0.5–0.8 cm wide. Primary panicle branches sterile at the tips. Panicle axis pilose. Spikelets subtended by an involucre. Fertile spikelets pedicelled, 1 in the cluster. Involucre composed of bristles, 13–15 mm long. Involucral bristles persistent, rigid, retrorsely scaberulous, retrorse above, antrorse below, glabrous. Pedicels present, oblong.

**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.

**Glumes.** Glumes reaching apex of florets, thinner than fertile lemma. Lower glume ovate, 0.33 length of spikelet, membranous, without keels, 3 -veined. Lower glume apex acute. Upper glume ovate, gibbous, 1 length of spikelet, membranous, 1-keeled, 7 -veined. Upper glume lateral veins prominent. Upper glume apex acute.

**Florets.** Basal sterile florets 1, barren, with palea. Lemma of lower sterile floret ovate, 1 length of spikelet, membranous, 5 -veined, acute. Palea of lower sterile floret 1 length of lemma. Fertile lemma ovate, dorsally compressed, gibbous, 2–2.5 mm long, indurate, keeled, lightly keeled. Lemma surface rugose. Lemma margins involute. Palea involute, indurate.

**Flower and Fruit.** Caryopsis with adherent pericarp, 1.3 mm long. Embryo 0.9 length of caryopsis. Hilum punctiform.

**Distribution (TDWG). Continent.** South America.

**Country /Province /State. Northern South America, Western South America, Brazil, Southern South America.** Venezuela. Bolivia. Brazil West Central. Paraguay.

**TDWG4.** Mato Grosso. Catamarca, Salta, Santiago del Estero, Tucuman. Corrientes, Formosa, Misiones.

### **Setaria homonyma** (Steud.) Chiov. *Nuov. Giorn. Bot. Ital.* n. s. xxvi. 78 (1919).

**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:** *Panicum homonymum* Steud., *Syn. Pl. Gram.* 48 (1854). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: India: Royle 47 (K iso).



**Illustrations (Books):** H.Jacques-Felix, *Les Graminees d'Afrique tropicale* (1962) (257, Fig. 188), G.V.Pope et al., *Flora Zambesiaca* 10 (3(1989):106, t. 27), S.Phillips, *Poaceae* (Gramineae) in I.Hedberg & S.Edwards, *Flora of Ethiopia and Eritrea* (1995) (241, Fig. 97), H.J.Noltie, *The Grasses of Bhutan* (2000) (711, Fig. 41).

**Images:** F.van Oudtshoorn, *Guide to Grasses of Southern Africa* (1999).

**Derivation** (Clifford & Bostock 2007): Gk. homos, alike; onoma, name. Species that have synonyms which are also homonyms.

**Classification.** Subfamily Panicoideae. Tribe: Paniceae. Subtribe SETARIINAE.

**Habit, Vegetative Morphology.** Annual, caespitose. Culms 25–100 cm long. Ligule a fringe of hairs. Leaf-blades spreading, plicate, 5–25 cm long, 5–35 mm wide, flaccid, light green.

**Inflorescence.** Inflorescence a panicle. Panicle open, pyramidal, 1–10(–20) cm long, contracted about primary branches. Primary panicle branches bearing spikelets almost to the base, sterile at the tips. Panicle branches secund (2-rowed), pubescent or pilose or villous. Spikelets subtended by an involucre. Fertile spikelets sessile, 1 in the cluster. Involucre composed of bristles, 5–10 mm long. Involucral bristles persistent, 1 in principal whorl, flexible, 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, dorsally compressed, compressed slightly, 2–2.5 mm long, falling entire.

**Glumes.** Glumes reaching apex of florets, thinner than fertile lemma. Lower glume orbicular, 0.25 length of spikelet, hyaline, without keels, 3 -veined. Lower glume apex obtuse. Upper glume elliptic, 1 length of spikelet, membranous, without keels, 5–7 -veined. Upper glume apex obtuse.

**Florets.** Basal sterile florets 1, barren, with palea. Lemma of lower sterile floret elliptic, 1 length of spikelet, membranous, 5 -veined, obtuse. Palea of lower sterile floret 0.33–0.5 length of lemma. Fertile lemma ovate, dorsally compressed, gibbous, 2–2.5 mm long, indurate, without keel. Lemma surface rugose. Lemma margins involute. Palea involute, indurate. Palea surface rugose.

**Distribution (TDWG). Continent.** Africa, Tropical Asia.

**Country /Province /State.** West-central tropical Africa, Northeast tropical Africa, East tropical Africa, South tropical Africa, Southern Africa. Central African Republic, Cameroon, Gabon, Rwanda, DRC. Ethiopia (inc. Eritrea), Sudan. Kenya, Tanzania, Uganda. Angola, Malawi, Mozambique, Zambia, Zimbabwe. Namibia, Botswana, Limpopo, Mpumalanga, Kwazulu-Natal. **Indian Subcontinent.** Eastern Himalaya.

**TDWG4.** Darjeeling, Karaikal, Karnataka. Madhya Pradesh, Rajasthan, Uttah Pradesh, West Bengal. Himachal Pradesh.

**Setaria humbertiana** A.Camus. *Not. Syst.*, ed. Humbert, xii. 151 (1946).

**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, Tular: Humbert 14399.

**Illustrations (Books):** J.Bosser, *Graminees des Paturage et des Cultures a Madagascar* (1969) (291, Fig 107).

**Derivation** (Clifford & Bostock 2007): L. -ana, indicating connection. In honor of Jean Henri Humbert (1887–1967) French botanist who collected in Madagascar.

**Classification.** Subfamily Panicoideae. Tribe: Paniceae. Subtribe SETARIINAE.

**Habit, Vegetative Morphology.** Perennial, caespitose. Culms 40–60 cm long. Ligule a fringe of hairs. Leaf-blades flat or convolute, 10–20 cm long, 2–5 mm wide.

**Inflorescence.** Inflorescence composed of racemes. Racemes 5–15, borne along a central axis, unilateral, 1–3 cm long. Central inflorescence axis 7–20 cm long. Rhachis angular, terminating in a barren extension, extension subulate. Spikelet packing regular, 2 -rowed. Spikelets solitary or in pairs or subtended by an involucre. Fertile spikelets sessile or sessile and pedicelled, 1–2 in the cluster. Involucre composed of bristles, 3–8 mm long. Involucral bristles persistent, 0–1 in principal whorl, flexible, antrorsely scaberulous, glabrous. Pedicels present, 1–1.5 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, compressed slightly, 2–2.5 mm long, falling entire.

**Glumes.** Glumes shorter than spikelet, thinner than fertile lemma. Lower glume ovate, 0.66 length of spikelet, membranous, without keels, 3–5 -veined. Lower glume apex obtuse. Upper glume ovate, 0.75 length of spikelet, membranous, without keels, 5 -veined. Upper glume apex obtuse.

**Florets.** Basal sterile florets 1, male or barren, with palea. Lemma of lower sterile floret ovate, 1 length of spikelet, membranous, 5 -veined, obtuse. Fertile lemma elliptic, dorsally compressed, gibbous, 2–2.5 mm long, indurate, without keel. Lemma margins involute. Lemma apex acute. Palea involute, indurate.

**Distribution (TDWG). Continent.** Africa.

**Country /Province /State.** Western Indian ocean. Madagascar.

**Setaria hunzikeri** A.M.Anton. *Kurtziana*, 17: 139 (1984).

**Accepted by:** R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

**TYPE** from Argentina. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Argentina, Cruz del Eje: Hunziker 12388 (CORD holo).

**Illustrations (Journals):** *Darwiniana* (37: 65, fig.6 (1999)).

**Derivation** (Clifford & Bostock 2007): in honor of Armando Teodoro Hunziker (1919-) Argentinian botanist.

**Classification.** Subfamily Panicoideae. Tribe: Paniceae. Subtribe SETARIINAE.

**Habit, Vegetative Morphology.** Perennial, caespitose. Culms 70 cm long. Culm-internodes distally glabrous. Culm-nodes brown, glabrous. Lateral branches ample. Leaf-sheaths hispid, with tubercle-based hairs. Ligule a ciliate membrane, 0.8 mm long. Collar pubescent. Leaf-blades 12–13 cm long, 10 mm wide. Leaf-blade surface pubescent, hairy on both sides, with tubercle-based hairs. Leaf-blade apex acuminate.

**Inflorescence.** Inflorescence a panicle. Peduncle 9–12 cm long, pubescent above. Panicle spiciform, linear, 8 cm long, 1 cm wide. Primary panicle branches accrescent to a central axis, with evident branchlets on axis. Panicle axis scabrous, hispidulous. Spikelets subtended by an involucre. Fertile spikelets sessile, 1 in the cluster. Involucre composed of bristles, 6–8 mm long. Involucral bristles persistent, 1 per spikelet, flexible, antrorsely scaberulous, 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 orbicular, dorsally compressed, 2 mm long, falling entire, readily shedding fertile florets.

**Glumes.** Glumes shorter than spikelet, thinner than fertile lemma. Lower glume ovate, clasping, 0.5 length of spikelet, membranous, without keels, 3 -veined. Lower glume apex obtuse or acute. Upper glume ovate, 0.66 length of spikelet, membranous, without keels, 5 -veined. Upper glume apex cuspidate.

**Florets.** Basal sterile florets 1, male, with palea. Lemma of lower sterile floret ovate, 1 length of spikelet, membranous, 5 -veined, cuspidate. Palea of lower sterile floret 0.9 length of lemma. Fertile lemma orbicular, dorsally compressed, gibbous, 2 mm long, indurate, without keel. Lemma surface rugulose. Lemma margins involute. Lemma apex apiculate. Palea involute, indurate.

**Flower and Fruit.** Lodicules 2, 0.25 mm long. Anthers 3, 0.33 mm long. Caryopsis with adherent pericarp, ellipsoid, 1.3 mm long, pallid. Embryo 0.5 length of caryopsis. Hilum punctiform.

**Distribution (TDWG). Continent.** South America.

**Country /Province /State.** Western South America, Southern South America. Bolivia. Argentina Northwest, Paraguay.

**TDWG4.** Catamarca, Jujuy, La Rioja, Salta, Santiago del Estero, San Juan, San Luis, Tucuman. Chaco, Cordoba, Corrientes, Formosa, Santa Fe.

**Setaria incrassata** (Hochst.) Hack. *Engl. Hochgebirgsfl. Trop. Afr.* 122 (1891).

**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 Ethiopia. **Basionym or Replaced Name:** *Panicum incrassatum* Hochst., *Flora* 38: 197 (1855). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *Schimper 1211*, Africa: Ethiopia: Gandoma (STR; IT: P).

**Illustrations (Books):** G.V.Pope et al., *Flora Zambesiaca* 10 (3(1989):97, t. 24), L.K.A. Chippindall, *Grasses and Pastures of South Africa* (1955) (347, Fig 301 as *S. woodii* subsp. *bechuanicua*), S.Phillips, *Poaceae* (Gramineae) in I.Hedberg & S.Edwards, *Flora of Ethiopia and Eritrea* (1995) (239, Fig 96), S.W.L.Jacobs, R.D.B.Whalley & D.J.B.Wheeler., *Grasses of New South Wales*, 4th edn (2008) (368).

**Images:** D.Sharp & B.K.Simon, *AusGrass*. Grasses of Australia. CD-Rom Version 1.0. (2002);, F.van Oudtshoorn, *Guide to Grasses of Southern Africa* (1999).

**Derivation** (Clifford & Bostock 2007): L. thickened. Culm base swollen.

**Classification.** Subfamily Panicoideae. Tribe: Paniceae. Subtribe SETARIINAE.

**Habit, Vegetative Morphology.** Perennial, caespitose. Rhizomes short. Butt sheaths yellow. Culms 20–200 cm long. Culm-nodes pubescent or glabrous (rarely). Ligule a fringe of hairs. Leaf-blades flat or convolute, 10–60 cm long, 1–15 mm wide. Leaf-blade apex attenuate, filiform.

**Inflorescence.** Inflorescence a panicle. Panicle spiciform, linear, continuous or interrupted, 3–30 cm long. Primary panicle branches accrescent to a central axis, with evident branchlets on axis. Panicle axis pubescent or pilose. Spikelets subtended by an involucre. Fertile spikelets 1–3 in the cluster. Involucre composed of bristles, 2–15 mm long. Involucral bristles persistent, 8–10 in principal whorl, flexible, antrorsely scaberulous, glabrous.

**Fertile Spikelets.** Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets ovate or orbicular, laterally compressed, gibbous, 2–3(–4) mm long, falling entire.

**Glumes.** Glumes reaching apex of florets or shorter than spikelet, thinner than fertile lemma. Lower glume ovate, 0.33–0.66 length of spikelet, membranous, without keels, 5–7 -veined. Lower glume apex obtuse or acute. Upper glume ovate, 0.7–1 length of spikelet, membranous, without keels, (5–)7–9(–11) -veined. Upper glume apex acute.

**Florets.** Basal sterile florets 1, male, with palea. Lemma of lower sterile floret ovate, 1 length of spikelet, membranous, 5 -veined, acute. Fertile lemma ovate, laterally compressed, gibbous, 1.5–3.5 mm long, indurate, without keel. Lemma surface punctate, rugulose. Lemma margins involute. Palea involute, indurate.

**Distribution (TDWG), Continent.** Africa, Australasia (\*).

**Country /Province /State.** West tropical Africa, West-central tropical Africa, Northeast tropical Africa, East tropical Africa, South tropical Africa, Southern Africa, Middle Atlantic ocean. Nigeria. Central African Republic, DRC. Chad, Eritrea, Ethiopia (inc. Eritrea), Somalia, Sudan. Kenya, Tanzania, Uganda. Angola, Malawi, Mozambique, Zambia, Zimbabwe. Namibia, Botswana, Limpopo, North-West, Gauteng, Mpumalanga, Swaziland, Free State, Kwazulu-Natal, Northern Cape, Eastern Cape. **Australia.** Western Australia (\*), Northern Territory (\*), Queensland (\*). New Caledonia.

**TDWG4.** Kimberley. Central Australia. Central, Inland.

**Setaria intermedia** Roem. & Schult. *Syst.* ii. 489. (1817).

**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 *S. tomentosa*), N.Tsvelev, *Grasses of the Soviet Union* (1983).

**TYPE** from India. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: India: Heyne.

**Recent Synonyms:** *Setaria tomentosa* (Roxb.) Kunth, *Rev. Gram.* 1: 47. (1829).

**Illustrations (Books):** K.M.Matthew, Illustrations on the *Flora of Tamilnadu Carnatic* (1982) (Pls. 935 & 936 as *S. tomentosa*), H.J.Noltie, *The Grasses of Bhutan* (2000) (711, Fig. 41), S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 742).

**Derivation** (Clifford & Bostock 2007): *L. intermediate*. Having affinities with but distinct from other species.

**Classification.** Subfamily Panicoideae. Tribe: Paniceae. Subtribe SETARIINAE.

**Habit, Vegetative Morphology.** Annual. Culms geniculately ascending or decumbent, weak, 15–100 cm long, without nodal roots or rooting from lower nodes. Culm-nodes glabrous. Ligule a fringe of hairs. Leaf-blade base without a false petiole. Leaf-blades 5–20 cm long, 2–10 mm wide, flaccid. Leaf-blade surface smooth, glabrous or pilose, with tubercle-based hairs.

**Inflorescence.** Inflorescence a panicle. Panicle contracted, lanceolate, interrupted, 3–12 cm long, contracted about primary branches. Primary panicle branches bearing spikelets almost to the base, sterile at the tips. Panicle axis hispidulous. Spikelets subtended by an involucre. Fertile spikelets sessile, 1–2 in the cluster. Involucre composed of bristles, 3–10 mm long. Involucral bristles persistent, 1–4 in principal whorl, rigid, antrorsely scaberulous, glabrous.

**Fertile Spikelets.** Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets elliptic, dorsally compressed, 1.5–2 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, 3–5 -veined. Lower glume apex obtuse or acute. Upper glume elliptic, 0.5–0.66 length of spikelet, membranous, without keels, 5–7 -veined. Upper glume apex acute.

**Florets.** Basal sterile florets 1, barren, with palea. Lemma of lower sterile floret elliptic, 1 length of spikelet, membranous, 5 -veined, without grooves, acute. Fertile lemma ovate, dorsally compressed, gibbous, 1.5–2 mm long, indurate, pallid or light brown, without keel. Lemma surface rugose. Lemma margins involute. Palea involute, indurate. Palea surface rugose.

**Flower and Fruit.**  $N = 18$  (1 ref TROPICOS), or 36 (1 ref TROPICOS).

**Distribution (TDWG). Continent.** Africa, Temperate Asia, Tropical Asia.

**Country /Province /State.** Northeast tropical Africa, East tropical Africa, Western Indian ocean. Eritrea, Socotra. Tanzania. Mauritius (\*). **Caucasus, Arabian Peninsula, China, Eastern Asia, Russia.** Oman. China South Central. Japan. **Indian Subcontinent, Indo-China.** Bangladesh, Eastern Himalaya, India, Pakistan, Sri Lanka. Andaman Is, Myanmar, Thailand.

**TDWG4.** Yunnan. Bhutan. Bihar, Kerala. Tamilnadu, West Bengal.

### **Setaria italica** (L.) Beauv. *Ess. Agrost.* :51 (1812).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), D.Sharp, D. & B.K.Simon, *AusGrass* (2002), E.Edgar, & H.Connor, *Flora of New Zealand Gramineae* 5 (2000), S-L Chen et al, *Flora of China* 22 (Poaceae) (2006), J.F.Veldkamp, *Poaceae ms (Flora Malesiana)* (& as *S. globularis*), 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), W.D.Clayton & N.Snow, *Key to Pacific Grasses* (2010).

**TYPE** from in Indis. **Basionym or Replaced Name:** *Panicum italicum* L., *Sp.Pl.* 1: 56 (1753). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: LT: *Herb A van Royen*, (L-912.356–242). LT designated by Veldkamp in Cafferty et al., *Taxon* 49(2): 253 (2000). LT: India (LINN-80.14). LT designated by Sherif & Siddiqui, *Fl. Libya* 145: 298 (1988), but this lectotypification is ineffective because the cited specimen is not original material [*fide* Cafferty et al., *Taxon* 49(2): 250 (2000)].

**Illustrations (Books):** G.Hegi, *Flora von Mitteleuropa* 1 (1909), C-C Hsu, *Flora of Taiwan*, Vol 5 (1978) (618), C-C Hsu, *Taiwan Grasses* (1975) (603, Pl. 1447), K.M.Matthew, *Further Illustrations on the Flora of Tamilnadu Carnatic* (1988) (Pl. 820), H.J.Noltie, *The Grasses of Bhutan* (2000), H.Duistermaat, *Field Guide to the Grasses of Singapore* (2005) (125, Fig. 128), J.P.Jessop, G.R.M. Dashorst & F.M.James, *Grasses of South Australia* (2006) (481, Fig. 413), S.W.L.Jacobs, R.D.B.Whalley & D.J.B.Wheeler., *Grasses of New South Wales*, 4th edn (2008) (369), M.E.Barkworth et al, *Flora of North America north of Mexico Vol 25 Poaceae*, part 2 (2003) (557), L.B. Smith, D.C. Wasshausen, R.M. Klein *Flora Illustrada Catarinensis Gramineas* (1981–1982) (788, Fig. 163), S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 744), E.Hafliger & E.Schultz, *Grass Weeds*, CIBA-GEIGY (1:126(1980)).

**Illustrations (Journals):** *Darwiniana* (37: 67, fig.7 (1999)).

**Images:** D.Sharp & B.K.Simon, *AusGrass*. Grasses of Australia. CD-Rom Version 1.0. (2002);.

**Derivation** (Clifford & Bostock 2007): L. -ica, belonging to. From Italia, that is Italy.

**Classification.** Subfamily Panicoideae. Tribe: Paniceae. Subtribe SETARIINAE.

**Habit, Vegetative Morphology.** Annual. Culms erect or geniculately ascending, robust, 50–100 cm long, 5–7 -noded. Leaf-sheaths outer margin hairy. Ligule a fringe of hairs. Leaf-blades 15–45 cm long, 6–20 mm wide, flaccid. Leaf-blade surface scaberulous, rough adaxially. Leaf-blade margins cartilaginous, scaberulous. Leaf-blade apex attenuate.

**Inflorescence.** Inflorescence a panicle. Peduncle antrorsely scabrous above. Panicle spiciform, linear or oblong, continuous or interrupted, equilateral or nodding, 5–30 cm long, 0.8–2.4 cm wide. Primary panicle branches accrescent to a central axis, with evident branchlets on axis. Panicle axis villous. Spikelets subtended by an involucre. Fertile spikelets sessile and pedicelled, 2–4 in the cluster. Involucre composed of bristles, 4–16 mm long. Involucral bristles persistent, 2–5 in principal whorl, flexible, antrorsely scaberulous, glabrous.

**Fertile Spikelets.** Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets elliptic, dorsally compressed, 2–3 mm long, persistent on plant.

**Glumes.** Glumes shorter than spikelet, thinner than fertile lemma. Lower glume ovate, 0.33 length of spikelet, hyaline or membranous, without keels, 1–3 -veined. Lower glume apex acute. Upper glume elliptic, 0.66–0.75 length of spikelet, membranous, without keels, 5–7 -veined. Upper glume apex obtuse or acute.

**Florets.** Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret elliptic, 1 length of spikelet, membranous, 5 -veined, obtuse or acute. Fertile lemma elliptic or oblong, dorsally compressed, gibbous, 2–3 mm long, indurate, without keel. Lemma surface unwrinkled or rugulose. Lemma margins involute. Palea involute, indurate.

**Flower and Fruit.** Anthers 3, 1 mm long. Caryopsis with adherent pericarp, ellipsoid or orbicular, dorsally compressed, 1.5–2 mm long. Hilum punctiform.

$N = 9$  (2 refs TROPICOS).  $2n = 18$  (8 refs TROPICOS), or 36 (1 ref TROPICOS).

**Distribution (TDWG). Continent.** Europe, Africa, Temperate Asia, Tropical Asia, Australasia (\*), Pacific, North America, South America.

**Region.** Northern Europe (\*), Middle Europe, Southwestern Europe, Southeastern Europe, Eastern Europe.

**Country /Province /State.** : Great Britain (\*). : Austria, Czechoslovakia, Germany, Hungary, Poland. : Sardinia, Spain. : Bulgaria, Greece, Italy, Crete, Romania, Turkey Europe, Yugoslavia. Central European Russia, East European Russia, South European Russia, Ukraine. **Northern Africa, South tropical Africa, Southern Africa** (\*), **Western Indian ocean.** Algeria, Egypt, Libya, Morocco, Tunisia. Malawi, Mozambique, Zimbabwe. Limpopo, Gauteng, Mpumalanga, Free State, Kwazulu-Natal, Western Cape, Eastern Cape. Mauritius (\*). Siberia, Russian far east, **Middle Asia, Western Asia, Arabian Peninsula, China, Mongolia, Eastern Asia.** Buryatiya, Chita. Amur, Primorye, Sakhalin. Kazakhstan, Kirgizistan, Turkmenistan, Tadzhikistan, Uzbekistan. Iran, Iraq. China South Central, Hainan, Inner Mongolia, Manchuria, China North-Central, China Southeast, Tibet, Xinjiang. Japan, Nansei-Shoto, Taiwan. Japan Hokkaido, or Honshu, or Shikoku, or Kyushu. **Indian Subcontinent, Indo-China, Malesia, Papuasias.** Bangladesh, Eastern Himalaya, Sri Lanka. Cambodia, Laos, Myanmar, Thailand, Vietnam. Borneo, Java, Lesser Sunda Is, Malaya, Singapore, Moluccas, Philippines, Sumatra. New Guinea 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. **North-central Pacific.** Fiji (\*), New Caledonia (\*). Hawaii (\*). **Western Canada, Eastern Canada, Northwest USA, North-central USA, Northeast USA, Southwestern USA, South-central USA, Southeastern USA, Mexico.** Alberta, British Columbia, Manitoba. Ontario, Quebec. Colorado, Idaho, Montana, Oregon, Washington, Wyoming. Kansas, North Dakota, Nebraska, Oklahoma. Connecticut, Indiana, Maine, Massachusetts, Michigan, Ohio, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, Vermont, West Virginia. Arizona. New Mexico, Texas. Central Mexico. **Caribbean, Northern South America, Western South America, Brazil, Southern South America.** French Guiana. Bolivia. Brazil Southeast. Argentina Northeast.

**TDWG4.** Beijing, Shaanxi, Shandong, Shanxi. Anhui, Fujian, Guangdong, Henan, 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, Uttar Pradesh, West Bengal, Yanam. Himachal Pradesh, Jammu Kashmir, Uttaranchal. Kimberley, Ereman, South-West. Central Australia. NW & Lake Eyre, Southern. North, Central, South East. Coast, Tablelands, Western Slopes, Western Plains. Mendoza, San Luis. Buenos Aires, Chaco, Cordoba, Distrito Federal, Formosa, La Pampa, Misiones, Santa Fe. Mexico State.

**Setaria jaffrei** P. Morat. *Adansonia*, 18(2): 258 (1978).

**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 New Caledonia. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: New Caledonia, Massif du Boulinda: Morat 5953 (P holotype, NOU).

**Illustrations (Books):** No illustration found (BKS).

**Classification.** Subfamily Panicoideae. Tribe: Paniceae. Subtribe SETARIINAE.

**Habit, Vegetative Morphology.** Perennial, caespitose. Culms erect, robust, 100–130 cm long, 2–3 mm diam., 14–16-noded. Culm-nodes glabrous or pubescent. Lateral branches lacking. Leaf-sheaths longer than adjacent culm internode, glabrous on surface. Leaf-sheath oral hairs ciliate. Ligule a ciliate membrane, 2.8 mm long. Leaf-blades lanceolate, flat or involute, 9–15 cm long, 10–12 mm wide, coriaceous, stiff.

**Inflorescence.** Inflorescence a panicle. Panicle open, linear, interrupted, 30–40 cm long, 0.5–0.7 cm wide, contracted about primary branches. Primary panicle branches appressed or ascending, distant, 2–2.3 cm long, bearing spikelets almost to the base, sterile at the tips. Spikelets subtended by an involucre. Fertile spikelets sessile, 1 in the cluster. Involucre composed of bristles, 0.3–2 mm long. Involucral bristles persistent, 1 per spikelet, flexible, antrorsely scaberulous, glabrous.

**Fertile Spikelets.** Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets ovate, dorsally compressed, acute, 3–4 mm long, 1.5 mm wide, falling entire. Floret callus pubescent.

**Glumes.** Glumes shorter than spikelet, thinner than fertile lemma. Lower glume ovate, clasping, 2.2 mm long, 0.66 length of spikelet, membranous, without keels, 7 -veined. Lower glume apex acute. Upper glume ovate, 2.8 mm long, 0.75 length of spikelet, membranous, without keels, 7 -veined. Upper glume inner surface pubescent (above). Upper glume apex acute.

**Florets.** Basal sterile florets 1, barren, with palea. Lemma of lower sterile floret ovate, 1 length of spikelet, membranous, 5 -veined, acute. Palea of lower sterile floret 1–1.5 mm long, 0.33 length of lemma. Fertile lemma ovate, dorsally compressed, 3–4 mm long, indurate, without keel. Lemma surface striate, unwrinkled. Lemma margins involute. Palea involute, indurate. Palea keels ciliolate, adorned above.

**Flower and Fruit.** Lodicules 2. Anthers 3.

**Distribution (TDWG). Continent.** Pacific.

**Country /Province /State. Southwestern Pacific.** New Caledonia.

**Setaria kagerensis** Mez. *Notizbl. Bot. Gart. Berlin*, vii. 58 (1917).

**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: Tanzania, Bukoba: Stuhlmann 1946 (B holo).

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): L. -ensis, denoting origin. From Kagera River, Mozambique.

**Classification.** Subfamily Panicoideae. Tribe: Paniceae. Subtribe SETARIINAE.

**Habit, Vegetative Morphology.** Perennial, short-lived, mat forming. Culms scandent or rambling, 60–150 cm long, without nodal roots or rooting from lower nodes. Culm-nodes pubescent. Ligule a fringe of hairs. Leaf-blade base without a false petiole or with a false petiole. Leaf-blades linear or lanceolate, plicate, 10–30 cm long, 3–17 mm wide, dark green.

**Inflorescence.** Inflorescence a panicle. Panicle open, lanceolate, 10–20 cm long, contracted about primary branches. Primary panicle branches bearing spikelets almost to the base, sterile at the tips. Panicle branches pubescent. Spikelets subtended by an involucre. Fertile spikelets sessile, 1 in the cluster. Involucre composed of bristles, 3–10 mm long. Involucral bristles persistent, 1 in principal whorl, flexible, antrorsely scaberulous, glabrous.

**Fertile Spikelets.** Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets elliptic, dorsally compressed, obtuse, 2–2.5 mm long, falling entire.

**Glumes.** Glumes reaching apex of florets or shorter than spikelet, thinner than fertile lemma. Lower glume ovate, 0.25–0.33 length of spikelet, membranous, without keels, 4–5 -veined. Lower glume apex truncate or obtuse. Upper glume ovate, 0.8–1 length of spikelet, membranous, without keels, 7–9 -veined. Upper glume apex obtuse or acute.

**Florets.** Basal sterile florets 1, male, with palea. Lemma of lower sterile floret ovate, 1 length of spikelet, membranous, 5–7 -veined, sulcate, acute. Palea of lower sterile floret 1 length of lemma. Fertile lemma ovate, dorsally compressed, gibbous, 2–2.5 mm long, indurate, pallid, shiny, without keel. Lemma surface unwrinkled. Lemma margins involute. Lemma apex obtuse or acute. Palea involute, indurate.

**Distribution (TDWG). Continent.** Africa.

**Country /Province /State. West-central tropical Africa, Northeast tropical Africa, East tropical Africa.** Burundi, Rwanda, DRC. Ethiopia (inc. Eritrea), Sudan. Kenya, Tanzania, Uganda.

**Setaria lachnea** (Nees) Kunth. *Enum. Pl.* i. 154 (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. **Basionym or Replaced Name:** *Setaria leiantha*, *Panicum lachneum* Nees, *Agrost. Bras.* 248 (1829). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Brazil, Sebastianopolis & Soterpolin: Martius (M holo).

**Illustrations (Books):** S.A.Renvoize, *Gramineas de Bolivia* (1998) (517, Fig. 116), E.G.Nicora, *Los Generos de Gramineas de America Austral* (1987) (488, Fig. 175 as *S. leiantha*), L.B. Smith, D.C. Wasshausen, R.M. Klein *Flora Illustrada Catarinensis Gramineas* (1981–1982) (806, Fig. 166 as *S. leiantha*), F.N.Hepper, *F.W.T.A.* 3(2) (1972) (422, Fig. 177 as *S. leiantha*), A.L.Cabrera, *Flora de la Provincia de Buenos Aires, IV Pt 2 Gramineas* (1970) (446, Fig. 114 as *S. leiantha*), B.Rosengurt, *Gramineas Uruguayas I* (1970) (392, Fig. 174 as *S. leiantha*).

**Derivation** (Clifford & Bostock 2007): Gk. lachnos, wool; L. -ea, pertaining to. Leaf-blades and leaf-sheaths densely hairy.

**Classification.** Subfamily Panicoideae. Tribe: Paniceae. Subtribe SETARIINAE.

**Habit, Vegetative Morphology.** Perennial, caespitose. Stolons absent or present. Butt sheaths glabrous or hirsute. Basal innovations intravaginal. Culms erect or geniculately ascending or leaning, 60–150 cm long. Culm-nodes brown, glabrous. Lateral branches lacking or sparse. Leaf-sheaths antrorsely scabrous, glabrous on surface, outer margin glabrous or hairy. Ligule a ciliate membrane, 1.8–4 mm long. Leaf-blade base broadly rounded. Leaf-blades linear or lanceolate, 12–35 cm long, 10–22 mm wide. Leaf-blade midrib conspicuous. Leaf-blade surface hirsute. Leaf-blade margins scabrous. Leaf-blade apex acute.

**Inflorescence.** Inflorescence a panicle. Panicle spiciform, linear, continuous or interrupted, 7–24 cm long, 0.9–3.5 cm wide. Primary panicle branches accrescent to a central axis, with evident branchlets on axis. Panicle

axis hirsute. Spikelets subtended by an involucre. Fertile spikelets sessile, 1 in the cluster. Involucre composed of bristles, 5–12 mm long. Involucral bristles persistent, 1 per spikelet, flexible, antrorsely scaberulous, glabrous.

**Fertile Spikelets.** Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets ovate, dorsally compressed, 1.9–2.2 mm long, 1–1.3 mm wide, falling entire.

**Glumes.** Glumes shorter than spikelet, thinner than fertile lemma. Lower glume ovate, 0.5 length of spikelet, membranous, without keels, 1(–3) -veined. Lower glume lateral veins absent or obscure. Lower glume apex obtuse or acute. Upper glume ovate, 0.5–0.75 length of spikelet, membranous, without keels, 5–7 -veined. Upper glume apex cuspidate.

**Florets.** Basal sterile florets 1, male, with palea. Lemma of lower sterile floret ovate, 1 length of spikelet, membranous, 5(–7) -veined, cuspidate. Palea of lower sterile floret 0.5–1 length of lemma. Fertile lemma ovate, dorsally compressed, gibbous, 1.9–2.2 mm long, 1–1.3 mm wide, indurate, yellow, without keel. Lemma surface unwrinkled or rugulose. Lemma margins involute. Lemma apex apiculate. Palea involute, indurate.

**Flower and Fruit.** Lodicules 2, cuneate, 0.3 mm long. Anthers 3. Caryopsis with adherent pericarp, ellipsoid, 1.1–1.3 mm long, yellow. Embryo 0.5 length of caryopsis. Hilum punctiform.

**Distribution (TDWG). Continent.** South America.

**Country /Province /State.** Western South America, Brazil, Southern South America. Bolivia, Peru. Brazil Northeast, Brazil South. Argentina Northeast, Argentina Northwest, Paraguay, Uruguay.

**TDWG4.** Minas Gerais, Rio de Janeiro, Espirito Santo, Catarina, Rio Grande do Sul. Catamarca, Jujuy, La Rioja, Salta, Santiago del Estero, San Juan, San Luis, Tucuman. Buenos Aires, Chaco, Cordoba, Corrientes, Distrito Federal, Entre Rios, Formosa, La Pampa, Misiones, Santa Fe.

**Setaria latifolia** (Scribn.) Hermann. Cohn, *Beitr. Biol.Pflanz.* x. 55 (1910).

**Accepted by:** R.J.Soreng et al., *Catalogue of New World 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:** *Chaetochloa latifolia* Scribn., *U.S. Dept. Agric. Bull. Agrost.* 11: 44 (1898). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Mexico, Durango: Palmer 879 (US holo, F, K, MO).

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): *L. latus*, broad; folium, leaf. Leaf-blades broad or relatively broad with respect to related species.

**Classification.** Subfamily Panicoideae. Tribe: Paniceae. Subtribe SETARIINAE.

**Habit, Vegetative Morphology.** Annual. Culms erect or geniculately ascending, 30–40 cm long. Culm-internodes antrorsely scabrous. Culm-nodes pubescent. Leaf-sheaths hispid, with tubercle-based hairs, outer margin hairy. Ligule a fringe of hairs. Collar glabrous. Leaf-blade base cordate. Leaf-blades lanceolate, 6–8 cm long, 10–15 mm wide. Leaf-blade surface scabrous, rough on both sides, pubescent, sparsely hairy, hairy on both sides. Leaf-blade margins cartilaginous, entire or crenate, scabrous. Leaf-blade apex acute.

**Inflorescence.** Inflorescence a panicle. Panicle spiciform, linear, loose, tapering above, 5–10 cm long. Primary panicle branches 0.2–0.5 cm long, sterile at the tips. Panicle axis angular, scabrous, with scattered hairs. Panicle branches scabrous. Spikelets subtended by an involucre. Fertile spikelets pedicelled, 1 in the cluster. Involucre composed of bristles, 5–18 mm long. Involucral bristles persistent, 1 per spikelet, flexible, antrorsely scaberulous, glabrous. 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 obovate, dorsally compressed, compressed slightly, 2 mm long, falling entire.

**Glumes.** Glumes shorter than spikelet, thinner than fertile lemma. Lower glume ovate, 0.8 length of spikelet, membranous, without keels, 5 -veined. Lower glume apex acute. Upper glume ovate, 0.66 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 ovate, 1 length of spikelet, membranous, 5 -veined, acute. Palea of lower sterile floret 1 length of lemma. Fertile lemma ovate, dorsally compressed, gibbous, 2 mm long, indurate, without keel. Lemma surface corrugate. Lemma margins involute. Palea involute, indurate.

**Distribution (TDWG). Continent.** North America.

**Country /Province /State.** Mexico. Northeast Mexico, Southwest Mexico.

**TDWG4.** Durango, Guanajuato. Jalisco, Michoacan, Oaxaca.

**Setaria laxa** Merrill. *Philipp. Journ. Sci. i. Suppl.* 366 (1906).

Regarded by K as a synonym (*S. clivalis*).

**TYPE** from The Philippines. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: Philippine Is., Luzon, Los Benos: Hallier.

**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: Paniceae. Subtribe SETARIINAE.

**Habit, Vegetative Morphology.** Annual, caespitose. Culms decumbent, 25–125 cm long, rooting from lower nodes. Culm-internodes distally glabrous. Leaf-sheaths outer margin glabrous or hairy. Leaf-sheath oral hairs ciliate. Ligule a ciliolate membrane. Leaf-blades 4–25 cm long, 3–9 mm wide. Leaf-blade surface pilose, hairy on both sides, with tubercle-based hairs.

**Inflorescence.** Inflorescence a panicle. Panicle open, ovate, 3–40 cm long. Primary panicle branches 1–15 cm long. Panicle branches scabrous. Spikelets subtended by an involucre. Fertile spikelets pedicelled, 2 in the cluster. Involucre composed of bristles, free throughout, 3–12 mm long. Involucral bristles persistent, few, in one whorl, 1 in principal whorl, flexible, antrorsely scaberulous, glabrous. 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, 2.5–2.75 mm long, falling entire.

**Glumes.** Glumes shorter than spikelet, thinner than fertile lemma. Lower glume ovate, 0.5–1 mm long, 0.2–0.33 length of spikelet, membranous, without keels, 3–5 -veined. Lower glume apex obtuse. Upper glume ovate, 1.5 mm long, 0.5–0.6 length of spikelet, membranous, without keels, 6–7 -veined. Upper glume apex obtuse.

**Florets.** Basal sterile florets 1, barren, with palea. Lemma of lower sterile floret ovate, 1 length of spikelet, membranous, 5 -veined. Fertile lemma elliptic, dorsally compressed, gibbous, 2–2.25 mm long, indurate, without keel. Lemma surface rugulose. Lemma margins involute. Palea involute, indurate.

**Flower and Fruit.** Anthers 3. Stigmas purple. Caryopsis with adherent pericarp, 1.5 mm long.

**Distribution (TDWG). Continent.** Tropical Asia.

**Country /Province /State. Malesia.** Java, Lesser Sunda Is, Sumatra, Philippines.

**Setaria leucopila** (Scribn. & Merr.) K. Schum. *Just's Jahresb.* xxviii. I. 417 (1902).

**Accepted by:** R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

**TYPE** from Mexico. **Basionym or Replaced Name:** *Chaetochloa leucopila* Scribn. & Merr., *Bull. Div. Agristol., U.S.D.A.* 21: 26, f. 14 (1900). T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: HT: *E. Palmer 1363*, Jun 1880, Mexico: Coahuila: Parras (US-81746).

**Illustrations (Books):** M.E.Barkworth et al, *Flora of North America north of Mexico Vol 25 Poaceae*, part 2 (2003) (549), F.W.Gould, *The Grasses of Texas* (1975) (558, Fig. 291), A.L.Cabrera, *Flora de la Provincia de Buenos Aires, IV Pt 2 Gramineas* (1970) (450, Fig 115), M.N.Correa, *Flora Patagonica Parte III, Gramineae* (1978) (548, Fig. 370).

**Illustrations (Journals):** *Darwiniana* (37: 71, fig.8 (1999)).

**Derivation** (Clifford & Bostock 2007): Gk. leukos, white; pilos, felt. Plant invested with short white hairs.

**Classification.** Subfamily Panicoideae. Tribe: Paniceae. Subtribe SETARIINAE.

**Habit, Vegetative Morphology.** Perennial, caespitose. Culms erect or geniculately ascending, 20–100 cm long. Culm-internodes elliptical in section, distally glabrous or pubescent. Lateral branches lacking or sparse. Leaf-sheaths keeled, glabrous on surface, outer margin hairy. Ligule a fringe of hairs, 1–2.5 mm long. Collar glabrous or pubescent or pilose. Leaf-blades flat or conduplicate, 8–25 cm long, 2–5 mm wide. Leaf-blade surface scabrous, rough adaxially or on both sides. Leaf-blade apex acuminate.

**Inflorescence.** Inflorescence a panicle. Panicle spiciform, linear, continuous or interrupted, dense, tapering above, 8–15 cm long, 1–1.5 cm wide. Primary panicle branches sterile at the tips. Panicle axis angular, scabrous, glabrous or villous. Spikelets subtended by an involucre. Fertile spikelets pedicelled, 1 in the cluster. Involucre composed of bristles, 4–15 mm long. Involucral bristles persistent, 1 per spikelet, flexible, antrorsely scaberulous, glabrous. 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 ovate, dorsally compressed, 2.2–2.5 mm long, falling entire.

**Glumes.** Glumes shorter than spikelet or 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, 0.75–1 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 ovate, 1 length of spikelet, membranous, 5 -veined, acute. Palea of lower sterile floret 0.5–0.75 length of lemma. Fertile lemma ovate, dorsally compressed, gibbous, 2.2–2.5 mm long, indurate, without keel. Lemma surface rugulose. Lemma margins involute. Lemma apex apiculate. Palea involute, indurate.

**Distribution (TDWG). Continent.** North America, South America.

**Country /Province /State.** Northwest USA, North-central USA, Southwestern USA, South-central USA, Mexico. Colorado. Oklahoma. Arizona. New Mexico, Texas. Central Mexico, Northeast Mexico, Northwest Mexico, Southwest Mexico. **Caribbean, Southern South America.** Argentina Northeast, Uruguay.

**TDWG4.** Catamarca, La Rioja, Mendoza, San Juan, San Luis. Buenos Aires, Cordoba, La Pampa. Río Negro. Puebla. Coahuila, Chihuahua, Guanajuato, Neuvo Leon, Queretaro, San Luis Potosi, Tamaulipas, Zacatecas. Baja California, Sonora. Oaxaca.

**Setaria liebmannii** Fourn. *Mex. Pl. Enum., Gram.* 44. (1886).

**Accepted by:** R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

**TYPE** from Mexico. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Mexico, Manantial: Liebmann 389 (C holo).

**Illustrations (Books):** M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 25 *Poaceae*, part 2 (2003) (553).

**Derivation** (Clifford & Bostock 2007): in honor of Frederik Michael Leibmann (1813–56), Danish botanist.

**Classification.** Subfamily Panicoideae. Tribe: Paniceae. Subtribe SETARIINAE.

**Habit, Vegetative Morphology.** Annual. Culms erect, 30–90 cm long. Culm-nodes glabrous or pubescent. Leaf-sheaths glabrous on surface, outer margin hairy. Ligule a fringe of hairs. Leaf-blades lanceolate, 10–20 cm long, 10–20 mm wide, yellowish green. Leaf-blade surface scabrous, rough on both sides. Leaf-blade margins cartilaginous, scabrous. Leaf-blade apex acuminate.

**Inflorescence.** Inflorescence a panicle. Peduncle scaberulous above. Panicle spiciform, linear, loose, tapering above or tapering below, straight or curved, 10–25 cm long. Primary panicle branches ascending, 0.5–2.5 cm long, sterile at the tips. Panicle axis angular, scabrous. Spikelets subtended by an involucre. Fertile spikelets pedicelled, 1 in the cluster. Involucre composed of bristles, 7–15 mm long. Involucral bristles persistent, 1 per spikelet, flexible, antrorsely scaberulous, glabrous. 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 ovate, dorsally compressed, 2 mm long, falling entire.

**Glumes.** Glumes shorter than spikelet, thinner than fertile lemma. Lower glume ovate, 0.33 length of spikelet, membranous, without keels, 3 -veined. Lower glume apex acute. Upper glume ovate, 0.9 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 ovate, 1 length of spikelet, membranous, 5 -veined, acute. Fertile lemma ovate, dorsally compressed, gibbous, 2 mm long, indurate, without keel. Lemma surface corrugate. Lemma margins involute. Palea involute, indurate. Palea surface rugose.

**Distribution (TDWG). Continent.** North America, South America.

**Country /Province /State.** Southwestern USA, Mexico. Central Mexico, Northeast Mexico, Gulf (Mexico), Northwest Mexico, Southwest Mexico, Southeast Mexico. **Mesoamerica, Western South America.** Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua. Colombia.

**TDWG4.** Mexico State, Morelos, Puebla. Chihuahua, Guanajuato. Veracruz. Baja California, Baja California Sur, Sinaloa, Sonora. Colima, Guerrero, Jalisco, Michoacan, Nayarit, Oaxaca. Chiapas.

**Setaria limensis** O. Tovar. *Publ. Mus. Hist. Nat. Javier Prado*, B, 32: 9 (1984).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online.

**TYPE** from Peru. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Peru, Oscolla to Surco: Ferreyra 9154 (US holo, MO).

**Illustrations (Journals):** *Ruizia* (13:391 Fig 52a-c (1993)).

**Derivation** (Clifford & Bostock 2007): *L. -ensis*, denoting origin. From Lima, Peru.

**Classification.** Subfamily Panicoideae. Tribe: Paniceae. Subtribe SETARIINAE.

**Habit, Vegetative Morphology.** Annual. Culms erect, 40–80 cm long. Culm-nodes glabrous. Leaves mostly basal. Leaf-sheaths keeled, outer margin hairy. Ligule a ciliate membrane. Leaf-blades 10–20 cm long, 5–8 mm wide. Leaf-blade surface glabrous.

**Inflorescence.** Inflorescence a panicle. Panicle spiciform, linear, loose, 10–15 cm long, 1 cm wide. Primary panicle branches sterile at the tips. Panicle axis villous. Spikelets subtended by an involucre. Fertile spikelets pedicelled, 1 in the cluster. Involucre composed of bristles, 6 mm long. Involucral bristles persistent, 1 per spikelet, antrorsely scaberulous, glabrous. 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 orbicular, dorsally compressed, gibbous, 3–3.2 mm long, falling entire.

**Glumes.** Glumes shorter than spikelet, thinner than fertile lemma. Lower glume ovate, 1.6 mm long, 0.33–0.5 length of spikelet, membranous, without keels, 3 -veined. Lower glume apex acute. Upper glume ovate, 2.8 mm long, 0.9 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 ovate, 1 length of spikelet, membranous, 5 -veined, acute. Palea of lower sterile floret 2 mm long. Fertile lemma elliptic, dorsally compressed, gibbous, 3–3.2 mm long, indurate, without keel. Lemma surface rugose. Lemma margins involute. Palea involute, indurate.

**Flower and Fruit.** Caryopsis with adherent pericarp, orbicular, 2 mm long.

**Distribution (TDWG). Continent.** South America.

**Country /Province /State.** Western South America. Ecuador, Peru.

**Setaria lindenbergiana** (Nees) Stapf. Dyer, *Fl. Cap.* vii. 422. (1899).

**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 lindenbergianum* Nees, *Fl. Afr. Austr.* 47 (1841). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: South Africa, Glenfilling: Drege (K isosyn) ; South Africa, Katrivierspoort: Drege sn (K isosyn) ; South Africa, Grahamstown to Mt. Bothas: Ecklon ; South Africa, Swart Kei R.: Ecklon sn.

**Illustrations (Books):** G.V.Pope et al., *Flora Zambesiaca* 10 (3(1989):108, t. 28), G.E.Gibbs Russell et al, *Grasses of Southern Africa* (1990) (296, Fig 190).

**Images:** F.van Oudtshoorn, *Guide to Grasses of Southern Africa* (1999).

**Derivation** (Clifford & Bostock 2007): L. -ana, indicating connection. In honor of Harold Lindberg (1871–1969) Finnish botanist.

**Classification.** Subfamily Panicoideae. Tribe: Paniceae. Subtribe SETARIINAE.

**Habit, Vegetative Morphology.** Perennial, caespitose. Butt sheaths persistent and investing base of culm, with compacted dead sheaths. Culms 30–120 cm long. Culm-nodes glabrous or pubescent. Ligule a fringe of hairs. Leaf-blade base without a false petiole or with a false petiole. Leaf-blades flat or plicate (when young and towards base), 10–30 cm long, 1–10(–15) mm wide. Leaf-blade surface scabrous, rough adaxially. Leaf-blade apex attenuate, filiform.

**Inflorescence.** Inflorescence a panicle. Panicle contracted, linear or lanceolate, 5–20 cm long, contracted about primary branches. Primary panicle branches bearing spikelets almost to the base, sterile at the tips. Panicle branches pubescent or pilose. Spikelets subtended by an involucre. Fertile spikelets sessile, 1 in the cluster. Involucre composed of bristles, 2–10 mm long. Involucral bristles persistent, 1 in principal whorl, flexible, antrorsely scaberulous, 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 or ovate, dorsally compressed, 2–3 mm long, falling entire.

**Glumes.** Glumes reaching apex of florets or shorter than spikelet, thinner than fertile lemma. Lower glume ovate, 0.25–0.5 length of spikelet, membranous, without keels, 3–5 -veined. Lower glume apex obtuse. Upper glume ovate, 0.5–1 length of spikelet, membranous, without keels, 7–9 -veined. Upper glume apex acute.

**Florets.** Basal sterile florets 1, male, with palea. Lemma of lower sterile floret ovate, 1 length of spikelet, membranous, 7 -veined, acute. Fertile lemma ovate, dorsally compressed, gibbous, 2–3 mm long, indurate, pallid, without keel. Lemma surface rugose. Lemma margins involute. Palea involute, indurate. Palea surface rugose.

**Distribution (TDWG). Continent.** Africa.

**Country /Province /State.** West-central tropical Africa, Northeast tropical Africa, East tropical Africa, South tropical Africa, Southern Africa. DRC. Ethiopia (inc. Eritrea). Tanzania. Angola, Zambia, Zimbabwe. Botswana, Limpopo, North-West, Gauteng, Mpumalanga, Free State, Northern Cape, Eastern Cape.

**Setaria longipila** Fourn. *Mex. Pl. Enum., Gram.* 47 (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>: *vide* TROPICOS and Kew Synonymy Database: Mexico: Jurgensen 722.

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): *L. longus*, long; pilus, a hair. Plant with long hairs investing all or any of its parts.

**Classification.** Subfamily Panicoideae. Tribe: Paniceae. Subtribe SETARIINAE.

**Habit, Vegetative Morphology.** Annual, caespitose. Culms erect, 30–50 cm long. Culm-nodes pubescent. Leaf-sheaths scaberulous, outer margin hairy. Ligule a fringe of hairs, 2–3 mm long. Leaf-blades 5–10 cm long, 6–12 mm wide. Leaf-blade surface scabrous, rough on both sides. Leaf-blade apex abruptly acute.

**Inflorescence.** Inflorescence a panicle. Peduncle smooth or scaberulous above, pilose above. Panicle contracted, linear, 4–12 cm long. Primary panicle branches sterile at the tips. Panicle axis angular, villous. Panicle branches scabrous, pilose. Spikelets subtended by an involucre. Fertile spikelets pedicelled, 1 in the cluster. Involucre composed of bristles, 5–10 mm long. Involucral bristles persistent, 1–2 per spikelet, flexible, antrorsely scaberulous, glabrous. 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 ovate, dorsally compressed, compressed slightly, 2 mm long, falling entire.

**Glumes.** Glumes shorter than spikelet, thinner than fertile lemma. Lower glume ovate, 0.33 length of spikelet, membranous, without keels, 3 -veined. Lower glume apex acute. Upper glume ovate, 0.9 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 ovate, 1 length of spikelet, membranous, 5 -veined, acute. Palea of lower sterile floret 1 length of lemma. Fertile lemma ovate, dorsally compressed, gibbous, 2 mm long, indurate, without keel. Lemma surface corrugate. Lemma margins involute. Palea involute, indurate.

**Distribution (TDWG). Continent.** North America, South America.

**Country /Province /State.** Mexico. Southwest Mexico, Southeast Mexico. **Mesoamerica.** El Salvador, Guatemala, Honduras, Nicaragua.

**TDWG4.** Jalisco, Michoacan, Nayarit, Oaxaca. Chiapas.

**Setaria longiseta** Beauv. *Fl. Owar.* ii. 81. t. 110. (1819).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

**TYPE** from Nigeria. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: Nigeria: Palisot de Beauvois (G holo).

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): *L. longus*, long; seta, bristle. Glumes or lemmas long awned.

**Classification.** Subfamily Panicoideae. Tribe: Paniceae. Subtribe SETARIINAE.

**Habit, Vegetative Morphology.** Perennial, caespitose. Culms geniculately ascending, 50–150 cm long. Culm-nodes glabrous. Ligule a fringe of hairs. Leaf-blades 7–40 cm long, 1–6(–10) mm wide. Leaf-blade apex attenuate, filiform.

**Inflorescence.** Inflorescence a panicle. Panicle open, lanceolate or ovate, 7–25 cm long, contracted about primary branches. Primary panicle branches simple, bearing spikelets almost to the base, sterile at the tips. Panicle branches scaberulous, with scattered hairs. Spikelets subtended by an involucre. Fertile spikelets sessile, 1 in the cluster. Involucre composed of bristles, 2–12 mm long. Involucral bristles persistent, 1 in principal whorl, flexible, smooth or antrorsely scaberulous, glabrous.

**Fertile Spikelets.** Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets elliptic, dorsally compressed, gibbous, acute, 1.5–2.2 mm long, falling entire.

**Glumes.** Glumes shorter than spikelet, thinner than fertile lemma. Lower glume ovate, 0.25–0.33 length of spikelet, membranous, without keels, 3–5 -veined. Lower glume apex acute. Upper glume ovate, 0.66–0.75 length of spikelet, membranous, without keels, 5–7 -veined. Upper glume apex acute.

**Florets.** Basal sterile florets 1, male, with palea. Lemma of lower sterile floret ovate, 1 length of spikelet, membranous, 5–7 -veined, sulcate, acute. Fertile lemma ovate, dorsally compressed, gibbous, 1.5–2 mm long,

indurate, pallid or light brown, without keel. Lemma surface rugose. Lemma margins involute. Palea involute, indurate.

**Distribution (TDWG). Continent.** Africa.

**Country /Province /State.** West tropical Africa, West-central tropical Africa, Northeast tropical Africa, East tropical Africa, South tropical Africa. Ivory Coast, Nigeria, Sierre Leone, Togo. Rwanda, DRC. Ethiopia (inc. Eritrea), Sudan. Kenya, Tanzania, Uganda. Angola, Malawi, Mozambique, Zambia.

**Setaria macrosperma** (Scribn. & Merr.) K. Schum. *Just's Jahresb.* xxviii. I. 417 (1902).

**Accepted by:** R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

**TYPE** from USA. **Basionym or Replaced Name:** *Chaetochloa macrosperma* Scribn. & Merrill, *U.S. Dept. Agric. Bull. Agrost.* 21: 33 (1900). T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: USA, Jacksonville: Curtiss 3617 (US lecto).

**Illustrations (Books):** M.E.Barkworth et al, *Flora of North America north of Mexico Vol 25 Poaceae*, part 2 (2003) (551), A.S.Hitchcock, *Manual of the Grasses of the West Indies* (1936) (350, Fig. 321).

**Derivation** (Clifford & Bostock 2007): Gk. makros, large; sperma, seed. Grains large.

**Classification.** Subfamily Panicoideae. Tribe: Paniceae. Subtribe SETARIINAE.

**Habit, Vegetative Morphology.** Perennial, short-lived. Culms erect or geniculately ascending, robust, 100–150 cm long, without nodal roots or rooting from lower nodes. Culm-internodes distally glabrous. Culm-nodes glabrous. Leaf-sheaths keeled, glabrous on surface, outer margin hairy. Ligule a fringe of hairs, 1–3 mm long. Collar pubescent. Leaf-blades flat or conduplicate, 35–50 cm long, 10–20 mm wide. Leaf-blade surface scabrous, rough on both sides, glabrous.

**Inflorescence.** Inflorescence a panicle. Panicle spiciform, lanceolate, loose, 10–25 cm long. Primary panicle branches ascending, 1.5–3 cm long, sterile at the tips. Panicle axis angular, scabrous, villous. Spikelets subtended by an involucre. Fertile spikelets pedicelled, 1 in the cluster. Involucre composed of bristles, 15–30 mm long. Involucral bristles persistent, 1–2 per spikelet, flexible, antrorsely scaberulous, glabrous. Pedicels present, oblong.

**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, 3–3.2 mm long, falling entire.

**Glumes.** Glumes shorter than spikelet, thinner than fertile lemma. Lower glume ovate, 0.33 length of spikelet, membranous, without keels, 3 -veined. Lower glume apex acute, mucronate. Upper glume ovate, 0.75 length of spikelet, membranous, without keels, 3–7 -veined. Upper glume apex acute, mucronate.

**Florets.** Basal sterile florets 1, barren, with palea. Lemma of lower sterile floret ovate, 1 length of spikelet, membranous, 5 -veined, acute. Palea of lower sterile floret 0.5 length of lemma. Fertile lemma ovate, dorsally compressed, gibbous, 3 mm long, indurate, without keel. Lemma surface rugulose. Lemma margins involute. Palea involute, indurate.

**Distribution (TDWG). Continent.** North America, South America.

**Country /Province /State.** Southeastern USA, Mexico. Florida, Georgia, South Carolina. Northeast Mexico. **Caribbean.** Bahamas.

Durango, Neuvo Leon, Tamaulipas.

**Setaria macrostachya** H. B. & K. *Nov. Gen. et Sp.* i. 110. (1815).

**Accepted by:** R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

**TYPE** from Mexico. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: Mexico, Salamanca to Zelaya: Hunnoldt & Bonpland 4202 (P holotype, K).

**Recent Synonyms:** *Setaria inopinata* L. Toolin, *Novon* 10(4): 415 (2000).

**Illustrations (Books):** M.E.Barkworth et al, *Flora of North America north of Mexico Vol 25 Poaceae*, part 2 (2003) (549), A.S.Hitchcock, *Manual of the Grasses of the West Indies* (1936) (346, Fig. 317).

**Illustrations (Journals):** *Darwiniana* (37: 75, Fig.9 (1999)), *Novon* (10: 416, Fig.1 (2000) as *S. inopinata*).

**Derivation** (Clifford & Bostock 2007): Gk. makros, large; stachys, ear of corn. Inflorescence large.

**Classification.** Subfamily Panicoideae. Tribe: Paniceae. Subtribe SETARIINAE.

**Habit, Vegetative Morphology.** Perennial. Culms erect or geniculately ascending, robust, 60–120 cm long. Culm-internodes elliptical in section. Lateral branches sparse. Leaf-sheaths keeled, glabrous on surface, outer margin hairy. Leaf-sheath oral hairs lacking or ciliate. Ligule a fringe of hairs, 2–4 mm long. Collar glabrous. Leaf-blades 15–20 cm long, 7–15 mm wide. Leaf-blade surface scabrous, rough on both sides.

**Inflorescence.** Inflorescence a panicle. Peduncle antrorsely scabrous above. Panicle spiciform, linear, interrupted, loose, truncate or rounded at the ends, 10–30 cm long, 1–2 cm wide. Primary panicle branches sterile at the tips. Panicle axis angular, scabrous, puberulous. Spikelets subtended by an involucre. Fertile spikelets pedicelled, 1 in the cluster. Involucre composed of bristles, 10–20 mm long. Involucral bristles persistent, 1 per spikelet, flexible, antrorsely scaberulous, glabrous. 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 ovate, dorsally compressed, gibbous, 2–2.3 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, 3–5 -veined. Lower glume apex acute. Upper glume ovate, 0.66–0.75 length of spikelet, membranous, without keels, 5–7 -veined. Upper glume apex acute.

**Florets.** Basal sterile florets 1, barren, with palea. Lemma of lower sterile floret ovate, 1 length of spikelet, membranous, 5 -veined, acute. Palea of lower sterile floret 1 length of lemma. Fertile lemma ovate, dorsally compressed, gibbous, 2–2.3 mm long, indurate, without keel. Lemma surface rugose. Lemma margins involute. Palea involute, indurate.

**Distribution (TDWG). Continent.** North America, South America.

**Country /Province /State.** Northwest USA, Southwestern USA, 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. El Salvador, Nicaragua. Cuba, Dominican Republic, Haiti, Jamaica, Puerto Rico. Venezuela. Bolivia, Colombia, Ecuador, Peru. Brazil Northeast, Brazil Southeast. Argentina Northwest, Paraguay.

**TDWG4.** Catamarca, Jujuy, La Rioja, Mendoza, Salta, Santiago del Estero, San Juan, San Luis, Tucuman. Chaco, Cordoba, Corrientes, Formosa, Misiones, Santa Fe. Mexico State, Morelos, Puebla. Aguascalientes, Coahuila, Chihuahua, Durango, Guanajuato, Hidalgo, Neuvo Leon, Queretaro, San Luis Potosi, Tamaulipas, Zacatecas. Veracruz. Baja California, Baja California Sur, Sonora. Nayarit, Oaxaca. Chiapas.

**Setaria madecassa** A.Camus. *Not. Syst.*, ed. Humbert, xii. 152 (1946).

**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, Madirovalo: Perrier 11197 ; Madagascar, Menavava: Perrier 899 ; Madagascar, Menavava: Perrier 899bis.

**Illustrations (Books):** J.Bosser, *Graminees des Paturage et des Cultures a Madagascar* (1969) (361, Fig 136).

**Derivation** (Clifford & Bostock 2007): from Madecassa, Madagascar.

**Classification.** Subfamily Panicoideae. Tribe: Paniceae. Subtribe SETARIINAE.

**Habit, Vegetative Morphology.** Annual, caespitose. Culms geniculately ascending, 40–70 cm long. Culm-internodes distally glabrous. Lateral branches lacking or sparse. Ligule a fringe of hairs. Leaf-blades 6–20 cm long, 2–6 mm wide. Leaf-blade surface hirsute, densely hairy.

**Inflorescence.** Inflorescence a panicle. Panicle open, lanceolate, 5–15 cm long. Primary panicle branches ascending, simple, 1.5–2.5 cm long. Spikelets subtended by an involucre. Fertile spikelets pedicelled, 1 in the cluster. Involucre composed of bristles, 5–12 mm long. Involucral bristles persistent, 1 in principal whorl, 1 per spikelet, flexible, glabrous. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets elliptic or ovate, dorsally compressed, gibbous, 2 mm long, falling entire.

**Glumes.** Glumes shorter than spikelet, thinner than fertile lemma. Lower glume orbicular, 0.25–0.33 length of spikelet, membranous, without keels, 3 -veined. Lower glume apex truncate. Upper glume ovate, 0.75 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 ovate, 1 length of spikelet, membranous, 5 -veined, concave across back, obtuse. Fertile lemma ovate, dorsally compressed, gibbous, 1.7 mm long, indurate, without keel. Lemma surface rugulose. Lemma margins involute. Palea involute, indurate.

**Distribution (TDWG). Continent.** Africa.

**Country /Province /State.** Western Indian ocean. Madagascar.

**Setaria magna** Griseb. *Fl. Brit. W. Ind.* 554. (1864).

**Accepted by:** R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

**TYPE** from Jamaica. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Jamaica: Purdie (GOET holo).

**Illustrations (Books):** M.E.Barkworth et al, *Flora of North America north of Mexico Vol 25 Poaceae*, part 2 (2003) (555), A.S.Hitchcock, *Manual of the Grasses of the West Indies* (1936) (345, Fig. 315), S.A.Renvoize, *Gramineas de Bolivia* (1998) (519, Fig 117).

**Illustrations (Journals):** *Darwiniana* (37: 77, Fig.10 (1999)).

**Derivation** (Clifford & Bostock 2007): L. large. Plants large and generally with tall culms.

**Classification.** Subfamily Panicoideae. Tribe: Paniceae. Subtribe SETARIINAE.

**Habit, Vegetative Morphology.** Annual. Culms erect or geniculately ascending, robust, 200–400 cm long, 10–20 mm diam. Culm-nodes glabrous. Leaf-sheaths smooth or scaberulous, outer margin hairy. Ligule a fringe of hairs, 1–2 mm long. Leaf-blades 30–60 cm long, 20–35 mm wide. Leaf-blade surface scabrous. Leaf-blade margins cartilaginous, scabrous.

**Inflorescence.** Inflorescence a panicle. Peduncle scaberulous above. Panicle spiciform, linear, dense, 20–45 cm long, 1.5–3 cm wide. Primary panicle branches 0.5–1.5 cm long, sterile at the tips. Panicle axis angular, scabrous, villous. Spikelets subtended by an involucre. Fertile spikelets pedicelled, 1 in the cluster. Involucre composed of bristles, 10–20 mm long. Involucral bristles persistent, 1–2 per spikelet, flexible, antrorsely scaberulous, glabrous. 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 elliptic, dorsally compressed, obtuse, 2 mm long, falling entire, readily shedding fertile florets.

**Glumes.** Glumes reaching apex of florets, thinner than fertile lemma. Lower glume ovate, 0.33 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 or barren, with palea. Lemma of lower sterile floret ovate, 1 length of spikelet, membranous, 5–7 -veined, acute. Palea of lower sterile floret 1 length of lemma. Fertile lemma ovate, dorsally compressed, gibbous, 1.8 mm long, indurate, light brown, shiny, without keel. Lemma surface smooth. Lemma margins involute. Palea involute, indurate.

**Distribution (TDWG), Continent.** North America, South America.

**Country /Province /State.** **South-central USA, Southeastern USA, Mexico.** New Mexico, Texas. Florida, Georgia, Louisiana, North Carolina, South Carolina, Virginia. Northeast Mexico, Southeast Mexico. **Mesoamerica, Caribbean, Northern South America, Western South America, Brazil, Southern South America.** Costa Rica. Bermuda, Cuba, Jamaica, Windward Islands, Puerto Rico. French Guiana, Surinam. Bolivia, Colombia. Brazil South. Argentina Northwest.

**TDWG4.** Minas Gerais, Rio de Janeiro, Espirito Santo. Jujuy, Salta. Chaco, Corrientes, Formosa. Coahuila, Tamaulipas. Campeche, Quintana Roo, Yucatan.

**Setaria media** Veldk. *Blumea* 39:378 (1994).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online (as *Paspalidium*).

**TYPE** from New Guinea. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *P. van Royen* 4592, 04 Aug 1954, Indonesia: New Guinea, Irian Jaya, Merauke, 5 m (L).

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): L. middle. Characters midway between two or more other species.

**Classification.** Subfamily Panicoideae. Tribe: Paniceae. Subtribe SETARIINAE.

**Habit, Vegetative Morphology.** Perennial, caespitose. Rhizomes elongated, spongy. Basal innovations extravaginal. Culms prostrate, 90–200 cm long, spongy, rooting from lower nodes. Ligule a ciliate membrane. Leaf-blade base truncate. Leaf-blades flat or conduplicate, 13–25 cm long, 4.5–8 mm wide. Leaf-blade surface glabrous. Leaf-blade margins glabrous. Leaf-blade apex acute.

**Inflorescence.** Inflorescence composed of racemes. Racemes 14–24, borne along a central axis, unilateral, 1–6 cm long. Central inflorescence axis 16–36 cm long, flattened, glabrous. Rhachis narrowly winged, angular, ciliate on margins, terminating in a barren extension, extension subulate. Spikelet packing abaxial, regular, 2 -rowed. Spikelets appressed, solitary. Fertile spikelets sessile.

**Fertile Spikelets.** Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets elliptic, dorsally compressed, turgidly plano-convex, 2.8–3.2 mm long, falling entire.

**Glumes.** Glumes dissimilar, shorter than spikelet, thinner than fertile lemma. Lower glume oblate, clasping, 0.5–1.1 mm long, 0.2–0.33 length of spikelet, membranous, without keels, 0 -veined. Lower glume lateral veins

absent. Lower glume apex truncate. Upper glume elliptic, 1.5–2.9 mm long, 0.5–0.9 length of spikelet, membranous, without keels, 3–5 -veined. Upper glume apex truncate or obtuse.

**Florets.** Basal sterile florets 1, male, with palea. Lemma of lower sterile floret similar to upper glume, elliptic, 0.8–1 length of spikelet, membranous, 3–5 -veined, obtuse or acute. Fertile lemma elliptic, 2.5–3 mm long, indurate, without keel. Lemma surface rugulose. Lemma margins involute. Palea indurate.

**Flower and Fruit.** Anthers 3, 1.3–1.9 mm long.

**Distribution (TDWG). Continent.** Tropical Asia.

**Country /Province /State. Papuaasia.** New Guinea West Papua (Irian Jaya). New Guinea.

### **Setaria megaphylla** (Steud) Th. Dur. & Schinz. *Consp. Fl. Afr.* v. 773 (1895).

**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 Gabon. **Basionym or Replaced Name:** *Setaria plicatilis*, *Panicum megaphyllum* Steud., *Syn. Pl. Gram.* 53 (1854). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Gabon: Jardin (P holo).

**Recent Synonyms:** *Setaria chevalieri* Stapf & C. E. Hubbard in Prain, *Fl. Trop. Afr.* 9: 842, (1930).

**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 (282, Pl. 45), L.K.A. Chippindall, *Grasses and Pastures of South Africa* (1955) (341&342, Fig 296&297 & as *S. chevalieri*), J.Bosser, *Graminees des Paturage et des Cultures a Madagascar* (1969) (287, Fig 106 as *S. chevalieri*), S.Phillips, *Poaceae* (Gramineae) in I.Hedberg & S.Edwards, *Flora of Ethiopia and Eritrea* (1995) (239, Fig 96), M.E.Barkworth et al, *Flora of North America north of Mexico Vol 25 Poaceae*, part 2 (2003) (544), S.A.Renvoize, *The Grasses of Bahia*, 1984 (100, Fig. 35).

**Images:** F.van Oudtshoorn, *Guide to Grasses of Southern Africa* (1999).

**Derivation** (Clifford & Bostock 2007): Gk. megas, large; phyllon, leaf. Leaf-blades large.

**Classification.** Subfamily Panicoideae. Tribe: Paniceae. Subtribe SETARIINAE.

**Habit, Vegetative Morphology.** Perennial, caespitose. Culms erect, robust, 100–300 cm long, 5–10 mm diam. Ligule a fringe of hairs. Leaf-blade base without a false petiole or with a false petiole. Leaf-blades linear or lanceolate, plicate, 15–80 cm long, 10–110 mm wide.

**Inflorescence.** Inflorescence a panicle. Panicle open, linear or lanceolate (pagoda-like), 20–60 cm long, contracted about primary branches. Primary panicle branches ascending or spreading, bearing spikelets almost to the base, sterile at the tips. Panicle branches stiff or flexible (the lower sometimes), pubescent. Spikelets subtended by an involucre. Fertile spikelets sessile, 1 in the cluster. Involucre composed of bristles, 3–10 mm long. Involucral bristles persistent, 1 in principal whorl, flexible, antrorsely scaberulous, glabrous.

**Fertile Spikelets.** Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets elliptic or ovate, dorsally compressed, acute, 2.2–3(–3.5) mm long, falling entire.

**Glumes.** Glumes shorter than spikelet, thinner than fertile lemma. Lower glume ovate or orbicular, 0.33–0.5 length of spikelet, membranous, without keels, 3 -veined. Lower glume apex truncate or obtuse. Upper glume elliptic or oblong, 0.66–0.75 length of spikelet, membranous, without keels, 5 -veined. Upper glume apex acute.

**Florets.** Basal sterile florets 1, barren, with palea or without significant palea. Lemma of lower sterile floret ovate, 1 length of fertile lemma, 1 length of spikelet, membranous, 5 -veined, acuminate. Palea of lower sterile floret 1 length of lemma. Fertile lemma ovate, dorsally compressed, gibbous, 2–3 mm long, indurate, dark brown, shiny, without keel. Lemma surface unwrinkled. Lemma margins involute. Lemma apex apiculate. Palea involute, indurate.

**Flower and Fruit.** *N* = 16 (1 ref TROPICOS), or 27 (1 ref TROPICOS).

**Distribution (TDWG). Continent.** Africa, Temperate Asia, Tropical Asia, South America.

**Country /Province /State. Northern Africa, Macaronesia, West tropical Africa, West-central tropical Africa, Northeast tropical Africa, East tropical Africa, South tropical Africa, Southern Africa, Middle Atlantic ocean, Western Indian ocean.** Egypt. Canary Is. Gambia, Guinea-Bissau, Guinea, Ivory Coast, Liberia, Nigeria, Sierre Leone, Togo. Cameroon, Gabon, Annobon, Principe & Sao Tome, Bioko, Rwanda, DRC. Eritrea, Ethiopia (inc. Eritrea), Somalia, Sudan. Kenya, Tanzania, Uganda. Angola, Malawi, Mozambique, Zambia, Zimbabwe. Limpopo, North-West, Gauteng, Mpumalanga, Swaziland, Kwazulu-Natal, Western Cape, Eastern Cape. Ascension. Mauritius, Madagascar. **Arabian Peninsula.** Saudi Arabia, Yemen. **Indian Subcontinent.** India. **Brazil.** Brazil Northeast, Brazil Southeast.

**TDWG4.**

**Setaria membranifolia** Herrm. Rosen, *Beitr. Biol. Pflanzen*, x. 61 (1910).

Regarded by K as a synonym (*S. grisebachii*).

**TYPE** from Ecuador. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: Ecuador, Chanduy: Spruce 6448 (W holo, K).

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): *L. membrana*, membrane; *folium*, leaf. Leaf-blades thin.

**Classification.** Subfamily Panicoideae. Tribe: Paniceae. Subtribe SETARIINAE.

**Habit, Vegetative Morphology.** Annual. Culms 60–100 cm long. Culm-nodes glabrous. Leaf-sheaths glabrous on surface, outer margin hairy. Ligule a ciliate membrane. Leaf-blades lanceolate or elliptic, 7–20 cm long, 10–20 mm wide, membranous, flaccid. Leaf-blade surface glabrous or pilose, sparsely hairy, hairy abaxially.

**Inflorescence.** Inflorescence a panicle. Panicle contracted or spiciform, linear or lanceolate, 8–15 cm long, contracted about primary branches. Primary panicle branches 3–5 cm long, bearing spikelets almost to the base, sterile at the tips. Panicle axis pubescent. Panicle branches glabrous to pilose, terminating in a 2–5 mm long bristle. Spikelets solitary (only branch tips sterile). Fertile spikelets pedicelled. Pedicels present, oblong.

**Fertile Spikelets.** Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets ovate, dorsally compressed, gibbous, 1.5 mm long, falling entire.

**Glumes.** Glumes shorter than spikelet, thinner than fertile lemma. Lower glume ovate, 0.5 length of spikelet, membranous, without keels, 5 -veined. Lower glume apex obtuse. Upper glume elliptic, 0.8 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 ovate, 1 length of spikelet, membranous, 5 -veined, acute. Fertile lemma ovate, dorsally compressed, gibbous, 1.5 mm long, indurate, without keel. Lemma surface rugose. Lemma margins involute. Palea involute, indurate.

**Flower and Fruit.** Caryopsis with adherent pericarp.

**Distribution (TDWG). Continent.** South America.

**Country /Province /State.** Western South America. Ecuador.

**Setaria mendocina** R. Phil. *Anal. Univ. Chil.* xciii. 715. (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 Argentina. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: Argentina, Mendoza: Philippi (SGO holo).

**Illustrations (Books):** M.N.Correa, *Flora Patagonica* Parte III, Gramineae (1978) (*Fl. Pat.* 3: 545, Fig. 369 (1978)).

**Classification.** Subfamily Panicoideae. Tribe: Paniceae. Subtribe SETARIINAE.

**Habit, Vegetative Morphology.** Perennial, caespitose, clumped densely. Culms erect, 30–80 cm long. Culm-nodes bearded. Lateral branches lacking or sparse. Leaf-sheaths outer margin hairy. Leaf-sheath oral hairs ciliate. Ligule a ciliate membrane, 2.5 mm long. Leaf-blades 8–20 cm long, 3–4 mm wide. Leaf-blade surface hispid, hairy on both sides. Leaf-blade apex acute.

**Inflorescence.** Inflorescence a panicle. Peduncle pilose above. Panicle spiciform, linear, interrupted, 5–8 cm long. Primary panicle branches sterile at the tips. Panicle axis angular, pilose. Panicle branches pilose. Spikelets subtended by an involucre. Fertile spikelets pedicelled, 1 in the cluster. Involucre composed of bristles. Involucral bristles persistent, 1–2 per spikelet, flexible, antrorsely scaberulous, glabrous. Pedicels present, oblong, ciliate.

**Fertile Spikelets.** Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets ovate, dorsally compressed, 3–4 mm long, falling entire, readily shedding fertile florets.

**Glumes.** Glumes exceeding apex of florets, thinner than fertile lemma. Lower glume ovate, 0.66 length of spikelet, membranous, without keels, 3 -veined. Lower glume surface pubescent. Lower glume apex acute. Upper glume ovate, 1 length of spikelet, membranous, without keels, 5–7 -veined. Upper glume surface pubescent, hairy at apex. Upper glume margins pubescent. Upper glume apex cuspidate.

**Florets.** Basal sterile florets 1, barren, with palea. Lemma of lower sterile floret ovate, 1 length of spikelet, membranous, 5–7 -veined, scabrous, rough at apex, cuspidate. Fertile lemma ovate, dorsally compressed, 2.5–3.5 mm long, indurate, shiny, without keel. Lemma margins involute. Lemma apex acute, pubescent, mucronate. Palea involute, indurate.

**Flower and Fruit.** Anthers 3, 1 mm long. Caryopsis with adherent pericarp, 1.8 mm long.

**Distribution (TDWG). Continent.** South America.



**Country /Province /State.** Southern South America. Argentina Northeast, Argentina South, Argentina Northwest.

**TDWG4.** Catamarca, Jujuy, La Rioja, Mendoza, San Luis. Buenos Aires, La Pampa. Neuquén, Río Negro.

**Setaria mildbraedii** C.E.Hubb. *Kew Bull.* 1939, 650 (1940).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online.

**TYPE** from Annobon Island. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Annobon Is.: Mildbraed 6716 (K holo).

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): in honor of Gottfried Wilhelm Johannes Mildbraed (1879–1954) German botanist.

**Classification.** Subfamily Panicoideae. Tribe: Paniceae. Subtribe SETARIINAE.

**Habit, Vegetative Morphology.** Perennial, caespitose, clumped loosely. Culms geniculately ascending, 30 cm long, 3–6 -noded. Culm-internodes smooth, distally glabrous. Lateral branches sparse. Leaf-sheaths loose, longer than adjacent culm internode, keeled, striately veined, glabrous on surface. Leaf-sheath oral hairs lacking or ciliate. Ligule a fringe of hairs. Leaf-blades curved or flexuous, 10–20 cm long, 1–2.8 mm wide, flaccid. Leaf-blade surface scaberulous, rough adaxially, glabrous. Leaf-blade apex attenuate, filiform.

**Inflorescence.** Inflorescence a panicle. Panicle contracted, linear, 1–6 cm long, 0.2–0.3 cm wide, contracted about primary branches. Primary panicle branches 1 -nate, 0.4–0.8 cm long, bearing spikelets almost to the base, sterile at the tips. Panicle axis scaberulous. Spikelets subtended by an involucre. Fertile spikelets pedicelled, 1 in the cluster. Involucre composed of bristles, 2.5–4 mm long. Involucral bristles persistent, 1 in principal whorl, 2.5–4 mm long, flexible, antrorsely scaberulous, glabrous. Pedicels present, 0.5 mm long, 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 oblong, dorsally compressed, acute, 1.5–1.7 mm long, falling entire.

**Glumes.** Glumes reaching apex of florets, thinner than fertile lemma. Lower glume ovate, 1 mm long, 0.66 length of spikelet, membranous, without keels, 3–5 -veined. Lower glume apex acute. Upper glume elliptic, 1 length of spikelet, membranous, without keels, 5–7 -veined. Upper glume apex acute.

**Florets.** Basal sterile florets 1, barren, with palea. Lemma of lower sterile floret elliptic, 1 length of spikelet, membranous, obtuse. Palea of lower sterile floret 0.5 mm long. Fertile lemma elliptic or oblong, dorsally compressed, gibbous, 1.3–1.5 mm long, indurate, pallid, without keel. Lemma surface smooth. Lemma margins involute. Lemma apex acute. Palea involute, indurate.

**Flower and Fruit.** Anthers 3, 1 mm long.

**Distribution (TDWG).** Continent. Africa.

**Country /Province /State.** West-central tropical Africa. Annobon, Principe & Sao Tome.

**Setaria montana** Reeder. *Journ. Arn. Arb.* xxix. 304 (1948).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online.

**TYPE** from New Guinea. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: New Guinea, Lake Habbema: Brass 11488 (US holo).

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): L. mons, mountain; -ana, indicating location. Growing on mountains.

**Classification.** Subfamily Panicoideae. Tribe: Paniceae. Subtribe SETARIINAE.

**Habit, Vegetative Morphology.** Annual or perennial. Culms geniculately ascending, 40–80 cm long. Culm-internodes elliptical in section, distally glabrous. Culm-nodes brown or black. Lateral branches sparse. Leaf-sheaths mostly shorter than adjacent culm internode, keeled, glabrous on surface. Ligule a ciliolate membrane, 0.5–0.8 mm long. Leaf-blades flat or involute, 10–20 cm long, 2–5 mm wide. Leaf-blade surface scabrous, rough adaxially, glabrous, hairless except near base.

**Inflorescence.** Inflorescence a panicle. Peduncle pubescent above. Panicle spiciform, linear, 4–10 cm long, 0.5–0.8 cm wide. Primary panicle branches 0.5 cm long. Panicle axis pubescent. Panicle branches pubescent. Spikelets subtended by an involucre. Fertile spikelets pedicelled, 1–2 in the cluster. Involucre composed of bristles, free throughout, 3–5 mm long. Involucral bristles persistent, few, in one whorl, 8–10 in principal whorl, flexible, antrorsely scaberulous, glabrous. 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, 2.6–3 mm long, 1.3 mm wide, falling entire.

**Glumes.** Glumes shorter than spikelet, thinner than fertile lemma. Lower glume ovate, 1.2–1.4 mm long, 0.5 length of spikelet, membranous, without keels, 3–5 -veined. Lower glume lateral veins prominent. Lower glume apex acute. Upper glume ovate, 1.7–2 mm long, 0.66 length of spikelet, membranous, without keels, 5 -veined. Upper glume lateral veins prominent. Upper glume apex obtuse.

**Florets.** Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret ovate, 1 length of spikelet, membranous, 3–5 -veined. Fertile lemma ovate, dorsally compressed, gibbous, 2.4–2.8 mm long, indurate, without keel. Lemma surface rugulose. Lemma margins involute. Lemma apex mucronate. Palea involute, indurate.

**Flower and Fruit.** Anthers 3. Caryopsis with adherent pericarp.

**Distribution (TDWG). Continent.** Tropical Asia.

**Country /Province /State.** Malesia, Papuasia. New Guinea.

**Setaria nicorae** J.F. Pensiero. *Novon*, 7(2): 186 (1997).

**Accepted by:** R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

**TYPE** from Paraguay. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Paraguay, Puerto Casado: Rojas 2359 (SI holo, BAA, LIL, US).

**Illustrations (Journals):** *Novon* (7: 187 Fig. 1 (1997)).

**Derivation** (Clifford & Bostock 2007): in honor of Elisa Gernaela Nicora de Panza (1912-) Argentinian botanist.

**Classification.** Subfamily Panicoideae. Tribe: Paniceae. Subtribe SETARIINAE.

**Habit, Vegetative Morphology.** Perennial, caespitose. Rhizomes short. Basal innovations intravaginal. Culms 30–100 cm long, 1.5–3 mm diam., 2–5 -noded. Culm-internodes smooth, distally glabrous. Culm-nodes glabrous or pubescent. Lateral branches lacking or sparse. Leaf-sheaths without keel, glabrous on surface, outer margin hairy. Leaf-sheath oral hairs lacking or ciliate. Ligule a fringe of hairs, 0.5–1.5 mm long. Leaf-blades linear or lanceolate, 10–30 cm long, 4–12 mm wide, glaucous. Leaf-blade midrib conspicuous. Leaf-blade surface scabrous, rough adaxially, glabrous. Leaf-blade apex acute.

**Inflorescence.** Inflorescence a panicle. Panicle spiciform, linear, 6–23 cm long, 1–1.2 cm wide. Primary panicle branches sterile at the tips. Panicle axis angular, scabrous, glabrous. Spikelets subtended by an involucre. Fertile spikelets pedicelled, 1 in the cluster. Involucre composed of bristles, 4–12 mm long. Involucral bristles persistent, 1 per spikelet, 4–12 mm long, antrorsely scaberulous, glabrous. Pedicels present, oblong.

**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, 2–2.8 mm long, 1–1.2 mm wide, falling entire.

**Glumes.** Glumes shorter than spikelet, thinner than fertile lemma. Lower glume ovate, 0.5 length of spikelet, membranous, without keels, 3–5 -veined. Lower glume apex obtuse or acute. Upper glume ovate, 0.75–0.8 length of spikelet, membranous, without keels, 5–7 -veined. Upper glume apex obtuse.

**Florets.** Basal sterile florets 1, male, with palea. Lemma of lower sterile floret ovate, 1 length of spikelet, membranous, 5–7 -veined, acute. Palea of lower sterile floret 1 length of lemma. Fertile lemma ovate, dorsally compressed, gibbous, 2–2.5 mm long, 1–1.2 mm wide, indurate, yellow, without keel. Lemma surface rugulose. Lemma margins involute. Lemma apex apiculate. Palea involute, indurate.

**Flower and Fruit.** Caryopsis with adherent pericarp, ellipsoid, 1.2–1.3 mm long. Embryo 0.75 length of caryopsis. Hilum punctiform.

**Distribution (TDWG). Continent.** South America.

**Country /Province /State.** Caribbean, Northern South America, Western South America, Brazil, and Southern South America. Venezuela. Bolivia, Colombia, Peru. Brazil West Central. Argentina Northwest, Paraguay.

**TDWG4.** Salta, Santiago del Estero. Chaco, Cordoba, Corrientes, Formosa, Santa Fe.

**Setaria nigrirostris** (Nees) Th. Dur. & Schinz. *Consp. Fl. Afr.* v. 774 (1895).

**Accepted by:** R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

**TYPE** from South Africa. **Basionym or Replaced Name:** *Panicum nigrirostre* Nees, *Fl. Afr. Austr.* 55 (1841). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: South Africa, Omsamwubo: Drege.

**Illustrations (Books):** L.K.A. Chippindall, *Grasses and Pastures of South Africa* (1955) (345, Fig 300).

**Images:** F.van Oudtshoorn, *Guide to Grasses of Southern Africa* (1999).

**Derivation** (Clifford & Bostock 2007): *L. niger*, black; rostrum, beak. Fertile lemma has a dark tip.

**Classification.** Subfamily Panicoideae. Tribe: Paniceae. Subtribe SETARIINAE.

**Habit, Vegetative Morphology.** Perennial, caespitose. Rhizomes short. Butt sheaths dark brown. Culms 20–100 cm long. Culm-nodes pubescent. Ligule a fringe of hairs. Leaf-blades 10–55 cm long, 4–10 mm wide.

**Inflorescence.** Inflorescence a panicle. Panicle spiciform, lanceolate, 2–15 cm long. Primary panicle branches accrescent to a central axis, with evident branchlets on axis. Spikelets subtended by an involucre. Fertile spikelets sessile, 1–3 in the cluster. Involucre composed of bristles, 5–10 mm long. Involucral bristles persistent, 5–10 in principal whorl, flexible, viscid, smooth, glabrous, obtuse (slightly clavate).

**Fertile Spikelets.** Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. 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, compressed slightly, 3–4 mm long, falling entire.

**Glumes.** Glumes shorter than spikelet, thinner than fertile lemma. Lower glume ovate, 0.5 length of spikelet, membranous, purple (at tip), without keels, 3–7 -veined. Lower glume apex acute. Upper glume ovate, 0.75–0.8 length of spikelet, membranous, purple (at tip), without keels, 5 -veined. Upper glume apex acute.

**Florets.** Basal sterile florets 1, male, with palea. Lemma of lower sterile floret ovate, 1 length of spikelet, membranous, 5 -veined, acute. Fertile lemma ovate, laterally compressed, gibbous, 3–4 mm long, indurate, without keel. Lemma surface rugose. Lemma margins involute. Lemma apex apiculate (purple). Palea involute, indurate.

**Distribution (TDWG). Continent.** Africa.

**Country /Province /State.** Northern Africa, South tropical Africa, Southern Africa. Malawi. Limpopo, North-West, Gauteng, Mpumalanga, Swaziland, Free State, Kwazulu-Natal, Lesotho, Eastern Cape.

**Setaria oblongata** (Griseb.) Parodi. *Physis*, ix. 13, 38 (1928).

**Accepted by:** R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

**TYPE** from Argentina. **Basionym or Replaced Name:** *Panicum oblongatum* Griseb., *Goett. Abh.* 19: 261 (1874). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Argentina, Siambon: Lorentz 237 (B holo).

**Illustrations (Books):** S.A.Renvoize, *Gramineas de Bolivia* (1998) (Fig. 117).

**Illustrations (Journals):** *Darwiniana* (37: 82, Fig.11 (1999)), *Ruizia* (13:384 Fig 51j-k (1993)).

**Derivation** (Clifford & Bostock 2007): *L. oblongus*, oblong; *-ata*, possessing. Leaf-blades approaching elliptical in outline with the sides tending to be parallel.

**Classification.** Subfamily Panicoideae. Tribe: Paniceae. Subtribe SETARIINAE.

**Habit, Vegetative Morphology.** Perennial, caespitose. Culms 60–110 cm long. Leaf-sheaths outer margin hairy. Ligule a ciliate membrane. Leaf-blades 15–20 cm long, 5–9 mm wide.

**Inflorescence.** Inflorescence a panicle. Panicle spiciform, linear, interrupted, loose, 15–25 cm long. Primary panicle branches sterile at the tips. Panicle axis pilose. Spikelets subtended by an involucre. Fertile spikelets pedicelled, 1 in the cluster. Involucre composed of bristles, 3–6 mm long. Involucral bristles persistent, 1 per spikelet, antrorsely scaberulous, glabrous. 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 ovate or orbicular, dorsally compressed, gibbous, 2–2.2 mm long, falling entire.

**Glumes.** Glumes shorter than spikelet, thinner than fertile lemma. Lower glume ovate, 0.33 length of spikelet, membranous, without keels, 3 -veined. Lower glume apex acute. Upper glume ovate, 0.66 length of spikelet, membranous, without keels, 7 -veined. Upper glume apex acute.

**Florets.** Basal sterile florets 1, barren, with palea. Lemma of lower sterile floret elliptic, 1 length of spikelet, membranous, 5 -veined, acute. Fertile lemma ovate, dorsally compressed, gibbous, 1.8–2 mm long, indurate, without keel. Lemma surface rugose. Lemma margins involute. Palea involute, indurate.

**Flower and Fruit.** Caryopsis with adherent pericarp.

**Distribution (TDWG). Continent.** South America.

**Country /Province /State.** Western South America, Southern South America. Bolivia, Peru. Argentina Northwest.

**TDWG4.** Catamarca, Jujuy, La Rioja, Salta, San Luis, Tucuman. Buenos Aires, Cordoba.

**Setaria obscura** DeWit. *Bull. Bot. Gard., Buitenz., Ser. 3, xvii. 45* (1941).

**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, Bushman's R.: Madley Wood 10554.

**Illustrations (Books):** L.K.A. Chippindall, *Grasses and Pastures of South Africa* (1955) (345, Fig 299).

**Derivation** (Clifford & Bostock 2007): readily confused with other species.

**Classification.** Subfamily Panicoideae. Tribe: Paniceae. Subtribe SETARIINAE.

**Habit, Vegetative Morphology.** Perennial, caespitose, clumped densely. Butt sheaths persistent and investing base of culm, with compacted dead sheaths. Culms 50–100 cm long. Culm-nodes glabrous. Lateral branches lacking. Ligule a fringe of hairs. Leaf-blades 10–35 cm long, 3–4 mm wide, stiff. Leaf-blade surface glabrous. Leaf-blade apex attenuate, hardened.

**Inflorescence.** Inflorescence a panicle. Panicle spiciform, linear, continuous or interrupted, 5.5–17 cm long. Primary panicle branches sterile at the tips. Panicle branches terminating in a 5–8 mm long bristle. Spikelets solitary. Fertile spikelets sessile.

**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, 4–4.6 mm long, falling entire.

**Glumes.** Glumes shorter than spikelet, thinner than fertile lemma. Lower glume ovate, 1.5 mm long, 0.33 length of spikelet, membranous, without keels, 3 -veined. Lower glume apex acute. Upper glume ovate, 2.5 mm long, 0.5 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 elliptic, 1 length of spikelet, cartilaginous, 5 -veined, sulcate, acute. Fertile lemma elliptic, dorsally compressed, 4–4.6 mm long, cartilaginous, without keel. Lemma surface unwrinkled. Lemma margins involute. Lemma apex acute. Palea involute, cartilaginous.

**Distribution (TDWG). Continent.** Africa.

**Country /Province /State.** Southern Africa. Kwazulu-Natal.

**Setaria oplismenoides** Herrm. Rosen, *Beitr. Biol. Pflanzen, x. 53* (1910).

**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: Australien: Nord-Kste, ohne Standortsangabe, *Schomburgh* (HT: US).

**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);

**Derivation** (Clifford & Bostock 2007): Gk. -oides, resembling. In habit similar to *Oplismenus*.

**Classification.** Subfamily Panicoideae. Tribe: Paniceae. Subtribe SETARIINAE.

**Habit, Vegetative Morphology.** Perennial. Rhizomes elongated. Culms erect, 60–120 cm long, 4–8 -noded. Culm-nodes glabrous. Leaf-sheaths keeled, outer margin glabrous or hairy. Ligule a fringe of hairs, 1–2 mm long. Leaf-blades 10–32 cm long, 4–10.5 mm wide. Leaf-blade surface scabrous, glabrous or pubescent.

**Inflorescence.** Inflorescence a panicle. Panicle open, lanceolate, 18–37 cm long. Primary panicle branches ascending or spreading, 2.5–7.5 cm long, bearing 5–15 fertile spikelets on each lower branch, bearing spikelets almost to the base, sterile at the tips. Panicle axis scabrous. Panicle branches scabrous. Spikelets subtended by an involucre. Fertile spikelets sessile, 1 in the cluster. Involucre composed of bristles. Involucral bristles persistent, 1 per spikelet, 15–25 mm long, flexible, glabrous.

**Fertile Spikelets.** Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets elliptic, dorsally compressed, 2.3–2.7 mm long, 1.2–1.7 mm wide, falling entire.

**Glumes.** Glumes shorter than spikelet, thinner than fertile lemma. Lower glume ovate, 0.7–1.4 mm long, 0.33–0.5 length of spikelet, membranous, without keels, 3–5 -veined. Lower glume apex acute. Upper glume elliptic, 2–2.6 mm long, 0.75–0.9 length of spikelet, membranous, without keels, 7–9 -veined. Upper glume apex acute.

**Florets.** Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret elliptic, 1 length of spikelet, membranous, 5–7 -veined, acute. Fertile lemma elliptic, dorsally compressed, gibbous, 2.2–2.7 mm long, indurate, without keel. Lemma surface rugulose. Lemma margins involute. Lemma apex acute. Palea involute, indurate. Palea surface rugose.

**Distribution (TDWG). Continent.** Australasia.

**Country /Province /State.** Australia. Northern Territory, Queensland.  
**TDWG4.** Darwin & Gulf. North, Central, Inland.

**Setaria orthosticha** K. Schum. ex Hermann. Cohn, *Beitr. Biol. Pflanz.* x. 49 (1910).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

**TYPE** from Malawi. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: Malawi, Shire highlands: Buchanan 3 (B holo, K).

**Illustrations (Books):** G.V.Pope et al., *Flora Zambesiaca* 10 (3(1989):104, t. 26), S.Phillips, *Poaceae* (Gramineae) in I.Hedberg & S.Edwards, *Flora of Ethiopia and Eritrea* (1995) (241, Fig 97).

**Derivation** (Clifford & Bostock 2007): Gk *orthos*, straight; *stichos*, row. Inflorescence an erect, contracted, narrow panicle.

**Classification.** Subfamily Panicoideae. Tribe: Paniceae. Subtribe SETARIINAE.

**Habit, Vegetative Morphology.** Annual, caespitose. Culms geniculately ascending, 10–150 cm long. Ligule a fringe of hairs. Leaf-blade base without a false petiole. Leaf-blades 3–30 cm long, 1–8 mm wide.

**Inflorescence.** Inflorescence a panicle. Panicle open, lanceolate, 1–16 cm long, contracted about primary branches. Primary panicle branches simple, bearing spikelets almost to the base, sterile at the tips. Panicle branches secund, villous. Spikelets subtended by an involucre. Fertile spikelets sessile, 1 in the cluster. Involucre composed of bristles, 2–10 mm long. Involucral bristles persistent, 1 in principal whorl, rigid (bent), smooth or antrorsely scaberulous, glabrous or villous.

**Fertile Spikelets.** Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets elliptic, dorsally compressed, gibbous, obtuse, 1.2–1.7 mm long, falling entire.

**Glumes.** Glumes shorter than spikelet, thinner than fertile lemma. Lower glume orbicular, 0.25–0.33 length of spikelet, membranous, without keels, 3 -veined. Lower glume apex obtuse. Upper glume ovate, 0.66–0.75 length of spikelet, membranous, without keels, 5–7 -veined. Upper glume apex obtuse.

**Florets.** Basal sterile florets 1, barren, with palea. Lemma of lower sterile floret elliptic, 1 length of spikelet, membranous, 5 -veined, without grooves, obtuse. Palea of lower sterile floret 0.5–1 length of lemma. Fertile lemma ovate, dorsally compressed, gibbous, 1–1.5 mm long, indurate, light brown to black, without keel. Lemma surface rugose. Lemma margins involute. Palea involute, indurate. Palea surface rugose.

**Distribution (TDWG). Continent.** Africa.

**Country /Province /State.** West-central tropical Africa, Northeast tropical Africa, East tropical Africa, South tropical Africa. Rwanda, DRC. Ethiopia (inc. Eritrea). Kenya, Tanzania, Uganda. Malawi, Mozambique, Zambia, Zimbabwe.

**Setaria pallidifusca** (Schumach.) Stapf & C.E.Hubb. *Kew Bull.* 1930, 259 (1930).

Regarded by K as a synonym (*S. pumila*).

**Accepted by:** U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), N.L.Bor, *Grasses of Burma, Ceylon, India and Pakistan* (1960), T.Koyama, *Grasses of Japan and its neighboring regions* (1987).

**TYPE** from Ghana. **Basionym or Replaced Name:** *Panicum pallidifuscum* Schum., *Schum. & Thonn. Beskr. Guin. Pl.* 58 (1827). T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: Ghana: Thonning (C holo).

**Illustrations (Books):** F.N.Hepper, *F.W.T.A.* 3(2) (1972), L.K.A. Chippindall, *Grasses and Pastures of South Africa* (1955) (354, Fig 305), J.Bosser, *Graminees des Paturage et des Cultures a Madagascar* (1969) (29 & 287, Fig 6 & 106), T.Koyama, *Grasses of Japan and its neighbouring regions* (1987) (332, Fig 128), C-C Hsu, *Flora of Taiwan*, Vol 5 (1978) (620), C-C Hsu, *Taiwan Grasses* (1975), H.B.Gilliland, *Grasses of Malaya* (1971) (Pl 9), E.E.Henty, *A Manual of the Grasses of New Guinea* (1969) (179, Pl. 67), E.Hafliger & E.Schultz, *Grass Weeds*, CIBA-GEIGY (1:127(1980)).

**Images:** H.B.Gilliland et al., *Flora of Malaya Vol. 3 Grasses* (1971);, F.van Oudtshoorn, *Guide to Grasses of Southern Africa* (1999).

**Derivation** (Clifford & Bostock 2007): L. *pallidus*, pale-colored; *fusca*, dark. Anthoecia yellow-green with purple tips.

**Classification.** Subfamily Panicoideae. Tribe: Paniceae. Subtribe SETARIINAE.

**Flower and Fruit.**  $N = 18$  (3 refs TROPICOS).  $2n = 10$  (1 ref TROPICOS).

**Distribution (TDWG). Continent.** Africa, Temperate Asia, Tropical Asia, Australasia.

**Country /Province /State.** West tropical Africa, West-central tropical Africa, East tropical Africa, South tropical Africa, Southern Africa, Western Indian ocean. Gambia, Guinea-Bissau, Ivory Coast, Mali,

Nigeria, Sierre Leone, Togo, Niger. Tanzania, Uganda. Angola, Malawi, Mozambique, Zambia, Zimbabwe. Madagascar. **China, Eastern Asia.** China South Central, China Southeast. Japan, Korea, Nansei-Shoto, Taiwan. **Indo-China, Malesia, Papuasia.** Thailand. Borneo, Java, Lesser Sunda Is, Moluccas, Sumatra, Sulawesi, Philippines. New Guinea. **Australia.** Northern Territory, Queensland, New South Wales, Lord Howe-Norfolk Is. Fiji (\*), New Caledonia (\*). Cook Is (\*).

**TDWG4.** Fujian, Guangdong, Guangxi, Hunan. Guizhou, Sichuan, Yunnan. Arunachal Pradesh, 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.

### **Setaria palmeri** Henrard. *Blumea*, iii. 415 (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 Mexico. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: : Based on *Chaetochloa rigida* ; Mexico, La Paz: Palmer 125 (US holo, K).

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): in honor of Edward Palmer (1831–1911) United States botanist.

**Classification.** Subfamily Panicoideae. Tribe: Paniceae. Subtribe SETARIINAE.

**Habit, Vegetative Morphology.** Perennial. Culms erect, 30–60 cm long. Leaf-sheaths glabrous on surface, outer margin glabrous. Ligule a fringe of hairs, 0.5–1 mm long. Leaf-blades 10–26 cm long, 6–12 mm wide, stiff. Leaf-blade midrib prominent beneath. Leaf-blade surface smooth or scaberulous, rough on both sides. Leaf-blade margins scabrous. Leaf-blade apex acuminate.

**Inflorescence.** Inflorescence a panicle, exserted or embraced at base by subtending leaf. Peduncle pubescent above. Panicle spiciform, linear, loose, 5–20 cm long. Primary panicle branches 0.3–10 cm long, sterile at the tips. Panicle axis angular, pubescent or villous. Spikelets subtended by an involucre. Fertile spikelets pedicelled, 1 in the cluster. Involucre composed of bristles, 3–10 mm long. Involucral bristles persistent, 1 per spikelet, flexible, antrorsely scaberulous, glabrous. Pedicels present, oblong.

**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, 2–2.5 mm long, falling entire.

**Glumes.** Glumes shorter than spikelet, thinner than fertile lemma. Lower glume ovate, 0.5 length of spikelet, membranous, without keels, 3 -veined. Lower glume apex acute, mucronate. Upper glume ovate, 0.5–0.66 length of spikelet, membranous, without keels, 5–7 -veined. Upper glume apex acute, mucronate.

**Florets.** Basal sterile florets 1, barren, with palea. Lemma of lower sterile floret ovate, 1 length of spikelet, membranous, 5 -veined, sulcate, acute. Palea of lower sterile floret 0.66 length of lemma. Fertile lemma ovate, dorsally compressed, gibbous, 2–2.5 mm long, indurate, without keel. Lemma surface rugose. Lemma margins involute. Lemma apex apiculate. Palea involute, indurate.

**Distribution (TDWG). Continent.** North America.

**Country /Province /State.** Mexico. Northwest Mexico.

**TDWG4.** Baja California Sur.

### **Setaria palmifolia** (Koenig) Stapf. *Journ. Linn. Soc., Bot.* xlii. 186 (1914).

**Accepted by:** R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), D.Sharp, D. & B.K.Simon, *AusGrass* (2002), E.Edgar, & H.Connor, *Flora of New Zealand Gramineae* 5 (2000), S-L Chen et al, *Flora of China* 22 (Poaceae) (2006), J.F.Veldkamp, Poaceae ms (*Flora Malesiana*), N.L.Bor, *Grasses of Burma, Ceylon, India and Pakistan* (1960) (& as *S. palmifolia*), T.Koyama, *Grasses of Japan and its neighboring regions* (1987), W.D.Clayton & N.Snow, *Key to Pacific Grasses* (2010).

**TYPE** from Thailand. **Basionym or Replaced Name:** *Panicum palmifolium* J. Kvnig, *Naturforscher* 23: 208 (1788). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: T: *Ex Herb. Desfont. s.n.*, no date, Unknown: (US-978043 (fragm. ex FI)). HT: *Koenig s.n.*, Thailand? (BM).

**Recent Synonyms:** *Setaria paniculifera* Steud., *Syn. Pl. Gram.* 54 (1854).

**Illustrations (Books):** T.Koyama, *Grasses of Japan and its neighbouring regions* (1987) (323, Fig. 124), C-C Hsu, *Flora of Taiwan*, Vol 5 (1978) (622), C-C Hsu, *Taiwan Grasses* (1975) (606, Pl. 1448), K.M.Matthew, *Flora Palni Hills* (1996) (864, Pl. 864 as *S. paniculifera*), K.M.Matthew, Further Illustrations on the *Flora of Tamilnadu Carnatic* (1988) (Pl. 822 & Pl. 823), H.J.Noltie, *The Grasses of Bhutan* (2000) (721, Fig. 43), H.B.Gilliland, *Grasses of Malaya* (1971) (158, Fig. 30), H.Duistermaat, *Field Guide to the Grasses of*

Singapore (2005) (123, Fig. 127 as var. *palmifolia*), E.E.Henty, *A Manual of the Grasses of New Guinea* (1969) (178, Pl. 66), J.P.Jessop, G.R.M. Dashorst & F.M.James, *Grasses of South Australia* (2006) (482, Fig. 415), S.W.L.Jacobs, R.D.B.Whalley & D.J.B.Wheeler, *Grasses of New South Wales*, 4th edn (2008) (369), M.E.Barkworth et al, *Flora of North America north of Mexico Vol 25 Poaceae*, part 2 (2003) (544), A.S.Hitchcock, *Manual of the Grasses of the West Indies* (1936) (337, Fig. 307 & 338, Fig. 308 as *S. paniculifera*), L.B. Smith, D.C. Wasshausen, R.M. Klein *Flora Illustrada Catarinensis Gramineas* (1981–1982) (788, Fig. 163 as *S. paniculifera*), S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 741), E.Hafliger & E.Schultz, Grass Weeds, CIBA-GEIGY (1:128–129(1980)as *S. paniculifera*).

**Illustrations (Journals):** *Darwiniana* (37: 84, Fig.12 (1999)).

**Images:** D.Sharp & B.K.Simon, *AusGrass*. Grasses of Australia. CD-Rom Version 1.0. (2002);, R.Darke, *Ornamental Grasses* (2004);, R.Darke, *The Encyclopaedia of Grasses for Liveable Landscapes* (2007);.

**Derivation** (Clifford & Bostock 2007): L. palma, palm tree; folium, leaf. Leaf-blades longitudinally folded like those of certain palm trees.

**Classification.** Subfamily Panicoideae. Tribe: Paniceae. Subtribe SETARIINAE.

**Habit, Vegetative Morphology.** Perennial, caespitose. Culms erect or geniculately ascending, robust, 100–300 cm long. Culm-nodes pubescent. Leaf-sheaths without keel, striately veined, pilose, with tubercle-based hairs, outer margin glabrous or hairy. Ligule a fringe of hairs. Leaf-blade base tapering to the midrib. Leaf-blades linear or elliptic, plicate, 40–80 cm long, 15–80 mm wide. Leaf-blade surface scabrous, rough on both sides, glabrous or pubescent, hairy on both sides. Leaf-blade margins scabrous. Leaf-blade apex attenuate.

**Inflorescence.** Inflorescence a panicle. Panicle open, ovate, effuse, 40–80 cm long, 20–40 cm wide. Primary panicle branches drooping, 10–30 cm long, sterile at the tips. Panicle axis scabrous. Panicle branches flexuous, pubescent in axils. Spikelets subtended by an involucre. Fertile spikelets pedicelled, 1 in the cluster. Involucre composed of bristles. Involucral bristles persistent, flexible, glabrous. Pedicels present, reduced to a stump.

**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 ovate, dorsally compressed, acute, 2.5–3 mm long, falling entire.

**Glumes.** Glumes shorter than spikelet, thinner than fertile lemma. Lower glume ovate, 0.33 length of spikelet, membranous, without keels, 3 -veined. Lower glume apex obtuse or acute. Upper glume oblong, 0.66 length of spikelet, membranous, without keels, 5–7 -veined. Upper glume apex obtuse.

**Florets.** Basal sterile florets 1, male or barren, with palea. Lemma of lower sterile floret elliptic, 1 length of spikelet, membranous, 5 -veined. Palea of lower sterile floret 0.5–0.75 length of lemma. Fertile lemma elliptic, dorsally compressed, gibbous, 2.5–3.5 mm long, indurate, without keel. Lemma surface smooth or punctate, unwrinkled. Lemma margins involute. Lemma apex acute. Palea involute, indurate.

**Flower and Fruit.** Anthers 3, 0.75–1.4 mm long. Caryopsis with adherent pericarp, ellipsoid.

*N* = 27 (1 ref TROPICOS).

**Distribution (TDWG).** **Continent.** Africa, Temperate Asia, Tropical Asia, Australasia (\*), Pacific, North America, South America.

**Country /Province /State.** **Northern Africa, West tropical Africa, West-central tropical Africa.** Liberia, Sierre Leone. **China, Eastern Asia.** China South Central, Hainan, China Southeast, Tibet. Japan, Nansei-Shoto, Taiwan. Japan Kyushu. **Indian Subcontinent, Indo-China, Malesia, Papuasia.** Eastern Himalaya, Sri Lanka. Andaman Is, Laos, Myanmar, Thailand, Vietnam. Borneo, Java, Lesser Sunda Is, Malaya, Singapore, Moluccas, Philippines, Sulawesi, Sumatra. New Guinea, Solomon Is (\*). **Australia, New Zealand.** Western Australia (\*), Northern Territory (\*), South Australia (\*), Queensland (\*), New South Wales (\*), Lord Howe-Norfolk Is (\*). New Zealand North I. **Southwestern Pacific, North-central Pacific.** Fiji (\*), Samoa (\*). Hawaii (\*). **Mexico.** Northeast Mexico, Gulf (Mexico), Northwest Mexico, Southwest Mexico, Southeast Mexico. **Mesoamerica, Caribbean, Northern South America, Western South America, Brazil.** El Salvador, Guatemala, Honduras, Nicaragua, Panama. Jamaica (\*), Leeward Is, Windward Islands, Trinidad-Tobago. Guyana, Venezuela. Colombia, Ecuador. Brazil North.

**TDWG4.** Anhui, Fujian, Guangdong, Guangxi, Hunan, Jiangxi, Zhejiang. Guizhou, Hubei, Sichuan, Yunnan. Darjeeling, Bhutan, Sikkim. Assam, Meghalaya. Andhra Pradesh, Kerala. West Bengal. South-West. Darwin & Gulf. Southern. North, Central, South East. Coast, Western Plains. Queretaro, San Luis Potosi. Veracruz. Baja California Sur. Jalisco, Michoacan, Nayarit, Oaxaca. Chiapas, Quintana Roo, Tabasco.

**Setaria pampeana** L. Parodi ex Nicora. *Bol. Soc. Argot. Bot.* xii. 301 (1968).

**Accepted by:** R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

**TYPE** from Argentina. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Argentina, La Merced: Hunziker 8092 (BAA holo, CORD, CTES).

**Illustrations (Books):** A. Burkat, *Flora Ilustrada de Entre Rios (Argentina)*, Pt II, Gramineas (1969) (428, Fig 180), A.L. Cabrera, *Flora de la Provincia de Buenos Aires, IV Pt 2 Gramineas* (1970) (452, Fig 116), M.N. Correa, *Flora Patagónica* Parte III, Gramineae (1978) (545, Fig 368).

**Derivation** (Clifford & Bostock 2007): Spanish American, pampas. From the Pampas, that is grasslands of South America.

**Classification.** Subfamily Panicoideae. Tribe: Paniceae. Subtribe SETARIINAE.

**Habit, Vegetative Morphology.** Perennial. Culms erect or geniculately ascending, slender, 30–40 cm long. Culm-internodes channelled, antrorsely scabrous, distally pubescent. Culm-nodes pubescent or bearded. Lateral branches ample, intravaginal. Leaf-sheaths keeled, antrorsely scabrous, outer margin hairy. Ligule a ciliate membrane, 1–1.8 mm long. Leaf-blades flat or conduplicate, 10–20 cm long, 2–5 mm wide. Leaf-blade surface scabrous, rough on both sides. Leaf-blade apex acuminate.

**Inflorescence.** Inflorescence a panicle. Panicle spiciform, linear, 6–10 cm long, 0.5 cm wide. Primary panicle branches sterile at the tips. Panicle axis angular, scabrous, with scattered hairs or glabrous. Panicle branches scabrous. Spikelets subtended by an involucre. Fertile spikelets pedicelled, 1 in the cluster. Involucre composed of bristles, 7–10 mm long. Involucral bristles persistent, 1 per spikelet, flexible, antrorsely scaberulous, glabrous. Pedicels present, oblong.

**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, acute, 1.8–2 mm long, falling entire.

**Glumes.** Glumes exceeding apex of florets, thinner than fertile lemma. Lower glume ovate, 0.5 length of spikelet, membranous, without keels, 3 -veined. Lower glume surface glabrous. Lower glume apex acute. Upper glume ovate, 1 length of spikelet, membranous, without keels, 5 -veined. Upper glume lateral veins prominent. Upper glume apex cuspidate.

**Florets.** Basal sterile florets 1, barren, with palea. Lemma of lower sterile floret ovate, 1 length of spikelet, membranous, 5 -veined, prominently veined, cuspidate. Palea of lower sterile floret 0–5 length of lemma. Fertile lemma orbicular, dorsally compressed, 1.5–1.8 mm long, indurate, without keel. Lemma surface rugulose. Lemma margins involute. Lemma apex apiculate. Palea involute, indurate.

**Flower and Fruit.** Anthers 3, 0.6–0.7 mm long. Caryopsis with adherent pericarp, ovoid, 1–1.2 mm long. Embryo 0.5 length of caryopsis. Hilum punctiform.

**Distribution (TDWG). Continent.** South America.

**Country /Province /State.** Western South America, Southern South America. Argentina Northeast, Argentina Northwest, Uruguay.

**TDWG4.** Catamarca, Jujuy, La Rioja, Mendoza, Salta, Santiago del Estero, San Juan, San Luis, Tucuman. Buenos Aires, Cordoba, Corrientes, Distrito Federal, Entre Rios, La Pampa, Santa Fe.

**Setaria paraguayensis** J.F. Pensiero. *Candollea*, 41(2): 469 (1986).

**Accepted by:** R.J. Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D. Clayton & K. Harman, *GrassBase* (2008) and online, U. Quattrocchi, *CRC World Dictionary of Grasses* (2006).

**TYPE** from Paraguay. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Paraguay, Puerto Casado: Pedersen 4142 (BAA holo, MO, WAG).

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): L. -ense, denoting origin. From Paraguay.

**Classification.** Subfamily Panicoideae. Tribe: Paniceae. Subtribe SETARIINAE.

**Habit, Vegetative Morphology.** Perennial, caespitose. Rhizomes short. Basal innovations intravaginal, flabellate. Culms erect or geniculately ascending, 50–100 cm long, 2–3 mm diam., 2–3 -noded. Culm-internodes distally glabrous or pubescent. Lateral branches lacking. Leaf-sheaths longer than adjacent culm internode, keeled, glabrous on surface, outer margin hairy. Leaf-sheath oral hairs lacking or ciliate. Ligule a fringe of hairs, 1–2 mm long. Collar glabrous. Leaf-blades 20–55 cm long, 15–18 mm wide. Leaf-blade midrib conspicuous. Leaf-blade surface scaberulous. Leaf-blade margins glabrous or ciliate. Leaf-blade apex acute.

**Inflorescence.** Inflorescence a panicle. Peduncle antrorsely scabrous above. Panicle spiciform, linear or lanceolate, loose, tapering above, 10–26 cm long, 1.5–3 cm wide. Primary panicle branches 1–3 cm long, sterile at the tips. Panicle axis scabrous and retrorsely scabrous. Spikelets subtended by an involucre. Fertile spikelets pedicelled, 1 in the cluster. Involucre composed of bristles, 14–20 mm long. Involucral bristles persistent, 1 per spikelet, flexible, retrorsely scaberulous, retrorse above, antrorse below or mingled with antrorse scabridity, glabrous. 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, gibbous, 2.5–3 mm long, 1.5–2 mm wide, falling entire.

**Glumes.** Glumes shorter than spikelet, thinner than fertile lemma. Lower glume ovate, 0.33–0.5 length of spikelet, membranous, without keels, 5 -veined. Lower glume apex acute. Upper glume ovate, (0.5–)0.75 length of spikelet, membranous, without keels, 7–9 -veined. Upper glume apex acute.

**Florets.** Basal sterile florets 1, barren, with palea. Lemma of lower sterile floret ovate, 1 length of spikelet, membranous, 7 -veined, acute. Fertile lemma ovate, dorsally compressed, gibbous, 2.5–3 mm long, 1.8–2 mm wide, indurate, yellow, without keel. Lemma surface rugulose. Lemma margins involute. Lemma apex apiculate. Palea involute, indurate.

**Distribution (TDWG). Continent.** South America.

**Country /Province /State.** Western South America, Brazil, and Southern South America. Bolivia. Brazil West Central. Paraguay.

**Setaria parodii** Nicora. *Bol. Soc. Argot. Bot.* xii. 306 (1968).

**Accepted by:** R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

**TYPE** from Argentina. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Argentina, Tranqueras: Nicora 5058 (BAA holo, SI).

**Illustrations (Books):** A.Burkat, *Flora Ilustrada de Entre Rios (Argentina)*, Pt II, Gramineas (1969) (424, Fig. 178), B.Rosengurt, *Gramineas Uruguayas I* (1970) (394, Fig. 175).

**Derivation** (Clifford & Bostock 2007): in honor of Lorenzo Raimondo Parodi (1895–1966) Argentinian agrostologist.

**Classification.** Subfamily Panicoideae. Tribe: Paniceae. Subtribe SETARIINAE.

**Habit, Vegetative Morphology.** Perennial, caespitose. Culms geniculately ascending, 70–120 cm long. Culm-nodes glabrous. Leaf-sheaths glabrous on surface, outer margin hairy. Ligule a ciliate membrane, 1.5–1.8 mm long. Leaf-blades 15–35 cm long, 4–6 mm wide. Leaf-blade surface scabrous. Leaf-blade margins scabrous. Leaf-blade apex attenuate.

**Inflorescence.** Inflorescence a panicle. Panicle spiciform, linear, 8–20 cm long, 1.5 cm wide. Primary panicle branches 1–2 cm long, sterile at the tips. Spikelets subtended by an involucre. Fertile spikelets pedicelled, 1 in the cluster. Involucre composed of bristles, 8–10 mm long. Involucral bristles persistent, 1 per spikelet, antrorsely scaberulous, glabrous. 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 ovate or orbicular, dorsally compressed, gibbous, 2.8–3.2 mm long, falling entire.

**Glumes.** Glumes shorter than spikelet, thinner than fertile lemma. Lower glume ovate, 0.5 length of spikelet, membranous, without keels, 5 -veined. Lower glume apex acute. Upper glume ovate, 0.7–0.8 length of spikelet, membranous, without keels, 7–9 -veined. Upper glume apex acute.

**Florets.** Basal sterile florets 1, barren, with palea. Lemma of lower sterile floret ovate, 1 length of spikelet, membranous, 5 -veined, acute. Palea of lower sterile floret 1 length of lemma. Fertile lemma ovate, dorsally compressed, gibbous, 2.5–2.8 mm long, indurate, without keel. Lemma surface rugose. Lemma margins involute. Palea involute, indurate.

**Flower and Fruit.** Caryopsis with adherent pericarp.

*N* = 18 (2 refs TROPICOS), or 36 (1 ref TROPICOS).

**Distribution (TDWG). Continent.** South America.

**Country /Province /State.** Brazil, Southern South America. Brazil South. Argentina Northeast, Uruguay.

**TDWG4.** Corrientes, Misiones, Santa Fe.

**Setaria parviflora** (Poiret) M. Kerguelen. *Lejeunia*, 120: 161 (1987).

**Accepted by:** R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), D.Sharp, D. & B.K.Simon, *AusGrass* (2002), E.Edgar, & H.Connor, *Flora of New Zealand Gramineae* 5 (2000), S-L Chen et al, *Flora of China* 22 (Poaceae) (2006), J.F.Veldkamp, Poaceae ms (*Flora Malesiana*), N.L.Bor, *Grasses of Burma, Ceylon, India and Pakistan* (1960) (as *S. geniculata*), T.Koyama, *Grasses of Japan and its neighboring regions* (1987) (*S. geniculata*), W.D.Clayton & N.Snow, *Key to Pacific Grasses* (2010).

**TYPE** from France. **Basionym or Replaced Name:** *Panicum geniculatum* Poir., *Encyc.* 4: 727 (err. typ. 737) (1798). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: France, Cult.: Jussieu.

**Recent Synonyms:** *Setaria gracilis* H. B. & K., *Nov. Gen. et Sp.* 1: 109. (1815). *Setaria geniculata* Beauv., *Agrost.* 51 (1812).

**Illustrations (Books):** C-C Hsu, *Flora of Taiwan*, Vol 5 (1978) (as *S. geniculata*), H. Duistermaat, *Field Guide to the Grasses of Singapore* (2005) (125, Fig. 129), J.P. Jessop, G.R.M. Dashorst & F.M. James, *Grasses of South Australia* (2006) (483, Fig 416), N. Walsh & T. Entwistle, *Flora of Victoria* Vol 2 (1994) (602, Fig 122 as *S. gracilis* var. *pauciseta*), S.W.L. Jacobs, R.D.B. Whalley & D.J.B. Wheeler., *Grasses of New South Wales*, 4th edn (2008) (369), T.D. Stanley & E. Ross, *Flora of South East Queensland, Gramineae* (1989) (205, Fig. 32 as *S. gracilis*), 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) (559), A.S. Hitchcock, *Manual of the Grasses of the West Indies* (1936) (as *S. geniculata*), S.A. Renvoize, *Gramineas de Bolivia* (1998) (517, Fig 116), S.A. Renvoize, *The Grasses of Bahia*, 1984 (102, Fig. 36 as *S. gracilis*), L.B. Smith, D.C. Wasshausen, R.M. Klein *Flora Illustrada Catarinensis Gramineas* (1981–1982) (788, Fig. 163), A. Burkat, *Flora Illustrada de Entre Rios (Argentina)*, Pt II, Gramineas (1969) (420, Fig. 176 as *S. geniculata*), W. Burger, *Flora Costaricensis* 15, Gramineae: *Fieldiana Botany New Series* 4 (1980) (525, Fig 197 as *S. geniculata*), M.N. Correa, *Flora Patagonica* Parte III, Gramineae (1978) (541, Fig 365 as *S. geniculata*), E. Judziewicz, *Flora of the Guianas*, 187. *Poaceae* (1990) (589, Fig 100), E. Hafliger & E. Schultz, *Grass Weeds*, CIBA-GEIGY (1:125) (1980) as *S. gracilis*).

**Illustrations (Journals):** *Darwiniana* (37: 75, Fig. 9 (1999) as var. *parviflora*), *Ruizia* (13:384 Fig 51e-g (1993) as *S. geniculata*).

**Images:** D. Sharp & B.K. Simon, *AusGrass. Grasses of Australia. CD-Rom Version 1.0.* (2002);

**Derivation** (Clifford & Bostock 2007): *L. parvus*, small; *flos*, flower. Spikelets small or with few florets.

**Classification.** Subfamily Panicoideae. Tribe: Paniceae. Subtribe SETARIINAE.

**Habit, Vegetative Morphology.** Perennial. Rhizomes absent or short, knotty. Culms erect or geniculately ascending, 30–110 cm long. Culm-internodes thin-walled. Culm-nodes glabrous. Leaf-sheaths without keel, glabrous on surface, outer margin glabrous. Leaf-sheath oral hairs ciliate. Ligule a fringe of hairs, 0.4–1.2 mm long. Leaf-blades 10–30 cm long, 2–7 mm wide. Leaf-blade surface scabrous, rough adaxially. Leaf-blade margins scaberulous. Leaf-blade apex acuminate.

**Inflorescence.** Inflorescence a panicle. Panicle spiciform, linear, 2–6 cm long, 0.8–1.4 cm wide. Primary panicle branches sterile at the tips. Panicle axis scabrous. Spikelets subtended by an involucre. Fertile spikelets pedicelled, 1 in the cluster. Involucre composed of bristles. Involucral bristles persistent, 6–11 per spikelet, 1.5–8 mm long, antrorsely scaberulous, glabrous. Pedicels present, reduced to a stump, tip cupuliform.

**Fertile Spikelets.** Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets lanceolate or elliptic, dorsally compressed, acute, 2.2–2.8 mm long, falling entire.

**Glumes.** Glumes shorter than spikelet, thinner than fertile lemma. Lower glume ovate, 1.1–1.4 mm long, 0.5 length of spikelet, membranous, without keels, 3–5 -veined. Lower glume apex acute. Upper glume ovate, 1.3–1.8 mm long, 0.5 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 ovate, 1 length of spikelet, membranous, 5 -veined, acute. Fertile lemma lanceolate or elliptic, dorsally compressed, 2–2.6 mm long, indurate, dark brown, without keel. Lemma surface rugose. Lemma margins involute. Lemma apex acute. Palea involute, indurate. Palea surface rugose.

**Flower and Fruit.** Anthers 3, 1.2–1.6 mm long, yellow or brown. Caryopsis with adherent pericarp, ellipsoid, 1.7 mm long.

$2n = 36$  (1 ref TROPICOS).

**Distribution (TDWG). Continent.** Europe (\*), Africa, Temperate Asia, Tropical Asia, Australasia (\*), Pacific, North America, South America.

**Region. Northern Europe** (\*).

**Country /Province /State.** : Great Britain (\*). **Macaronesia, Southern Africa** (\*), **Middle Atlantic ocean, Western Indian ocean.** Canary Is, Madeira. Western Cape. Madagascar. **China, Eastern Asia.** China South Central, Hainan, China Southeast. Nansei-Shoto, Taiwan. **Indian Subcontinent, Indo-China, Malesia, Papuasias.** Sri Lanka. Laos, Myanmar, Thailand. Malaya, Singapore, Philippines. New Guinea, Solomon Is (\*). **Australia, New Zealand.** Western Australia (\*), South Australia (\*), Queensland (\*), New South Wales (\*), Victoria, Tasmania. Kermadec Is, New Zealand North I, New Zealand South I. **Southwestern Pacific, South-central Pacific, Northwestern Pacific, North-central Pacific.** Fiji (\*), New Caledonia (\*), Tonga (\*). Easter Is (\*). Marianas (\*), Marshall Is (\*). Hawaii (\*). **North-central USA, Northeast USA, Southwestern USA, South-central USA, Southeastern USA, Mexico.** Illinois, Iowa. New Jersey, Pennsylvania. California. 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.** Belize, Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua, Panama. Bahamas, Bermuda, Cayman Is, Cuba, Dominican Republic, Haiti, Jamaica, Leeward Is, Windward Islands, Trinidad-Tobago. French Guiana, Guyana, Surinam, Venezuela. Bolivia, Colombia, Ecuador, Galapagos, Peru. Brazil West Central, Brazil Northeast, Brazil Southeast, Brazil North, Brazil South. Argentina Northeast, Argentina South, Argentina Northwest, Chile Central, Desventurados Is, Juan Fernandez Is, Paraguay, Uruguay.

**TDWG4.** Fujian, Guangdong, Guangxi, Hunan, Jiangxi, Guizhou, Sichuan, Yunnan. Rajasthan. Kimberley, South-West. Southern. Central, South East. Coast, Tablelands, Western Slopes, Western Plains. Para, Amapa, Amazonas, Acre, Rondonia, Mato Grosso, Goias, Bahia, Maranhao, Piaui, Ceara, Rio Grande do Norte, Paraiba, Pernambuco, Alagoas, Sergipe, Minas Gerais, Rio de Janeiro, Espirito Santo, Sao Paulo Parana, Catarina, Rio Grande do Sul. Catamarca, Jujuy, La Rioja, Mendoza, Salta, Santiago del Estero, San Juan, San Luis, Tucuman. Buenos Aires, Chaco, Cordoba, Corrientes, Distrito Federal, Entre Rios, Formosa, La Pampa, Misiones, Santa Fe. Río Negro. Rest of Chile- Biobio, La Auracania, Maule, O'Higgins, Santado, Valpariso. Atacama. Coquimbo, Valparaiso, O'Higgins, Maule, Biobio, La Araucania. Los Lagos. 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.

**Setaria paspalidioides** Vickery. *Telopea*, 1 (1): 42 (1975).

**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: New South Wales: Western Plains: Gulargambone, 27 Apr 1936, *E.C. Mathes s.n.* (HT: NSW-9027).

**Illustrations (Books):** S.W.L.Jacobs, R.D.B.Whalley & D.J.B.Wheeler., *Grasses of New South Wales*, 4th edn (2008) (370).

**Images:** D.Sharp & B.K.Simon, *AusGrass*. Grasses of Australia. CD-Rom Version 1.0. (2002);.

**Derivation** (Clifford & Bostock 2007): Gk *-oides*, resemblance. In inflorescence similar to *Paspalidium*.

**Classification.** Subfamily Panicoideae. Tribe: Paniceae. Subtribe SETARIINAE.

**Habit, Vegetative Morphology.** Perennial, caespitose. Culms 30–70 cm long. Culm-internodes channelled or elliptical in section, ridged, antrorsely scabrous. Culm-nodes black, glabrous or pubescent. Leaf-sheaths keeled, ribbed, antrorsely scabrous, pilose, with tubercle-based hairs, outer margin hairy. Ligule a fringe of hairs, 1.5 mm long. Leaf-blades 15–30 cm long, 4–9 mm wide, stiff. Leaf-blade midrib prominent beneath. Leaf-blade surface scabrous, pilose, sparsely hairy, with tubercle-based hairs. Leaf-blade margins scabrous. Leaf-blade apex acuminate.

**Inflorescence.** Inflorescence a panicle. Peduncle antrorsely scabrous above. Panicle open, linear. Primary panicle branches appressed, 1–2.4 cm long, sterile at the tips. Panicle axis scabrous. Panicle branches flexuous, scabrous. Spikelets subtended by an involucre. Fertile spikelets pedicelled, 1 in the cluster. Involucre composed of bristles. Involucral bristles persistent, 0–1 per spikelet, 5–10 mm long, flexible, antrorsely scaberulous, glabrous. Pedicels present, reduced to a stump, tip cupuliform.

**Fertile Spikelets.** Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets elliptic or obovate, dorsally compressed, gibbous, acute, 3 mm long, falling entire.

**Glumes.** Glumes shorter than spikelet, thinner than fertile lemma. Lower glume ovate, 0.4 length of spikelet, membranous, without keels, 5 -veined. Lower glume apex obtuse or acute. Upper glume elliptic or orbicular, 0.6–0.8 length of spikelet, membranous, without keels, 7–9 -veined. Upper glume apex obtuse.

**Florets.** Basal sterile florets 1, barren, with palea. Lemma of lower sterile floret ovate, 1 length of spikelet, membranous, 5 -veined, acute. Fertile lemma ovate, dorsally compressed, gibbous, 3 mm long, indurate, dark brown, without keel. Lemma surface rugose. Lemma margins involute. Lemma apex apiculate. Palea involute, indurate. Palea surface rugose.

**Flower and Fruit.** Anthers 3. Caryopsis with adherent pericarp, ellipsoid or ovoid, 1.75 mm long. Embryo 0.66 length of caryopsis. Hilum punctiform.

**Distribution (TDWG). Continent.** Australasia.

**Country /Province /State.** Australia. Queensland, New South Wales.

**TDWG4.** Central, South East. Western Plains.

**Setaria paucifolia** (Morong) Lindm. *Svensk. Vet. Akad. Handl.* 346:10 (1900).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

**TYPE** from Paraguay. **Basionym or Replaced Name:** *Chamaeraphis paucifolia* Morong, *Ann. N. Y. Acad. Sci.* 7: 265 (paucifolius) (1893). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *T. Morong 418*, 1888–1890, Paraguay: central Paraguay (NY; IT: MO-18377539, US-821227).

**Illustrations (Books):** L.B. Smith, D.C. Wasshausen, R.M. Klein *Flora Illustrada Catarinensis Gramineas* (1981–1982) (806, Fig. 166).

**Derivation** (Clifford & Bostock 2007): *L. paucus*, few; folium, leaf. Culms bearing few leaves.

**Classification.** Subfamily Panicoideae. Tribe: Paniceae. Subtribe SETARIINAE.

**Habit, Vegetative Morphology.** Perennial, caespitose. Rhizomes short. Basal innovations intravaginal. Culms 100–200 cm long, 2–4 mm diam., 4–5 -noded. Culm-nodes glabrous. Leaf-sheaths glabrous on surface or puberulous, outer margin glabrous or hairy. Ligule a ciliate membrane, 1 mm long. Leaf-blade base with a false petiole. Leaf-blades filiform, involute or convolute, 20–70 cm long, 0.2–0.4 mm wide. Leaf-blade surface glabrous or pubescent, hairy abaxially. Leaf-blade apex attenuate.

**Inflorescence.** Inflorescence a panicle. Panicle spiciform, linear, continuous, 13–35 cm long, 0.8–1.4 cm wide. Primary panicle branches sterile at the tips. Panicle axis scaberulous, with scattered hairs or glabrous. Spikelets subtended by an involucre. Fertile spikelets pedicelled, 1 in the cluster. Involucre composed of bristles, 5–10 mm long. Involucral bristles persistent, 1(–2) per spikelet, antrorsely scaberulous, glabrous or ciliate. 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 ovate, dorsally compressed, gibbous, 2.4–3 mm long, 0.8–1 mm wide, falling entire.

**Glumes.** Glumes shorter than spikelet, thinner than fertile lemma. Lower glume ovate, 0.25–0.33 length of spikelet, membranous, without keels, 3–5 -veined. Lower glume apex acute. Upper glume ovate, gibbous, 0.33–0.5 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 ovate, 1 length of spikelet, membranous, 5 -veined, acute. Fertile lemma elliptic, dorsally compressed, gibbous, 2.4–3 mm long, indurate, without keel. Lemma surface rugulose. Lemma margins involute, ciliate. Palea involute, indurate. Palea keels ciliolate.

**Flower and Fruit.** Anthers 1.7 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.** Mato Grosso, Goias, Minas Gerais, Rio de Janeiro, Espirito Santo, Sao Paulo Parana, Catarina, Rio Grande do Sul. Corrientes, Misiones.

**Setaria perrieri** A.Camus. *Bull. Soc. Bot. France*, lxxiv. 632 (1928).

**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, Itremo: Perrier 12466.

**Illustrations (Books):** No illustration found (BKS).

**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 SETARIINAE.

**Habit, Vegetative Morphology.** Perennial. Culms erect, 30–60 cm long. Leaf-sheaths hirsute, outer margin hairy. Ligule absent. Leaf-blades 25–35 cm long, 4–6 mm wide. Leaf-blade surface pilose, hairy adaxially or on both sides. Leaf-blade margins scaberulous. Leaf-blade apex acuminate.

**Inflorescence.** Inflorescence a panicle. Peduncle pilose above. Panicle open, lanceolate, 12–15 cm long, contracted about primary branches. Primary panicle branches appressed, 1–3 cm long, bearing spikelets almost to the base, sterile at the tips. Panicle axis angular, pilose. Panicle branches pilose. Spikelets subtended by an involucre. Fertile spikelets pedicelled, 1 in the cluster. Involucre composed of bristles, 8–10 mm long. Involucral bristles persistent, 1–3 per spikelet, flexible, antrorsely scaberulous, glabrous. 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 ovate, dorsally compressed, 3 mm long, falling entire.

**Glumes.** Glumes shorter than spikelet, thinner than fertile lemma. Lower glume ovate, 1.2–1.3 mm long, 0.4 length of spikelet, membranous, without keels, 3 -veined. Lower glume apex acute. Upper glume ovate, 2 mm long, 0.66 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 ovate, 1 length of spikelet, membranous, 5 -veined, obtuse. Palea of lower sterile floret 0.66 length of lemma. Fertile lemma lanceolate, dorsally compressed, gibbous, 3 mm long, indurate, without keel. Lemma surface smooth. Lemma margins involute. Lemma apex obtuse. Palea involute, indurate.

**Flower and Fruit.** Anthers 1.8 mm long.

**Distribution (TDWG). Continent.** Africa.

**Country /Province /State.** Western Indian ocean. Madagascar.

**Setaria petiolata** Stapf & C.E.Hubb. Prain, *Fl. Trop. Afr.* ix. 813 (1930).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

**TYPE** from Malawi. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Malawi, Lake Malawi: Simons (BM holo).

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): *L. petiolus*, little leg; -ata, possessing. Leaf-blades with a pseudopetiole.

**Classification.** Subfamily Panicoideae. Tribe: Paniceae. Subtribe SETARIINAE.

**Habit, Vegetative Morphology.** Annual, caespitose. Culms weak, 20–100 cm long. Culm-nodes glabrous. Ligule a fringe of hairs. Leaf-blade base with a false petiole, petiole 0.5–5 cm long. Leaf-blades 7–30 cm long, 2–20 mm wide, flaccid. Leaf-blade surface scabrous.

**Inflorescence.** Inflorescence a panicle. Panicle contracted or spiciform, linear or lanceolate, 3–17 cm long. Primary panicle branches sterile at the tips. Panicle branches villous. Spikelets subtended by an involucre. Fertile spikelets sessile, 1–3 in the cluster. Involucre composed of bristles, 5–10 mm long. Involucral bristles persistent, 5–7 in principal whorl, flexible, antrorsely scaberulous, glabrous.

**Fertile Spikelets.** Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets elliptic, dorsally compressed, 1.5–2 mm long, falling entire.

**Glumes.** Glumes shorter than spikelet, thinner than fertile lemma. Lower glume ovate, 0.5 length of spikelet, membranous, without keels, 3–5 -veined. Lower glume apex acute. Upper glume elliptic, 0.5–0.75 length of spikelet, membranous, without keels, 5 -veined. Upper glume apex obtuse.

**Florets.** Basal sterile florets 1, male or barren, with palea. Lemma of lower sterile floret ovate, 1 length of spikelet, membranous, 5 -veined, acute. Palea of lower sterile floret 0.66 length of lemma. Fertile lemma ovate, dorsally compressed, gibbous, 1.5–2 mm long, indurate, pallid, without keel. Lemma surface rugose. Lemma margins involute. Palea involute, indurate.

**Distribution (TDWG). Continent.** Africa.

**Country /Province /State.** Northeast tropical Africa, East tropical Africa, South tropical Africa. Ethiopia (inc. Eritrea). Kenya, Tanzania. Angola, Malawi, Mozambique, Zambia, Zimbabwe.

**Setaria pflanzii** J.F. Pensiero. *Hickenia*, 2(27): 123 (1995).

**Accepted by:** R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

**TYPE** from Bolivia. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Bolivia, El Salvador: Toledo & Joaquin 10453 (SI holo, SF).

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): in honor of Karl Pflanz (1872–1925) German botanist.

**Classification.** Subfamily Panicoideae. Tribe: Paniceae. Subtribe SETARIINAE.

**Habit, Vegetative Morphology.** Perennial, caespitose. Culms 50–120 cm long. Culm-nodes glabrous. Ligule a fringe of hairs. Leaf-blades linear or lanceolate, 12–32 cm long, 6–13 mm wide. Leaf-blade surface glabrous. Leaf-blade apex acute.

**Inflorescence.** Inflorescence a panicle. Panicle spiciform, linear, interrupted, (8–)14–26 cm long, 1–3 cm wide. Primary panicle branches sterile at the tips. Panicle axis angular, glabrous to pubescent. Spikelets subtended by an involucre. Fertile spikelets pedicelled, 1 in the cluster. Involucre composed of bristles, 3–5 mm long. Involucral bristles persistent, 1 per spikelet, flexible, antrorsely scaberulous, glabrous. 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 ovate or orbicular, dorsally compressed, 3–3.5 mm long, falling entire.

**Glumes.** Glumes shorter than spikelet or reaching apex of florets, thinner than fertile lemma. Lower glume ovate, 0.33–0.5 length of spikelet, membranous, without keels. Lower glume apex acute. Upper glume ovate, 0.8–1 length of spikelet, membranous, without keels.

**Florets.** Basal sterile florets 1, barren, with palea. Lemma of lower sterile floret ovate, 1 length of spikelet, membranous. Fertile lemma ovate, dorsally compressed, gibbous, 3–3.5 mm long, indurate, without keel. Lemma surface rugulose. Lemma margins involute. Palea involute, indurate.

**Distribution (TDWG). Continent.** South America.

**Country /Province /State.** Western South America, Southern South America. Bolivia. Argentina Northwest, Paraguay.

**TDWG4.** Salta.

**Setaria plicata** (Lam.) T. Cooke. *Fl. Bombay*, ii. 919 (1908).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), S-L Chen et al, *Flora of China* 22 (Poaceae) (2006), N.L.Bor, *Grasses of Burma, Ceylon, India and Pakistan* (1960), T.Koyama, *Grasses of Japan and its neighboring regions* (1987).

**TYPE** from Mauritius. **Basionym or Replaced Name:** *Panicum plicatum* Lam., *Illustr.* 1: 171 (1797). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Mauritius: Coll? (P holo, US).

**Illustrations (Books):** T.Koyama, *Grasses of Japan and its neighbouring regions* (1987) (322, Fig 123), C-C Hsu, *Flora of Taiwan*, Vol 5 (1978) (624), C-C Hsu, *Taiwan Grasses* (1975) (607, Pl. 1449), R.Pilger, *Die Natürlichen Pflanzenfamilien* 14e (1940) (71, Fig. 40), S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 741 as *Setaria plicata* var. *plicata*).

**Derivation** (Clifford & Bostock 2007): L. plico, fold. Leaf-blade with several longitudinal folds.

**Classification.** Subfamily Panicoideae. Tribe: Paniceae. Subtribe SETARIINAE.

**Habit, Vegetative Morphology.** Perennial, caespitose. Culms geniculately ascending or decumbent, 70–150 cm long. Leaf-sheaths keeled, outer margin hairy. Ligule a fringe of hairs. Leaf-blade base tapering to the midrib. Leaf-blades elliptic, plicate, 20–40 cm long, 5–30 mm wide, dark green. Leaf-blade surface scabrous, rough on both sides, pubescent, hairy abaxially. Leaf-blade margins scabrous, tuberculate-ciliate, hairy at base. Leaf-blade apex attenuate.

**Inflorescence.** Inflorescence a panicle. Peduncle glabrous or pilose above. Panicle open, linear, dense, 15–30 cm long, 2–5 cm wide. Primary panicle branches appressed or ascending, 0.5–1 cm long, bearing spikelets almost to the base, sterile at the tips. Panicle axis scabrous, pubescent. Panicle branches scabrous. Spikelets subtended by an involucre. Fertile spikelets pedicelled, 1 in the cluster. Involucre composed of bristles. Involucral bristles persistent, flexible, glabrous. Pedicels present, reduced to a stump, 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, dorsally compressed, acute, 3.5–4 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, 3 -veined. Lower glume apex obtuse. Upper glume elliptic, 0.8 length of spikelet, membranous, without keels, 7 -veined. Upper glume apex acute.

**Florets.** Basal sterile florets 1, barren, with palea. Lemma of lower sterile floret elliptic, 1 length of spikelet, membranous, 5 -veined. Fertile lemma elliptic, dorsally compressed, gibbous, 3.5–4 mm long, indurate, yellow, without keel. Lemma surface rugulose. Lemma margins involute. Lemma apex acute. Palea involute, indurate.

**Flower and Fruit.** Anthers 3, 1.5 mm long. Caryopsis with adherent pericarp, ellipsoid.

*N* = 36 (1 ref TROPICOS).

**Distribution (TDWG). Continent.** Temperate Asia, Tropical Asia.

**Country /Province /State.** China, Eastern Asia. China South Central, Hainan, China Southeast, Tibet. Japan, Nansei-Shoto, Taiwan. Japan Kyushu. **Indian Subcontinent, Indo-China, Malesia, Papuasia.** India, Nepal. Thailand. Malaya. New Guinea. New Caledonia (\*).

**TDWG4.** Anhui, Fujian, Guangdong, Guangxi, Hunan, Jiangsu, Jiangxi, Zhejiang. Guizhou, Hubei, Sichuan, Yunnan. Manipur, Mizoram. Kerala, Karnataka. Punjab, Uttar Pradesh.

**Setaria poiretiana** (Schult.) Kunth. *Rev. Gram.* i. 47 (1829).

**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 Brazil. **Basionym or Replaced Name:** *Panicum elongatum* Poir., non Salisb.(1796), *Encyc. Suppl.* 4: 278 (1816). T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: : Based on *P.elongatum* Poir. ; Brazil: Desfontaines (FI holo).

**Illustrations (Books):** S.Phillips, *Poaceae* (Gramineae) in I.Hedberg & S.Edwards, *Flora of Ethiopia and Eritrea* (1995) (239, Fig 96), T.Koyama, *Grasses of Japan and its neighbouring regions* (1987), A.S.Hitchcock, *Manual of the Grasses of the West Indies* (1936) (336, Fig. 306), L.B. Smith, D.C. Wasshausen, R.M. Klein *Flora Illustrada Catarinensis Gramineas* (1981–1982) (788 & 790, Fig. 163 & 164), W.Burger, *Flora Costaricensis* 15, Gramineae: *Fieldiana Botany New Series* 4 (1980) (529, Fig 198), B.Rosengurt, *Gramineas Uruguayas I* (1970) (388, Fig. 173), E.Judziewicz, *Flora of the Guianas*, 187. *Poaceae* (1990) (590, Fig 101), E.Hafliger & E.Schultz, *Grass Weeds*, CIBA-GEIGY (1:130(1980)).

**Illustrations (Journals):** *Darwiniana* (37: 97, Fig.14 (1999)), *Ruizia* (13:384 Fig 51h-i (1993)).

**Derivation** (Clifford & Bostock 2007): L. -ana, indicating connection. In honor of Jean Louis Marie Poiret (1755–1834) French cleric and encyclopedist.

**Classification.** Subfamily Panicoideae. Tribe: Paniceae. Subtribe SETARIINAE.

**Habit, Vegetative Morphology.** Perennial, caespitose. Culms erect, robust, 120–250 cm long, 4–8 mm diam. Ligule a fringe of hairs. Leaf-blades linear or lanceolate, plicate, 30–80 cm long, 10–100 mm wide.

**Inflorescence.** Inflorescence a panicle. Panicle open, pyramidal, 30–60 cm long, contracted about primary branches. Primary panicle branches ascending or spreading, bearing spikelets almost to the base, sterile at the tips. Panicle branches stiff, pubescent. Spikelets subtended by an involucre. Fertile spikelets sessile, 1 in the cluster. Involucre composed of bristles, 3–15 mm long. Involucral bristles persistent, 1 in principal whorl, flexible, antrorsely scaberulous, glabrous.

**Fertile Spikelets.** Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets elliptic, dorsally compressed, rostrate or acuminate, 3–4.5 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. Upper glume ovate, 0.66–0.75 length of spikelet, membranous, without keels.

**Florets.** Basal sterile florets 1, barren, with palea. Lemma of lower sterile floret ovate, 1.2 length of fertile lemma, 1 length of spikelet, membranous. Fertile lemma ovate, dorsally compressed, gibbous, 2.5–3.5 mm long, indurate, dark brown, without keel. Lemma surface unwrinkled. Lemma margins involute. Palea involute, indurate.

**Flower and Fruit.**  $N = 16$  (3 refs TROPICOS).  $2n = 32$  (1 ref TROPICOS), or 36 (1 ref TROPICOS).

**Distribution (TDWG). Continent.** Africa, North America, South America.

**Country /Province /State.** **West tropical Africa, West-central tropical Africa, Northeast tropical Africa, East tropical Africa.** Nigeria. Cameroon, Annobon, Principe & Sao Tome, Rwanda, DRC. Ethiopia (inc. Eritrea), Sudan. Kenya, Tanzania, Uganda. **Mexico.** Central Mexico, Gulf (Mexico), Southeast Mexico. **Mesoamerica, Caribbean, Northern South America, Western South America, Brazil, Southern South America.** Trinidad-Tobago. Bolivia. Brazil Southeast, Brazil North. Argentina Northeast.

**TDWG4.** Kerala. Tamilnadu. Buenos Aires.

**Setaria pseudaristata** (Peter) Pilger. Engl. & Prantl, *Nat. Pflanzenfam. Aufl.* 2, xiv e. 72 (1940).

**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:** *Acrochaete pseudaristata* Peter, Fedde, *Repert. Beih.* xl. 1. 20, Anhang, 5 (1930). T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: Tanzania, Chaya to Tura: Peter 34269 (B holo).

**Illustrations (Books):** G.E.Gibbs Russell et al, *Grasses of Southern Africa* (1990).

**Derivation** (Clifford & Bostock 2007): Gk *pseudos*, false; L. *arista*, bristle; -ata, possessing. Apices of upper glume and lower glume attenuate.

**Classification.** Subfamily Panicoideae. Tribe: Paniceae. Subtribe SETARIINAE.

**Habit, Vegetative Morphology.** Perennial, caespitose. Culms 50–100 cm long. Culm-nodes glabrous. Ligule a fringe of hairs. Leaf-blades 10–30 cm long, 2–6 mm wide. Leaf-blade apex attenuate, filiform.

**Inflorescence.** Inflorescence a panicle. Panicle open, oblong or ovate, 15–30 cm long. Primary panicle branches moderately divided, sterile at the tips. Panicle branches flexuous, pubescent. Spikelets subtended by an involucre. Fertile spikelets sessile, 1 in the cluster. Involucre composed of bristles, 3–20 mm long. Involucral bristles persistent, 1 in principal whorl, flexible, antrorsely scaberulous, glabrous.

**Fertile Spikelets.** Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets elliptic, dorsally compressed, acute, 3–3.5 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, 3 -veined. Lower glume apex acute. Upper glume ovate, 0.66–0.75 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 ovate, 1 length of spikelet, membranous, 5 -veined, acute. Fertile lemma ovate, dorsally compressed, gibbous, 3–3.5 mm long, indurate, without keel. Lemma surface unwrinkled or rugulose (obscurely). Lemma margins involute. Palea involute, indurate.

**Distribution (TDWG).** Continent. Africa.

**Country /Province /State.** East tropical Africa, South tropical Africa, Southern Africa. Tanzania. Angola, Zambia, Zimbabwe. Namibia, Botswana.

**Setaria pumila** (Poir.) Roem. & Schult. *Syst. ii.* 891 (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), 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)*, T.G.Tutin et al, *Flora Europaea* 5 (1980), N.Tsvelev, *Grasses of the Soviet Union* (1983) (as *S. glauca*), T.Koyama, *Grasses of Japan and its neighboring regions* (1987) (as *S. glauca*), W.D.Clayton & N.Snow, *Key to Pacific Grasses* (2010).

**TYPE** from unknown (P). **Basionym or Replaced Name:** *Panicum pumilum* Poir., *Encycl., Suppl.* 4: 273 (1816). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *Herb. Desfontaines s.n.*, (FI; IT: P).

**Recent Synonyms:** *Setaria ustilata* deWit, *Bull. Bot. Gard., Buitenz., Ser.* 3, 17: 59 (1941). *Setaria glauca* auct. non (L.) P.Beauv.

**Illustrations (Books):** C.E.Hubbard, *Grasses* (1968) (as *S. glauca*), N.N.Tsvelev, *Grasses of the Soviet Union* (1983) (987 (653), Pl.15 as *S.glauca*), F.N.Hepper, *F.W.T.A.* 3(2) (1972) (422, Fig.438 as *S. pallidifusca*), L.Boulos, *Flora of Egypt* 4 (2005) (300, Pl. 88), N.L.Bor, *Gramineae in Flora of Iraq* (1968) (as *S. glauca*), K.M.Matthew, *Further Illustrations on the Flora of Tamilnadu Carnatic* (1988) (pl.823), T.A.Cope, *Flora of Pakistan* 143: *Poaceae* (1982) (182, Fig. 19), H.J.Noltie, *The Grasses of Bhutan* (2000) (721, Fig. 43), J.P.Jessop, G.R.M. Dashorst & F.M.James, *Grasses of South Australia* (2006) (483, Fig 417 as subsp. *pumila*), S.W.L.Jacobs, R.D.B.Whalley & D.J.B.Wheeler., *Grasses of New South Wales*, 4th edn (2008) (370), J.C.Tothill, & J.B.Hacker. *The grasses of southern Queensland* (1983) (374), T.D.Stanley & E.Ross, *Flora of South East Queensland, Gramineae* (1989) (205, Fig. 32 as subsp.*pumila*), 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) (559 as subsp. *pumila* & *pallidifusca*), A.S.Hitchcock, *Manual of the Grasses of the West Indies* (1936) (as *S. lutescens*), R.Pilger, *Die Natürlichen Pflanzenfamilien* 14e (1940) (72, Fig. 41).

**Images:** D.Sharp & B.K.Simon, *AusGrass*. *Grasses of Australia*. CD-Rom Version 1.0. (2002);, L.Boulos, *Flora of Egypt* 4 (2005);, F.van Oudtshoorn, *Guide to Grasses of Southern Africa* (1999) (as *S.ustilata*).

**Derivation** (Clifford & Bostock 2007): L. dwarf, low growing. Habit typically depauperate.

**Classification.** Subfamily Panicoideae. Tribe: Paniceae. Subtribe SETARIINAE.

**Habit, Vegetative Morphology.** Annual, caespitose. Culms geniculately ascending, 5–130 cm long. Culm-nodes glabrous. Ligule a ciliolate membrane or a fringe of hairs. Leaf-blades 3–30 cm long, 2–10 mm wide.

**Inflorescence.** Inflorescence a panicle. Panicle spiciform, linear, 1–10(–20) cm long. Primary panicle branches accrescent to a central axis, with evident branchlets on axis. Panicle axis pubescent. Spikelets subtended by an involucre. Fertile spikelets pedicelled, 1 in the cluster. Involucre composed of bristles, free throughout, 3–12 mm long. Involucral bristles persistent, few, in one whorl, 6–8 in principal whorl, flexible, antrorsely scaberulous, glabrous. 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 ovate, dorsally compressed, gibbous, 1.5–3.5 mm long, falling entire.

**Glumes.** Glumes shorter than spikelet, thinner than fertile lemma. Lower glume orbicular, 0.3–0.7 length of spikelet, membranous, without keels, 3 -veined. Lower glume apex acute. Upper glume ovate, 0.4–0.7 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 ovate, 1 length of spikelet, membranous, 5 -veined, sulcate, acute. Fertile lemma ovate, dorsally compressed, gibbous, 1.5–3.5 mm



long, indurate, without keel. Lemma surface rugose or corrugate. Lemma margins involute. Palea involute, indurate.

**Flower and Fruit.** Anthers 3, 0.4 mm long.

$N = 36$  (1 ref TROPICOS).  $2n = 36$  (3 refs TROPICOS).

**Distribution (TDWG). Continent.** Europe, Africa, Temperate Asia, Tropical Asia, Australasia (\*), Pacific, North America, South America.

**Region.** Northern Europe (\*), Middle Europe, Southwestern Europe, Southeastern Europe, Eastern Europe.

**Country /Province /State.** : Great Britain (\*). : Austria, Czechoslovakia, Hungary. : Baleares, Corsica, France, Portugal, Sardinia, Spain, Azores. : Albania, Bulgaria, Greece, Italy, Crete, Romania, Sicily, Turkey Europe, Yugoslavia. Belarus, Estonia, Latvia, Lithuania, Krym, Central European Russia, East European Russia, North European Russia, South European Russia, Northwest European Russia, Moldova, 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, Morocco, Tunisia. Azores, Canary Is, Cape Verde. Rwanda, DRC. Chad, Eritrea, Ethiopia (inc. Eritrea), Socotra, Somalia, Sudan. Kenya, Tanzania, Uganda. Angola, Malawi, Mozambique, Zambia, Zimbabwe. Namibia, Botswana, Limpopo, North-West, Gauteng, Mpumalanga, Swaziland, Free State, Kwazulu-Natal, Lesotho, Northern Cape, Western Cape, Eastern Cape. Mauritius, Madagascar. Siberia, Russian far east, **Middle Asia, Caucasus, Western Asia, Arabian Peninsula, China, Mongolia, Eastern Asia.** Altay, Buryatiya, Chita, Irkutsk, Tuva. Amur, Kamchatka, Khabarovsk, Kuril Is, Magadan, Primorye, Sakhalin. Kazakhstan, Kirgizistan, Turkmenistan, Tadjikistan, Uzbekistan. Iran. Kuwait, Oman. China South Central, Hainan, Inner Mongolia, Manchuria, China North-Central, China Southeast, Tibet, Xinjiang. Japan, Kazan-retto, Nansei-Shoto, Ogosawara-shoto, Taiwan. Japan Honshu, or Shikoku, or Kyushu. **Indian Subcontinent, Indo-China, Malesia, Papuasias.** Bangladesh, Eastern Himalaya, Pakistan, Sri Lanka, West Himalaya. Andaman Is, Myanmar, Thailand, Vietnam. Java. Solomon Is (\*). **Australia, New Zealand.** Western Australia (\*), Northern Territory (\*), South Australia (\*), Queensland (\*), New South Wales (\*), A.C.T. (\*), Victoria (\*), Tasmania (\*), Lord Howe-Norfolk Is (\*). Kermadec Is (\*), New Zealand North I (\*), New Zealand South I (\*). **Southwestern Pacific, South-central Pacific, Northwestern Pacific, North-central Pacific.** Fiji (\*), New Caledonia (\*), Samoa (\*), Tonga (\*), Vanuatu (\*). Cook Is (\*), Marquesas (\*), Society Is (\*). Caroline Is (\*), Marcus Is (\*), Marianas (\*), Marshall Is (\*). **Western Canada, Eastern Canada, Northwest USA, North-central USA, Northeast USA, Southwestern USA, South-central USA, Southeastern USA, Mexico.** Alberta, British Columbia, Manitoba, Saskatchewan. Newfoundland, Ontario, Quebec. Colorado, Idaho, Montana, Oregon, Washington, Wyoming. Illinois, Iowa, Kansas, Minnesota, Missouri, North Dakota, Nebraska, Oklahoma, South Dakota, Wisconsin. Connecticut, Indiana, Maine, Massachusetts, Michigan, Ohio, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, Vermont, West Virginia. Arizona, California, Nevada, Utah. Alabama, Arkansas, Delaware, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, North Carolina, South Carolina, Tennessee, Virginia, District of Columbia. Central Mexico. **Caribbean, Western South America, Brazil, Southern South America.** Haiti, Jamaica, Leeward Is. Bolivia, Ecuador. Brazil Southeast. Argentina South, Argentina Northwest, Chile North, Chile Central.

**TDWG4.** Beijing, Shaanxi, Shandong. Anhui, Fujian, Guangdong, Henan, Hunan, Jiangxi, Shanghai, Zhejiang. Guizhou, Hubei, Sichuan, Yunnan. Darjeeling, Bhutan, Sikkim. 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, Eremean, South-West. Darwin & Gulf. NW & Lake Eyre, Southern. North, Central, South East, Inland. Coast, Tablelands, Western Slopes, Western Plains. Jujuy. Río Negro. Tarapaca, Atacama. Valparaiso, Santiago, Maule. Mexico State.

**Setaria queenslandica** Domin. *Biblioth. Bot.* 1 v. 330 (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>: *fide* TROPICOS and Kew Synonymy Database: [Australia]: "Nord-Queensland: in den Eucalyptus- Waldern zwischen Chillagoe und dem Walsh River ...", *Domain*, I. 1910.

**Illustrations (Books):** No illustration found (BKS), K.Domin, *Bibliotheca Botanica* 85 (1915) (Pl.15).

**Images:** D.Sharp & B.K.Simon, *AusGrass*. Grasses of Australia. CD-Rom Version 1.0. (2002);

**Derivation** (Clifford & Bostock 2007): L. -ica, belonging to. From Queensland, Australia.

**Classification.** Subfamily Panicoideae. Tribe: Paniceae. Subtribe SETARIINAE.

**Habit, Vegetative Morphology.** Annual, caespitose. Cataphylls inconspicuous. Culms geniculately ascending, 30–45 cm long. Culm-internodes smooth. Lateral branches lacking. Leaf-sheaths loose, keeled,

striately veined, glabrous on surface. Ligule a fringe of hairs. Leaf-blades flat or involute, 7–15 cm long, 2–4 mm wide. Leaf-blade surface scaberulous, pilose, sparsely hairy, hairy adaxially.

**Inflorescence.** Inflorescence a panicle. Peduncle scaberulous above. Panicle spiciform, linear, loose, 3–4 cm long, bearing few spikelets. Primary panicle branches accrescent to a central axis, with evident branchlets on axis. Spikelets subtended by an involucre. Fertile spikelets pedicelled, 1 in the cluster. Involucre composed of bristles, free throughout, 9 mm long. Involucral bristles persistent, few, in one whorl, 7–8 in principal whorl, flexible, antrorsely scaberulous, glabrous. 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 ovate, dorsally compressed, gibbous, 3.5 mm long, falling entire.

**Glumes.** Glumes shorter than spikelet or reaching apex of florets, thinner than fertile lemma. Lower glume ovate, 2 mm long, 0.5–0.6 length of spikelet, membranous, without keels, 3 -veined. Lower glume apex acute. Upper glume ovate, gibbous, 0.8–1 length of spikelet, membranous, without keels, 5 -veined. Upper glume lateral veins prominent. Upper glume surface scabrous. Upper glume apex acute.

**Florets.** Basal sterile florets 1, barren, with palea. Lemma of lower sterile floret ovate, 1 length of spikelet, membranous, light green, 5 -veined, acute. Palea of lower sterile floret 3 mm long. Fertile lemma ovate, dorsally compressed, gibbous, 3.5 mm long, indurate, pallid, without keel. Lemma surface rugulose. Lemma margins involute. Lemma apex apiculate. Palea involute, indurate.

**Flower and Fruit.** Anthers 3.

**Distribution (TDWG). Continent.** Australasia.

**Country /Province /State.** Australia. Western Australia, Northern Territory, Queensland.

**TDWG4.** Kimberley. Darwin & Gulf. North.

**Setaria rariflora** J. Presl, non Spreng. (1821). *Rel. Haenk.* 1: 313 (1830).

**Accepted by:** U. Quattrocchi, *CRC World Dictionary of Grasses* (2006).

**TYPE** from Mexico. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: Mexico, Acapulco: Haenke (PR holo).

**Illustrations (Books):** M.E. Barkworth et al, *Flora of North America north of Mexico* Vol 25 *Poaceae*, part 2 (2003) (551), A.S. Hitchcock, *Manual of the Grasses of the West Indies* (1936) (349, Fig. 320), L.B. Smith, D.C. Wasshausen, R.M. Klein *Flora Illustrada Catarinensis Gramineas* (1981–1982) (806, Fig. 166).

**Derivation** (Clifford & Bostock 2007): *L. rarus*, far apart; *flos*, flower. With spikelets well separated in inflorescence.

**Classification.** Subfamily Panicoideae. Tribe: Paniceae. Subtribe SETARIINAE.

**Distribution (TDWG). Continent.** South America.

**Country /Province /State.** Caribbean. Cuba, Leeward Is, Puerto Rico.

**Setaria restioidea** (Franch.) Stapf. Prain, *Fl. Trop. Afr.* ix. 811 (1930).

**Accepted by:** W.D. Clayton & K. Harman, *GrassBase* (2008) and online.

**TYPE** from Congo Rep. **Basionym or Replaced Name:** *Panicum restioideum* Franch., *Bull. Soc. Hist. Nat. Autun* 8: 353 (1895). T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: Hab. ... Congo, sables humides de la plaine de Mpila, près de Brazzaville...", *J. de Brazza & Thollon* 70.

**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 (269, Pl. 44).

**Derivation** (Clifford & Bostock 2007): Gk. -oidea, resemblance. Similar to *Restio*.

**Classification.** Subfamily Panicoideae. Tribe: Paniceae. Subtribe SETARIINAE.

**Habit, Vegetative Morphology.** Perennial, caespitose. Culms 60–150 cm long, wiry. Ligule a fringe of hairs. Leaf-blades flat or convolute, 10–60 cm long, 1–4 mm wide. Leaf-blade apex attenuate, filiform.

**Inflorescence.** Inflorescence a panicle. Panicle spiciform, linear, 5–18 cm long. Primary panicle branches accrescent to a central axis, with evident branchlets on axis. Panicle axis pubescent or pilose. Spikelets subtended by an involucre. Fertile spikelets 2–3 in the cluster. Involucre composed of bristles, 2–8 mm long. Involucral bristles persistent, flexible, antrorsely scaberulous, glabrous.

**Fertile Spikelets.** Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets elliptic, dorsally compressed, 2–2.5 mm long, falling entire.

**Glumes.** Glumes shorter than spikelet, thinner than fertile lemma. Lower glume ovate, 0.33–0.5 length of spikelet, hyaline, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume apex obtuse. Upper glume ovate, 0.33–0.5 length of spikelet, hyaline, without keels, 3 -veined. Upper glume apex obtuse.

**Florets.** Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret oblong, 1 length of spikelet, membranous, much thinner on margins, 5 -veined, acute. Fertile lemma ovate, dorsally compressed, gibbous, 1.5–2 mm long, indurate, without keel. Lemma surface striate. Lemma margins involute. Palea involute, indurate.

**Distribution (TDWG). Continent.** Africa.

**Country /Province /State.** West tropical Africa, West-central tropical Africa, Northeast tropical Africa, East tropical Africa, South tropical Africa. DRC. Chad, Sudan. Uganda. Angola.

**Setaria reverchonii** (Vasey) Pilger. Engl. & Prantl, *Nat. Pflanzenfam. Aufl.* 2, 14 e. 72 (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 (as *Paspalidium*), U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

**TYPE** from USA. **Basionym or Replaced Name:** *Panicum reverchonii* Vasey, *Dept. Agric. Bot. Div. Bull.* 8: 25 (1889). T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: HT: *Reverchon s.n.*, USA: Texas: Dallas Co.: near Dallas (US-81109). distributed as Curtiss, North American Plants, No. I.

**Recent Synonyms:** *Setaria ramiseta* (Scribn.) Pilger in Engl. & Prantl, *Nat. Pflanzenfam. Aufl.* 2, xiv e. 72 (1940). *Setaria firmula* (Hitchc. & Chase) Pilg., *Nat. Pflanzenfam.* (ed. 2) 14e: 72 (1940).

**Illustrations (Books):** M.E.Barkworth et al, *Flora of North America north of Mexico Vol 25 Poaceae*, part 2 (2003) (547 as subspecies *reverchonii* & *firmula* & *ramiseta*), F.W.Gould, *The Grasses of Texas* (1975) (546, Fig. 285).

**Derivation** (Clifford & Bostock 2007): in honor of Julien Reverchon (1837–1905) French-born United States plant collector.

**Classification.** Subfamily Panicoideae. Tribe: Paniceae. Subtribe SETARIINAE.

**Habit, Vegetative Morphology.** Perennial, caespitose. Butt sheaths pilose or villous. Culms 35–70 cm long. Ligule a fringe of hairs, 1–2 mm long. Leaf-blades flat or involute, 6–20 cm long, 1.5–3 mm wide.

**Inflorescence.** Inflorescence composed of racemes. Racemes 6–20, borne along a central axis, paucilateral, 0.5–1.5 cm long, bearing few fertile spikelets, bearing 1–10 fertile spikelets on each. Central inflorescence axis 6–20 cm long, tip with blunt extension. Rhachis subterete, scabrous on surface, terminating in a barren extension, extension bristle-like, extension 2–6 mm long. Spikelet packing abaxial, lax, irregular. Spikelets solitary or in pairs. 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, subacute, (2.5–)3–4 mm long, falling entire.

**Glumes.** Glumes dissimilar, reaching apex of florets, thinner than fertile lemma. Lower glume ovate, clasping, 0.33–0.5 length of spikelet, membranous, without keels, 5 -veined. Lower glume apex obtuse. Upper glume elliptic, 1 length of spikelet, membranous, without keels, 9 -veined. Upper glume apex obtuse.

**Florets.** Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret similar to upper glume, elliptic, 1 length of spikelet, membranous, 5 -veined, obtuse or acute. Fertile lemma elliptic, 2–3.5 mm long, indurate, without keel. Lemma surface rugulose. Lemma margins involute. Lemma apex acute. Palea reflexed at apex, indurate. Palea surface rugose.

**Distribution (TDWG). Continent.** North America, South America.

**Country /Province /State.** South-central USA, Mexico. Texas. Northeast Mexico. **Southern South America.** Paraguay. Coahuila, Neuvo Leon, Tamaulipas.

**Setaria rigida** Stapf. Dyer, *Fl. Cap.* vii. 426. (1900).

**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: ST: *Buchanan 12*, South Africa: Eastern Region: Natal: Umpumulo, 2400 ft ST: *Buchanan 173*, South Africa: Eastern Region: Natal: Umpumulo, 2400 ft.

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): L. stiff. Culms, spikelets or inflorescence branches held stiffly erect.

**Classification.** Subfamily Panicoideae. Tribe: Paniceae. Subtribe SETARIINAE.

**Habit, Vegetative Morphology.** Perennial. Rhizomes short. Culms erect, 100–180 cm long. Ligule a fringe of hairs. Leaf-blades flat or involute, 10–30 cm long, 3–6 mm wide, stiff. Leaf-blade apex attenuate.

**Inflorescence.** Inflorescence a panicle. Peduncle antrorsely scabrous above. Panicle spiciform, linear, 8–24 cm long. Primary panicle branches sterile at the tips. Spikelets subtended by an involucre. Fertile spikelets sessile, 2–5(–8) in the cluster. Involucre composed of bristles. Involucral bristles persistent, 4–9 in principal whorl, 6–12 mm long, grooved on the face, rigid, antrorsely scaberulous, 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 elliptic, dorsally compressed, acute, 2.3–2.8 mm long, falling entire.

**Glumes.** Glumes shorter than spikelet, thinner than fertile lemma. Lower glume ovate, 0.7 mm long, 0.25 length of spikelet, membranous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume apex acute. Upper glume ovate, 1–1.5 mm long, 0.5 length of spikelet, membranous, without keels, 3–5 -veined. Upper glume apex obtuse.

**Florets.** Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret ovate, 1 length of spikelet, membranous, 5 -veined, acute. Fertile lemma ovate, dorsally compressed, 2.3–2.8 mm long, indurate, without keel. Lemma surface rugulose. Lemma margins involute. Lemma apex acute. Palea involute, indurate.

**Distribution (TDWG). Continent.** Africa.

**Country /Province /State. Southern Africa.** Swaziland, Kwazulu-Natal, Eastern Cape.

**Setaria roemerii** Jansen. *Reinwardtia*, ii. 340 (1953).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online.

**TYPE** from New Guinea. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *Roemer 611*, 1911, New Guinea (L).

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): in honor of Hans L. Roemer (fl. 1983) Canadian ecologist.

**Classification.** Subfamily Panicoideae. Tribe: Paniceae. Subtribe SETARIINAE.

**Habit, Vegetative Morphology.** Annual, caespitose, clumped loosely. Culms erect or geniculately ascending, 40–80 cm long. Leaf-sheaths mostly shorter than adjacent culm internode, glabrous on surface. Ligule a fringe of hairs, 1 mm long. Leaf-blades flat, 10–20 cm long, 4–6 mm wide, glaucous. Leaf-blade surface smooth, pilose. Leaf-blade margins ciliate, hairy at base. Leaf-blade apex attenuate.

**Inflorescence.** Inflorescence a panicle. Peduncle pubescent above. Panicle spiciform, linear, 13–15 cm long, 0.4–0.6 cm wide. Primary panicle branches accrescent to a central axis, with evident branchlets on axis. Panicle axis pubescent. Spikelets subtended by an involucre. Fertile spikelets sessile, 1 in the cluster. Involucre composed of bristles, free throughout. Involucral bristles persistent, in one whorl, 6–8 in principal whorl, 6–8 per spikelet, 6 mm long, flexible, antrorsely scaberulous, glabrous. 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 elliptic, dorsally compressed, gibbous, 3 mm long, falling entire.

**Glumes.** Glumes shorter than spikelet, thinner than fertile lemma. Lower glume ovate or orbicular, 0.33 length of spikelet, membranous, without keels, 3 -veined. Lower glume lateral veins prominent. Lower glume apex truncate or obtuse. Upper glume ovate, gibbous, 0.66 length of spikelet, membranous, without keels, 5 -veined. Upper glume lateral veins prominent. Upper glume surface scabrous. Upper glume apex truncate or obtuse, mucronate.

**Florets.** Basal sterile florets 1, barren, with palea. Lemma of lower sterile floret ovate, 1 length of spikelet, membranous, 5 -veined, acute, mucronate. Fertile lemma ovate, dorsally compressed, gibbous, indurate, without keel. Lemma surface rugose. Lemma apex acute. Palea involute, indurate. Palea surface rugose.

**Flower and Fruit.** Anthers 3. Caryopsis with adherent pericarp, orbicular.

**Distribution (TDWG). Continent.** Tropical Asia.

**Country /Province /State. Malesia, Papuasia.** New Guinea.

**Setaria rosenfurtii** Nicora. *Fl. Prov. Buenos Aires, Pt. 2, Gramin.*, 453 (1970).

**Accepted by:** R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

**TYPE** from Argentina. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Argentina: Buenos Aires: Capital Federal: Villa Urquiza, Apr. 1951, *L.R. Parodi 15260* (HT: BAA).

**Illustrations (Books):** A.L.Cabrera, *Flora de la Provincia de Buenos Aires, IV Pt 2 Gramineas* (1970) (454, Fig 117 & 456, Fig. 118).

**Derivation** (Clifford & Bostock 2007): in honor of Bernado Rosengurt (1916-) who collected in South America.

**Classification.** Subfamily Panicoideae. Tribe: Paniceae. Subtribe SETARIINAE.

**Habit, Vegetative Morphology.** Perennial, caespitose. Stolons absent or present. Basal innovations intravaginal. Culms erect or geniculately ascending, 35–70 cm long, 3–6 -noded. Culm-nodes glabrous or pubescent. Leaf-sheaths keeled, glabrous on surface, outer margin glabrous or hairy. Ligule a ciliate membrane, 2–2.5 mm long. Leaf-blades convolute, 12–25 cm long, 3–6 mm wide. Leaf-blade surface scabrous, pilose, hairy on both sides.

**Inflorescence.** Inflorescence a panicle. Panicle spiciform, linear, interrupted, 6–15 cm long, 0.5–0.7 cm wide. Primary panicle branches 0.2–1.3 cm long, sterile at the tips. Panicle axis angular, with scattered hairs or glabrous. Spikelets subtended by an involucre. Fertile spikelets pedicelled, 1 in the cluster. Involucre composed of bristles, 5–15 mm long. Involucral bristles persistent, 1 per spikelet, antrorsely scaberulous, glabrous. 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 ovate, dorsally compressed, gibbous, 2.4–2.6 mm long, falling entire.

**Glumes.** Glumes shorter than spikelet, thinner than fertile lemma. Lower glume ovate, 0.5 length of spikelet, membranous, without keels, 3–5 -veined. Lower glume apex acute. Upper glume ovate, 0.8 length of spikelet, membranous, without keels, 7–10 -veined. Upper glume apex obtuse.

**Florets.** Basal sterile florets 1, barren, with palea. Lemma of lower sterile floret ovate, 1 length of spikelet, membranous, 5 -veined, acute. Fertile lemma ovate, dorsally compressed, gibbous, 2–2.2 mm long, indurate, without keel. Lemma surface rugulose. Lemma margins involute. Lemma apex apiculate. Palea involute, indurate.

**Flower and Fruit.** Anthers 0.7–0.8 mm long. Caryopsis with adherent pericarp.

*N* = 54 (3 refs TROPICOS).

**Distribution (TDWG). Continent.** South America.

**Country /Province /State. Brazil, Southern South America.** Argentina Northeast, Paraguay.

**TDWG4.** Buenos Aires, Corrientes, Entre Rios, Misiones, Santa Fe.

## **Setaria sagittifolia** (A.Rich.) Walp. *Ann.* iii. 721. (1852).

**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:** *Pennisetum sagittifolium* Hochst. ex A. Rich., *Tent. Fl. Abyss.* 2: 379–380 (1850). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: ST: *Quartin Dillon s.n.*, Africa: Abyssinia (Tchelatchekanne) (P). ST: *Schimper, pl. Schimp. Abyss., Sect. III, 1655*, Ethiopia: crescit in convalle fluvii Tacazze, juxta Tchelatchekanne (K; IST: L, MO).

**Recent Synonyms:** *Cymbosetaria sagittifolia* (A. Rich.) Schweickerdt in *Hook. Ic. Pl.* 34: t. 3320 (1936).

**Illustrations (Books):** H.Jacques-Felix, *Les Graminees d'Afrique tropicale* (1962) (as *Cymbosetaria*), R.M.Phill, F.T.E.A., *Gramineae* (3(1982):534, Fig.128), L.K.A. Chippindall, *Grasses and Pastures of South Africa* (1955) (356, Fig 306 as *Cymbosetaria*), M.A.N.Muller, *Grasses of South West Africa/Namibia* (1984) (as *Cymbosetaria*), G.E.Gibbs Russell et al, *Grasses of Southern Africa* (1990) (298, Fig 191), J.Bosser, *Graminees des Paturage et des Cultures a Madagascar* (1969) (283, Fig 104 as *Cymbosetaria*), R.Pilger, *Die Natuerlichen Pflanzenfamilien* 14e (1940) (as *Cymbosetaria*).

**Illustrations (Journals):** *Hooker's Icones Plantarum* (t.3320 (1936) as *Cymbosetaria*).

**Images:** F.van Oudtshoorn, *Guide to Grasses of Southern Africa* (1999).

**Derivation** (Clifford & Bostock 2007): *L. sagittus*, shaped like an arrow-head; folium, leaf. With leaf-blades resembling an arrow-head.

**Classification.** Subfamily Panicoideae. Tribe: Paniceae. Subtribe SETARIINAE.

**Habit, Vegetative Morphology.** Annual. Culms weak, 20–80 cm long. Ligule a fringe of hairs. Leaf-blade base sagittate, with a false petiole (at least the lower). Leaf-blades linear or lanceolate, 5–30 cm long, 3–11 mm wide.

**Inflorescence.** Inflorescence a panicle. Panicle open, oblong or ovate, 3–15 cm long, contracted about primary branches. Primary panicle branches whorled at most nodes, simple, bearing spikelets almost to the base, sterile at the tips. Panicle branches secund, scaberulous. Spikelets subtended by an involucre. Fertile spikelets sessile, 1 in the cluster. Involucre composed of bristles, 2–15 mm long. Involucral bristles persistent, 1 in principal whorl, flexible, antrorsely scaberulous, 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 orbicular, laterally compressed, 2 mm long, falling entire.

**Glumes.** Glumes shorter than spikelet, thinner than fertile lemma. Lower glume ovate, 0.33 length of spikelet, membranous, without keels, 3 -veined. Lower glume apex obtuse. Upper glume elliptic, 0.5 length of spikelet, membranous, without keels, 5 -veined. Upper glume apex obtuse.

**Florets.** Basal sterile florets 1, male or barren, with palea. Lemma of lower sterile floret elliptic, 1 length of spikelet, membranous, 5 -veined, without grooves, obtuse. Fertile lemma ovate, laterally compressed, gibbous, 2 mm long, indurate, keeled. Lemma surface rugose. Lemma margins involute. Palea involute, indurate. Palea surface rugose.

**Distribution (TDWG). Continent.** Africa, Temperate Asia.

**Country /Province /State.** Northeast tropical Africa, East tropical Africa, South tropical Africa, Southern Africa, Western Indian ocean. Ethiopia (inc. Eritrea), Somalia, Sudan. Kenya, Tanzania. Angola, Malawi, Zambia, Zimbabwe. Namibia, Botswana, Limpopo, Mpumalanga, Swaziland, Kwazulu-Natal. Madagascar. **Arabian Peninsula.** Yemen.

**Setaria scabrifolia** (Nees) Kunth. *Rev. Gram.* ii. t. 212. (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 Brazil. **Basionym or Replaced Name:** *Panicum scabrifolium* Nees, *Fl. Bras. Enum. Pl.* 2(1): 246–247 (1829). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *K.F.P. von Martius s.n.*, no date, Brazil: Minas Gerais: inter Villa Rica et Tejuco (M; IT: K (photo), US-80969 (fragm.)).

**Illustrations (Books):** S.A.Renvoize, *The Grasses of Bahia*, 1984 (100, Fig. 35), L.B. Smith, D.C. Wasshausen, R.M. Klein *Flora Illustrada Catarinensis Gramineas* (1981–1982) (806, Fig. 166).

**Illustrations (Journals):** *Darwiniana* (37: 101, Fig.15 (1999)).

**Derivation** (Clifford & Bostock 2007): L. scaber, rough; folium, leaf. Leaf-blades rough.

**Classification.** Subfamily Panicoideae. Tribe: Paniceae. Subtribe SETARIINAE.

**Habit, Vegetative Morphology.** Perennial, caespitose. Basal innovations extravaginal. Culms erect, 40–180 cm long, 3–7 -noded. Culm-nodes glabrous. Leaf-sheaths longer than adjacent culm internode, outer margin hairy. Ligule a ciliate membrane, 1–1.8 mm long. Leaf-blades 20–40 cm long, 4–12 mm wide. Leaf-blade surface scabrous, rough on both sides, glabrous or pilose. Leaf-blade margins scabrous. Leaf-blade apex acuminate.

**Inflorescence.** Inflorescence a panicle. Panicle spiciform, linear, loose, 10–20 cm long, 1.5–2 cm wide. Primary panicle branches 0.1–1.2 cm long, sterile at the tips. Panicle axis angular, pilose. Panicle branches scabrous. Spikelets subtended by an involucre. Fertile spikelets pedicelled, 1 in the cluster. Involucre composed of bristles, 5–19 mm long. Involucral bristles persistent, 1–3 per spikelet, antrorsely scaberulous, glabrous. 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 ovate, dorsally compressed, 2–3 mm long, falling entire.

**Glumes.** Glumes shorter than spikelet, thinner than fertile lemma. Lower glume ovate, 0.33 length of spikelet, membranous, without keels, 5 -veined. Lower glume apex obtuse. Upper glume ovate, 0.5 length of spikelet, membranous, without keels, 7 -veined. Upper glume apex acute.

**Florets.** Basal sterile florets 1, barren, with palea. Lemma of lower sterile floret ovate, 1 length of spikelet, membranous, 5 -veined, acute. Palea of lower sterile floret 1 length of lemma. Fertile lemma ovate, dorsally compressed, gibbous, 2–3 mm long, indurate, without keel. Lemma surface rugose. Lemma margins involute. Lemma apex apiculate. Palea involute, indurate.

**Flower and Fruit.** Anthers 1–1.2 mm long. Caryopsis with adherent pericarp.

*N* = 18 (3 refs TROPICOS).

**Distribution (TDWG). Continent.** Africa, South America.

**Country /Province /State.** Western Indian ocean. Madagascar. **Brazil, Southern South America.** Brazil Northeast, Brazil Southeast, Brazil South. Paraguay.

**TDWG4.** Bahia, Minas Gerais, Rio de Janeiro, Espirito Santo, Sao Paulo Parana, Catarina, Rio Grande do Sul.

**Setaria scandens** Schrad. ex Schult. *Mant.* ii. 279. (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 South America. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *Anonymous s.n.*, (GOET; IT: LE, US-978002 (fragm.), US-977998 (fragm.)).

**Illustrations (Books):** A.S.Hitchcock, *Manual of the Grasses of the West Indies* (1936) (343, Fig. 313), S.A.Rennoize, *Gramineas de Bolivia* (1998) (517, Fig 116), S.A.Rennoize, *The Grasses of Bahia*, 1984 (102, Fig. 36), L.B. Smith, D.C. Wasshausen, R.M. Klein *Flora Illustrada Catarinensis Gramineas* (1981–1982) (788, Fig. 163), M.N.Corrêa, *Flora Patagónica Parte III, Gramineae* (1978) (541, Fig 364).

**Derivation** (Clifford & Bostock 2007): *L. scando*, climb up. Of scrambling habit.

**Classification.** Subfamily Panicoideae. Tribe: Paniceae. Subtribe SETARIINAE.

**Habit, Vegetative Morphology.** Annual. Culms geniculately ascending, 40–80 cm long. Culm-nodes glabrous. Leaf-sheaths glabrous on surface, outer margin hairy. Ligule a fringe of hairs, 0.5–1 mm long. Collar pilose. Leaf-blades linear or lanceolate, 5–15 cm long, 4–10 mm wide. Leaf-blade surface scabrous, rough on both sides, pubescent, hairy on both sides. Leaf-blade apex acuminate.

**Inflorescence.** Inflorescence a panicle. Peduncle scaberulous above. Panicle spiciform, linear, dense, 3–10 cm long, 0.5 cm wide. Primary panicle branches sterile at the tips. Panicle axis angular, with scattered hairs or pubescent. Spikelets subtended by an involucre. Fertile spikelets pedicelled, 1 in the cluster. Involucre composed of bristles, 3–5 mm long. Involucral bristles persistent, 1–3 per spikelet, flexible, retrorsely scaberulous, retrorse above, antrorse below, glabrous. Pedicels present, oblong.

**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, compressed slightly, 1.5 mm long, falling entire.

**Glumes.** Glumes shorter than spikelet, thinner than fertile lemma. Lower glume ovate, clasping, 0.5 length of spikelet, membranous, without keels, 3 -veined. Lower glume apex acute. Upper glume ovate, 0.9 length of spikelet, membranous, mid-green, without keels, 5 -veined. Upper glume apex acute.

**Florets.** Basal sterile florets 1, barren, with palea. Lemma of lower sterile floret ovate, 1 length of spikelet, membranous, mid-green, 5 -veined, acute. Palea of lower sterile floret 0.5 length of lemma. Fertile lemma ovate, dorsally compressed, gibbous, 1.5 mm long, indurate, without keel. Lemma surface rugulose. Lemma margins involute. Palea involute, indurate.

**Distribution (TDWG). Continent.** North America, South America.

**Country /Province /State. Mexico.** Central Mexico, Northeast Mexico, Gulf (Mexico), Southwest Mexico, Southeast Mexico. **Mesoamerica, Caribbean, Northern South America, Western South America, Brazil, Southern South America.** Belize, Costa Rica, Guatemala, Honduras, Nicaragua, Panama. Cuba, Dominican Republic, Haiti, Jamaica. Venezuela. Bolivia, Colombia, Ecuador, Peru. Brazil West Central, Brazil Northeast, Brazil Southeast, Brazil South. Argentina Northeast, Argentina Northwest, Paraguay.

**TDWG4.** Para, Amapa, Mato Grosso, Goias, Bahia, Maranhao, Piaui, Ceara, Rio Grande do Norte, Paraiba, Pernambuco, Alagoas, Sergipe, Minas Gerais, Rio de Janeiro, Espirito Santo, Sao Paulo Parana, Catarina, Rio Grande do Sul. Jujuy. Buenos Aires, Misiones. Mexico State. Hidalgo, Queretaro. Veracruz. Guerrero, Michoacan. Campeche, Chiapas, Yucatan.

**Setaria scheelei** (Steud.) Hitchcock. *Proc. Biol. Soc. Wash.* xli. 163 (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. **Basionym or Replaced Name:** *Panicum scheelei* Steud., *Syn. Pl. Glumac.* 1: 51 (1853). T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: IT: *Lindheimer 564*, 1847, USA: Texas: Comal Co.: New Braunfels (MO, US).

**Illustrations (Books):** M.E.Barkworth et al, *Flora of North America north of Mexico Vol 25 Poaceae*, part 2 (2003) (549), F.W.Gould, *The Grasses of Texas* (1975) (560, Fig. 292).

**Derivation** (Clifford & Bostock 2007): in honor of Georg Heinrich Scheele (1808–1864) German cleric and botanist.

**Classification.** Subfamily Panicoideae. Tribe: Paniceae. Subtribe SETARIINAE.

**Habit, Vegetative Morphology.** Perennial. Culms geniculately ascending, robust, 60–120 cm long. Lateral branches lacking or sparse. Leaf-sheaths keeled, smooth or scaberulous, glabrous on surface or hispid, outer margin hairy. Ligule a fringe of hairs, 1–2 mm long. Collar pilose. Leaf-blades flat or conduplicate, 15–30 cm long, 5–12 mm wide. Leaf-blade surface scabrous, glabrous to pubescent.

**Inflorescence.** Inflorescence a panicle. Peduncle antrorsely scabrous above. Panicle spiciform, lanceolate, loose, 15–25 cm long. Primary panicle branches 0.5–3 cm long, sterile at the tips. Panicle axis angular, scabrous, villous. Spikelets subtended by an involucre. Fertile spikelets pedicelled, 1 in the cluster. Involucre composed of bristles, 10–35 mm long. Involucral bristles persistent, 1(–3) per spikelet, flexible, antrorsely scaberulous, glabrous. 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 ovate, dorsally compressed, 2.2–2.5 mm long, falling entire.

**Glumes.** Glumes shorter than spikelet, thinner than fertile lemma. Lower glume ovate, 0.5 length of spikelet, membranous, without keels, 3 -veined. Lower glume apex acute. Upper glume ovate, 0.75 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 ovate, 1 length of spikelet, membranous, 5 -veined, acute. Palea of lower sterile floret 1 length of lemma. Fertile lemma ovate, dorsally compressed, gibbous, 1.5–3.5 mm long, indurate, without keel. Lemma surface rugose. Lemma margins involute. Palea involute, indurate.

**Distribution (TDWG). Continent.** North America.

**Country /Province /State.** Southwestern USA, South-central USA, Mexico. New Mexico, Texas. Northeast Mexico, Gulf (Mexico), Southwest Mexico.

**TDWG4.** Coahuila, Durango, Hidalgo, Neuvo Leon, San Luis Potosi, Tamaulipas. Veracruz. Michoacan.

**Setaria scottii** (Hack.) A.Camus. *Bull. Soc. Bot. France*, lxxiv. 633 (1928).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

**TYPE** from Madagascar. **Basionym or Replaced Name:** *Panicum scottii* Hack., *J. Linn. Soc., Bot.* 29: 63 (1891). T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: Madagascar: Dry hills of Imerina, *Scott Elliot 1810* (HT: not designated).

**Illustrations (Books):** J.Bosser, *Graminees des Paturage et des Cultures a Madagascar* (1969) (279, Fig 102).

**Derivation** (Clifford & Bostock 2007): in honor of G.F. Scott Elliott (fl. 1893) British administrator in West Africa.

**Classification.** Subfamily Panicoideae. Tribe: Paniceae. Subtribe SETARIINAE.

**Habit, Vegetative Morphology.** Perennial. Culms decumbent, 30–60 cm long. Leaf-sheaths outer margin hairy. Ligule a fringe of hairs. Leaf-blades 5–12 cm long, 2–5 mm wide. Leaf-blade surface pubescent, hairy adaxially.

**Inflorescence.** Inflorescence composed of racemes. Racemes 4–12, borne along a central axis, 1–2 cm long. Central inflorescence axis 6–14 cm long. Rhachis scabrous on surface, terminating in a barren extension. Spikelets subtended by an involucre. Fertile spikelets pedicelled, 1 in the cluster. Involucre composed of bristles, 2–5 mm long. Involucral bristles persistent, 0–1 per spikelet, flexible, antrorsely scaberulous, glabrous. 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 ovate, dorsally compressed, gibbous, obtuse, 2 mm long, falling entire.

**Glumes.** Glumes shorter than spikelet, thinner than fertile lemma. Lower glume orbicular, clasping, 0.25 length of spikelet, membranous, without keels, 0 -veined. Lower glume lateral veins absent. Lower glume apex truncate. Upper glume ovate, 0.75 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 ovate, 1 length of spikelet, membranous, 5 -veined, sulcate, obtuse. Palea of lower sterile floret 1 length of lemma. Fertile lemma ovate, dorsally compressed, gibbous, 2 mm long, indurate, without keel. Lemma surface scaberulous. Lemma margins involute. Palea involute, indurate.

**Distribution (TDWG). Continent.** Africa.

**Country /Province /State.** Western Indian ocean. Madagascar.

**Setaria seriata** Stapf. Prain, *Fl. Trop. Afr.* ix. 853 (1930).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online.

**TYPE** from DRC. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: [Africa]: "South Central, Belgian Congo: Kantanga, M'Pueto,...", *Descamps s.n.*.

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): L. series, row; -ata, possessing. Culms arise in more or less close succession from extravaginal innovations.

**Classification.** Subfamily Panicoideae. Tribe: Paniceae. Subtribe SETARIINAE.



**Habit, Vegetative Morphology.** Annual, caespitose. Culms 50–200 cm long. Ligule a fringe of hairs. Leaf-blades linear or lanceolate, plicate, 10–30 cm long, 8–20 mm wide, flaccid.

**Inflorescence.** Inflorescence a panicle. Panicle open, lanceolate, 10–20 cm long, contracted about primary branches. Primary panicle branches simple, bearing spikelets almost to the base, sterile at the tips. Panicle branches secund, scaberulous. Spikelets appressed, subtended by an involucre. Fertile spikelets pedicelled, 1 in the cluster. Involucre composed of bristles, 5–10 mm long. Involucral bristles persistent, 1 in principal whorl, flexible, antrorsely scaberulous, glabrous. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets elliptic, dorsally compressed, acute, 2–2.5 mm long, falling entire.

**Glumes.** Glumes reaching apex of florets or shorter than spikelet, thinner than fertile lemma. Lower glume orbicular, 0.1–0.25 length of spikelet, hyaline, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume apex truncate or obtuse. Upper glume ovate, 0.75–1 length of spikelet, membranous, without keels, 7 -veined. Upper glume apex obtuse.

**Florets.** Basal sterile florets 1, male, with palea. Lemma of lower sterile floret ovate, 1 length of spikelet, membranous, 7 -veined, acute. Fertile lemma ovate, dorsally compressed, gibbous, 2–2.5 mm long, indurate, pallid, without keel. Lemma surface unwrinkled. Lemma margins involute. Palea involute, indurate.

**Distribution (TDWG). Continent.** Africa.

**Country /Province /State.** West tropical Africa, West-central tropical Africa, South tropical Africa. Benin, Ghana, Ivory Coast, Nigeria. DRC. Zambia.

**Setaria setosa** (Sw.) Beauv. *Agrost.* 51 (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 Jamaica. **Basionym or Replaced Name:** *Panicum setosum* Sw., *Prodr.* 22 (1788). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *O.P. Swartz s.n.*, Jamaica (S; IT: BAA-2849 (fragm.), M, US-80986 (fragm.)).

**Illustrations (Books):** M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 25 *Poaceae*, part 2 (2003) (551), A.S.Hitchcock, *Manual of the Grasses of the West Indies* (1936) (348, Fig. 318 & 319), S.A.Renvoize, *The Grasses of Bahia*, 1984 (102, Fig. 36).

**Illustrations (Journals):** *Darwiniana* (37: 105, Fig.16 (1999) as var. *setosa*).

**Derivation** (Clifford & Bostock 2007): L. seta, bristle; -osa, abundance. Spikelets subtended by bristles.

**Classification.** Subfamily Panicoideae. Tribe: Paniceae. Subtribe SETARIINAE.

**Habit, Vegetative Morphology.** Perennial. Culms erect or geniculately ascending, 50–100 cm long, firm or woody. Culm-internodes smooth. Culm-nodes glabrous. Leaf-sheaths glabrous on surface or puberulous, outer margin hairy. Ligule a fringe of hairs, 1 mm long. Collar glabrous or pubescent. Leaf-blades flat or conduplicate, 15–20 cm long, 6–12 mm wide. Leaf-blade surface scabrous, rough adaxially, glabrous or puberulous, hairy on both sides.

**Inflorescence.** Inflorescence a panicle. Panicle spiciform, lanceolate, interrupted, loose, 15–20 cm long. Primary panicle branches ascending, 0.5–2.5 cm long, sterile at the tips. Panicle axis angular, scabrous, glabrous or villous. Spikelets subtended by an involucre. Fertile spikelets pedicelled, 1 in the cluster. Involucre composed of bristles, 5–10 mm long. Involucral bristles persistent, 1 per spikelet, flexible, antrorsely scaberulous, glabrous. 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 ovate, dorsally compressed, 2–2.5 mm long, falling entire.

**Glumes.** Glumes shorter than spikelet, thinner than fertile lemma. Lower glume ovate, 0.5 length of spikelet, membranous, without keels, 3 -veined. Lower glume apex acute. Upper glume ovate, 0.66 length of spikelet, membranous, without keels, 5–7 -veined. Upper glume apex obtuse.

**Florets.** Basal sterile florets 1, barren, with palea. Lemma of lower sterile floret ovate, 1 length of spikelet, membranous, 5 -veined, acute. Palea of lower sterile floret 1 length of lemma. Fertile lemma ovate, dorsally compressed, gibbous, 2–2.5 mm long, indurate, without keel. Lemma surface rugulose. Lemma margins involute. Lemma apex apiculate. Palea involute, indurate.

**Distribution (TDWG). Continent.** North America, South America.

**Country /Province /State.** Mexico. Northeast Mexico, Southwest Mexico. **Caribbean, Northern South America, Western South America, Brazil, Southern South America.** Bahamas, Cuba, Dominican Republic, Haiti, Jamaica, Leeward Is, Puerto Rico, Trinidad-Tobago, Venezuelan and Netherlands Antilles. French Guiana, Venezuela. Bolivia, Colombia, Ecuador, Galapagos, Peru. Brazil Northeast, Brazil Southeast, Brazil South. Paraguay.

**TDWG4.** Bahia, Ceara, Rio Grande do Norte, Paraiba, Pernambuco, Alagoas, Sergipe, Minas Gerais, Rio de Janeiro, Espirito Santo, Sao Paulo Parana, Catarina, Rio Grande do Sul. Neuvo Leon. Michoacan.

**Setaria sphacelata** (Schumach.) Stapf & C.E.Hubb. ex Moss. *Kew Bull.* 1929:195 (1929).

**Accepted by:** R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), D.Sharp, D. & B.K.Simon, *AusGrass* (2002), E.Edgar, & H.Connor, *Flora of New Zealand Gramineae* 5 (2000), J.F.Veldkamp, Poaceae ms (*Flora Malesiana*), N.L.Bor, Grasses of Burma, Ceylon, India and Pakistan (1960), N.Tsvelev, *Grasses of the Soviet Union* (1983) (as *S. decipiens*), W.D.Clayton & N.Snow, Key to Pacific Grasses (2010).

**TYPE** from Ghana. **Basionym or Replaced Name:** *Panicum sphacelatum* Schumach., *Beskr. Guin. Pl.* 58–59 (1827). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *Thonning s.n.*, Ghana (C).

**Recent Synonyms:** *Setaria anceps* Stapf ex Massey, *Sudan Grasses* : 33 (1926). *Setaria splendida* Stapf in Prain, *Fl. Trop. Afr.* 9: 799 (1930).

**Illustrations (Books):** H.Jacques-Felix, *Les Graminees d'Afrique tropicale* (1962), W. Robyns (1929 and 1934). *Flora Agrostologique du Congo Belge et du Ruanda-Urundi*, I. Maydees et Andropgonees and II. Panicees. Bruxelles, Goemaere (261, Pl. 43), L.K.A. Chippindall, *Grasses and Pastures of South Africa* (1955) (Plt. 10, 348 & 350, Fig 302&303 as *S. flabellata* & *S. neglecta*), G.E.Gibbs Russell et al, *Grasses of Southern Africa* (1990) (294, Fig 189), S.Phillips, *Poaceae* (Gramineae) in I.Hedberg & S.Edwards, *Flora of Ethiopia and Eritrea* (1995) (239, Fig 96), K.M.Matthew, *Flora Palni Hills* (1996) (865, Pl 865), S.W.L.Jacobs, R.D.B.Whalley & D.J.B.Wheeler., *Grasses of New South Wales*, 4th edn (2008) (370), M.E.Barkworth et al, *Flora of North America north of Mexico Vol 25 Poaceae*, part 2 (2003) (559), S.A.Renvoize, *The Grasses of Bahia*, 1984 (105, Fig. 37), L.B. Smith, D.C. Wasshausen, R.M. Klein *Flora Illustrada Catarinensis Gramineas* (1981–1982) (788, Fig. 163), E.Hafliger & E.Schultz, *Grass Weeds*, CIBA-GEIGY (1:131(1980)).

**Illustrations (Journals):** *Darwiniana* (37: 107, Fig.17 (1999) as var. *sericea*).

**Images:** D.Sharp & B.K.Simon, *AusGrass*. Grasses of Australia. CD-Rom Version 1.0. (2002);, F.van Oudtshoorn, *Guide to Grasses of Southern Africa* (1999) (var. *sericea*, var. *sphacelata* & var. *torta*).

**Derivation** (Clifford & Bostock 2007): L. speckled with brown or black. The apices of the anthoecia are purple or black.

**Classification.** Subfamily Panicoideae. Tribe: Paniceae. Subtribe SETARIINAE.

**Habit, Vegetative Morphology.** Perennial, caespitose. Rhizomes short or elongated. Butt sheaths withering or persistent and investing base of culm, with fibrous dead sheaths. Basal innovations subterete or flabellate. Culms 20–300 cm long. Culm-nodes glabrous. Ligule a fringe of hairs. Leaf-blades flat or convolute, 10–50 cm long, 2–17 mm wide. Leaf-blade apex acuminate.

**Inflorescence.** Inflorescence a panicle. Panicle spiciform, linear, 3–50 cm long. Primary panicle branches accrescent to a central axis, with evident branchlets on axis. Panicle axis pubescent. Spikelets subtended by an involucre. Fertile spikelets sessile, 1–4 in the cluster. Involucre composed of bristles, 1.5–12 mm long. Involucral bristles persistent, 6–15 in principal whorl, flexible, antrorsely scaberulous, glabrous.

**Fertile Spikelets.** Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets elliptic, dorsally compressed, 1.5–3.5 mm long, falling entire.

**Glumes.** Glumes shorter than spikelet, thinner than fertile lemma. Lower glume ovate, 0.25–0.5 length of spikelet, membranous, without keels, 3(–5) -veined. Lower glume apex obtuse or acute. Upper glume ovate, 0.33–0.66(–0.75) 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 ovate, 1 length of spikelet, membranous, 5 -veined, acute. Fertile lemma ovate, dorsally compressed, gibbous, 1–3 mm long, indurate, without keel. Lemma surface rugose. Lemma margins involute. Lemma apex acute. Palea involute, indurate.

**Flower and Fruit.**  $N = 9$  (2 refs TROPICOS), or 18 (3 refs TROPICOS).  $2n = 36$  (1 ref TROPICOS).

**Distribution (TDWG).** **Continent.** Africa, Temperate Asia, Tropical Asia, Australasia (\*), Pacific, 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, Middle Atlantic ocean, Western Indian ocean. Benin, Burkina, Ghana, Guinea, Ivory Coast, Mali, Mauritania, Nigeria, Togo. Cameroon, Gabon, Rwanda, DRC. Chad, Eritrea, Ethiopia (inc. Eritrea), 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. St Helena. Madagascar (\*). **Arabian Peninsula.** Saudi Arabia, Yemen. **Indian Subcontinent, Indo-China, Malesia, Papuaia.** Eastern Himalaya, Sri Lanka. Cambodia, Laos, Thailand, Vietnam. Java, Malaya,

Philippines, Christmas I, Singapore. New Guinea. **Australia.** Western Australia (\*), Queensland (\*), New South Wales (\*). **Southwestern Pacific, South-central Pacific, North-central Pacific.** Fiji (\*), New Caledonia (\*), Samoa (\*), Tonga (\*). Cook Is (\*), Easter Is (\*), Marquesas (\*), Society Is (\*). Caroline Is (\*), Marianas (\*). Hawaii (\*). **Southwestern USA, Mexico.** California. Central Mexico, Gulf (Mexico), Southwest Mexico, Southeast Mexico. **Mesoamerica, Western South America, Brazil, Southern South America.** Costa Rica, El Salvador, Honduras, Nicaragua. Peru. Brazil West Central, Brazil Northeast, Brazil North, Brazil Southeast. Paraguay, Uruguay.

**TDWG4.** Bhutan. Kimberley, South-West. North, Central, South East. Coast, Western Plains. Salta. Chaco, Corrientes, Misiones. Puebla. Veracruz. Jalisco. Tabasco, Yucatan.

**Setaria stolonifera** Boldrini. *Bol. Soc. Argent. Bot.*, 16(3): 228 (1975).

**Accepted by:** R.J.Soreng et al., *Catalogue of New World 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: HT: A. A. Araújo, mais de 1973, Brasil: Rio Grande do Sul: Mostardas: Viamão, cultivado en canteros de la Escola Técnico de Agricultura. (BLA-8596).

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): L. stolo, shoot; fero, bear. Plant with well developed underground stems.

**Classification.** Subfamily Panicoideae. Tribe: Paniceae. Subtribe SETARIINAE.

**Habit, Vegetative Morphology.** Perennial. Stolons present. Basal innovations intravaginal. Culms 100–150 cm long, 1–2 mm diam. Culm-internodes distally glabrous. Culm-nodes brown, glabrous. Lateral branches ample. Leaf-sheaths mostly shorter than adjacent culm internode, glabrous on surface, outer margin glabrous. Ligule a ciliate membrane, 1–2 mm long. Collar glabrous. Leaf-blades 5–22 cm long, 3–7 mm wide. Leaf-blade midrib conspicuous. Leaf-blade surface glabrous. Leaf-blade apex acute.

**Inflorescence.** Inflorescence a panicle. Panicle spiciform, linear, interrupted, 2–9 cm long, 0.5–1 cm wide. Primary panicle branches accrescent to a central axis, with evident branchlets on axis. Panicle axis scaberulous, glabrous. Spikelets subtended by an involucre. Fertile spikelets sessile, 1 in the cluster. Involucre composed of bristles, 4–10 mm long. Involucral bristles persistent, 1 per spikelet, flexible, antrorsely scaberulous, glabrous.

**Fertile Spikelets.** Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets ovate, dorsally compressed, 1.8–2.1 mm long, 1–1.1 mm wide, falling entire, readily shedding fertile florets.

**Glumes.** Glumes shorter than spikelet, thinner than fertile lemma. Lower glume ovate, 0.33–0.5 length of spikelet, membranous, without keels, 3 -veined. Lower glume apex obtuse or cuspidate. Upper glume ovate, 0.5 length of spikelet, membranous, without keels, 5 -veined. Upper glume apex cuspidate.

**Florets.** Basal sterile florets 1, male, with palea. Lemma of lower sterile floret ovate, 1 length of spikelet, membranous, 5 -veined, cuspidate. Palea of lower sterile floret 0.75–1 length of lemma. Fertile lemma ovate, dorsally compressed, gibbous, 1.8–2.1 mm long, 1–1.1 mm wide, indurate, shiny, without keel. Lemma surface smooth. Lemma margins involute. Lemma apex apiculate. Palea involute, indurate.

**Flower and Fruit.** Lodicules 2. Anthers 3. Caryopsis with adherent pericarp, orbicular, 1.2 mm long. Embryo 0.75 length of caryopsis. Hilum punctiform.

*N* = 18 (3 refs TROPICOS).

**Distribution (TDWG). Continent.** South America.

**Country /Province /State.** Brazil, Southern South America. Brazil South. Argentina Northeast.

**TDWG4.** Santa Fe.

**Setaria submacrostachya** Lucas. *Bol. Soc. Venez. Cienc. Nat.* xv. 28 (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: HT: *L. Aristeguieta* 443, Sep 1950, Venezuela: Federal Dependancies: en sitios rocosos del Gran Roque y de LA Orchila (VEN; IT: K (photo), US-3049718 (fragm.)).

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): L. sub, approaching. Similar to *Setaria macrostachya*.

**Classification.** Subfamily Panicoideae. Tribe: Paniceae. Subtribe SETARIINAE.

**Habit, Vegetative Morphology.** Perennial. Butt sheaths villous. Culms erect or geniculately ascending, 40–70 cm long. Culm-internodes terete, antrorsely scabrous, distally glabrous. Culm-nodes glabrous. Lateral

branches ample. Leaf-sheaths longer than adjacent culm internode, outer margin hairy. Ligule a fringe of hairs, 0.5 mm long. Leaf-blades 10–20 cm long, 4–7 mm wide. Leaf-blade surface hirsute, hairy on both sides. Leaf-blade margins scabrous. Leaf-blade apex acuminate.

**Inflorescence.** Inflorescence a panicle. Panicle spiciform, linear, continuous, loose, tapering above, 5–8 cm long, 0.3–0.7 cm wide. Primary panicle branches sterile at the tips. Panicle axis angular, scabrous, pilose. Spikelets subtended by an involucre. Fertile spikelets pedicelled, 1 in the cluster. Involucre composed of bristles, 9 mm long. Involucral bristles persistent, 1 per spikelet, rigid, antrorsely scaberulous, glabrous. 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 ovate, dorsally compressed, gibbous, 1.5–1.7 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, 3 -veined. Lower glume apex acute. Upper glume ovate, 0.5–0.66 length of spikelet, membranous, mid-green or purple, without keels, 5 -veined. Upper glume apex acute.

**Florets.** Basal sterile florets 1, barren, with palea. Lemma of lower sterile floret ovate, 1 length of spikelet, membranous, 5 -veined, acute. Fertile lemma ovate, dorsally compressed, gibbous, 1.5–1.7 mm long, indurate, 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. Venezuela.

### **Setaria sulcata** Raddi. *Agrost. Bras.* 50. (1823).

**Accepted by:** R.J.Soreng et al., *Catalogue of New World 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: HT: *Raddi 17*, Brazil: Rio de Janeiro (FI).

**Illustrations (Books):** S.A.Renvoize, *Gramineas de Bolivia* (1998) (517, Fig 116).

**Derivation** (Clifford & Bostock 2007): L. sulcus, furrow; -ata, possessing. Internodes grooved.

**Classification.** Subfamily Panicoideae. Tribe: Paniceae. Subtribe SETARIINAE.

**Habit, Vegetative Morphology.** Perennial, caespitose. Culms erect, robust, 100–200 cm long. Ligule a fringe of hairs. Leaf-blade base without a false petiole or with a false petiole. Leaf-blades linear or lanceolate, plicate, 20–60 cm long, 10–50 mm wide.

**Inflorescence.** Inflorescence a panicle. Panicle open, lanceolate (pagoda-like), 25–50 cm long, contracted about primary branches. Primary panicle branches spreading, bearing spikelets almost to the base, sterile at the tips. Panicle branches stiff, pubescent. Spikelets subtended by an involucre. Fertile spikelets sessile, 1 in the cluster. Involucre composed of bristles, 3–15 mm long. Involucral bristles persistent, 1 in principal whorl, flexible, antrorsely scaberulous, glabrous.

**Fertile Spikelets.** Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets ovate, dorsally compressed, acute, 3–3.5 mm long, falling entire.

**Glumes.** Glumes shorter than spikelet, thinner than fertile lemma. Lower glume ovate, 0.25–0.33 length of spikelet, membranous, without keels. Upper glume ovate, 0.5–0.66 length of spikelet, membranous, without keels.

**Florets.** Basal sterile florets 1, barren, with palea. Lemma of lower sterile floret ovate, 1–1.1 length of fertile lemma, 1 length of spikelet, coriaceous. Fertile lemma ovate, dorsally compressed, gibbous, 2.5–3 mm long, indurate, without keel. Lemma surface unwrinkled. Lemma margins involute. Palea involute, indurate.

**Distribution (TDWG). Continent.** Africa, North America, South America.

**Country /Province /State.** East tropical Africa. Tanzania. Mexico. Mesoamerica, Caribbean, Northern South America, Western South America, Brazil, Southern South America. Belize, Costa Rica, Nicaragua. Trinidad-Tobago. French Guiana, Guyana, Surinam, Venezuela. Bolivia, Colombia, Peru. Brazil West Central, Brazil Northeast, Brazil North, Brazil Southeast, Brazil South. Paraguay.

**TDWG4.** Goiás, Minas Gerais, Rio de Janeiro, Espírito Santo. Salta. Buenos Aires, Chaco, Corrientes, Formosa, Misiones, Santa Fe. Mexico State, Puebla. Hidalgo, Queretaro, San Luis Potosi. Veracruz. Nayarit, Oaxaca.

### **Setaria surgens** Stapf. *Kew Bull.* 1909, 265. (1909).

**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 Irian Jaya. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *Versteeg* 1907, 08 Nov 1907, Netherlands New Guinea (K; IT: BO, L).

**Illustrations (Books):** S.W.L.Jacobs, R.D.B.Whalley & D.J.B.Wheeler., *Grasses of New South Wales*, 4th edn (2008) (371).

**Images:** D.Sharp & B.K.Simon, *AusGrass*. Grasses of Australia. CD-Rom Version 1.0. (2002);.

**Derivation** (Clifford & Bostock 2007): *L. surgo*, raise. Culms long, ascending.

**Classification.** Subfamily Panicoideae. Tribe: Paniceae. Subtribe SETARIINAE.

**Habit, Vegetative Morphology.** Annual. Culms geniculately ascending, 30–40 cm long, 5–6 -noded. Culm-nodes black. Lateral branches fastigiate, arising from lower culm or mid culm. Ligule a fringe of hairs. Leaf-blades 8–15 cm long, 2–4 mm wide, glaucous. Leaf-blade surface smooth, pilose. Leaf-blade apex attenuate.

**Inflorescence.** Inflorescence a panicle. Panicle spiciform, linear, 2–5 cm long. Primary panicle branches accrescent to a central axis, with evident branchlets on axis. Panicle axis pubescent. Spikelets subtended by an involucre. Fertile spikelets pedicelled, 1 in the cluster. Involucre composed of bristles, free throughout, 8–12 mm long. Involucral bristles persistent, few, in one whorl, 8–12 in principal whorl, flexible, antrorsely scaberulous, glabrous. 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 elliptic or obovate, dorsally compressed, gibbous, 2.5–3 mm long, falling entire.

**Glumes.** Glumes shorter than spikelet or reaching apex of florets, thinner than fertile lemma. Lower glume ovate, 1 mm long, 0.3–0.4 length of spikelet, membranous, without keels, 3–5 -veined. Lower glume lateral veins prominent. Lower glume apex acute. Upper glume ovate, gibbous, 0.75–1 length of spikelet, membranous, without keels, 5 -veined. Upper glume lateral veins prominent. Upper glume surface scabrous. Upper glume apex acute.

**Florets.** Basal sterile florets 1, barren, with palea. Lemma of lower sterile floret ovate, 1 length of spikelet, membranous, light green, 5 -veined, acute. Fertile lemma ovate, dorsally compressed, gibbous, 2.5–3 mm long, indurate, without keel. Lemma surface rugulose. Lemma margins involute. Lemma apex acute or apiculate. Palea involute, indurate.

**Flower and Fruit.** Anthers 3, 1.5 mm long. Caryopsis with adherent pericarp, orbicular, 1.5 mm long.

**Distribution (TDWG). Continent.** Tropical Asia, Australasia.

**Country /Province /State. Malesia, Papuasias.** New Guinea PNG, or West Papua (Irian Jaya). New Guinea. **Australia.** Western Australia, Northern Territory, Queensland, New South Wales.

**TDWG4.** Kimberley, Eremean. Darwin & Gulf, Victoria R & Barkly Tableland, Central Australia. North, Central, South East, Inland. Western Plains.

**Setaria taolanensis** A. Camus. *Bull. Soc. Bot. France*, 101: 29 (1954).

**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, Taolana: Herb. Jard. Bot. Tananan 4591.

**Illustrations (Books):** No illustration found (BKS).

**Classification.** Subfamily Panicoideae. Tribe: Paniceae. Subtribe SETARIINAE.

**Habit, Vegetative Morphology.** Annual, caespitose. Rhizomes elongated. Culms erect, 10–12 cm long. Culm-internodes smooth, distally glabrous. Culm-nodes black. Leaf-sheaths loose, striately veined. Ligule a ciliate membrane. Leaf-blades lanceolate, 3–5 cm long. Leaf-blade venation prominent. Leaf-blade apex attenuate.

**Inflorescence.** Inflorescence a panicle, exserted or embraced at base by subtending leaf. Panicle open, lanceolate. Primary panicle branches 3–4 in number, appressed, bearing 8–10 fertile spikelets on each lower branch, sterile at the tips. Panicle axis angular, glabrous. Spikelets subtended by an involucre. Fertile spikelets sessile, 1 in the cluster. Involucre composed of bristles, 3 mm long. Involucral bristles persistent, in one whorl, 1 in principal whorl, flexible, glabrous.

**Fertile Spikelets.** Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets elliptic, dorsally compressed, gibbous, 1.6–2 mm long, falling entire.

**Glumes.** Glumes shorter than spikelet, thinner than fertile lemma. Lower glume ovate, 0.7 mm long, 0.33–0.5 length of spikelet, membranous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume apex obtuse. Upper glume ovate, 1.5 mm long, 0.75–0.8 length of spikelet, membranous, without keels, 7 -veined. Upper glume apex emarginate.

**Florets.** Basal sterile florets 1, male, with palea. Lemma of lower sterile floret elliptic, 1 length of spikelet, membranous, 3–5 -veined. Fertile lemma elliptic, dorsally compressed, gibbous, 1.8 mm long, indurate, pallid, without keel. Lemma surface rugose. Lemma margins involute. Lemma apex obtuse, mucronate. Palea involute, indurate.

**Distribution (TDWG).** Continent. Africa.

**Country /Province /State.** Western Indian ocean. Madagascar.

**Setaria tenacissima** Schrad. ex Schult. *Mant.* ii. 279 (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 Brazil. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: T: *Anon.*, Brazil (GOET; IT: US-3049698a (fragm. ex GOET)).

**Illustrations (Books):** A.S.Hitchcock, *Manual of the Grasses of the West Indies* (1936) (344, Fig. 314), J.A.Steyermark et al, *Flora of the Venezuelan Guayana* Vol. 8 (2004) (267, Fig. 217), W.Burger, *Flora Costaricensis* 15, Gramineae: *Fieldiana Botany New Series* 4 (1980) (531, Fig. 199).

**Illustrations (Journals):** *Darwiniana* (37: 109, Fig.18 (1999)), *Ruizia* (13:384 Fig 511 (1993)).

**Derivation** (Clifford & Bostock 2007): *L. tenax*, tenacious; -issima, most. Foliage persistent.

**Classification.** Subfamily Panicoideae. Tribe: Paniceae. Subtribe SETARIINAE.

**Habit, Vegetative Morphology.** Annual. Culms geniculately ascending, 100–200 cm long, without nodal roots or rooting from lower nodes. Culm-nodes glabrous. Leaf-sheaths antrorsely scabrous, outer margin hairy. Ligule a fringe of hairs. Collar pilose. Leaf-blades flat or conduplicate, 10–20 cm long, 4–10 mm wide. Leaf-blade surface scabrous, rough on both sides, pubescent, hairy on both sides.

**Inflorescence.** Inflorescence a panicle. Peduncle scaberulous above. Panicle spiciform, linear, loose, 10–20 cm long. Primary panicle branches 0.2–0.5 cm long, sterile at the tips. Panicle axis angular, pilose. Panicle branches pubescent. Spikelets subtended by an involucre. Fertile spikelets pedicelled, 1 in the cluster. Involucre composed of bristles, 10–15 mm long. Involucral bristles persistent, 1 per spikelet, rigid, retrorsely scaberulous, retrorse above, antrorse below, glabrous. Pedicels present, oblong.

**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, 1.4–1.8 mm long, falling entire.

**Glumes.** Glumes shorter than spikelet, thinner than fertile lemma. Lower glume ovate, 0.5 length of spikelet, membranous, without keels, 3 -veined. Lower glume apex acute. Upper glume ovate, 0.9 length of spikelet, membranous, purple, without keels, 5 -veined. Upper glume apex acute.

**Florets.** Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret ovate, 1 length of spikelet, membranous, purple, 5 -veined, acute. Fertile lemma ovate, dorsally compressed, gibbous, 1.2–1.4 mm long, indurate, without keel. Lemma surface rugose. Lemma margins involute. Palea involute, indurate.

**Distribution (TDWG).** Continent. North America, South America.

**Country /Province /State.** Mexico. Southwest Mexico. Mesoamerica, Caribbean, Northern South America, Western South America, Brazil. Costa Rica, El Salvador, Guatemala, Honduras, Panama. Dominican Republic, Haiti, Puerto Rico, Trinidad-Tobago. Venezuela. Bolivia, Colombia, Ecuador, Peru. Brazil West Central, Brazil Northeast, Brazil Southeast.

**TDWG4.** Mato Grosso, Goias. Guerrero.

**Setaria tenax** (Rich.) Desv. *Opusc.* 78. (1831).

**Accepted by:** R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

**TYPE** from French Guiana. **Basionym or Replaced Name:** *Panicum tenax* Rich., *Actes Soc. Hist. Nat. Paris* 1: 106 (1792). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *Domino Le Blond s.n.*, no date, French Guiana (FI; IT: K (photo), US-81142 (fragm.)). US fragm. *fide* Toolin, *Madrono* 44(3): 299 (1997).

**Illustrations (Books):** A.S.Hitchcock, *Manual of the Grasses of the West Indies* (1936) (341, Fig. 311), S.A.Renvoize, *The Grasses of Bahia*, 1984 (102, Fig. 36), J.A.Steyermark et al, *Flora of the Venezuelan Guayana* Vol. 8 (2004) (267, Fig. 216), W.Burger, *Flora Costaricensis* 15, Gramineae: *Fieldiana Botany New Series* 4 (1980) (531, Fig. 199).

**Illustrations (Journals):** *Darwiniana* (37: 110, Fig.19 (1999)).

**Derivation** (Clifford & Bostock 2007): *L. holding* firmly together, persistent. Densely tufted.

**Classification.** Subfamily Panicoideae. Tribe: Paniceae. Subtribe SETARIINAE.

**Habit, Vegetative Morphology.** Perennial. Culms erect or geniculately ascending, 100–200 cm long. Culm-internodes distally glabrous. Culm-nodes constricted, glabrous. Leaf-sheaths glabrous on surface, outer margin hairy. Ligule a fringe of hairs, 1–2 mm long. Collar bearded. Leaf-blade base broadly rounded. Leaf-blades 10–30 cm long, 10–20 mm wide. Leaf-blade surface scaberulous, glabrous or pubescent. Leaf-blade apex acuminate.

**Inflorescence.** Inflorescence a panicle. Peduncle antrorsely scabrous above. Panicle spiciform, linear, loose, tapering above, 10–35 cm long. Primary panicle branches 1–3 cm long, sterile at the tips. Panicle axis angular, scabrous, pilose. Spikelets subtended by an involucre. Fertile spikelets pedicelled, 1 in the cluster. Involucre composed of bristles, 10–20 mm long. Involucral bristles persistent, 1 per spikelet, flexible, retrorsely scaberulous, retrorse above, antrorse below or mingled with antrorse scabridity, glabrous. 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 orbicular, hemispherical, dorsally compressed, compressed slightly, 2–2.5 mm long, falling entire.

**Glumes.** Glumes shorter than spikelet, thinner than fertile lemma. Lower glume ovate, 0.33 length of spikelet, membranous, without keels, 5 -veined. Lower glume apex acute. Upper glume ovate, 0.5 length of spikelet, membranous, without keels, 7–9 -veined. Upper glume apex acute.

**Florets.** Basal sterile florets 1, barren, with palea. Lemma of lower sterile floret ovate, 1 length of spikelet, membranous, 5–7 -veined, acute. Palea of lower sterile floret 1 length of lemma. Fertile lemma ovate, dorsally compressed, gibbous, 2–2.5 mm long, indurate, yellow, without keel. Lemma surface rugose. Lemma margins involute. Palea involute, indurate.

**Distribution (TDWG). Continent.** North America, South America.

**Country /Province /State.** **Mexico.** Central Mexico, Northeast Mexico, Gulf (Mexico), Southwest Mexico, Southeast Mexico. **Mesoamerica, Caribbean, Northern South America, Western South America, Brazil.** Belize, Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua, Panama. Cuba, Haiti, Jamaica, Windward Islands, Trinidad-Tobago. French Guiana, Guyana, Venezuela. Bolivia, Colombia, Peru. Brazil West Central, Brazil Northeast, Brazil Southeast, Brazil North, Brazil South.

**TDWG4.** Roraima, Para, Amapa, Amazonas, Acre, Rondonia, Mato Grosso, Bahia, Maranhao, Piaui, Ceara, Rio Grande do Norte, Paraiba, Pernambuco, Alagoas, Sergipe, Minas Gerais, Rio de Janeiro, Espirito Santo, Sao Paulo Parana, Catarina, Rio Grande do Sul. Puebla. Guanajuato, Hidalgo, Neuvo Leon, Queretaro, San Luis Potosi. Veracruz. Guerrero, Jalisco, Oaxaca. Campeche, Chiapas, Quintana Roo, Tabasco, Yucatan.

**Setaria texana** Emery. *Bull. Torr. Bot. Cl.* 1 iv. 97 (1957).

**Accepted by:** R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online.

**TYPE** from USA. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: HT: *W.H.P. Emery* 515, 11 Nov 1955, USA: Texas: Kleberg Co.: 8 mi W of Kingsville (TEX).

**Illustrations (Books):** M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 25 *Poaceae*, part 2 (2003) (549), F.W.Gould, *The Grasses of Texas* (1975) (556, Fig. 290).

**Derivation** (Clifford & Bostock 2007): L. -ana, indicating location. From Texas, USA.

**Classification.** Subfamily Panicoideae. Tribe: Paniceae. Subtribe SETARIINAE.

**Habit, Vegetative Morphology.** Perennial. Culms erect or geniculately ascending, 30–70 cm long, wiry. Culm-internodes elliptical in section. Culm-nodes glabrous. Lateral branches ample. Leaf-sheaths keeled, outer margin hairy. Ligule a fringe of hairs, 1 mm long. Collar glabrous. Leaf-blades 5–15 cm long, 2–4 mm wide. Leaf-blade surface scabrous, rough adaxially.

**Inflorescence.** Inflorescence a panicle. Peduncle antrorsely scabrous above. Panicle spiciform, linear, continuous or interrupted, loose, tapering above, 2–6 cm long. Primary panicle branches 0.1–0.3 cm long, sterile at the tips. Panicle axis angular, scabrous, puberulous. Spikelets subtended by an involucre. Fertile spikelets pedicelled, 1 in the cluster. Involucre composed of bristles, 3–10 mm long. Involucral bristles persistent, 1 per spikelet, flexible, antrorsely scaberulous, glabrous. 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 ovate, dorsally compressed, 1.9–2.1 mm long, falling entire.

**Glumes.** Glumes shorter than spikelet, thinner than fertile lemma. Lower glume ovate, 0.5 length of spikelet, membranous, without keels, 3 -veined. Lower glume apex acute. Upper glume ovate, 0.75 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 ovate, 1 length of spikelet, membranous, 5 -veined, acute. Palea of lower sterile floret 0.1–0.5 length of lemma. Fertile lemma ovate,

dorsally compressed, gibbous, 1.9–2.1 mm long, indurate, without keel. Lemma surface smooth. Lemma margins involute. Palea involute, indurate.

**Distribution (TDWG). Continent.** North America.

**Country /Province /State.** South-central USA, Mexico. Texas. Northeast Mexico. Neuvo Leon, Tamaulipas.

**Setaria vaginata** Spreng. *Syst. iv. Cur. Post.* 33. (1827).

**Accepted by:** R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

**TYPE** from Brazil. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: HT: *F. Sellow s.n.*, no date, Brazil: Rio Grande (B; IT: BAA-2854 (fragm.), K (photo), US-978035 (fragm.), W).

**Recent Synonyms:** *Setaria onurus* (Trin.) Griseb.. *Fl. Brit. W. Ind.* 555. (1864).

**Illustrations (Books):** A.Burkat, *Flora Ilustrada de Entre Rios (Argentina)*, Pt II, Gramineas (1969) (428, Fig 180 & as *S. onurus*), A.L.Cabrera, *Flora de la Provincia de Buenos Aires, IV Pt 2 Gramineas* (1970) (456, Fig. 118), M.N.Correa, *Flora Patagonica Parte III, Gramineae* (1978) (541, Fig 367), B.Rosengurtt, *Gramineas Uruguayas I* (1970) (394, Fig. 175).

**Illustrations (Journals):** *Darwiniana* (37: 114, Fig.21 (1999) as var. *vaginata*).

**Classification.** Subfamily Panicoideae. Tribe: Paniceae. Subtribe SETARIINAE.

**Habit, Vegetative Morphology.** Perennial, caespitose. Rhizomes absent or short. Culms geniculately ascending, 50–100 cm long. Culm-internodes distally glabrous. Culm-nodes glabrous or pubescent. Lateral branches ample. Leaf-sheaths keeled, outer margin hairy. Leaf-sheath oral hairs ciliate. Ligule a ciliate membrane, 1.8–2 mm long. Leaf-blades flat or conduplicate, 10–20 cm long, 4–7 mm wide. Leaf-blade midrib prominent beneath. Leaf-blade surface scabrous, glabrous or pilose, hairy on both sides. Leaf-blade margins scabrous. Leaf-blade apex attenuate.

**Inflorescence.** Inflorescence a panicle. Panicle spiciform, linear, interrupted, 7–15 cm long, 0.5–0.7 cm wide. Primary panicle branches sterile at the tips. Panicle axis with scattered hairs or glabrous. Spikelets subtended by an involucre. Fertile spikelets pedicelled, 1 in the cluster. Involucre composed of bristles, 6–12 mm long. Involucral bristles persistent, 1 per spikelet, flexible, antrorsely scaberulous, glabrous. 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 elliptic, dorsally compressed, gibbous, 2–2.3 mm long, falling entire.

**Glumes.** Glumes shorter than spikelet, thinner than fertile lemma. Lower glume ovate, 0.5 length of spikelet, membranous, without keels, 3 -veined. Lower glume apex acute. Upper glume ovate, 0.66 length of spikelet, membranous, without keels, 5–7 -veined. Upper glume apex acute.

**Florets.** Basal sterile florets 1, barren, with palea. Lemma of lower sterile floret ovate, 1 length of spikelet, membranous, 5 -veined, acute. Palea of lower sterile floret 1 length of lemma. Fertile lemma elliptic, dorsally compressed, gibbous, 2–2.3 mm long, indurate, without keel. Lemma surface rugulose. Lemma margins involute. Lemma apex acute. Palea involute, indurate.

**Flower and Fruit.** Caryopsis with adherent pericarp, orbicular.

*N* = 18 (3 refs TROPICOS).

**Distribution (TDWG). Continent.** South America.

**Country /Province /State.** Brazil, Southern South America. Brazil Southeast. Argentina Northeast, Paraguay, Uruguay.

**TDWG4.** Bahia, Sao Paulo Parana, Catarina, Rio Grande do Sul. Buenos Aires, Chaco, Cordoba, Corrientes, Distrito Federal, Entre Rios, Misiones, Santa Fe.

**Setaria variifolia** (Swallen) Davidse. *Ann. Missouri Bot. Gard.* 68(1): 226 (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 (as *Paspalidium*).

**TYPE** from Mexico. **Basionym or Replaced Name:** *Panicum variifolium* Swallen, *Publ. Carnegie Inst. Wash.* 436: 345, f. 7 (1934)

T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: HT: *J.R. Swallen 2435*, 7–13 Jul 1932, Mexico: Yucatán: by roadside in brush at Chichen Itza (US-1538643, IT: US-1867533, NY-18141 (possible)).

**Illustrations (Books):** No illustration found (BKS).

**Classification.** Subfamily Panicoideae. Tribe: Paniceae. Subtribe SETARIINAE.



**Habit, Vegetative Morphology.** Perennial, caespitose. Culms 40–80 cm long. Culm-internodes antrorsely scabrous. Leaf-sheaths keeled, antrorsely scabrous. Ligule a ciliate membrane, 0.5 mm long. Leaf-blade base without a false petiole or with a false petiole, petiole 0–1.5 cm long. Leaf-blades 15–30 cm long, 4–7 mm wide. Leaf-blade apex attenuate.

**Inflorescence.** Inflorescence composed of racemes. Racemes 15–20, borne along a central axis, paucilateral, 0.1–4 cm long, bearing few fertile spikelets, bearing 1–4 fertile spikelets on each. Central inflorescence axis 8–24 cm long. Rhachis subterete, terminating in a barren extension, extension bristle-like. Spikelet packing abaxial, crowded or contiguous, irregular. Spikelets solitary or in pairs. 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, 4–4.5 mm long, falling entire.

**Glumes.** Glumes dissimilar, shorter than spikelet, thinner than fertile lemma. Lower glume ovate, 1.5 mm long, 0.33 length of spikelet, membranous, without keels, 5 -veined. Lower glume apex obtuse. Upper glume oblong, 0.5 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, 5–7 -veined, acute. Fertile lemma ovate, 3–3.5 mm long, indurate, without keel. Lemma surface rugulose. Lemma margins involute. Lemma apex apiculate. Palea reflexed at apex, indurate. Palea surface rugose.

**Distribution (TDWG). Continent.** North America, South America.

**Country /Province /State. Mexico.** Southeast Mexico. **Mesoamerica.** Belize, Guatemala. Quintana Roo, Yucatan.

## **Setaria verticillata** (L.) Beauv. *Agrost.* 51. (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), 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), W.D.Clayton & N.Snow, *Key to Pacific Grasses* (2010).

**TYPE** from unknown (LINN). **Basionym or Replaced Name:** *Panicum verticillatum* L., *Sp. Pl.* (ed. 2) 1: 82 (1762). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: LT: Europe (LINN-80.7). LT designated by Belo-Correia & Costa, *Revista Biol.* (Lisbon) 13: 117–143 (1986); also cited in Sherif & Siddiqi, *Fl. Libya* 145: 296 (1988).

**Recent Synonyms:** *Setaria adhaerens* (Forssk.) Chiov., *Nuov. Giorn. Bot. Ital.*, n. s., 26: 77 (1919).

**Illustrations (Books):** F.N.Hepper, *F.W.T.A.* 3(2) (1972) (422, Fig.439), R.M.Polhill, F.T.E.A., *Gramineae* 3(1982):523, Fig.127), L.K.A. Chippindall, *Grasses and Pastures of South Africa* (1955) (353, Fig. 304), M.A.N.Muller, *Grasses of South West Africa/Namibia* (1984), G.E.Gibbs Russell et al, *Grasses of Southern Africa* (1990) (299, Fig 192), J.Bosser, *Graminees des Paturage et des Cultures a Madagascar* (1969) (285, Fig. 105), N.Feinbrun-Dothan, *Flora Palaestina* 4 (1986) (Pl. 414 as var. *verticillata*), S.Phillips, *Poaceae* (Gramineae) in I.Hedberg & S.Edwards, *Flora of Ethiopia and Eritrea* (1995) (237, Fig. 95), L.Boulos, *Flora of Egypt* 4 (2005) (300, Pl. 88), T.A.Cope, in M.Thulin, *Poaceae* (Gramineae). *Flora of Somalia* (1995) (233, Fig 134), N.L.Bor, *Gramineae in Flora of Iraq* (1968) (505, Pl. 193), C-C Hsu, *Flora of Taiwan*, Vol 5 (1978) (626), C-C Hsu, *Taiwan Grasses* (1975), K.M.Matthew, *Flora Palni Hills* (1996) (866, Pl 866), K.M.Matthew, *Further Illustrations on the Flora of Tamilnadu Carnatic* (1988) (Pl.824), J.P.Jessop, G.R.M. Dashorst & F.M.James, *Grasses of South Australia* (2006) (485, Fig. 419), N.Walsh & T.Entwistle, *Flora of Victoria* Vol 2 (1994) (602, Fig. 122), S.W.L.Jacobs, R.D.B.Whalley & D.J.B.Wheeler., *Grasses of New South Wales*, 4th edn (2008) (371), T.D.Stanley & E.Ross, *Flora of South East Queensland, Gramineae* (1989) (205, Fig. 32), D.Sharp & B.K.Simon, *AusGrass. Grasses of Australia. CD-Rom Version 1.0.* (2002), W.L.Wagner et al., *Manual of the Flowering Plants of Hawai'i*, Vol. 2 (1990) (1587, Pl. 235), M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 25 *Poaceae*, part 2 (2003) (555), A.S.Hitchcock, *Manual of the Grasses of the West Indies* (1936) (342, Fig. 312), S.A.Renvoize, *The Grasses of Bahia*, 1984 (132, Fig. 46 as *Panicum decipiens*), A.Burkat, *Flora Ilustrada de Entre Rios (Argentina)*, Pt II, Gramineas (1969) (422, Fig. 177 as *Panicum decipiens*), A.L.Cabrera, *Flora de la Provincia de Buenos Aires, IV Pt 2 Gramineas* (1970) (454, Fig. 146 as *Panicum decipiens*), M.N.Correa, *Flora Patagonica Parte III, Gramineae* (1978) (533, Fig. 361), F.O.Zuloaga et al, *Flora del Paraguay* 23 (1994) (as *Panicum decipiens*), B.Rosengurtt, *Gramineas Uruguayas I* (1970) (338, Fig. 143 & 388, Fig. 173 as *Panicum decipiens*), R.Pilger, *Die Natürlichen Pflanzenfamilien* 14e

(1940) (73, Fig. 42), S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 746), E.Hafliger & E.Schultz, *Grass Weeds*, CIBA-GEIGY (1:132(1980)).

**Images:** D.Sharp & B.K.Simon, *AusGrass*. Grasses of Australia. CD-Rom Version 1.0. (2002);, L.Boulos, *Flora of Egypt 4* (2005);, F.van Oudtshoorn, *Guide to Grasses of Southern Africa* (1999).

**Derivation** (Clifford & Bostock 2007): L. whorl; -ata, possessing. Primary inflorescence branches whorled.

**Classification.** Subfamily Panicoideae. Tribe: Paniceae. Subtribe SETARIINAE.

**Habit, Vegetative Morphology.** Annual, caespitose. Culms decumbent, 10–100 cm long. Leaf-sheaths outer margin glabrous or hairy. Ligule a ciliate membrane. Leaf-blades 5–30 cm long, 4–16 mm wide, flaccid. Leaf-blade surface glabrous or pilose.

**Inflorescence.** Inflorescence a panicle. Panicle spiciform, linear, continuous or interrupted, 2–15 cm long. Primary panicle branches accrescent to a central axis, with evident branchlets on axis. Panicle axis hispidulous. Spikelets subtended by an involucre. Fertile spikelets 1–3 in the cluster. Involucre composed of bristles, 3–8 mm long. Involucral bristles persistent, 1–4 in principal whorl, flexible, retrorsely scaberulous, glabrous.

**Fertile Spikelets.** Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets elliptic, dorsally compressed, 1.5–2.5 mm long, falling entire.

**Glumes.** Glumes reaching apex of florets, thinner than fertile lemma. Lower glume ovate, 0.33–0.5 length of spikelet, hyaline, without keels, 1–3 -veined. Lower glume apex acute. Upper glume ovate, 1 length of spikelet, membranous, without keels, 5–7 -veined. Upper glume apex acute.

**Florets.** Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret ovate, 1 length of spikelet, membranous, 5–7 -veined, acute. Fertile lemma ovate, dorsally compressed, gibbous, 1–2 mm long, indurate, without keel. Lemma surface rugose. Lemma margins involute. Palea involute, indurate.

**Flower and Fruit.**  $N = 9$  (2 refs TROPICOS), or 27 (4 refs TROPICOS).  $2n = 18$  (1 ref TROPICOS), or 36 (1 ref TROPICOS), or 54 (1 ref TROPICOS).

**Distribution (TDWG). Continent.** Europe, Africa, Temperate Asia, Tropical Asia, Australasia (\*), Pacific, North America (\*), South America (\*).

**Region.** Northern Europe (\*), Middle Europe, Southwestern Europe, Southeastern Europe, Eastern Europe.

**Country /Province /State.** : Great Britain (\*). : Balears, France, Portugal, Sardinia, Spain, Azores. : Albania, Bulgaria, Greece, Italy, Crete, Romania, Sicily, Turkey Europe, Yugoslavia. Belarus, Estonia, Latvia, Lithuania, Krym, Central European Russia, East European Russia, South European Russia, Northwest European Russia, Moldova, Ukraine. **Northern Africa, Macaronesia, West tropical Africa, West-central tropical Africa, Northeast tropical Africa, East tropical Africa, South tropical Africa, Southern Africa, Middle Atlantic ocean, Western Indian ocean.** Algeria, Egypt, Libya, Morocco, Tunisia. Azores, Canary Is, Cape Verde, Madeira. Burkina, Ghana, Mali, Mauritania, Nigeria, Senegal, Niger. Rwanda, DRC. Chad, 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, Ascension, St Helena. Mauritius, Madagascar. **Middle Asia, Caucasus, Western Asia, Arabian Peninsula, China, Eastern Asia.** Kazakhstan, Kirgizistan, Turkmenistan, Tadzhikistan, Uzbekistan. Iran, Iraq. Gulf States, Kuwait, Oman. China South Central, Inner Mongolia. Japan, Nansei-Shoto, Taiwan. Japan Honshu. **Indian Subcontinent, Indo-China, Malesia, Papuasia.** Bangladesh, Eastern Himalaya, Pakistan, Sri Lanka, West Himalaya. Andaman Is, Cambodia, Laos, Myanmar, Thailand, Vietnam. Java, Lesser Sunda Is, Sulawesi, Philippines. **Australia.** Western Australia (\*), Northern Territory (\*), South Australia (\*), Queensland (\*), New South Wales (\*), A.C.T. (\*), Victoria (\*), Tasmania (\*), Lord Howe-Norfolk Is (\*). **Southwestern Pacific, South-central Pacific, Northwestern Pacific, North-central Pacific.** New Caledonia (\*). Marquesas (\*), Pitcairn Is (\*). Marianas (\*), Marshall Is (\*), Wake Is (\*). Hawaii (\*). **Subarctic America, Western Canada, Eastern Canada, Northwest USA, North-central USA, Northeast USA, Southwestern USA, South-central USA, Southeastern USA, Mexico.** Northwest Territories. British Columbia, Manitoba. Ontario, Quebec. Colorado. Illinois, Iowa, North Dakota, Nebraska, Oklahoma, South Dakota, Wisconsin. Connecticut, Massachusetts, Michigan, New Jersey, New York, Pennsylvania, Rhode Island, West Virginia. Arizona, California, Utah. New Mexico. Alabama, Delaware, Kentucky, Louisiana, Maryland. Central Mexico, Northeast Mexico, Northwest Mexico, Southwest Mexico. **Mesoamerica, Caribbean, Northern South America, Western South America, Brazil, Southern South America.** Guatemala. Bermuda, Cuba. Venezuela. Colombia, Ecuador, Peru. Brazil Northeast, Brazil Southeast, Brazil South. Argentina Northeast, Argentina South, Argentina Northwest, Chile Central, Uruguay.

**TDWG4.** 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. Victoria R & Barkly Tableland, Central Australia. NW & Lake Eyre, Southern. North, Central, South East. Tablelands, Western Slopes, Western Plains. La Rioja, Mendoza, Santiago del Estero, San Juan, San Luis. Buenos Aires, Cordoba, Entre Rios, Formosa, La Pampa, Santa Fe. Neuquén, Río Negro. Valparaiso, Santiago, Biobio. Distrito Federal, Puebla. Coahuila. Baja California Sur.

**Setaria verticilliformis** Dum. *Fl. Belg.* 150 (1827).

**Accepted by:** R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

**TYPE** from Luxemburg. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Luxembourgen: Tin.

**Illustrations (Books):** M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 25 *Poaceae*, part 2 (2003) (555), E.Hafliger & E.Schultz, *Grass Weeds*, CIBA-GEIGY (1:133(1980)).

**Classification.** Subfamily Panicoideae. Tribe: Paniceae. Subtribe SETARIINAE.

**Flower and Fruit.**  $2n = 36$  (1 ref TROPICOS).

**Distribution (TDWG). Continent.** Europe.

**Country /Province /State.** Mexico. Northwest Mexico.

Baja California.

**Setaria villosissima** (Scribn. & Merr.) K. Schum. *Just's Jahresb.* xxviii. I. 417 (1902).

**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:** *Chaetochloa villosissima* Scribn. & Merr., *Bull. Div. Agrostol., U.S.D.A.* 21: 34, f. 19 (1900). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *J. G. Smith s.n.*, May 1897, USA: Texas: Duval Co.: San Diego (US-81747).

**Illustrations (Books):** M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 25 *Poaceae*, part 2 (2003) (551).

**Derivation** (Clifford & Bostock 2007): L. most hairy. Plant densely hairy overall or in part.

**Classification.** Subfamily Panicoideae. Tribe: Paniceae. Subtribe SETARIINAE.

**Habit, Vegetative Morphology.** Perennial, caespitose. Culms erect or geniculately ascending, 4–10 cm long. Culm-internodes elliptical in section, distally glabrous. Culm-nodes glabrous or pubescent. Leaf-sheaths antrorsely scabrous, hirsute, outer margin hairy. Leaf-sheath oral hairs bearded. Ligule a fringe of hairs, 1 mm long. Leaf-blades linear or lanceolate, 15–30 cm long, 6–8 mm wide. Leaf-blade midrib prominent beneath. Leaf-blade surface pubescent, hairy on both sides. Leaf-blade margins cartilaginous, scabrous. Leaf-blade apex attenuate.

**Inflorescence.** Inflorescence a panicle. Panicle spiciform, lanceolate, loose, 20 cm long, 2–3 cm wide. Primary panicle branches ascending, 2–3 cm long, sterile at the tips. Panicle axis angular, scabrous, villous. Spikelets subtended by an involucre. Fertile spikelets pedicelled, 1 in the cluster. Involucre composed of bristles, 15–25 mm long. Involucral bristles persistent, 1 per spikelet, flexible, antrorsely scaberulous, glabrous. Pedicels present, oblong.

**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.

**Glumes.** Glumes reaching apex of florets, thinner than fertile lemma. Lower glume ovate, clasping, 0.33 length of spikelet, membranous, without keels, 3 -veined. Lower glume apex acute. Upper glume ovate, 1 length of spikelet, membranous, without keels, 5–7 -veined. Upper glume apex acute, mucronate.

**Florets.** Basal sterile florets 1, barren, with palea. Lemma of lower sterile floret ovate, 1 length of spikelet, membranous, 5 -veined, sulcate, acuminate. Palea of lower sterile floret 0.2 length of lemma. Fertile lemma ovate, dorsally compressed, gibbous, 2.5–3 mm long, indurate, without keel. Lemma surface rugulose. Lemma margins involute. Lemma apex apiculate. Palea involute, indurate.

**Distribution (TDWG). Continent.** North America.

**Country /Province /State.** Southwestern USA, South-central USA, Mexico. Arizona. Texas. Northeast Mexico, Northwest Mexico.

Coahuila, Chihuahua, Neuvo Leon, Tamaulipas. Sonora.

**Setaria viridis** (L.) Beauv. *Agrost.* 51. (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), 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) (& as).

**Basionym or Replaced Name:** *Panicum viride* L., *Syst. Nat. (ed. 10)* 2: 870 (1759). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: LT: Europe (LINN-80.12). LT cited by Sherif & Siddiqui, *Fl. Libya* 145: 296 (1885).

**Illustrations (Books):** C.E.Hubbard, *Grasses* (1968) (366), L.Boulos, *Flora of Egypt* 4 (2005) (300, Pl. 88), N.Feinbrun-Dothan, *Flora Palaestina* 4 (1986) (Pl. 413), C-C Hsu, *Flora of Taiwan*, Vol 5 (1978), T.Koyama, *Grasses of Japan and its neighbouring regions* (1987) (327, Fig 126), C-C Hsu, *Flora of Taiwan*, Vol 5 (1978) (628), C-C Hsu, *Taiwan Grasses* (1975) (609, Pl. 1450 as var. *viridis*), H.J.Noltie, *The Grasses of Bhutan* (2000) (721, Fig. 43), J.P.Jessop, G.R.M. Dashorst & F.M.James, *Grasses of South Australia* (2006) (485, Fig. 420), N.Walsh & T.Entwistle, *Flora of Victoria* Vol 2 (1994) (602, Fig. 122), S.W.L.Jacobs, R.D.B.Whalley & D.J.B.Wheeler., *Grasses of New South Wales*, 4th edn (2008) (371), K.F.Best, et al, *Prairie Grasses* (1971) (211), M.E.Barkworth et al, *Flora of North America north of Mexico Poaceae*, part 2 (2003) (557 as subsp. *viridus* & *major*), A.Burkat, *Flora Illustrada de Entre Rios (Argentina)*, Pt II, Gramineas (1969) (422, Fig. 177), M.N.Correa, *Flora Patagonica* Parte III, Gramineae (1978) (541, Fig 366), S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 745 as *Setaria viridis* ssp. *viridis*), E.Hafliger & E.Schultz, *Grass Weeds*, CIBA-GEIGY (1:131(1980)).

**Images:** D.Sharp & B.K.Simon, *AusGrass*. Grasses of Australia. CD-Rom Version 1.0. (2002);.

**Derivation** (Clifford & Bostock 2007): L. green. Widely applied but especially to species with green spikelets.

**Classification.** Subfamily Panicoideae. Tribe: Paniceae. Subtribe SETARIINAE.

**Habit, Vegetative Morphology.** Annual, caespitose. Culms erect or geniculately ascending, 10–60 cm long, 3–5 -noded. Culm-nodes glabrous. Leaf-sheaths outer margin hairy. Ligule a fringe of hairs. Leaf-blades 3–30 cm long, 4–10 mm wide. Leaf-blade surface scaberulous, glabrous.

**Inflorescence.** Inflorescence a panicle. Peduncle scaberulous above. Panicle spiciform, linear, 1–10 cm long, 0.4–1 cm wide. Primary panicle branches accrescent to a central axis, with evident branchlets on axis. Panicle axis hispid or pilose. Spikelets subtended by an involucre. Fertile spikelets pedicelled, 2–6 in the cluster. Involucre composed of bristles, free throughout, 5–10 mm long. Involucral bristles persistent, few, in one whorl, 4–14 in principal whorl, 1–3 per spikelet, flexible, antrorsely scaberulous, glabrous. 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 elliptic, dorsally compressed, obtuse, 2–3 mm long, falling entire.

**Glumes.** Glumes dissimilar, reaching apex of florets, thinner than fertile lemma. Lower glume oblate, 0.25–0.33 length of spikelet, membranous, without keels, 1–3 -veined. Lower glume apex obtuse. Upper glume elliptic, 1 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, oblong, 1 length of spikelet, membranous, 5–7 -veined, obtuse. Palea of lower sterile floret membranous (0.33–0.5 length of lemma). Fertile lemma elliptic, dorsally compressed, 2–3 mm long, indurate, without keel. Lemma surface rugulose. Lemma margins involute. Lemma apex obtuse. Palea involute, indurate.

**Flower and Fruit.** Anthers 3, 0.8 mm long.

$N = 9$  (1 ref TROPICOS), or 18 (3 refs TROPICOS).  $2n = 18$  (9 refs TROPICOS).

**Distribution (TDWG). Continent.** Europe, Africa, Temperate Asia, Tropical Asia, Australasia (\*), North America, South America.

**Region.** Northern Europe, Middle Europe, Southwestern Europe, Southeastern Europe, Eastern Europe.

**Country /Province /State.** : Denmark, Finland, Great Britain (\*), Northern Ireland, Norway, Sweden. : Austria, Liechtenstein, Belgium, Luxembourg, Czechoslovakia, Germany, Hungary, Netherlands, Poland, Switzerland. : Balears, Corsica, Channel Islands, France, Monaco, Portugal, Sardinia, Andorra, Gibraltar, Spain. : Albania, Bulgaria, Greece, Italy, San Marino, Vatican, Crete, Romania, Malta, Sicily, Turkey Europe, Yugoslavia. Belarus, Estonia, Kaliningrad, Latvia, Lithuania, Baltic States, Krym, Central European Russia, East European Russia, South European Russia, Northwest European Russia, Moldova, Ukraine. **Northern Africa, Macaronesia, West tropical Africa, Northeast tropical Africa.** Egypt, Libya. Madeira. Niger. Sudan. Siberia, Russian far east, **Middle Asia, Caucasus, Western Asia, Arabian Peninsula, China, Mongolia, Eastern Asia, Russia.** Buryatiya, Chita. Amur, Kuril Is, Primorye, Sakhalin. Kirgizistan, Turkmenistan, Tadjikistan, Uzbekistan. Iran, Iraq. Gulf States, Kuwait, Oman. China South Central, Inner Mongolia, Manchuria, China North-Central, Qinghai, China Southeast, Tibet, Xinjiang. Japan, Nansei-Shoto, Taiwan. Japan Hokkaido, or Honshu, or Shikoku, or Kyushu. **Indian Subcontinent, Indo-China, Malesia, Papuasia.** Eastern Himalaya, Pakistan, West Himalaya. Vietnam. Java, Lesser Sunda Is, Philippines, Sumatra. New Guinea. **Australia, New**

**Zealand.** South Australia (\*), Queensland (\*), New South Wales (\*), A.C.T. (\*), Victoria (\*), Tasmania (\*). Chatham Is, New Zealand North I, New Zealand South I. New Caledonia. Hawaii (\*). **Subarctic America, Western Canada, Eastern Canada, Northwest USA, North-central USA, Northeast USA, Southwestern USA, South-central USA, Southeastern USA, Mexico.** Northwest Territories, Yukon. 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. Central Mexico, Northeast Mexico, Northwest Mexico. **Mesoamerica, Caribbean, Western South America, Brazil, Southern South America.** Costa Rica, Panama. Bermuda, Leeward Is. Bolivia. Brazil West Central, Brazil North, Brazil South. Argentina Northeast, Argentina South, Chile North, Chile Central, Juan Fernandez Is, Uruguay.

**TDWG4.** Gansu, Hebei, Shaanxi, Shandong, Shanxi. Anhui, Fujian, Guangdong, Henan, Hunan, Jiangsu, Jiangxi, Zhejiang. Guizhou, Hubei, Sichuan, Yunnan. Bhutan. Uttah Pradesh. Himachal Pradesh, Jammu Kashmir. NW & Lake Eyre, Southern. South East. Coast, Tablelands, Western Slopes, Western Plains. Mendoza, San Juan. Buenos Aires, Cordoba, Distrito Federal, Entre Rios, La Pampa, Santa Fe. Neuquén, Río Negro. Atacama. Valparaiso, Santiago, Biobio. Puebla. Coahuila, San Luis Potosi. Baja California Sur.

**Setaria vulpiseta** (Lam.) Roem. & Schult. Syst. ii. 495. (1817).

**Accepted by:** R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

**TYPE** from Santo Domingo. **Basionym or Replaced Name:** *Panicum vulpisetum* Lam., *Encycl.* 4: 735 (err. typ. 745) (1798). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Ce beau panic croît à Saint-Dominque, *Dutrone s.n.* (HT: FI) US (fragm.)).

**Illustrations (Books):** A.S.Hitchcock, *Manual of the Grasses of the West Indies* (1936) (351, Fig. 322), S.A.Renvoize, *Gramineas de Bolivia* (1998) (Fig. 117), S.A.Renvoize, *The Grasses of Bahia*, 1984 (100, Fig. 35), J.A.Steyermark et al, *Flora of the Venezuelan Guayana* Vol. 8 (2004) (268, Fig. 218), L.B. Smith, D.C. Wasshausen, R.M. Klein *Flora Illustrada Catarinensis Gramineas* (1981–1982) (788, Fig. 163), W.Burger, *Flora Costaricensis* 15, Gramineae: *Fieldiana Botany New Series* 4 (1980) (531, Fig. 199).

**Illustrations (Journals):** *Darwiniana* (37: 120, Fig.22 (1999)).

**Derivation** (Clifford & Bostock 2007): *L. vulpus*, fox; *seta*, bristle. With an inflorescence resembling a fox-tail.

**Classification.** Subfamily Panicoideae. Tribe: Paniceae. Subtribe SETARIINAE.

**Habit, Vegetative Morphology.** Perennial, caespitose. Culms geniculately ascending, 100–200 cm long. Leaf-sheaths keeled, smooth or antrorsely scabrous, outer margin hairy. Ligule a fringe of hairs, 2 mm long. Collar pilose. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades flat or plicate or conduplicate, 25–50 cm long, 20–30 mm wide. Leaf-blade surface scabrous, rough on both sides. Leaf-blade apex acuminate.

**Inflorescence.** Inflorescence a panicle. Peduncle smooth or antrorsely scabrous above. Panicle spiciform, linear, dense or loose, tapering above or tapering below, 15–30 cm long, 4–5 cm wide. Primary panicle branches ascending, 2–3 cm long, sterile at the tips. Panicle axis angular, scabrous, pilose. Panicle branches stiff. Spikelets subtended by an involucre. Fertile spikelets pedicelled, 1 in the cluster. Involucre composed of bristles, 20–30 mm long. Involucral bristles persistent, 1–2 per spikelet, flexible, antrorsely scaberulous, glabrous. Pedicels present, oblong.

**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, compressed slightly, 2.5 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, 3–5 -veined. Lower glume apex acute. Upper glume ovate, 0.33–0.5 length of spikelet, membranous, without keels, 7 -veined. Upper glume apex acute.

**Florets.** Basal sterile florets 1, barren, with palea. Lemma of lower sterile floret ovate, 1 length of spikelet, membranous, 5 -veined, acute. Palea of lower sterile floret 1 length of lemma. Fertile lemma ovate, dorsally compressed, gibbous, 2.5 mm long, indurate, yellow, without keel. Lemma surface rugose. Lemma margins involute. Lemma apex acute. Palea involute, indurate.

**Flower and Fruit.**  $N = 18$  (3 refs TROPICOS).  $2n = 54$  (1 ref TROPICOS).

**Distribution (TDWG).** **Continent.** Europe (\*), North America, South America.

**Region.** Northern Europe (\*).

**Country /Province /State.** : GB Aliens (Ryves et al). **Mexico.** Central Mexico, Northeast Mexico, Gulf (Mexico), Northwest Mexico, Southwest Mexico, Southeast Mexico. **Mesoamerica, Caribbean, Northern South America, Western South America, Brazil, Southern South America.** Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua, Panama. Puerto Rico, Trinidad-Tobago. Guyana, Surinam, Venezuela. Bolivia, Colombia, Ecuador, Galapagos, Peru. Brazil West Central, Brazil Northeast, Brazil Southeast, Brazil North, Brazil South. Argentina Northwest, Paraguay.

**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. Jujuy, Salta. Buenos Aires, Chaco, Corrientes, Formosa, Misiones, Santa Fe. Mexico State, Puebla. San Luis Potosi. Veracruz. Oaxaca. Quintana Roo, Tabasco, Yucatan.

**Setaria welwitschii** Rendle. *Cat. Welw. Afr. Pl.* ii. 185. (1899).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online.

**TYPE** from Angola. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: ST: *no. 2891*, [Africa: Angola]: "Ambriz..." ST: *no. 2895*, [Africa: Angola]: "Ambirz ..." ST: *no. 2914*, [Africa: Angola]: "Loanda ..." ST: *no. 7307*, [Africa: Angola]: "Loanda ..." ST: *no. 7370*, [Africa: Angola]: "Loanda ..." ST: *no. 2913*, [Africa: Angola]: "Loanda ..." ST: *no. 7508*, [Africa: Angola]: "Mossamedes ...".

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): in honor of Friedrich Martin Josef Welwitsch (1806–72) Austrian-born botanist, physician and traveller.

**Classification.** Subfamily Panicoideae. Tribe: Paniceae. Subtribe SETARIINAE.

**Habit, Vegetative Morphology.** Perennial. Rhizomes short. Culms erect or geniculately ascending, 200–300 cm long, 4 mm diam. Culm-internodes 7–10 cm long. Lateral branches ample. Leaf-sheaths tight, mostly shorter than adjacent culm internode, keeled, smooth, glabrous on surface or pilose, outer margin hairy. Ligule a fringe of hairs. Leaf-blades 5–30 cm long, 3–7 mm wide, stiff or firm. Leaf-blade midrib prominent beneath. Leaf-blade venation with 6–8 secondary veins. Leaf-blade surface scabrous, rough adaxially, glabrous or pilose, sparsely hairy. Leaf-blade margins scabrous.

**Inflorescence.** Inflorescence a panicle. Peduncle 20–25 cm long, antrorsely scabrous above, hirsute above. Panicle contracted or spiciform, oblong or pyramidal, continuous or interrupted, 2.5–13 cm long, 0.4–2.4 cm wide. Primary panicle branches 0.1–1.6 cm long, bearing spikelets almost to the base, sterile at the tips. Panicle axis angular, villous. Panicle branches puberulous. Spikelets subtended by an involucre. Fertile spikelets sessile, 3–5 in the cluster. Involucre composed of bristles, 7–9 mm long. Involucral bristles persistent, 3–5 in principal whorl, with one conspicuously longer bristle, 12–16 mm long, antrorsely scaberulous, glabrous.

**Fertile Spikelets.** Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets oblong, dorsally compressed, gibbous, 2–2.5 mm long, 1 mm wide, falling entire.

**Glumes.** Glumes reaching apex of florets, thinner than fertile lemma. Lower glume ovate, 0.33–0.5 length of spikelet, membranous, without keels, 3 -veined. Lower glume apex acute. Upper glume ovate, 1 length of spikelet, membranous, without keels, 5–7 -veined. Upper glume primary vein depressed. Upper glume apex acute.

**Florets.** Basal sterile florets 1, barren, with palea. Lemma of lower sterile floret ovate, 1 length of spikelet, membranous, 5–7 -veined, flat across back, acute. Fertile lemma ovate, dorsally compressed, gibbous, 2–2.5 mm long, indurate, pallid, without keel. Lemma surface smooth or granulose. Lemma margins involute. Lemma apex acute. Palea involute, indurate.

**Distribution (TDWG). Continent.** Africa.

**Country /Province /State.** South tropical Africa, Middle Atlantic ocean. Angola. St Helena.

**Setaria yunnanensis** B.J.Keng & K.D.Yu. *Acta Bot. Yunnanica*, 2(4): 418 (1980).

**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: Binchuan, Aug. 1963, *Jinsha River Exped.* 6668 (HT: NJU; IT: KUN).

**Illustrations (Books):** S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 742).

**Derivation** (Clifford & Bostock 2007): L. *-ense*, denoting origin. From Yunnan Province, China.

**Classification.** Subfamily Panicoideae. Tribe: Paniceae. Subtribe SETARIINAE.

**Habit, Vegetative Morphology.** Annual. Culms erect or geniculately ascending, 70 cm long, 1.5 mm diam., 9 -noded, without nodal roots or rooting from lower nodes. Culm-internodes 5–12 cm long, smooth.

Culm-nodes pubescent. Lateral branches lacking or sparse. Leaf-sheaths mostly shorter than adjacent culm internode, outer margin hairy. Ligule a fringe of hairs. Leaf-blades lanceolate, 6–15 cm long, 4–12 mm wide. Leaf-blade surface glabrous or pilose, sparsely hairy, hairy adaxially, with tubercle-based hairs. Leaf-blade margins ciliate. Leaf-blade apex acuminate.

**Inflorescence.** Inflorescence a panicle, exerted or embraced at base by subtending leaf. Panicle open, oblong, 4–17 cm long, 0.5–3 cm wide. Primary panicle branches ascending, 8 cm long, sterile at the tips. Panicle axis angular, pubescent. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, 0.5 mm long, 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 oblong or ovate, dorsally compressed, 2.2–2.4 mm long, falling entire.

**Glumes.** Glumes reaching apex of florets, thinner than fertile lemma. Lower glume ovate, 0.33 length of spikelet, membranous, without keels, 3 -veined. Lower glume apex acute. Upper glume ovate, 1 length of spikelet, membranous, light green or purple, without keels, 7 -veined. Upper glume apex acute.

**Florets.** Basal sterile florets 1, barren, with palea. Lemma of lower sterile floret ovate, 1 length of spikelet, membranous, light green or purple, 5 -veined, acute. Palea of lower sterile floret 0.66 length of lemma. Fertile lemma ovate, dorsally compressed, gibbous, 2.2–2.4 mm long, indurate, without keel. Lemma surface rugulose. Lemma margins involute. Lemma apex acute, scabrous. Palea involute, indurate.

**Flower and Fruit.** Anthers 3, 1 mm long, brown. Stigmas purple.

**Distribution (TDWG). Continent.** Temperate Asia.

**Country /Province /State.** China. China South Central, Tibet.

**TDWG4.** Sichuan, Yunnan.

**Setaria x pycnocomma** (Steudel) Henr. ex Nakai. *J. Jap. Bot.* 15(6): 393 (1939).

**Accepted by:** T.Koyama, *Grasses of Japan and its neighboring regions* (1987).

**Illustrations (Books):** No illustration found (BKS).

**Classification.** Subfamily Panicoideae. Tribe: Paniceae. Subtribe SETARIINAE.

**Setariopsis auriculata** (Fourn.) Scribn. *Field Columb. Mus. Bot.* i. 289 (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. **Basionym or Replaced Name:** *Setaria auriculata* E. Fourn., *Mexic. Pl.* 2: 43 (1886). T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: LT: *Linden s.n.*, Jul, Mexico: Campeche (BR). LT designated by Hitchcock, *Contr. U.S. Natl. Herb.* : (1913). ST: *Liebmann 379*, Aug, Mexico: Manantial.

**Illustrations (Books):** M.E.Barkworth et al, *Flora of North America north of Mexico Vol 25 Poaceae*, part 2 (2003) (540), R.McVaugh, *Flora Nova-Galiciana Vol.14 Gramineae* (1983), R.Pilger, *Die Natürlichen Pflanzenfamilien* 14e (1940) (75, Fig. 44 as *Setaria*).

**Derivation** (Clifford & Bostock 2007): L. auris, ear; -ula, diminutive; -ata, possessing. Leaf-blades rounded at the base or with auricles.

**Classification.** Subfamily Panicoideae. Tribe: Paniceae. Subtribe SETARIINAE.

**Habit, Vegetative Morphology.** Annual, caespitose. Culms 15–60 cm long. Ligule a fringe of hairs. Collar pubescent. Leaf-blades 3–25 cm long, 2–12 mm wide. Leaf-blade apex acuminate.

**Inflorescence.** Inflorescence a panicle. Panicle contracted, linear or lanceolate, interrupted, 3–15 cm long. Primary panicle branches 0.5–2 cm long, sterile at the tips. Panicle branches angular, scabrous. Spikelets subtended by an involucre. Fertile spikelets pedicelled. Involucre composed of bristles, 3–8 mm long. Involucral bristles persistent, 1 per spikelet. Pedicels present, oblong, 0.5 mm long.

**Fertile Spikelets.** Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets ovate, dorsally compressed, plano-convex, obtuse, 2–2.5 mm long, falling entire. Rhachilla internodes elongated between glumes.

**Glumes.** Glumes dissimilar, reaching apex of florets, thinner than fertile lemma. Lower glume oblate, 0.33 length of spikelet, membranous, without keels, 3 -veined. Lower glume apex obtuse. Upper glume ovate, gibbous, membranous or coriaceous (at maturity), without keels, winged on margins (at maturity), winged below (auriculate), 11–13 -veined. Upper glume apex obtuse.

**Florets.** Basal sterile florets 1, barren, with palea. Lemma of lower sterile floret ovate, 1 length of spikelet, membranous or coriaceous (at maturity), thicker on margins (below), sulcate, obtuse. Palea of lower sterile

floret hyaline (0.25 length of lemma). Fertile lemma ovate, 2–2.5 mm long, indurate, without keel. Lemma surface rugose. Lemma margins involute. Lemma apex acute. Palea indurate (rugose).

**Distribution (TDWG). Continent.** North America, South America.

**Country /Province /State. Southwestern USA, Mexico.** Arizona. Central Mexico, Northeast Mexico, Gulf (Mexico), Northwest Mexico, Southwest Mexico, Southeast Mexico. **Mesoamerica, Northern South America, Western South America.** Guatemala, Honduras, Nicaragua. Venezuela. Colombia.

**TDWG4.** Mexico State, Morelos, Puebla. Chihuahua, Guanajuato, Queretaro, San Luis Potosi, Zacatecas. Veracruz. Baja California, Baja California Sur, Sinaloa, Sonora. Colima, Guerrero, Jalisco, Michoacan, Nayarit, Oaxaca. Campeche, Chiapas, Quintana Roo, Yucatan.

### **Setariopsis latiglumis** (Vasey) Scribn. *Field Columb. Mus. Bot.* i. 289 (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. **Basionym or Replaced Name:** *Setaria latiglumis* Vasey, *Bull. Torrey Bot. Club* 13(12): 229 (1886). T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: HT: *E. Palmer 117a*, Aug 1885, Mexico: Chihuahua (US-82081; IT: US-744788).

**Illustrations (Books):** R.McVaugh, *Flora Nova-Galiciana* Vol.14 *Gramineae* (1983).

**Derivation** (Clifford & Bostock 2007): *L. latus*, broad; *gluma*, husk. Glumes broad.

**Classification.** Subfamily Panicoideae. Tribe: Paniceae. Subtribe SETARIINAE.

**Habit, Vegetative Morphology.** Annual. Culms erect, (30–)60–100 cm long, without nodal roots or rooting from lower nodes. Culm-internodes ridged, smooth or scaberulous. Culm-nodes pubescent. Leaves cauline. Leaf-sheaths keeled, hispid, with tubercle-based hairs. Ligule a fringe of hairs. Leaf-blades 10–30 cm long, 5–9 mm wide. Leaf-blade surface scaberulous, pilose, sparsely hairy. Leaf-blade margins scabrous.

**Inflorescence.** Inflorescence a panicle. Panicle contracted or spiciform, linear or lanceolate, truncate or rounded at the ends or tapering above, 4–20 cm long, contracted about primary branches. Primary panicle branches bearing spikelets almost to the base, sterile at the tips. Panicle branches flexuous, angular, hispid or pilose. Spikelets subtended by an involucre. Fertile spikelets pedicelled, 1 in the cluster. Involucre composed of bristles, 7–10 mm long. Involucral bristles persistent, 1 per spikelet, antrorsely scaberulous. Pedicels present, cuneate, 0.5 mm long, scabrous.

**Fertile Spikelets.** Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets oblong or ovate, dorsally compressed, compressed slightly, gibbous, 3–3.5 mm long, falling entire.

**Glumes.** Glumes dissimilar, with lower narrower than upper, exceeding apex of florets or reaching apex of florets, thinner than fertile lemma. Lower glume oblate, gibbous, 1–1.3 mm long, 0.3 length of spikelet, membranous, without keels, 2 -veined. Lower glume apex obtuse or cuspidate. Upper glume oblate (spreading), gibbous, 3 mm long, 1 length of adjacent fertile lemma, herbaceous or indurate (at maturity), firmer above, without keels, 17–19 -veined. Upper glume lateral veins ribbed, without cross-veins or with cross-veins. Upper glume apex entire to erose, obtuse to cuspidate.

**Florets.** Basal sterile florets 1, barren, with palea. Lemma of lower sterile floret oblong, 3–3.5 mm long, 1 length of spikelet, membranous or coriaceous (at maturity), firmer above, 9 -veined, sulcate (lyrate), scaberulous, emarginate. Palea of lower sterile floret pilose. Fertile lemma elliptic, dorsally compressed, 2–3 mm long, indurate, pallid, keeled, lightly keeled, keeled above, 5 -veined, more than 3-veined. Lemma surface tuberculate. Lemma margins involute. Lemma apex cuspidate. Palea elliptic, 0.9–1 length of lemma, indurate, thinner on margins, 2 -veined. Palea surface tuberculate.

**Flower and Fruit.** Anthers 3, 0.5–0.7 mm long. Stigmas 2. Caryopsis with adherent pericarp, ovoid.

**Distribution (TDWG). Continent.** North America.

**Country /Province /State. Mexico.** Central Mexico, Northeast Mexico, Northwest Mexico, Southwest Mexico, Southeast Mexico.

**TDWG4.** Mexico State, Morelos, Puebla. Chihuahua, Durango, Guanajuato, Queretaro, Zacatecas. Guerrero, Jalisco, Michoacan, Nayarit, Oaxaca. Chiapas.

### **Shibataea chiangshanensis** T.H. Wen. *Bull. Bot. Res. North-East. Forest. Inst.*, 3(1): 95 (1983).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), S-L Chen et al, *Flora of China* 22 (Poaceae) (2006).

**TYPE** from China. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: China: Zhejiang: Jiang Shan, *Y.F. Chan 80607* (HT: ZJFI).

**Illustrations (Books):** No illustration found (BKS).



**Derivation** (Clifford & Bostock 2007): *L. -ensis*, denoting origin. From Jiand Shan, Zhejiang Province, China.

**Classification.** Subfamily Bambusoideae. Tribe: Bambuseae.

**Habit, Vegetative Morphology.** Perennial, woody bamboo. Rhizomes elongated, leptomorph. Butt sheaths absent. Culms erect, 50 cm long, 2 mm diam., woody. Culm-internodes terete, thin-walled, 7–12 cm long, brown. Lateral branches suffrutescent. Culm-sheaths present, deciduous, chartaceous, red, pubescent, with white hairs, hairy on margins, without auricles, glabrous on shoulders. Culm-sheath ligule 0.5 mm high. Leaves cauline, 1 per branch, with sheath almost obsolete. Ligule an eciliate membrane. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades lanceolate, 6–8 cm long, 12–23 mm wide. Leaf-blade venation with distinct cross veins. Leaf-blade margins scabrous. Flowering specimens unknown.

**Distribution (TDWG). Continent.** Temperate Asia.

**Country /Province /State. China.** China Southeast.

**TDWG4.** Zhejiang.

**Shibataea chinensis** Nakai. *Journ. Jap. Bot.* 9: 81, 85 (1933).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), S-L Chen et al, *Flora of China* 22 (Poaceae) (2006).

**TYPE** from China. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: China, Sungkiang, Mt. Zose: Migo (K iso, NAS).

**Illustrations (Books):** S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 216 as var. *chinensis*).

**Derivation** (Clifford & Bostock 2007): *L. -ense*, denoting origin. From China.

**Classification.** Subfamily Bambusoideae. Tribe: Bambuseae.

**Habit, Vegetative Morphology.** Perennial, woody bamboo. Rhizomes elongated, leptomorph. Butt sheaths absent. Culms erect, 100 cm long, 2–3 mm diam., woody. Culm-internodes semiterete, 7–15 cm long, light green, distally glabrous. Culm-nodes with distinct supra-nodal ridge. Lateral branches suffrutescent. Branch complement three or several. Culm-sheaths present, deciduous, chartaceous, glabrous or hispid, hairy at the base, hairy on margins, without auricles, glabrous on shoulders. Culm-sheath ligule 4 mm high. Culm-sheath blade inconspicuous. Leaves cauline, 1(–2) per branch. Leaf-sheaths glabrous on surface. Leaf-sheath oral hairs lacking. Ligule an eciliate membrane, 4–6 mm long, pubescent on abaxial surface. Leaf-blade base asymmetrical, with a brief petiole-like connection to sheath. Leaf-blades lanceolate or ovate, 6–10 cm long, 10–25 mm wide. Leaf-blade venation with 10–18 secondary veins, with distinct cross veins. Leaf-blade surface glabrous. Leaf-blade margins scaberulous. Leaf-blade apex acuminate. Flowering specimens unknown.

**Flower and Fruit.**  $2n = 48$  (1 ref TROPICOS).

**Distribution (TDWG). Continent.** Temperate Asia.

**Country /Province /State. China.** China Southeast.

**TDWG4.** Anhui, Jiangsu, Jiangxi, Zhejiang.

**Shibataea hispida** McClure. *Lingnan Univ. Sci. Bull.*, No. 9, 57 (1941).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), S-L Chen et al, *Flora of China* 22 (Poaceae) (2006).

**TYPE** from China. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: China, Siunin: Ching 3211.

**Illustrations (Books):** S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 216).

**Derivation** (Clifford & Bostock 2007): *L.* bearing coarse stiff hairs. Plant wholly or partly rough to the touch.

**Classification.** Subfamily Bambusoideae. Tribe: Bambuseae.

**Habit, Vegetative Morphology.** Perennial, woody bamboo. Rhizomes elongated, leptomorph. Butt sheaths absent. Culms erect, 100 cm long, 1.5–4 mm diam., woody. Culm-internodes semiterete, thick-walled, yellow, distally glabrous. Culm-nodes with distinct supra-nodal ridge. Lateral branches suffrutescent. Branch complement three or several. Culm-sheaths present, chartaceous, brown, triangular at apex, without auricles, glabrous on shoulders. Culm-sheath blade inconspicuous. Leaves cauline, 1 per branch. Leaf-sheaths 1–2 cm long. Leaf-sheath oral hairs lacking. Ligule an eciliate membrane. Leaf-blade base broadly rounded, with a brief petiole-like connection to sheath, petiole 4–8 cm long, petiole glabrous or pubescent. Leaf-blades lanceolate or elliptic, 7–10 cm long, 20–30(–40) mm wide, mid-green and grey-green, discolorous with last colour beneath. Leaf-blade venation with 12–16 secondary veins, with distinct cross veins. Leaf-blade surface puberulous, hairy abaxially. Leaf-blade margins scaberulous. Leaf-blade apex acuminate. Flowering specimens unknown.

**Distribution (TDWG). Continent.** Temperate Asia.

**Country /Province /State.** China. China Southeast.  
**TDWG4.** Anhui, Zhejiang.

**Shibataea kumasasa** (Steud.) Makino. *Bot. Mag., Tokyo* xxviii. 22 (1914).

**Accepted by:** R.J.Soreng et al., *Catalogue of 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).

**Illustrations (Books):** C-C Hsu, *Taiwan Grasses* (1975) (738, Pl. 1497), D.Farrelly, *The Book of Bamboo* (1984), S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 216).

**Derivation** (Clifford & Bostock 2007): Jap. kuma, bear; sasa, dwarf bamboo. Growing in places frequented by bears.

**Classification.** Subfamily Bambusoideae. Tribe: Bambuseae.

**Habit, Vegetative Morphology.** Perennial, woody bamboo. Rhizomes elongated, leptomorph. Butt sheaths absent. Culms erect, zigzag, 50–150 cm long, 3–5 mm diam., woody. Culm-internodes semiterete, thin-walled, 3–10 cm long. Culm-nodes swollen, with distinct supra-nodal ridge. Lateral branches suffrutescent. Branch complement two or three or several, with subequal branches, thinner than stem. Culm-sheaths present, deciduous, chartaceous, without auricles, ciliate on shoulders. Culm-sheath blade linear. Leaves cauline, 1(–2) per branch, with sheath almost obsolete. Ligule an eciliate membrane. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades lanceolate or ovate, 5–11 cm long, 20–25 mm wide. Leaf-blade venation with distinct cross veins. Leaf-blade surface pubescent, hairy abaxially. Leaf-blade margins scabrous.

**Inflorescence.** Synflorescence bractiferous, fasciculate, dense, with glumaceous subtending bracts, without axillary buds at base of spikelet, 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, 15–18 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, 0.7–0.8 length of upper glume, chartaceous, without keels, 7–9 -veined. Lower glume apex acute. Upper glume ovate, 5–8 mm long, 0.7–0.8 length of adjacent fertile lemma, chartaceous, without keels, 7–9 -veined. Upper glume apex acute.

**Florets.** Fertile lemma oblong, 18 mm long, chartaceous, without keel, 9–11 -veined, more than 3-veined. Lemma apex acute. Palea 0.7–0.8 length of lemma.

**Flower and Fruit.** Lodicules 3, veined, ciliate. Anthers 3, 5–6 mm long. Stigmas 3. Ovary umbonate. Caryopsis with adherent pericarp, 7 mm long.

**Distribution (TDWG).** Continent. Temperate Asia, South America (+).

**Country /Province /State.** **Caucasus, China, Eastern Asia.** China Southeast. Japan (\*), Nansei-Shoto, Taiwan (\*). **Mesoamerica.** Costa Rica.

**TDWG4.** Anhui (\*), Fujian, Guangdong (\*), Jiangsu (\*), Zhejiang.

**Shibataea lancifolia** C.H.Hu. *J. Nanjing Univ., Nat. Sci. Ed.* 1981(2): 257 (1981).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), S-L Chen et al, *Flora of China* 22 (Poaceae) (2006).

**TYPE** from China. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: China: Fujian: Chong'an, ca. 500 m, 6 Dec. 1974, Z.P. Wang et al. s.n. (HT: NJU).

**Illustrations (Books):** S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 215).

**Derivation** (Clifford & Bostock 2007): *L. lanceus*, lance; *folium*, leaf. Leaf-blade lanceolate.

**Classification.** Subfamily Bambusoideae. Tribe: Bambuseae.

**Habit, Vegetative Morphology.** Perennial, woody bamboo. Rhizomes elongated, leptomorph. Butt sheaths absent. Culms erect, 45–100 cm long, 2–3 mm diam., woody. Culm-internodes semiterete, 3–4 cm long, distally glabrous. Culm-nodes with distinct supra-nodal ridge. Lateral branches suffrutescent. Branch complement three or several. Culm-sheaths present, deciduous, chartaceous, glabrous, without auricles, glabrous on shoulders. Culm-sheath blade inconspicuous. Leaves cauline, 1–2 per branch. Leaf-sheaths 2 cm long. Leaf-sheath oral hairs lacking. Ligule an eciliate membrane, 5 mm long. Leaf-blade base cuneate, with a brief petiole-like connection to sheath. Leaf-blades lanceolate, 8–12 cm long, 8–15 mm wide. Leaf-blade venation with distinct cross veins. Leaf-blade surface pubescent, hairy abaxially. Leaf-blade margins scaberulous. Leaf-blade apex attenuate.

**Inflorescence.** Synflorescence bractiferous, fasciculate, dense, with spathaceous subtending bracts, with axillary buds at base of spikelet, prophyllate below lateral spikelets.

Fertile spikelets sessile.

**Fertile Spikelets.** Spikelets comprising 1–2 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile to one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets linear, laterally compressed, 15–20 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes several, comprising 1–3 gemmiferous bracts, 0 empty glumes.

**Florets.** Fertile lemma lanceolate, 12 mm long, chartaceous, light green, without keel, 11 -veined, more than 3-veined. Lemma apex acute. Palea 1 length of lemma.

**Flower and Fruit.** Lodicules 3. Anthers 3, yellow. Stigmas 3. Caryopsis with adherent pericarp, ovoid.  $2n = 48$  (1 ref TROPICOS).

**Distribution (TDWG). Continent.** Temperate Asia.

**Country /Province /State. China.** China Southeast.

**TDWG4.** Fujian, Zhejiang.

### **Shibataea nanpingensis** Q.F. Zheng & K.F. Huang. *Wuyi Sci. J.*, 2: 17 (1982).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), S-L Chen et al, *Flora of China* 22 (Poaceae) (2006).

**TYPE** from China. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: China: Fujian: Nanping, Haoping, K.F. Huang 801276 (HT: FJFC; IT: NJU).

**Illustrations (Books):** S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 216 as var. *nanpingensis*).

**Derivation** (Clifford & Bostock 2007): L. -ensis, denoting origin. From Nanping, Fujian Province, China.

**Classification.** Subfamily Bambusoideae. Tribe: Bambuseae.

**Habit, Vegetative Morphology.** Perennial, woody bamboo. Rhizomes elongated, leptomorph. Butt sheaths absent. Culms erect, 100–170 cm long, 4–5 mm diam., woody. Culm-internodes terete, thin-walled, 25–300 cm long. Lateral branches suffrutescent. Branch complement three. Culm-sheaths present, deciduous, chartaceous, green, pubescent, with white hairs, without auricles, glabrous on shoulders. Culm-sheath ligule 1.5–4 mm high. Culm-sheath blade linear, 0.3–0.6 cm long. Leaves cauline, 1 per branch, with sheath almost obsolete. Ligule an eciliate membrane. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades lanceolate or elliptic, 17–20 cm long, 15–30 mm wide. Leaf-blade venation with 14–18 secondary veins, with distinct cross veins. Leaf-blade surface glabrous. Leaf-blade margins scabrous. Flowering specimens unknown.

**Flower and Fruit.**  $2n = 48$  (1 ref TROPICOS).

**Distribution (TDWG). Continent.** Temperate Asia.

**Country /Province /State. China.** China Southeast.

**TDWG4.** Fujian.

### **Shibataea pygmaea** Maekawa. *Journ. Jap. Bot.* xix. 150 (1943).

**TYPE** from China. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: China-mediana, Prov. Kiangsi P'eng-che, Nangwawan, Dec 1941, *F.Maekawa 11 M539* (HT:TI).

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): L. dwarf. Culms shorter than those of many other species in the genus.

**Classification.** Subfamily Bambusoideae. Tribe: Bambuseae.

**Distribution (TDWG). Continent.** Temperate Asia.

**Country /Province /State. China.** China Southeast.

**TDWG4.** Guangxi.

### **Shibataea strigosa** T.H. Wen. *Bull. Bot. Res. North-East. Forest. Inst.*, 3(1): 96 (1983).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), S-L Chen et al, *Flora of China* 22 (Poaceae) (2006).

**TYPE** from China. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: China, Zhejiang, Longquon: Wen 80557.

**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 Bambusoideae. Tribe: Bambuseae.

**Habit, Vegetative Morphology.** Perennial, woody bamboo. Rhizomes elongated, leptomorph. Butt sheaths absent. Culms erect, 50 cm long, 3 mm diam., woody. Culm-internodes semiterete, mid-green, distally glabrous. Culm-nodes with distinct supra-nodal ridge. Lateral branches suffrutescent. Branch complement three. Culm-sheaths present, chartaceous, green, pilose, hairy above, with tawny hairs, glabrous on margins, truncate at apex, without auricles, glabrous on shoulders. Culm-sheath ligule ciliate. Culm-sheath blade linear, erect. Leaves cauline, 1 per branch. Leaf-sheath oral hairs lacking. Ligule an eciliate membrane. Leaf-blade base broadly rounded, asymmetrical, with a brief petiole-like connection to sheath, petiole 0.3–0.4 cm long. Leaf-blades elliptic or ovate, 5–7 cm long, 15–20 mm wide. Leaf-blade venation with 12–14 secondary veins, with distinct cross veins. Leaf-blade surface glabrous. Leaf-blade apex acuminate. Flowering specimens unknown.

**Distribution (TDWG). Continent.** Temperate Asia.

**Country /Province /State.** China. China Southeast.

**TDWG4.** Jiangxi, Zhejiang.

**Silentvalleya nairii** V.J. Nair, P.V. Sreekumar, E. Vajravelu & P. Bharg, ( publ. 1983). *J. Bombay Nat. Hist. Soc.*, 79(3): 654 (1982).

**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, Silent Valley: Nair 64268 (CAL holo).

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): in honor of N. Chandrasekharan Nair (1927-) Indian botanist.

**Classification.** Subfamily Chloridoideae. Tribe: Chloridoideae incertae sedis.

**Habit, Vegetative Morphology.** Perennial, caespitose. Culms erect, 40–100 cm long. Ligule an eciliate membrane, truncate. Leaf-blades 40–60 cm long, 0.4–0.6 mm wide, glaucous. Leaf-blade apex attenuate.

**Inflorescence.** Inflorescence composed of racemes. Racemes 6–10, borne along a central axis, unilateral, 8–20 cm long. Central inflorescence axis 7–10 cm long. Rhachis angular. Spikelet packing broadside to rhachis, lax. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, linear, 0.5–1.5 mm long.

**Fertile Spikelets.** Spikelets comprising 6–10 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets oblong, laterally compressed, 8 mm long, 2 mm wide, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes definite. Floret callus bearded. Floret callus hairs 0.2 length of lemma.

**Glumes.** Glumes persistent, dissimilar, shorter than spikelet. Lower glume ovate, 2 mm long, 0.5 length of upper glume, membranous, without keels, 0 -veined. Lower glume lateral veins absent. Lower glume apex acute. Upper glume lanceolate, 4 mm long, 1 length of adjacent fertile lemma, membranous, 1-keeled, 3 -veined. Upper glume apex acuminate.

**Florets.** Fertile lemma ovate, 4 mm long, membranous, keeled, lightly keeled, 3 -veined, 0–3 -veined. Lemma lateral veins obscure, midway between midvein and margin. Lemma apex acute, awned, 1 -awned. Principal lemma awn 3–5 mm long overall, limb scaberulous. Palea elliptic, 0.7–0.8 length of lemma, 2 -veined. Palea keels ciliate. Apical sterile florets resembling fertile though underdeveloped.

**Flower and Fruit.** Lodicules 2, cuneate, fleshy. Anthers 3, linear, 1.25 mm long. Stigmas 2. Caryopsis with adherent pericarp, fusiform, 2 mm long.

**Distribution (TDWG). Continent.** Tropical Asia.

**Country /Province /State.** Indian Subcontinent. India.

**TDWG4.** Kerala.

**Simplicia buchananii** (Zotov) Zotov. *New Zealand J. Bot.*, 9(3): 542 (1971).

**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:** *Simplicia laxa* var. *buchananii* Zotov, *Trans. Roy. Soc. New Zealand* 73: 236 (1943). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: A. Mackay s.n., 1874, New Zealand: Mount Arthur (WELT-59605 [Buchanan's folio]).

**Illustrations (Books):** No illustration found (BKS).

**Classification.** Subfamily Pooideae. Tribe: Poeae.

**Habit, Vegetative Morphology.** Perennial. Butt sheaths pubescent. Culms decumbent, 30–60 cm long, 3–4-noded. Ligule an eciliate membrane, 2–4 mm long, erose, obtuse. Leaf-blades 10–20 cm long, 1.5–3 mm wide. Leaf-blade surface glabrous.

**Inflorescence.** Inflorescence a panicle. Panicle contracted, linear, 5–10 cm long. Primary panicle branches appressed, 2-nate, bearing spikelets almost to the base. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, glabrous.

**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 lanceolate, laterally compressed, 2.5–3 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes persistent, similar, shorter than spikelet, thinner than fertile lemma. Lower glume ovate, 0.6 mm long, 0.7 length of upper glume, 1-keeled, 1-veined. Lower glume lateral veins absent. Lower glume apex acute. Upper glume ovate, 1.2 mm long, 0.4–0.5 length of adjacent fertile lemma, 1-keeled, 1–3-veined. Upper glume apex acute.

**Florets.** Fertile lemma ovate, 2.5–3 mm long, chartaceous, keeled, 3-veined, 0–3-veined. Lemma surface scaberulous, glabrous. Lemma apex acute, mucicous or mucronate. Palea elliptic, 1 length of lemma, 1–2-veined, 1-keeled. Palea surface scaberulous, glabrous. Palea apex obtuse. Rhachilla extension 0.25 length of fertile floret.

**Flower and Fruit.** Lodicules 2, ovate, 0.7 mm long, membranous, with a small lateral lobe. Anthers 3, 1 mm long. Caryopsis with adherent pericarp, ovoid, laterally compressed, 1.5 mm long. Hilum punctiform.

**Distribution (TDWG). Continent.** Australasia.

**Country /Province /State.** New Zealand. New Zealand South I.

**Simplicia laxa** T. Kirk. *Trans. N. Z. Inst.* xxix. 497 (1896).

**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: *D. Petrie s.n.*, New Zealand: Waikouaiti, Otago (WELT-43017). LT designated by Zotov, *New Zealand J. Bot.* 9: 541 (1971).

**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: Poeae.

**Habit, Vegetative Morphology.** Perennial. Butt sheaths pubescent. Culms decumbent, 25–50 cm long, 5–6-noded. Ligule an eciliate membrane, 2–5 mm long, erose, obtuse. Leaf-blades 6–12 cm long, 1.5–3 mm wide. Leaf-blade surface pubescent, hairy adaxially.

**Inflorescence.** Inflorescence a panicle. Panicle open, pyramidal, 2–6 cm long. Primary panicle branches spreading or drooping, 2-nate. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, pubescent.

**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, 2.5–3 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes persistent, similar, shorter than spikelet, thinner than fertile lemma. Lower glume ovate, 0.7 mm long, 0.7 length of upper glume, 1-keeled, 1-veined. Lower glume lateral veins absent. Lower glume apex acute. Upper glume ovate, 1 mm long, 0.3–0.4 length of adjacent fertile lemma, 1-keeled, 1–3-veined. Upper glume apex acute.

**Florets.** Fertile lemma ovate, 2.5–3 mm long, chartaceous, keeled, 3-veined, 0–3-veined. Lemma surface smooth, pubescent. Lemma apex acute, mucronate. Palea elliptic, 1 length of lemma, 1–2-veined, 1-keeled. Palea surface smooth, pubescent. Palea apex obtuse. Rhachilla extension 0.25 length of fertile floret.

**Flower and Fruit.** Lodicules 2, ovate, 0.7 mm long, membranous, with a small lateral lobe. Anthers 2, 1 mm long. Caryopsis with adherent pericarp, ovoid, laterally compressed, 1.5 mm long. Hilum punctiform.

$2n = 28$  (1 ref TROPICOS).

**Distribution (TDWG). Continent.** Australasia.

**Country /Province /State.** New Zealand. New Zealand North I, New Zealand South I.

**Sinarundinaria nagalendianus** H.B. Naithani. *Indian Forester* 120(12): 1120 (1994).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online.

T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Assam: Nagaland.

**Habit, Vegetative Morphology.** Perennial, caespitose. Rhizomes short, pachymorph. Culms erect, 300–700 cm long, 15–25 mm diam., woody, with root thorns from the nodes. Culm-internodes terete, 7–15 cm long, dark green. Lateral branches dendroid. Branch complement several. Culm-sheaths present, 22 cm long, 2 times as

long as wide, chartaceous, hispid, with tawny hairs, hairy on margins, truncate at apex, auriculate, ciliate on shoulders. Culm-sheath blade triangular, 0.5–1.5 cm long, with ciliate margins. Leaf-sheaths striately veined, smooth, glabrous on surface, outer margin hairy. Leaf-sheath oral hairs ciliate. Ligule an eciliate membrane. Leaf-blade base with a brief petiole-like connection to sheath, petiole 0.2 cm long. Leaf-blades elliptic, 7–20 cm long, 17–28 mm wide. Leaf-blade midrib prominent beneath. Leaf-blade venation prominent, with 10–14 secondary veins, with distinct cross veins. Leaf-blade surface smooth, glabrous or puberulous, hairy adaxially. Leaf-blade margins scaberulous. Leaf-blade apex acuminate. Flowering specimens unknown.

**Distribution (TDWG). Continent.** Tropical Asia.

**Country /Province /State. Indian Subcontinent.** India.  
Nagaland.

GrassBase Notes Bambuseae. Naithani 2007.

**Sinarundinaria schmidiana** (A. Camus) C.S. Chao & Renvoize. *Kew Bulletin* 44(2): 360 (1989).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online (as *Fargesia*).

**TYPE** from Vietnam. **Basionym or Replaced Name:** *Arundinaria schmidiana* A. Camus, *Notul. Syst. (Paris)* 14 (4): 253–254 (1953). T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: Viet Nam: Annam: sommet du Lang-bian, vers 2000 m, Feb 1950, Schmid 570 (HT: P).

**Illustrations (Books):** No illustration found (BKS).

**Classification.** Subfamily Bambusoideae. Tribe: Bambuseae.

**Distribution (TDWG). Continent.** Tropical Asia.

**Country /Province /State. Indo-China.** Vietnam.

**Sinobambusa baccanensis** Nguyen To Quyen. *Bot. Zhurn.*, 76(6): 879 (1991).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

**TYPE** from Vietnam. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: Vietnam, Bac Can: Vu Van Can (HNF holo).

**Derivation** (Clifford & Bostock 2007): L. -ensis, denoting origin. From Bac Can, Vietnam.

**Classification.** Subfamily Bambusoideae. Tribe: Bambuseae.

**Habit, Vegetative Morphology.** Perennial, woody bamboo. Rhizomes elongated, leptomorph. Butt sheaths absent. Culms erect, 500–600 cm long, woody, without nodal roots. Culm-internodes channelled. Lateral branches dendroid. Branch complement three, in a horizontal line. Culm-sheaths present. Leaves cauline, 5 per branch. Leaf-sheaths glabrous on surface, outer margin hairy. Leaf-sheath oral hairs setose. Leaf-sheath auricles absent. Ligule an eciliate membrane, 0.5–0.8 mm long, truncate. Leaf-blade base with a brief petiole-like connection to sheath, petiole 0.3–0.5 cm long, petiole glabrous. Leaf-blades lanceolate, 18–20 cm long, 25–28 mm wide. Leaf-blade venation with 10–12 secondary veins, with obscure cross veins. Leaf-blade surface glabrous. Leaf-blade apex acuminate.

**Inflorescence.** Synflorescence bractiferous, fasciculate, with glumaceous subtending bracts, with axillary buds at base of spikelet, prophyllate below lateral spikelets.

Fertile spikelets sessile.

**Fertile Spikelets.** Spikelets comprising 7–12 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets linear, laterally compressed, 60–80 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes one the lower absent or obscure, persistent, shorter than spikelet. Upper glume lanceolate, 11 mm long, chartaceous, without keels. Upper glume surface glabrous. Upper glume apex acute.

**Florets.** Fertile lemma lanceolate, 13–14 mm long, chartaceous, without keel, 15–17 -veined, more than 3-veined. Lemma surface glabrous. Lemma apex acute, mucronate. Palea 8–9 mm long, chartaceous. Palea keels ciliate. Apical sterile florets resembling fertile though underdeveloped.

**Flower and Fruit.** Lodicules 3, veined, ciliate. Anthers 3. Stigmas 3. Caryopsis with adherent pericarp.

**Distribution (TDWG). Continent.** Tropical Asia.

**Country /Province /State. Indo-China.** Vietnam.

**Sinobambusa dushanensis** (C.D. Chu & J.G. Zhang) T.H. Wen. *J. Bamboo Res.*, 6(3): 33 (1987).

**Accepted by:** U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), S-L Chen et al, *Flora of China* 22 (Poaceae) (2006).

**TYPE** from China. **Basionym or Replaced Name:** *Arundinaria dushanensis* C.D. Chu & J.Q. Zhang, *Bamboo Res. Asia* 1982(1): 1, pl. 1 (1982). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: China, Du-shan: Chu Cheug-de et al. 81021.

**Illustrations (Books):** S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 202).

**Classification.** Subfamily Bambusoideae. Tribe: Bambuseae.

**Distribution (TDWG). Continent.** Temperate Asia.

**Country /Province /State.** China. China South Central.

**TDWG4.** Guizhou.

**Sinobambusa farinosa** (McClure) T.H. Wen, without basionym page. *J. Bamboo Res.*, 1(1): 35 (1982).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), S-L Chen et al, *Flora of China* 22 (Poaceae) (2006).

**TYPE** from China. **Basionym or Replaced Name:** *Semiarundinaria farinosa* McClure, *Lingnan Univ. Sci. Bull.* 9: 45 (1940). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: China: Guangdong: 3 May 1936, *H. Fung 20939* (HT: US).

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): *L. farina*, flour; -osa, abundance. Surface of culms very waxy.

**Classification.** Subfamily Bambusoideae. Tribe: Bambuseae.

**Habit, Vegetative Morphology.** Perennial, woody bamboo. Rhizomes elongated, leptomorph. Butt sheaths absent. Culms erect, 220 cm long, 12 mm diam., woody. Culm-internodes terete, distally glabrous. Culm-nodes swollen. Lateral branches dendroid, ascending. Branch complement three, in a horizontal line, with 1 branch dominant. Culm-sheaths present, deciduous, hispid, with appressed hairs, with tawny hairs, hairy on margins, auriculate, setose on shoulders, shoulders with straight hairs or curved hairs, shoulders with 14 mm long hairs. Culm-sheath ligule ciliolate. Culm-sheath blade linear or lanceolate, deciduous, erect or spreading, glabrous on surface. Leaves cauline, 3–6 per branch. Leaf-sheaths glabrous on surface, outer margin glabrous. Leaf-sheath oral hairs lacking or setose, pale. Leaf-sheath auricles absent. Ligule an eciliate membrane, pubescent on abaxial surface. Leaf-blade base with a brief petiole-like connection to sheath, petiole glabrous. Leaf-blades lanceolate, 6–18 cm long, 10–20 mm wide, fleshy, mid-green, concolorous. Leaf-blade venation with 8–10 secondary veins, with distinct cross veins. Leaf-blade surface glabrous. Leaf-blade margins scaberulous. Leaf-blade apex acuminate. Flowering specimens unknown.

**Distribution (TDWG). Continent.** Temperate Asia.

**Country /Province /State.** China. China Southeast.

**TDWG4.** Fujian, Guangdong, Guangxi, Jiangxi, Zhejiang.

**Sinobambusa glabrata** W.T. Lin & Z.J. Feng, *appl. incert. J. S. China Agric. Univ.*, 14(1): 47 (1993).

**TYPE** from China. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Guangning, Jinshan, *Z.J. Feng 37018* (HT: CANT).

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): *L. glaber*, smooth; -ata, possessing. Plant glabrous in whole or in part.

**Classification.** Subfamily Bambusoideae. Tribe: Bambuseae.

**Distribution (TDWG). Continent.** Temperate Asia.

**Country /Province /State.** China. China Southeast.

**TDWG4.** Guangdong.

**Sinobambusa henryi** (McCl.) C.D.Chu & C.S.Chao. *Acta Phytotax. Sin.*, 18(1): 32 (1980).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), S-L Chen et al, *Flora of China* 22 (Poaceae) (2006).

**TYPE** from China. **Basionym or Replaced Name:** *Semiarundinaria henryi* McClure, *Lingnan Univ. Sci. Bull.* 9: 48 (1940). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: China: Guangdong: 14 March 1925, *H. Fung 20886 (BG 1192)* (HT: US).

**Recent Synonyms:** *Sinobambusa nandanensis* T.H. Wen, *J. Bamboo Res.*, 6(3): 29 (1987).

**Illustrations (Books):** S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 200).

**Classification.** Subfamily Bambusoideae. Tribe: Bambuseae.

**Habit, Vegetative Morphology.** Perennial, woody bamboo. Rhizomes elongated, leptomorph. Butt sheaths absent. Culms erect, 720 cm long, 36 mm diam., woody. Culm-internodes terete, distally glabrous. Culm-nodes swollen. Lateral branches dendroid, ascending. Branch complement three, in a horizontal line, with subequal

branches. Culm-sheaths present, deciduous, coriaceous, brown, hispid, hairy at the base, with erect hairs, hairy on margins, auriculate, setose on shoulders, shoulders with straight hairs or curved hairs, shoulders with 10 mm long hairs. Culm-sheath ligule ciliolate. Culm-sheath blade lanceolate, erect. Leaves cauline, 3–5 per branch. Leaf-sheaths glabrous on surface or puberulous. Leaf-sheath oral hairs setose, erect or spreading. Leaf-sheath auricles falcate. Ligule an eciliate membrane or a ciliolate membrane, scaberulous on abaxial surface, obtuse. Leaf-blade base with a brief petiole-like connection to sheath, petiole 0.2–0.3 cm long, petiole pubescent. Leaf-blades lanceolate, 8–15 cm long, 15–23 mm wide, fleshy, mid-green and light green, discolorous with last colour beneath. Leaf-blade venation with distinct cross veins. Leaf-blade surface pilose, hairy abaxially. Leaf-blade margins scaberulous. Leaf-blade apex acuminate. Flowering specimens unknown.

**Distribution (TDWG). Continent.** Temperate Asia.

**Country /Province /State. China.** China Southeast.

**TDWG4.** Guangdong, Guangxi.

### **Sinobambusa humila** McClure. *Lingnan Univ. Sci. Bull.*, No. 9, 59 (1940).

**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, Fei Loi Haap: Fung 20907.

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): L. low growing. Short-statured in comparison with related species often prostrate.

**Classification.** Subfamily Bambusoideae. Tribe: Bambuseae.

**Habit, Vegetative Morphology.** Perennial, woody bamboo. Butt sheaths absent. Culms erect, 50–100 cm long, woody, without nodal roots. Culm-internodes terete, thin-walled, distally mealy. Culm-nodes pubescent. Lateral branches dendroid. Branch complement three, with subequal branches, thinner than stem. Culm-sheaths present, persistent, green or purple, pilose, hairy at the base, auriculate, setose on shoulders. Culm-sheath blade lanceolate, erect or reflexed, scabrid. Leaves cauline. Leaf-sheaths glabrous on surface, outer margin hairy. Leaf-sheath oral hairs setose, pale. Leaf-sheath auricles falcate. Ligule an eciliate membrane, pubescent on abaxial surface. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades oblong, 9–16 cm long, 10–24 mm wide. Leaf-blade surface smooth or scaberulous, rough abaxially, glabrous. Leaf-blade apex acuminate.

**Inflorescence.** Synflorescence bractiferous, fasciculate, lax, with glumaceous subtending bracts, with axillary buds at base of spikelet, prophyllate below lateral spikelets.

Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 8–20 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets linear, laterally compressed, 40–90 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes 4 mm long, pilose, hairy above.

**Glumes.** Glumes several, 4 empty glumes, persistent, similar, shorter than spikelet. Lower glume ovate, 3–4 mm long, 1-keeled. Lower glume apex acute. Upper glume ovate, 5.5–6 mm long, 1-keeled. Upper glume apex acute.

**Florets.** Fertile lemma ovate, 8.5 mm long, chartaceous, without keel, 9 -veined, more than 3-veined. Lemma lateral veins obscure. Lemma margins ciliate. Lemma apex acute. Palea chartaceous. Palea keels ciliolate, adorned above. Palea apex obtuse. Apical sterile florets resembling fertile though underdeveloped.

**Flower and Fruit.** Lodicules 3, ciliate. Anthers 3. Stigmas 2. Ovary glabrous. Caryopsis with adherent pericarp.

**Distribution (TDWG). Continent.** Temperate Asia.

**Country /Province /State. China.** China Southeast.

**TDWG4.** Guangdong.

### **Sinobambusa incana** T.H. Wen. *J. Bamboo Res.*, 1(2): 13 (1982).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), S-L Chen et al, *Flora of China 22* (Poaceae) (2006).

**TYPE** from China. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: China, Guangdong: Li 29862.

**Illustrations (Books):** S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 201).

**Derivation** (Clifford & Bostock 2007): L. grey, hoary. Leaf-blades or spikelets villous.

**Classification.** Subfamily Bambusoideae. Tribe: Bambuseae.



**Habit, Vegetative Morphology.** Perennial, woody bamboo, culms solitary. Rhizomes elongated, leptomorph. Butt sheaths absent. Culms erect, 500–1000 cm long, woody, without nodal roots. Culm-internodes channelled, thin-walled, light green, distally glabrous. Culm-nodes pubescent. Lateral branches dendroid. Branch complement three, in a horizontal line, with subequal branches, thinner than stem. Culm-sheaths present, pubescent, hairy below, without auricles. Culm-sheath ligule ciliate. Culm-sheath blade linear or lanceolate, erect, glabrous on surface. Leaves cauline, 2–4 per branch. Leaf-sheaths pubescent, outer margin hairy. Leaf-sheath oral hairs setose, 7–8 mm long. Leaf-sheath auricles absent. Ligule an eciliate membrane. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades lanceolate, 5–8 cm long, 7–10 mm wide. Leaf-blade venation with distinct cross veins. Leaf-blade surface glabrous. Leaf-blade margins scabrous. Leaf-blade apex attenuate.

**Inflorescence.** Synflorescence bractiferous, fasciculate, lax, with glumaceous subtending bracts, with axillary buds at base of spikelet, prophyllate below lateral spikelets.

Fertile spikelets sessile.

**Fertile Spikelets.** Spikelets comprising 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 linear, laterally compressed, 90 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes glabrous.

**Glumes.** Glumes two, persistent, similar, shorter than spikelet. Lower glume 11–13 -veined. Upper glume 11–13 -veined.

**Florets.** Fertile lemma ovate, 9 mm long, chartaceous, without keel, 15 -veined, more than 3-veined. Lemma lateral veins with cross-veins. Lemma apex acuminate. Palea chartaceous, 11 -veined. Palea keels ciliate. Palea apex obtuse. Apical sterile florets resembling fertile though underdeveloped.

**Flower and Fruit.** Lodicules 3, veined, ciliate. Anthers 3. Stigmas 3. Ovary glabrous. Caryopsis with adherent pericarp.

**Distribution (TDWG). Continent.** Temperate Asia.

**Country /Province /State. China.** China Southeast.

**TDWG4.** Guangdong.

### **Sinobambusa intermedia** McClure. *Lingnan Univ. Sci. Bull.*, No. 9, 61 (1940).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), S-L Chen et al, *Flora of China* 22 (Poaceae) (2006).

**TYPE** from China, cultivated. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: T: (US-2802889, US-2804234). This specimen was cultivated and collected from the living type at Lingnan Univ. bamboo garden on 5 Apr 1938.. T: *H.L Fung* 21424, 14 Jun 1940, China: Kwangtung, P'an-yu, L.U. Fruit Nursery (L).

**Illustrations (Books):** S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 199).

**Derivation** (Clifford & Bostock 2007): *L. intermedia*. Having affinities with but distinct from other species.

**Classification.** Subfamily Bambusoideae. Tribe: Bambuseae.

**Habit, Vegetative Morphology.** Perennial, woody bamboo. Rhizomes elongated, leptomorph. Butt sheaths absent. Culms erect, 200 cm long, 6 mm diam., woody. Culm-internodes scaberulous, distally glabrous. Culm-nodes swollen. Lateral branches dendroid. Branch complement three, in a horizontal line, with 1 branch dominant. Culm-sheaths present, tardily deciduous or deciduous, hispid, hairy on margins, auriculate, setose on shoulders, shoulders with straight hairs or curved hairs, shoulders with 20 mm long hairs. Culm-sheath ligule ciliolate. Culm-sheath blade lanceolate, demarcated but persistent, erect, glabrous on surface. Leaves cauline. Leaf-sheaths glabrous on surface, outer margin hairy. Leaf-sheath oral hairs scanty or lacking. Leaf-sheath auricles absent. Ligule an eciliate membrane. Leaf-blade base with a brief petiole-like connection to sheath, petiole glabrous. Leaf-blades lanceolate, 13–20 cm long, 18–28 mm wide, fleshy, mid-green, concolorous. Leaf-blade venation with 8–12 secondary veins, with distinct cross veins. Leaf-blade surface glabrous or puberulous, hairy abaxially. Leaf-blade margins scaberulous. Leaf-blade apex acuminate. Flowering specimens unknown.

**Distribution (TDWG). Continent.** Temperate Asia.

**Country /Province /State. China.** China South Central, China Southeast.

**TDWG4.** Fujian, Guangdong, Guangxi, Sichuan, Yunnan.

### **Sinobambusa nephroaurita** C.D. Chu & C.S. Chao. *Acta Phytotax. Sin.*, 18(1): 32 (1980).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), S-L Chen et al, *Flora of China* 22 (Poaceae) (2006).

**TYPE** from China. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: China, Guangxi, Rongshui: Hsiung Wen-Yue & Chao Dhi-son 77530.

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): Gk. nephron, kidney; aurita, long-eared. With kidney-shaped auricles on the culm sheaths.

**Classification.** Subfamily Bambusoideae. Tribe: Bambuseae.

**Habit, Vegetative Morphology.** Perennial, woody bamboo. Rhizomes elongated, leptomorph. Butt sheaths absent. Culms erect, 600–800 cm long, 20–30 mm diam., woody, without nodal roots. Culm-internodes 30–40 cm long, glaucous, distally hispid. Culm-nodes swollen. Lateral branches dendroid. Culm-sheaths present, coriaceous, yellow or green or brown, hispid, auriculate, setose on shoulders, shoulders with straight hairs, shoulders with 10–15 mm long hairs. Culm-sheath ligule 7–8(–15) mm high. Culm-sheath blade lanceolate or triangular, spreading or reflexed, pubescent. Leaves cauline, 4–6 per branch. Leaf-sheaths glabrous on surface, outer margin hairy. Leaf-sheath oral hairs setose, erect, 10 mm long. Leaf-sheath auricles absent. Ligule an eciliate membrane, 0.5 mm long, truncate or obtuse. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades lanceolate, 11–18 cm long, 11–16 mm wide. Leaf-blade venation with 8–12 secondary veins. Leaf-blade surface glabrous. Leaf-blade margins scabrous. Leaf-blade apex attenuate. Flowering specimens unknown.

**Flower and Fruit.**  $2n = 48$  (1 ref TROPICOS).

**Distribution (TDWG). Continent.** Temperate Asia.

**Country /Province /State.** China. China South Central, China Southeast.

**TDWG4.** Guangdong, Guangxi. Sichuan.

**Sinobambusa rubroligula** McClure. *Lingnan Univ. Sci. Bull.*, No. 9, 65 (1940).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), S-L Chen et al, *Flora of China 22* (Poaceae) (2006).

**TYPE** from China. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: China: Guangdong: 13 May 1931, *H. Fung 20946* (HT: US).

**Illustrations (Books):** S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 201).

**Derivation** (Clifford & Bostock 2007): *L. ruber*, red; *ligula*, small tongue. Ligule red.

**Classification.** Subfamily Bambusoideae. Tribe: Bambuseae.

**Habit, Vegetative Morphology.** Perennial, woody bamboo. Rhizomes elongated, leptomorph. Butt sheaths absent. Culms erect, 190 cm long, 8 mm diam., woody. Culm-internodes terete, distally glabrous. Culm-nodes swollen. Lateral branches dendroid, spreading. Branch complement three, in a horizontal line. Culm-sheaths present, deciduous, hispid, hairy at the base, without auricles, glabrous on shoulders. Culm-sheath ligule reddish, entire. Culm-sheath blade lanceolate, reflexed, scabrid. Leaves cauline. Leaf-sheaths glabrous on surface. Leaf-sheath oral hairs lacking. Leaf-sheath auricles absent. Ligule an eciliate membrane, pubescent on abaxial surface, obtuse. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades lanceolate, 9–22 cm long, 8–26 mm wide, fleshy. Leaf-blade venation with distinct cross veins. Leaf-blade surface puberulous, hairy abaxially. Leaf-blade margins scaberulous. Leaf-blade apex acuminate. Flowering specimens unknown.

**Flower and Fruit.**  $2n = 48$  (1 ref TROPICOS).

**Distribution (TDWG). Continent.** Temperate Asia.

**Country /Province /State.** China. Hainan, China Southeast.

**TDWG4.** Guangdong, Guangxi.

**Sinobambusa sat** (Balansa) C.S.Chao & S.A.Renvoize. *Kew Bull.*, 44(2): 366: (1989).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

**TYPE** from Vietnam. **Basionym or Replaced Name:** *Arundinaria sat* Bal., *J. Bot. Appl. (Desvaux)* 4: 28 (1890). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Viet Nam: Commundans la region montagneuse du Tonkin: Ouanbi, Mont-Bavi, etc, *Balansa 1576* (IT: K).

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): a contraction of kai-sat, the vernacular name for the species in Annam.

**Classification.** Subfamily Bambusoideae. Tribe: Bambuseae.

**Habit, Vegetative Morphology.** Perennial, woody bamboo, culms solitary. Rhizomes elongated, leptomorph. Butt sheaths absent. Culms erect, 50–60 cm long, woody, without nodal roots. Culm-internodes channelled, thin-walled. Lateral branches dendroid. Branch complement three, in a horizontal line, with

subequal branches, thinner than stem. Culm-sheaths present. Leaves cauline. Leaf-sheaths glabrous on surface, outer margin hairy. Leaf-sheath oral hairs ciliate. Ligule an eciliate membrane. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades lanceolate or oblong, 5–15 cm long, 8–12 mm wide. Leaf-blade venation with 16–20 secondary veins, with distinct cross veins. Leaf-blade surface glabrous. Leaf-blade margins scabrous. Leaf-blade apex attenuate.

**Inflorescence.** Synflorescence bractiferous, fasciculate, lax, with glumaceous subtending bracts, with axillary buds at base of spikelet, prophyllate below lateral spikelets.

Fertile spikelets sessile.

**Fertile Spikelets.** Spikelets comprising 8–20 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets linear, laterally compressed, 30–50 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes two, persistent, similar, shorter than spikelet. Lower glume oblong or ovate. Lower glume lateral veins with cross-veins.

**Florets.** Fertile lemma ovate, 9–11 mm long, chartaceous, without keel, more than 3-veined. Lemma lateral veins with cross-veins. Lemma apex obtuse. Palea chartaceous. Palea keels ciliate, adorned above. Apical sterile florets resembling fertile though underdeveloped.

**Flower and Fruit.** Lodicules 3. Anthers 3. Stigmas 3. Ovary glabrous. Caryopsis with adherent pericarp.

**Distribution (TDWG). Continent.** Tropical Asia.

**Country /Province /State.** Indo-China. Vietnam.

**Sinobambusa scabrida** T.H. Wen. *J. Bamboo Res.*, 2(1): 61 (1983).

**Accepted by:** U. Quattrocchi, *CRC World Dictionary of Grasses* (2006).

**TYPE** from China. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: China, lindong: Chang 10521.

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): L. rough. Plants in part or totally rough to the touch.

**Classification.** Subfamily Bambusoideae. Tribe: Bambuseae.

**Habit, Vegetative Morphology.** Perennial, woody bamboo. Rhizomes elongated, leptomorph. Butt sheaths absent. Culms erect, 500 cm long, 155–200 mm diam., woody. Culm-internodes distally mealy. Culm-nodes flanged. Lateral branches dendroid. Branch complement three, in a horizontal line. Culm-sheaths present, deciduous, coriaceous, pilose, with tawny hairs, hairy on margins, auriculate, setose on shoulders. Culm-sheath ligule ciliolate. Culm-sheath blade lanceolate, glabrous on surface. Leaves cauline, 3–4 per branch. Leaf-sheaths 4–4.5 cm long, glabrous on surface. Leaf-sheath oral hairs lacking. Leaf-sheath auricles absent. Ligule an eciliate membrane, truncate. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades lanceolate, 8–11 cm long, 11–18 mm wide, fleshy. Leaf-blade venation with 8–10 secondary veins, with distinct cross veins. Leaf-blade surface glabrous. Leaf-blade margins scaberulous. Leaf-blade apex acuminate. Flowering specimens unknown.

**Distribution (TDWG). Continent.** Temperate Asia.

**Country /Province /State.** China. China Southeast.

**TDWG4.** Guangxi.

**Sinobambusa sichuanensis** T.P. Yi. *Bull. Bot. Res. North-East. Forest. Inst.*, 2(4): 105 (1982).

Regarded by K as a synonym (*S. tootsik*).

**TYPE** from China. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: China: Sichuan: Guang Xian, 710 m, *T.P. Yi 68005* (HT: SFS).

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): L. -ensis, denoting origin. From Sichuan Province, China.

**Classification.** Subfamily Bambusoideae. Tribe: Bambuseae.

**Flower and Fruit.**  $2n = 48$  (1 ref TROPICOS).

**Distribution (TDWG). Continent.** Temperate Asia.

**Country /Province /State.** China. China South Central.

**Sinobambusa tootsik** (Makino) Makino ex Nakai. *Journ. Arn. Arb.* vi. 152 (1925).

**Accepted by:** R.J. Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D. Clayton & K. Harman, *GrassBase* (2008) and online, U. Quattrocchi, *CRC World Dictionary of Grasses* (2006), S-L Chen et al., *Flora of China* 22 (Poaceae) (2006).

**TYPE** from Japan, cultivated. **Basionym or Replaced Name:** *Arundinaria tootsik* Makino, *Bot. Mag. (Tokyo)* 19: 63 (1905). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Japan, Cult.: Coll?.

**Recent Synonyms:** *Semiarundinaria okuboi* Makino, *Journ. Jap. Bot.* 8: 45 (1933). *Arundinaria dolichantha* Keng, *Sinensia* 7: 418 (1936).

**Illustrations (Books):** C-C Hsu, *Taiwan Grasses* (1975) (742, Pl. 1499), S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 197, 198).

**Derivation** (Clifford & Bostock 2007): vernacular name of the species in Japan, also written as To-chiku, Koko-chiku, Nankin-chiku.

**Classification.** Subfamily Bambusoideae. Tribe: Bambuseae.

**Habit, Vegetative Morphology.** Perennial, woody bamboo, culms solitary. Rhizomes elongated, leptomorph. Butt sheaths absent. Culms erect, 500–1000 cm long, 20–40 mm diam., woody, without nodal roots. Culm-internodes channelled, thin-walled, 40–80 cm long. Culm-nodes swollen, pubescent (brown hairs). Lateral branches dendroid. Branch complement three, in a horizontal line, with subequal branches, thinner than stem. Culm-sheaths present, deciduous, coriaceous, concolorous, pilose, hairy throughout, with dark brown hairs, auriculate, setose on shoulders. Culm-sheath blade lanceolate, acute. Leaves cauline, 3–9 per branch. Leaf-sheath oral hairs setose, spreading, dark. Leaf-sheath auricles falcate. Ligule an eciliate membrane. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades lanceolate or oblong, 8–20 cm long, 10–30 mm wide. Leaf-blade venation with distinct cross veins. Leaf-blade margins spinulose.

**Inflorescence.** Synflorescence bractiferous, fasciculate, lax, with glumaceous subtending bracts, with axillary buds at base of spikelet, prophyllate below lateral spikelets.

Fertile spikelets sessile.

**Fertile Spikelets.** Spikelets comprising 4–25 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets linear, laterally compressed, 30–100 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes persistent, similar, shorter than spikelet. Lower glume oblong, 0.7–1 length of upper glume, chartaceous, without keels, 9 -veined. Lower glume apex acute. Upper glume oblong, 0.5–0.7 length of adjacent fertile lemma, chartaceous, without keels, 9 -veined. Upper glume lateral veins with cross-veins. Upper glume apex acute.

**Florets.** Fertile lemma ovate, 8–11 mm long, chartaceous, without keel, 11–15 -veined, more than 3-veined. Lemma lateral veins with cross-veins. Lemma apex acute. Palea 0.9 length of lemma, chartaceous, 9 -veined. Palea keels ciliate. Apical sterile florets resembling fertile though underdeveloped.

**Flower and Fruit.** Lodicules 3, obovate, 2.5 mm long, glabrous. Anthers 3, 4.5 mm long. Stigmas 3. Ovary glabrous. Caryopsis with adherent pericarp, ellipsoid, 9 mm long.

$2n = 48$  (1 ref TROPICOS).

**Distribution (TDWG).** Continent. Temperate Asia, Tropical Asia, North America (+).

**Country /Province /State.** China, Eastern Asia. China Southeast. Japan (\*), Nansei-Shoto. Indo-China. Vietnam.

**TDWG4.** Fujian, Guangdong, Guangxi.

**Sinobambusa urens** T.H. Wen. *J. Bamboo Res.*, 2(1): 59 (1983).

**Accepted by:** U. Quattrocchi, *CRC World Dictionary of Grasses* (2006).

**TYPE** from China. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: China, Futing: Wen 80649 (ZJFI holo).

**Illustrations (Books):** No illustration found (BKS).

**Classification.** Subfamily Bambusoideae. Tribe: Bambuseae.

**Habit, Vegetative Morphology.** Perennial, woody bamboo. Rhizomes elongated, leptomorph. Butt sheaths absent. Culms erect, 700 cm long, 30 mm diam., woody. Culm-internodes 50 cm long, mid-green, distally glabrous. Culm-nodes swollen. Lateral branches dendroid. Branch complement three, in a horizontal line. Culm-sheaths present, 30–40 cm long, 3 times as long as wide, coriaceous, pilose, with tawny hairs, auriculate, with 7 mm high auricles, with 3 mm wide auricles, setose on shoulders, shoulders with 10 mm long hairs. Culm-sheath ligule 2 mm high, entire. Culm-sheath blade linear or triangular, erect or reflexed. Leaves cauline, 4–5 per branch. Leaf-sheaths 6.5 cm long, glabrous on surface. Leaf-sheath oral hairs setose. Leaf-sheath auricles absent or falcate. Ligule an eciliate membrane, 2 mm long. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades lanceolate, 8–16 cm long, 12–20 mm wide, fleshy. Leaf-blade venation with distinct cross veins. Leaf-blade surface glabrous. Leaf-blade margins scaberulous. Leaf-blade apex acuminate. Flowering specimens unknown.

**Distribution (TDWG).** Continent. Temperate Asia.

**Country /Province /State.** China. China Southeast.  
**TDWG4.** Fujian.

**Sinobambusa yixingensis** C.S.Chao & K.S.Xiao. *J. Nanjing Inst. Forest.*, 1985(4): 20 (1985).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), S-L Chen et al, *Flora of China* 22 (Poaceae) (2006).

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): L. -ensis, denoting origin. From Yixing County, Jiansu County, Yunnan, China.

**Classification.** Subfamily Bambusoideae. Tribe: Bambuseae.

**Habit, Vegetative Morphology.** Perennial, woody bamboo. Rhizomes elongated, leptomorph. Butt sheaths absent. Culms erect, 300 cm long, 17 mm diam., woody. Culm-internodes channelled, 40–47 cm long. Culm-nodes swollen. Lateral branches dendroid. Branch complement three, in a horizontal line. Culm-sheaths present, green and purple, striped, hispid, with tawny hairs, without auricles, glabrous on shoulders. Culm-sheath ligule ciliolate. Culm-sheath blade lanceolate, 2.5 cm long. Leaves cauline, 1–3 per branch. Leaf-sheaths deciduous, glabrous on surface. Leaf-sheath oral hairs lacking. Leaf-sheath auricles absent. Ligule an eciliate membrane. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades lanceolate, 7–14 cm long, 13–20 mm wide, fleshy. Leaf-blade venation with distinct cross veins. Leaf-blade surface puberulous, hairy abaxially. Leaf-blade margins scaberulous. Leaf-blade apex acuminate. Flowering specimens unknown.

**Distribution (TDWG). Continent.** Temperate Asia.

**Country /Province /State.** China. China Southeast.

**Sinocalamus bachtaiensis** T.Q. Nguyen. *Bot. Zhurn. (Moscow & Leningrad)* 75(2): 222 (1990).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online.

**TYPE** from Vietnam. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: Vietnam, Bac Thai: *Ma Van Hach* (HNF holo).

**Illustrations (Books):** No illustration found (BKS).

**Classification.** Subfamily Bambusoideae. Tribe: Bambuseae.

**Distribution (TDWG). Continent.** Tropical Asia.

**Country /Province /State.** Indo-China. Vietnam.

**Sinocalamus concavus** W. T. Lin & Z. M. Wu, *appl incert. J. South China Agr. Univ.* 13(2): 82 (1992).

**TYPE** from China. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: China: Guangdong: Guangning, Wuhe, 15 Sept. 1990, *Zhimin Wu 88031* (HT: SCAC).

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): L. concave. Lower lemma concave.

**Classification.** Subfamily Bambusoideae. Tribe: Bambuseae.

**Distribution (TDWG). Continent.** Temperate Asia.

**Country /Province /State.** China. China Southeast.

**TDWG4.** Guangdong.

**Sinocalamus distegius** Keng & P. C. Keng. *Journ. Wash. Acad. Sci.* vi. 76 (1946).

**TYPE** from China. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: China: Sichuan: hilly areas, streams, 300–500 m.

**Illustrations (Books):** No illustration found (BKS).

**Classification.** Subfamily Bambusoideae. Tribe: Bambuseae.

**Habit, Vegetative Morphology.** Perennial, woody bamboo, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms erect, erect at the tip or inclined at the tip, 1000 cm long, 45 mm diam., woody. Culm-internodes terete, thick-walled, 20–50 cm long, distally pruinose or pubescent. Culm-nodes pubescent. Lateral branches dendroid, ascending or spreading. Branch complement many, in a clump. Culm-sheaths present, deciduous, 20–26 cm long, 0.5 length of internode, coriaceous, hispid, with tawny hairs, truncate at apex, without auricles, glabrous on shoulders or ciliate or spreading. Culm-sheath ligule 1–2 mm high, dentate or dentate or ciliate. Culm-sheath blade lanceolate or triangular, spreading, 1.3–13.5 cm long, 5–32 mm wide, glabrous on surface, acuminate. Leaf-sheaths 3.5–4.8 cm long, hispid, with reflexed hairs. Ligule an eciliate membrane, 0.5–1 mm long, truncate. Leaf-blade base with a brief petiole-like connection to sheath, petiole 0.1–0.2 cm long. Leaf-blades lanceolate, 5–16 cm long, 8–14 mm wide. Leaf-blade

venation with 10–12 secondary veins. Leaf-blade surface pubescent, hairy abaxially. Leaf-blade margins scabrous. Leaf-blade apex acuminate.

**Inflorescence.** Synflorescence bractiferous, clustered at the nodes, in globose clusters, dense, with glumaceous subtending bracts, with axillary buds at base of spikelet, prophyllate below lateral spikelets, leafless between clusters.

Fertile spikelets sessile.

**Fertile Spikelets.** Spikelets comprising 4–6 fertile florets, without rhachilla extension. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets ovate, laterally compressed, 13–18 mm long, 5–7 mm wide, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes definite, 1–2 mm long, glabrous.

**Glumes.** Glumes several, 1–2 empty glumes, persistent, similar, shorter than spikelet.

**Florets.** Fertile lemma ovate, 8–10 mm long, chartaceous, without keel, more than 3-veined. Lemma margins ciliate. Lemma apex acuminate. Palea chartaceous, 4 -veined, 2-keeled but the uppermost without keels. Palea keels ciliate. Palea surface pilose, hairy on margins.

**Flower and Fruit.** Lodicules 3, 2–4 mm long. Anthers 6, 5–6 mm long, anther tip penicillate. Filaments 8 mm long. Stigmas 1–2, pubescent. Ovary umbonate, pubescent on apex. Caryopsis with adherent pericarp, fusiform, 6 mm long.

**Distribution (TDWG). Continent.** Temperate Asia.

**Country /Province /State.** China. China South Central.

**TDWG4.** Sichuan.

**Sinocalamus maiensis** Nguyen To Quyen. *Bot. Zhurn.*, 75(2): 224 (1990).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online.

**TYPE** from Vietnam. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: Vietnam, Tuyen Quang; Nguyen Hun Hieu (HNF holo).

**Illustrations (Books):** No illustration found (BKS).

**Classification.** Subfamily Bambusoideae. Tribe: Bambuseae.

**Habit, Vegetative Morphology.** Perennial, woody bamboo, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms erect, 1000–2000 cm long, 60–80 mm diam., woody. Culm-internodes terete. Lateral branches dendroid. Culm-sheaths present, 15–25 cm long, 1.2 times as long as wide, coriaceous. Leaf-sheaths glabrous on surface. Leaf-sheath oral hairs setose. Ligule an eciliate membrane. Leaf-blade base with a brief petiole-like connection to sheath, petiole 0.5–0.6 cm long. Leaf-blades oblong, 32–36 cm long, 45–60 mm wide. Leaf-blade apex acuminate.

**Inflorescence.** Synflorescence bractiferous, clustered at the nodes, in globose clusters, with glumaceous subtending bracts, with axillary buds at base of spikelet, prophyllate below lateral spikelets.

Fertile spikelets sessile.

**Fertile Spikelets.** Spikelets comprising 5–8 fertile florets, without rhachilla extension. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, laterally compressed, 18–22 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes definite.

**Glumes.** Glumes several, 2–3 empty glumes, persistent, similar, shorter than spikelet. Upper glume ovate, 4–6 mm long. Upper glume apex acute, mucronate.

**Florets.** Fertile lemma ovate, auriculate at base, 10–12 mm long, 10–12 mm wide, chartaceous, without keel, more than 3-veined. Lemma surface pubescent. Lemma margins ciliate. Lemma apex acute, mucronate. Palea chartaceous, 2-keeled but the uppermost without keels. Palea surface pilose.

**Flower and Fruit.** Anthers 6. Stigmas 1. Ovary umbonate. Caryopsis with adherent pericarp.

**Distribution (TDWG). Continent.** Tropical Asia.

**Country /Province /State.** Indo-China. Vietnam.

**Sinocalamus nhatrangensis** Nguyen To Quyen & Vucan. *Bot. Zhurn.*, 76(7): 993 (1991).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online.

**TYPE** from Vietnam. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: Vietnam, Phu Khanh; Poilane 5414 (MBHM holo).

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): L. -ensis, denoting origin. From Nha Trang, Vietnam.

**Classification.** Subfamily Bambusoideae. Tribe: Bambuseae.

**Habit, Vegetative Morphology.** Perennial, woody bamboo, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms erect, 700–900 cm long, 25–35 mm diam., woody. Culm-internodes terete. Lateral

branches dendroid. Branch complement several. Culm-sheaths present. Leaf-sheaths hispid. Leaf-sheath oral hairs setose, 10 mm long. Leaf-sheath auricles falcate. Ligule an eciliate membrane, 4–5 mm long. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades oblong, 15–18 cm long, 30–40 mm wide, fleshy. Leaf-blade venation with 14–18 secondary veins. Leaf-blade margins scaberulous. Leaf-blade apex acuminate.

**Inflorescence.** Synflorescence bractiferous, clustered at the nodes, in globose clusters, 1.5–10 cm between clusters, pubescent on internodes, with glumaceous subtending bracts, with axillary buds at base of spikelet, prophyllate below lateral spikelets, leafless between branches.

Fertile spikelets sessile.

**Fertile Spikelets.** Spikelets comprising 3–4 fertile florets, without rhachilla extension. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, laterally compressed, 3.5–4.5 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes suppressed between florets.

**Glumes.** Glumes two, persistent, shorter than spikelet. Lower glume ovate. Upper glume ovate, chartaceous, without keels.

**Florets.** Fertile lemma ovate, 2.5–3.5 mm long, chartaceous, keeled, more than 3-veined. Lemma surface pilose. Lemma apex acute.

**Flower and Fruit.** Lodicules absent. Anthers 6. Stigmas 1. Caryopsis with adherent pericarp.

**Distribution (TDWG). Continent.** Tropical Asia.

**Country /Province /State.** Indo-China. Vietnam.

### **Sinocalamus rectocuneatus** (W.T. Lin) W.T. Lin. *J. S. China Agric. Univ.*, 14(3): 111 (1993).

**TYPE** from China. **Basionym or Replaced Name:** *Neosinocalamus rectocuneatus* W.T. Lin, *Acta Phytotax. Sin.* 26(3): 228, pl. 6 (1988). T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: China: Guangdong: Yingde, Yan bei, 17 Nov. 1986, *M.Y. Xiao 53487* (HT: CSAC).

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): *L. rectus*, straight. Leaf-blades cuneate without basal nodes.

**Classification.** Subfamily Bambusoideae. Tribe: Bambuseae.

**Distribution (TDWG). Continent.** Temperate Asia.

**Country /Province /State.** China. China Southeast.

**TDWG4.** Guangdong.

### **Sinocalamus rugosiglumis** Nguyen To Quyen. *Bot. Zhurn.*, 74(11): 1662 (1989).

**Accepted by:** W.D. Clayton & K. Harman, *GrassBase* (2008) and online.

**TYPE** from Vietnam. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: Vietnam, Vih Phu: Le Lai (HNF holo).

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): *L. ruga*, wrinkle; *-osa*, abundance; *gluma*, husk. Lemma margins transversely rugose.

**Classification.** Subfamily Bambusoideae. Tribe: Bambuseae.

**Habit, Vegetative Morphology.** Perennial, woody bamboo, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms erect, 1200 cm long, 90 mm diam., woody. Culm-internodes terete. Lateral branches dendroid. Culm-sheaths present, 20–25 cm long, 2 times as long as wide, yellow, hispid, with appressed hairs, convex at apex, without auricles. Culm-sheath ligule 1 mm high, entire. Culm-sheath blade lanceolate. Ligule an eciliate membrane, 1 mm long. Leaf-blade base with a brief petiole-like connection to sheath, petiole 0.3–0.5 cm long. Leaf-blades oblong, 20–28 cm long, 40–50 mm wide, fleshy. Leaf-blade venation with 20–30 secondary veins. Leaf-blade surface glabrous. Leaf-blade margins scabrous. Leaf-blade apex acuminate.

**Inflorescence.** Synflorescence bractiferous, clustered at the nodes, in globose clusters, with glumaceous subtending bracts, with axillary buds at base of spikelet, prophyllate below lateral spikelets, leafless between clusters.

Fertile spikelets sessile.

**Fertile Spikelets.** Spikelets comprising 4–5 fertile florets, without rhachilla extension. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets ovate, laterally compressed, 7–10 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes suppressed between florets.

**Glumes.** Glumes two or several, 2–3 empty glumes, persistent, similar, shorter than spikelet. Lower glume ovate, chartaceous, without keels. Upper glume ovate, 4–5 mm long, coriaceous, without keels. Upper glume surface glabrous. Upper glume margins ciliate. Upper glume apex acute.

**Florets.** Fertile lemma ovate, 7–9 mm long, 6.5–8.5 mm wide, coriaceous, without keel, more than 3-veined. Lemma surface rugose (on margins). Lemma margins ciliate. Lemma apex acute. Palea 6–7 mm long, chartaceous, 2-keeled but the uppermost without keels. Palea keels ciliate.

**Flower and Fruit.** Lodicules absent. Anthers 6. Filaments united in a tube. Stigmas 1. Caryopsis with adherent pericarp.

**Distribution (TDWG). Continent.** Tropical Asia.

**Country /Province /State.** Indo-China. Vietnam.

**Sinocalamus sang** Nguyen To Quyen. *Bot. Zhurn.*, 75(2): 223 (1990).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online.

**TYPE** from Vietnam. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Vietnam, Bac Thai: Ma Van Hach (HNF holo).

**Illustrations (Books):** No illustration found (BKS).

**Classification.** Subfamily Bambusoideae. Tribe: Bambuseae.

**Habit, Vegetative Morphology.** Perennial, woody bamboo, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms erect, 700–1000 cm long, 30–40 mm diam., woody. Culm-internodes terete. Lateral branches dendroid. Culm-sheaths present. Ligule an eciliate membrane. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades oblong, 35–37 cm long, 70–80 mm wide. Leaf-blade apex acuminate.

**Inflorescence.** Synflorescence bractiferous, clustered at the nodes, in globose clusters, with glumaceous subtending bracts, with axillary buds at base of spikelet, prophyllate below lateral spikelets.

Fertile spikelets sessile.

**Fertile Spikelets.** Spikelets comprising 4–5 fertile florets, without rhachilla extension. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, laterally compressed, 8–12 mm long, 6–8 mm wide, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes definite.

**Glumes.** Glumes several, 2–3 empty glumes, persistent, similar, shorter than spikelet. Upper glume ovate, 3–5 mm long. Upper glume apex acute.

**Florets.** Fertile lemma ovate, 7–10 mm long, chartaceous, without keel, more than 3-veined. Lemma margins ciliate. Lemma apex acute. Palea chartaceous, 2-keeled but the uppermost without keels. Palea keels ciliate. Palea surface pubescent.

**Flower and Fruit.** Anthers 6. Stigmas 1. Ovary umbonate. Caryopsis with adherent pericarp.

**Distribution (TDWG). Continent.** Tropical Asia.

**Country /Province /State.** Indo-China. Vietnam.

**Sinocalamus suberosus** W. T. Lin & Z. M. Wu, *appl incert. J. South China Agr. Univ.* 13(2): 83 (1992).

**TYPE** from China. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: China: Guangdong: Guangning, Dongxiang, 13 Sept. 1990, *Zhimin Wu 88024* (HT: SCAC).

**Illustrations (Books):** No illustration found (BKS).

**Classification.** Subfamily Bambusoideae. Tribe: Bambuseae.

**Distribution (TDWG). Continent.** Temperate Asia.

**Country /Province /State.** China. China Southeast.

**TDWG4.** Guangdong.

**Sinocalamus triramus** W. T. Lin & Z. M. Wu, *appl incert. J. South China Agr. Univ.* 15(2): 78. (1994).

**TYPE** from China. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: China: Guangdong: Guangning, Qinggui, Xiaojinkeng, *Zhimin Wu 85909* (HT: CANT).

**Illustrations (Books):** No illustration found (BKS).

**Classification.** Subfamily Bambusoideae. Tribe: Bambuseae.

**Distribution (TDWG). Continent.** Temperate Asia.

**Country /Province /State.** China. China Southeast.

**TDWG4.** Guangdong.

**Sinocalamus yentuensis** Nguyen To Quyen. *Bot. Zhurn.*, 75(2): 223 (1990).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online.

**TYPE** from Vietnam. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Vietnam, Yen Tu: Nguyen Khac Knoi (HNF holo).



**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): *L. -ensis*, denoting origin. From Yen Tu, Ha Nam Ninh Province, Vietnam.

**Classification.** Subfamily Bambusoideae. Tribe: Bambuseae.

**Habit, Vegetative Morphology.** Perennial, woody bamboo, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms erect, 2000–2600 cm long, 100–120 mm diam., woody. Culm-internodes terete. Lateral branches dendroid. Culm-sheaths present, 35–37 cm long, 1.5 times as long as wide. Leaf-sheaths outer margin hairy. Ligule an eciliate membrane, 1 mm long. Leaf-blade base with a brief petiole-like connection to sheath, petiole 0.2–0.3 cm long. Leaf-blades oblong, 24–26 cm long, 35–50 mm wide. Leaf-blade apex acuminate.

**Inflorescence.** Synflorescence bractiferous, clustered at the nodes, in globose clusters, with glumaceous subtending bracts, with axillary buds at base of spikelet, prophyllate below lateral spikelets.

Fertile spikelets sessile.

**Fertile Spikelets.** Spikelets comprising 3–6 fertile florets, without rhachilla extension. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, laterally compressed, 10–12 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes definite.

**Glumes.** Glumes several, 2–4 empty glumes, persistent, similar, shorter than spikelet. Upper glume ovate, 3–5 mm long. Upper glume apex acute.

**Florets.** Fertile lemma ovate, 7–8.5 mm long, chartaceous, without keel, more than 3-veined. Lemma surface pilose. Lemma margins ciliate. Lemma apex acute, mucronate. Palea chartaceous, 2-keeled but the uppermost without keels. Palea surface pilose. Palea apex dentate, 2 -fid.

**Flower and Fruit.** Anthers 6, 6–7 mm long. Stigmas 1. Ovary umbonate. Caryopsis with adherent pericarp.

**Distribution (TDWG). Continent.** Tropical Asia.

**Country /Province /State. Indo-China.** Vietnam.

**Sinochasea trigyna** Keng. *Journal of the Washington Academy of Sciences* 48(4): 115, f. 1 (1958).

More checking of status required.

**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) (as *Sinochasea*).

**TYPE** from China. **Basionym or Replaced Name:** *Sinochasea trigyna* Keng, *J. Wash. Acad. Sci.* 48(4): 115–117, f. 1 (1958). T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: China: Qinghai: Hai-yen, San Chio Shen, Sheep-breeding Station, San Tui Tui Pu, 21 Aug. 1954, *P.C. Yeh & W.C. Wang et al.* 3241 (HT: N; IT: PE, NAS).

**Recent Synonyms:** *Pseudodanthonia trigyna* (Keng) Clayton, *Kew Bull.*, 40(4): 729 (1985).

**Illustrations (Books):** S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 257 as *Sinochasea*).

**Derivation** (Clifford & Bostock 2007): *Gk. treis*, three; *gyne*, woman. The pistil has three styles.

**Classification.** Subfamily Pooideae. Tribe: Phaenospermateae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Rhizomes short. Butt sheaths persistent and investing base of culm, with compacted dead sheaths. Culms erect, 45 cm long, 1.5 mm diam. Leaves mostly basal. Ligule an eciliate membrane, 0.5–1 mm long. Leaf-blades involute, 6.6–16 cm long, 1–3 mm wide.

**Inflorescence.** Inflorescence a panicle. Panicle contracted, lanceolate, 7–8.5 cm long, 1 cm wide. Primary panicle branches 1–3 cm long, bearing 4–7 fertile spikelets on each lower branch. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, filiform, 0.6–5 mm long.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, with a barren rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, laterally compressed, 10–12 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus pilose, obtuse.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma, gaping. Lower glume lanceolate, 10–12 mm long, 1 length of upper glume, herbaceous, 1-keeled, 5 -veined. Lower glume apex acuminate. Upper glume lanceolate, 10–12 mm long, 1.4–1.5 length of adjacent fertile lemma, herbaceous, with hyaline margins, 1-keeled, 5 -veined. Upper glume apex acuminate.

**Florets.** Fertile lemma oblong, 7–8 mm long, chartaceous, without keel, 5 -veined, more than 3-veined. Lemma surface villous. Lemma hairs 2 mm long. Lemma apex lobed, 2 -fid, with linear lobes, incised 0.3 of lemma length, awned, 1 -awned. Principal lemma awn from a sinus, geniculate, 10–12 mm long overall, with twisted column. Palea lanceolate, 0.8 length of lemma, 2 -veined. Palea keels winged, narrowly winged, ciliolate. Palea surface villous. Palea apex dentate. Rhachilla extension 0.2 length of fertile floret, glabrous or pilose.

**Flower and Fruit.** Lodicules 2, ovate, membranous. Anthers 3, 1 mm long. Stigmas 3. Styles free to the base. Ovary glabrous.

**Distribution (TDWG). Continent.** Temperate Asia.

**Country /Province /State.** China. Qinghai, Tibet.

**Sirochloa parvifolia** (Munro) S. Dransfield. *Kew Bull.* 57:966 (2002).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

**TYPE** from Madagascar. **Basionym or Replaced Name:** *Schizostachyum parvifolium* Munro, *Trans. Linn. Soc. London* 26(1): 136 (1868). T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: LT: *Gerrard 74*, 1865, Madagascar: Toamasina, flowers (K). LT designated by Dransfield, *Kew Bull.* 57: 963, 966 (2002). ST: *Boivin 1978*, Madagascar: Nossi-be (P). ST: *Boivin 3030*, Iles Comores, Mayotta.

**Recent Synonyms:** *Schizostachyum bosseri* A. Camus, *Bull. Soc. Bot. France* 104: 281 (1957).

**Illustrations (Journals):** *Kew Bulletin* (57: 968, Fig.1 (2002)).

**Derivation** (Clifford & Bostock 2007): *L. parvus*, small; folium, leaf. Leaf-blades small.

**Classification.** Subfamily Bambusoideae. Tribe: Bambuseae.

**Habit, Vegetative Morphology.** Perennial, woody bamboo, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms 250–300 cm long, 6 mm diam., woody. Culm-internodes terete, 22 cm long, distally glabrous. Lateral branches dendroid. Branch complement several. Culm-sheaths present. Leaf-sheaths glabrous on surface or puberulous. Leaf-sheath oral hairs ciliate. Leaf-sheath auricles falcate. Ligule an eciliate membrane. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades lanceolate, 2.5–9 cm long, 6–10 mm wide. Leaf-blade venation with 4–6 secondary veins. Leaf-blade surface glabrous or pilose, hairy abaxially. Leaf-blade apex acuminate.

**Inflorescence.** Synflorescence bractiferous, clustered at the nodes, in untidy tufts, with glumaceous subtending bracts, with axillary buds at base of spikelet, prophyllate below lateral spikelets, leafless between clusters.

Fertile spikelets sessile.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, with diminished florets at the apex. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, laterally compressed, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes two or several, 2–3 empty glumes, persistent, shorter than spikelet. Lower glume ovate. Lower glume surface glabrous or pilose. Lower glume apex acuminate. Upper glume ovate, chartaceous. Upper glume surface glabrous or pilose. Upper glume apex acuminate.

**Florets.** Fertile lemma ovate, chartaceous, without keel, 7–9 -veined, more than 3-veined. Lemma apex acuminate. Palea apex dentate, 2 -fid. Apical sterile florets 1 in number, rudimentary.

**Flower and Fruit.** Anthers 6. Stigmas 3. Ovary with a steeple-like appendage. Caryopsis with free brittle pericarp.

**Distribution (TDWG). Continent.** Africa.

**Country /Province /State.** Western Indian ocean. Madagascar.

**Snowdenia microcarpha** C.E.Hubb. *Kew Bull.* 1929, 31. (1929).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

**TYPE** from Uganda. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: Uganda: Mt. Elgon, Butandiga, 2100 m, Dec 1927, *Snowden 1228*.

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): Gk. mikros, small; karpheos, chip. The very small spikelets fall entire and so look like small chips of wood.

**Classification.** Subfamily Panicoideae. Tribe: Paniceae. Subtribe SETARIINAE.

**Habit, Vegetative Morphology.** Annual. Culms decumbent, weak, 15–30 cm long, rooting from lower nodes. Leaf-sheaths smooth, glabrous on surface or pubescent. Ligule a ciliate membrane. Leaf-blades linear or lanceolate, 1–3 cm long, 2–5 mm wide.

**Inflorescence.** Inflorescence composed of racemes. Racemes 1, single, multilateral, 2–4 cm long. Rhachis angular. Spikelet packing abaxial, irregular. Spikelets ascending, 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, dorsally compressed, 3.5–4 mm long, falling entire.

**Glumes.** Glumes similar, shorter than spikelet, thinner than fertile lemma. Lower glume orbicular, 0.1 length of spikelet, hyaline, without keels, 0 -veined. Lower glume lateral veins absent. Lower glume apex truncate or obtuse. Upper glume orbicular, 0.1 length of spikelet, hyaline, without keels, 0 -veined. Upper glume primary vein absent. Upper glume lateral veins absent. Upper glume apex truncate or obtuse.

**Florets.** Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret elliptic, 1 length of spikelet, membranous, 5 -veined, scabrous, rough on veins, acuminate, awned. Awn of lower sterile floret 3–5 mm long. Fertile lemma elliptic, 3.5–4 mm long, membranous, without keel. Lemma margins flat, covering most of palea. Lemma apex acute, mucronate. Palea 0.5 length of lemma, hyaline, without keels.

**Distribution (TDWG). Continent.** Africa.

**Country /Province /State.** East tropical Africa. Uganda.

**Snowdenia mutica** (Hochst.) Pilger. *Notizbl. Bot. Gart. Berlin*, xiv. 103 (1938).

**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:** *Beckera mutica* Hochst., *Flora* 27: 514 (1844). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Locis humidis umbrosis in rupestribus montis Abyssinici Aber prope Dschenausam, Jun 1840, *Schimper* ?.

**Derivation** (Clifford & Bostock 2007): L. blunt. Lacking awns or lemmas and/or glumes truncate.

**Classification.** Subfamily Panicoideae. Tribe: Paniceae. Subtribe SETARIINAE.

**Habit, Vegetative Morphology.** Perennial. Rhizomes short. Culms rambling, 30–90 cm long, rooting from lower nodes. Leaf-sheaths smooth, pilose, with tubercle-based hairs. Ligule a ciliolate membrane, 2–2.5 mm long. Leaf-blades linear or lanceolate, 5–15 cm long, 5–10 mm wide. Leaf-blade surface scaberulous, glabrous or pilose, sparsely hairy, with tubercle-based hairs.

**Inflorescence.** Inflorescence composed of racemes. Racemes 1, single, multilateral, 3–7 cm long. Rhachis angular, scabrous on surface. Spikelet packing abaxial, irregular. Spikelets ascending, solitary. Fertile spikelets pedicelled. Pedicels present, oblong, 0.5–1 mm long, 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 lanceolate, dorsally compressed, acuminate, 5–5.5 mm long, falling entire.

**Glumes.** Glumes similar, shorter than spikelet, thinner than fertile lemma. Lower glume orbicular, 0.5 mm long, 0.1 length of spikelet, hyaline, without keels, 0 -veined. Lower glume lateral veins absent. Lower glume apex truncate or obtuse. Upper glume orbicular, 0.6–1 mm long, 0.1–0.2 length of spikelet, hyaline, without keels, 0 -veined. Upper glume primary vein absent. Upper glume apex emarginate or truncate or obtuse.

**Florets.** Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret elliptic, 1 length of spikelet, membranous, 5 -veined, scabrous, rough on veins, acuminate, muticous or awned. Awn of lower sterile floret 0–5 mm long. Fertile lemma ovate, 5–5.5 mm long, membranous, without keel. Lemma margins flat, covering most of palea. Lemma apex acute, mucronate. Palea 0.5 length of lemma, hyaline, without keels.

**Distribution (TDWG). Continent.** Africa.

**Country /Province /State.** Northeast tropical Africa. Ethiopia (inc. Eritrea).

**Snowdenia petitiana** (A. Rich.) C.E.Hubb. *Hook. Ic. Pl.* vii. t. 3647, p. (1967).

**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:** *Beckera petitiana* A. Rich., *Tent. Fl. Abyss.* 2: 358–359 (1850). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Crescit prope pagum Kouaiéta non procul ad urbe Beless, in provincia Chiré, *Quartin Dillon & Antoine Petit s.n.* (HT: P).

**Illustrations (Books):** R.M.Pohill, F.T.E.A., *Gramineae* (3(1982):671, Fig 155), S.Phillips, *Poaceae* (Gramineae) in I.Hedberg & S.Edwards, *Flora of Ethiopia and Eritrea* (1995) (258, Fig 103).

**Illustrations (Journals):** *Hooker's Icones Plantarum* (t.3647 (1967)).

**Derivation** (Clifford & Bostock 2007): in honor of Antoine Petit (?-1843) French physician and zoologist who collected in Ethiopia.

**Classification.** Subfamily Panicoideae. Tribe: Paniceae. Subtribe SETARIINAE.

**Habit, Vegetative Morphology.** Annual. Culms decumbent, 30–90 cm long, rooting from lower nodes. Leaf-sheaths retrorsely scabrous. Ligule a ciliolate membrane, 1 mm long. Leaf-blades linear to lanceolate, 3–13 cm long, 4–15 mm wide.

**Inflorescence.** Inflorescence composed of racemes. Racemes 1, single, multilateral, 3–7 cm long. Rhachis angular. Spikelet packing abaxial, irregular. Spikelets ascending, solitary. Fertile spikelets pedicelled. Pedicels present, linear.

**Fertile Spikelets.** Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets lanceolate, dorsally compressed, 3.2–4 mm long, falling entire.

**Glumes.** Glumes similar, shorter than spikelet, thinner than fertile lemma. Lower glume orbicular, 0.2–0.5 mm long, 0.5–1 length of upper glume, 0.1 length of spikelet, hyaline, without keels, 0 -veined. Lower glume lateral veins absent. Lower glume apex truncate or obtuse. Upper glume orbicular, 0.4–0.6 mm long, 0.1 length of spikelet, hyaline, without keels, 0 -veined. Upper glume primary vein absent. Upper glume lateral veins absent. Upper glume apex truncate or obtuse.

**Florets.** Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret elliptic, 1 length of spikelet, membranous, 5 -veined, scabrous, rough on veins, acuminate, awned. Awn of lower sterile floret 1–5 mm long. Fertile lemma elliptic, 3–3.6 mm long, membranous, without keel, 5 -veined, more than 3-veined. Lemma margins flat, covering most of palea. Lemma apex acute, mucronate. Palea 0.5 length of lemma, hyaline, without keels.

**Distribution (TDWG). Continent.** Africa.

**Country /Province /State.** Northeast tropical Africa, East tropical Africa. Ethiopia (inc. Eritrea). Kenya, Tanzania, Uganda.

**Snowdenia polystachya** (Fresen.) Pilger. *Notizbl. Bot. Gart. Berlin*, xiv. 103, in obs. (1938).

**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:** *Beckera polystachya* Fresen., *Mus. Senckenberg.* 2, t. 8: 132 (1837). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Abyssinia: auf dem Wege von Halei nach Temben, im Mai oder halben Juni, *Rueppell s.n.* (HT: FR).

**Illustrations (Books):** S.Phillips, *Poaceae* (Gramineae) in I.Hedberg & S.Edwards, *Flora of Ethiopia and Eritrea* (1995) (258, Fig 103).

**Classification.** Subfamily Panicoideae. Tribe: Paniceae. Subtribe SETARIINAE.

**Habit, Vegetative Morphology.** Annual. Culms decumbent, 15–180 cm long, rooting from lower nodes. Leaf-sheaths smooth, glabrous on surface or pilose, with tubercle-based hairs. Ligule a ciliolate membrane. Leaf-blades linear or lanceolate, 4–30 cm long, 2–18 mm wide.

**Inflorescence.** Synflorescence simple or compound.

Inflorescence composed of racemes, terminal and axillary. Racemes 1, single, multilateral, 2–5 cm long. Rhachis angular. Spikelet packing abaxial, irregular. Spikelets ascending, 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, dorsally compressed, 2–2.3 mm long, falling entire.

**Glumes.** Glumes similar, shorter than spikelet, thinner than fertile lemma. Lower glume orbicular, 0.1 length of spikelet, hyaline, without keels, 0 -veined. Lower glume lateral veins absent. Lower glume apex truncate or obtuse. Upper glume orbicular, 0.1 length of spikelet, hyaline, without keels, 0 -veined. Upper glume primary vein absent. Upper glume lateral veins absent. Upper glume apex truncate or obtuse.

**Florets.** Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret elliptic, 1 length of spikelet, membranous, 5 -veined, scabrous, rough on veins, entire or dentate, 2 -fid, obtuse or acute, awned. Awn of lower sterile floret 1–7 mm long. Fertile lemma elliptic, 2–3.3 mm long, membranous, without keel. Lemma margins flat, covering most of palea. Lemma apex truncate or obtuse, mucous or mucronate. Palea 0.5 length of lemma, hyaline, without keels.

**Distribution (TDWG). Continent.** Europe (\*), Africa, Temperate Asia.

**Region.** Northern Europe (\*).

**Country /Province /State.** : GB Aliens (Ryves et al). Northeast tropical Africa, East tropical Africa. Eritrea, Ethiopia (inc. Eritrea), Sudan. Kenya, Tanzania. **Arabian Peninsula.** Yemen.

**Soejatmia ridleyi** (Gamble) K.M.Wong. *Kew Bulletin* 48(3): 532, f. 7 (1993).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006) (as *Bambusa*).

**TYPE** from Malaysia. **Basionym or Replaced Name:** *Bambusa ridleyi* Gamble, *Ann. Bot. Gard. Calc.* 7: 34 (1896). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Malaya, Singapore, Bukit Timah: Ridley 1693.

**Illustrations (Journals):** *Kew Bulletin* (48 (3): 531, Fig. 7 as *Soejatmia*).

**Images:** H.B.Gilliland et al., *Flora of Malaya Vol. 3 Grasses* (1971); (as *Bambusa*).

**Derivation** (Clifford & Bostock 2007): In honor of Henry Nicholas Ridley (1855–1956) English-born Malayan botanist.

**Classification.** Subfamily Bambusoideae. Tribe: Bambuseae.

**Habit, Vegetative Morphology.** Perennial, woody bamboo, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms 300–500 cm long, woody, without nodal roots. Culm-internodes terete, thin-walled, 20–45 cm long, distally pubescent. Lateral branches dendroid. Culm-sheaths present, 9 cm long, pubescent, with white hairs, auriculate, with 10 mm high auricles, setose on shoulders. Culm-sheath blade ovate, cordate, erect, 5–7 cm long, 20 mm wide, acuminate. Leaf-sheath oral hairs setose, 10–20 mm long. Leaf-sheath auricles erect, 4–10 mm long. Ligule an eciliate membrane. Collar with external ligule. Leaf-blade base with a brief petiole-like connection to sheath, petiole 0.2–0.3 cm long. Leaf-blades lanceolate, 20–30 cm long, 25–50 mm wide. Leaf-blade surface glabrous.

**Inflorescence.** Synflorescence bractiferous, clustered at the nodes, in untidy tufts, with glumaceous subtending bracts, with axillary buds at base of spikelet, prophyllate below lateral spikelets.

**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, 40–50 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes definite, 5–7 mm long.

**Glumes.** Glumes several.

**Florets.** Fertile lemma lanceolate, 18–22 mm long, without keel, more than 3-veined. Lemma apex acute. Palea 12–16 -veined. Palea keels ciliate, adorned above. Palea apex dentate, 2 -fid. Apical sterile florets resembling fertile though underdeveloped.

**Flower and Fruit.** Lodicules 3, 8–9 mm long, ciliate. Anthers 6, 8 mm long, anther tip apiculate. Stigmas 3. Ovary umbonate.

**Distribution (TDWG). Continent.** Tropical Asia.

**Country /Province /State.** Malesia. Malaya, Singapore.

**Sohnsia filifolia** (Fourn.) AiryShaw. *Kew Bull.* xviii. 272 (1965).

**Accepted by:** R.J.Soreng et al., *Catalogue of New World 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:** *Calamochloa filifolia* E. Fourn., *Bull. Soc. Bot. France* 24: 178 (1877). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: T: *Virlet 1461*, no date, Mexico: San Luis Potosí (P; US-A865757 (fragm.)).

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): L. filum, thread; folium, leaf. Leaf-blades very narrow.

**Classification.** Subfamily Chloridoideae. Tribe: Cynodonteae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Butt sheaths persistent and investing base of culm, with compacted dead sheaths. Culms 30–100 cm long. Ligule a ciliate membrane, 0.8–1 mm long. Leaf-blades curled, involute, 10–40 cm long, 2 mm wide. Leaf-blade surface scabrous, rough on both sides. Dioecious.

**Inflorescence.** Inflorescence a panicle. Panicle open, ovate, 8–21 cm long, contracted about primary branches. Primary panicle branches bearing spikelets almost to the base. Panicle branches pubescent. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, filiform, puberulous.

**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, 10–12 mm long, breaking up at maturity, disarticulating above glumes but not between florets. Rhachilla internodes 0.5 mm long. Floret callus pilose.

**Glumes.** Glumes persistent, similar, shorter than spikelet, thinner than fertile lemma. Lower glume lanceolate, 3.5–6.5 mm long, 0.9 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume lateral veins absent. Lower glume surface asperulous. Lower glume apex acute. Upper glume lanceolate, 4.7–7 mm long, 0.75–1 length of adjacent fertile lemma, membranous, 1-keeled, 1 -veined. Upper glume lateral veins absent. Upper glume surface asperulous. Upper glume apex acute.

**Florets.** Fertile florets female. Fertile lemma elliptic, 6–7 mm long, coriaceous, much thinner above, without keel, 3 -veined, 0–3 -veined. Lemma midvein ciliate (on either side). Lemma margins ciliate. Lemma apex lobed, 3 -fid, with outer lobes shorter or with central lobe bidentate, incised 0.25 of lemma length, awned, 3 -awned. Principal lemma awn from a sinus, flat below, 3–4 mm long overall. Lateral lemma awns present, arising dorsally, 3–4 mm long, subequal to principal. Palea 1 length of lemma, 2 -veined. Palea keels winged, narrowly winged. Apical sterile florets resembling fertile though underdeveloped.

**Flower and Fruit.** Anthers 3.

Male inflorescence similar to female, a panicle. Male spikelets distinct from female, 3–5 flowered, ovate, 5–9 mm long, glabrous. Male spikelet glumes 2. Male spikelet lemma 3 -veined, awned (3 awns 0.5mm long).

**Distribution (TDWG). Continent.** North America.

**Country /Province /State.** Mexico. Northeast Mexico.

**TDWG4.** Queretaro, San Luis Potosi.

**Sorghastrum balansae** (Hack.) P.D. Davila. *Ann. Missouri Bot. Gard.*, 76(4): 1171: (1989).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

**TYPE** from Paraguay. **Basionym or Replaced Name:** *Sorghum balansae* Hack., *Fl. Bras.* 2(4): 277 (1883). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *Balansa 209a*, Jan 290a, Paraguay (P).

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): in honor of Benjamin Balansa (1825–1892) French botanist.

**Classification.** Subfamily Panicoideae. Tribe: Andropogoneae. Subtribe SACCHARINAE.

**Habit, Vegetative Morphology.** Perennial. Culms erect, 120–260 cm long, 3–4 mm diam., with prop roots. Leaf-sheaths 20–35 cm long, glabrous on surface. Ligule an eciliate membrane, 1–3.5 mm long. Leaf-blades 15–45 cm long, 2–6 mm wide. Leaf-blade surface glabrous. Leaf-blade margins scabrous.

**Inflorescence.** Inflorescence a panicle with branches tipped by a raceme. Peduncle 30–65 cm long. Panicle open, lanceolate, dense or loose, 10–40 cm long. Primary panicle branches ascending. Panicle axis glabrous. Racemes bearing a triad of spikelets, 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, filiform, 3–5 mm long, pubescent.

**Sterile Spikelets.** Companion sterile spikelets represented by barren pedicels.

**Fertile Spikelets.** Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets lanceolate, dorsally compressed, 6–7.8 mm long, falling entire, deciduous with accessory branch structures. Spikelet callus oblong, pubescent, base acute.

**Glumes.** Glumes dissimilar, firmer than fertile lemma. Lower glume oblong, 1 length of spikelet, coriaceous, without keels, 7–9 -veined. Lower glume surface pubescent. Lower glume apex truncate. Upper glume oblong, 1 length of spikelet, coriaceous, without keels, 5 -veined. Upper glume surface glabrous. Upper glume apex acute.

**Florets.** Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret oblong, 4–6.5 mm long, hyaline, 2 -veined, ciliate on margins, dentate, 2 -fid. Fertile lemma oblong, 3–4.5 mm long, hyaline, without keel, 3 -veined, 0–3 -veined. Lemma margins ciliolate. Lemma apex lobed, 2 -fid, awned, 1 -awned. Principal lemma awn from a sinus, bigenulate, 50–75 mm long overall, with twisted column. Column of lemma awn hispidulous. Palea absent or minute.

**Flower and Fruit.** Lodicules 2, glabrous. Anthers 3.

**Distribution (TDWG). Continent.** South America.

**Country /Province /State.** Brazil, Southern South America. Brazil West Central. Paraguay. Mato Grosso, Goias.

**Sorghastrum bipennatum** (Hack.) Pilger. *Notizbl. Bot. Gart. Berlin*, xiv. 96 (1938).

Regarded by K as a synonym (*S. incompletum*).

**Accepted 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 Sudan. **Basionym or Replaced Name:** *Andropogon bipennatus* Hack., *Flora* 68(8): 142 (1885). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *G.A. Schweinfurth 2486*, 12 Oct 1869, Central African Republic: ad Seriba Ghattas in terra Djur (W; IT: B (destroyed), K, US-76451 (frag.)).

**Illustrations (Books):** H.Jacques-Felix, *Les Graminees d'Afrique tropicale* (1962) (289, Fig. 225), J.Bosser, *Graminees des Paturage et des Cultures a Madagascar* (1969) (227, Fig. 78).

**Derivation** (Clifford & Bostock 2007): L. bis, twice; pinna, feather; -atum, possessing. The fertile sessile spikelet is subtended by two feathery pedicels which lack the male spikelets customarily present in related species.

**Classification.** Subfamily Panicoideae. Tribe: Andropogoneae. Subtribe SACCHARINAE.

**Habit, Vegetative Morphology.** Annual. Culms decumbent, weak, 30–300 cm long, without nodal roots or rooting from lower nodes. Ligule an eciliate membrane. Leaf-blades 10–60 cm long, 3–10 mm wide.

**Inflorescence.** Inflorescence a panicle with branches tipped by a raceme. Panicle open, lanceolate, 10–40 cm long. Panicle branches capillary. Racemes bearing a triad of spikelets, 1 fertile spikelets on each. Rhachis obsolete. Spikelets in threes. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 2 in the cluster. Pedicels present, filiform, ciliate.

**Sterile Spikelets.** Companion sterile spikelets represented by barren pedicels.

**Fertile Spikelets.** Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets ovate, dorsally compressed, 4–5.5 mm long, falling entire, deciduous with accessory branch structures. Spikelet callus pilose, base obtuse. Spikelet callus hairs white, 0.5–1.5 mm long.

**Glumes.** Glumes dissimilar, firmer than fertile lemma, shiny. Lower glume ovate, 1 length of spikelet, coriaceous, dark brown, without keels, 9 -veined. Lower glume surface pilose. Lower glume hairs white or grey or yellow. Lower glume apex truncate. Upper glume oblong, without keels.

**Florets.** Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret oblong, 1 length of spikelet, hyaline, 2 -veined, ciliate on margins. Fertile lemma oblong, hyaline, without keel. Lemma margins ciliolate. Lemma apex dentate, 2 -fid, awned, 1 -awned. Principal lemma awn from a sinus, bigeniculate, 25–40 mm long overall, with twisted column. Column of lemma awn pubescent, hairy on the spiral. Palea absent or minute.

**Flower and Fruit.** Lodicules 2, glabrous.

**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, Western Indian ocean. Burkina, Ghana, Guinea-Bissau, Guinea, Ivory Coast, Nigeria, Sierre Leone, Togo. Cameroon. Ethiopia (inc. Eritrea), Sudan. Tanzania. Madagascar. Western South America. Ecuador.

**Sorghastrum brunneum** Swallen. *Contrib. U. S. Nat. Herb.* xxix. 428 (1950).

**Accepted by:** R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

**TYPE** from Guatemala. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *P.C. Standley 81290*, 27 Dec 1940, Guatemala: Huehuetenango: in mountains west of Aguacatan, on road to Huehuetenango, alt. 1950 m (US-1910682).

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): L. dull brown. Spikelets dull-brown.

**Classification.** Subfamily Panicoideae. Tribe: Andropogoneae. Subtribe SACCHARINAE.

**Habit, Vegetative Morphology.** Perennial, caespitose. Culms erect, 50–160 cm long, 1–3 mm diam. Leaf-sheaths 14–30 cm long, glabrous on surface, outer margin glabrous or hairy. Ligule a ciliolate membrane, 2–4 mm long. Leaf-blades flat or conduplicate, 15–35 cm long, 2–6 mm wide. Leaf-blade surface scabrous, rough on both sides, glabrous or pubescent, hairy adaxially. Leaf-blade margins scabrous.

**Inflorescence.** Inflorescence a panicle with branches tipped by a raceme. Peduncle 15–35 cm long. Panicle open, linear, equilateral or nodding, 10–35 cm long. Panicle axis smooth or scabrous, glabrous. Racemes bearing a triad of spikelets or few fertile spikelets, 1–2 fertile spikelets on each. Rhachis fragile at the nodes. Rhachis internodes filiform. 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, filiform, 3.5 mm long, pubescent.

**Sterile Spikelets.** Companion sterile spikelets represented by barren pedicels.

**Fertile Spikelets.** Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets lanceolate, dorsally compressed, 5–6.5 mm long, falling entire, deciduous with accessory branch structures. Spikelet callus pubescent, base obtuse.

**Glumes.** Glumes dissimilar, firmer than fertile lemma. Lower glume oblong, 1 length of spikelet, coriaceous, dark brown, without keels, 7–9 -veined. Lower glume surface pubescent. Lower glume apex

truncate. Upper glume oblong, 1 length of spikelet, coriaceous, without keels, 5 -veined. Upper glume surface glabrous. Upper glume apex acute.

**Florets.** Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret oblong, 3–5 mm long, hyaline, 2 -veined, ciliate on margins, dentate, 2 -fid. Fertile lemma oblong, 2–5 mm long, hyaline, without keel, 3 -veined, 0–3 -veined. Lemma margins ciliolate. Lemma apex lobed, 2 -fid, awned, 1 -awned. Principal lemma awn from a sinus, bigenulate, 15–25 mm long overall, with twisted column. Column of lemma awn hispidulous. Palea absent or minute.

**Flower and Fruit.** Lodicules 2, glabrous. Anthers 3, 2–3.5 mm long. Caryopsis 2–2.5 mm long.

**Distribution (TDWG). Continent.** North America, South America.

**Country /Province /State. Mexico.** Central Mexico, Northeast Mexico, Gulf (Mexico), Southwest Mexico, Southeast Mexico. **Mesoamerica.** Guatemala, Honduras.

Puebla. Coahuila, Neuvo Leon, Queretaro, San Luis Potosi, Tamaulipas. Veracruz. Michoacan, Nayarit, Oaxaca. Chiapas.

### **Sorghastrum chasae** Swallen. *Phytologia*, xiv. 96 (1966).

**Accepted by:** R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

**TYPE** from Brazil. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *A. Chase 11861*, 5–6 Apr 1930, Brazil: Mato Grosso: Santa Rita do Araguayana, in sandy cerrado (US-1501345).

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): in honor of Mary Agnes Merrill Chase (1869–1963) United States agrostologist.

**Classification.** Subfamily Panicoideae. Tribe: Andropogoneae. Subtribe SACCHARINAE.

**Habit, Vegetative Morphology.** Perennial. Culms rambling or scandent, 250–300 cm long, 3.5 mm diam., rooting from lower nodes. Leaf-sheaths 8–10 cm long. Ligule an eciliate membrane, 3.5 mm long. Leaf-blades 25–50 cm long, 20–25 mm wide. Leaf-blade surface scaberulous. Leaf-blade margins scabrous.

**Inflorescence.** Inflorescence a panicle with branches tipped by a raceme. Peduncle 50–60 cm long. Panicle open, lanceolate, 20–40 cm long. Primary panicle branches ascending. Panicle axis hispid. Panicle branches hispid. Racemes bearing a triad of spikelets or few fertile spikelets, 1–2 fertile spikelets on each. Rhachis fragile at the nodes. Rhachis internodes filiform. 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, filiform, 3–3.5 mm long, pubescent.

**Sterile Spikelets.** Companion sterile spikelets represented by barren pedicels.

**Fertile Spikelets.** Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets lanceolate, dorsally compressed, 4.5–5 mm long, falling entire, deciduous with accessory branch structures. Spikelet callus pubescent, base obtuse.

**Glumes.** Glumes dissimilar, firmer than fertile lemma. Lower glume oblong, 1 length of spikelet, coriaceous, without keels, 7–9 -veined. Lower glume surface pubescent. Lower glume apex truncate. Upper glume oblong, 1 length of spikelet, coriaceous, without keels, 3 -veined. Upper glume surface glabrous. Upper glume apex acute.

**Florets.** Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret oblong, 3–4 mm long, hyaline, 3 -veined, ciliate on margins, dentate, 2 -fid. Fertile lemma oblong, 2–3 mm long, hyaline, without keel, 3 -veined, 0–3 -veined. Lemma margins ciliolate. Lemma apex lobed, 2 -fid, awned, 1 -awned. Principal lemma awn from a sinus, bigenulate, 25–35 mm long overall, with twisted column. Column of lemma awn hispidulous. Palea absent or minute.

**Flower and Fruit.** Lodicules 2, glabrous. Anthers 3, 2–3 mm long. Caryopsis 3 mm long.

**Distribution (TDWG). Continent.** South America.

**Country /Province /State. Brazil.** Brazil West Central.

### **Sorghastrum contractum** (Hack.) Kuhlman & Kuhn. *Fl. Distr. Ibiti* :29 (1947).

**Accepted by:** R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

**TYPE** from Brazil. **Basionym or Replaced Name:** *Sorghum nutans* subsp. *contractum* Hack., *Fl. Bras.* 2(4): 276 (1883). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: LT: *Warming s.n.*, Brazil: Lagoa Santa (US; ILT: MO-2103505). LT designated by Davila, *Syst. Rev. Sorghastrum*, 168 (1988), Ph. D. diss., ined.. ST: *Regnell s.n.*, Brazil: Minas Gerais: dictis prov. Minarum pr. Caldas et Pedra Branca ST: *Lund s.n.*, Brazil: Curvello.



**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): L. contracted. Inflorescence a narrow panicle.

**Classification.** Subfamily Panicoideae. Tribe: Andropogoneae. Subtribe SACCHARINAE.

**Habit, Vegetative Morphology.** Perennial, caespitose. Culms erect, 120–230 cm long, 2–4 mm diam. Leaf-sheaths 15–40 cm long. Ligule an eciliate membrane, 2–3.5 mm long. Leaf-blades flat or convolute, 25–50 cm long, 2–8 mm wide. Leaf-blade surface scabrous, glabrous or pubescent, hairy abaxially. Leaf-blade margins scabrous.

**Inflorescence.** Inflorescence a panicle with branches tipped by a raceme. Peduncle 30–50 cm long. Panicle contracted, linear, 15–35 cm long. Panicle axis glabrous. Racemes bearing a triad of spikelets or few fertile spikelets, 1–2 fertile spikelets on each. Rhachis fragile at the nodes. Rhachis internodes filiform. 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, filiform, 2.5–4 mm long, glabrous.

**Sterile Spikelets.** Companion sterile spikelets represented by barren pedicels.

**Fertile Spikelets.** Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets lanceolate, dorsally compressed, 4–6 mm long, falling entire, deciduous with accessory branch structures. Spikelet callus cuneate, pilose, base pungent.

**Glumes.** Glumes dissimilar, firmer than fertile lemma. Lower glume oblong, 1 length of spikelet, coriaceous, without keels, 7–9 -veined. Lower glume surface pubescent. Lower glume apex truncate. Upper glume oblong, 1 length of spikelet, coriaceous, without keels, 5 -veined. Upper glume surface glabrous. Upper glume apex acute.

**Florets.** Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret oblong, 3.5–5 mm long, hyaline, 2 -veined, ciliate on margins, dentate, 2 -fid. Fertile lemma oblong, 2.6–4 mm long, hyaline, without keel, 3 -veined, 0–3 -veined. Lemma margins ciliolate. Lemma apex lobed, 2 -fid, awned, 1 -awned. Principal lemma awn from a sinus, bigeniculate, 18–35 mm long overall, with twisted column. Column of lemma awn hispidulous. Palea absent or minute.

**Flower and Fruit.** Lodicules 2, glabrous. Anthers 3, 2–3 mm long.

**Distribution (TDWG), Continent.** South America.

**Country /Province /State.** Brazil. Brazil Southeast.

**Sorghastrum crassum** Renvoize. *Kew Bull.* 61(2): 281 (2006).

**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, Tarija: Gran Chaco, Jan 2001: Wood & Goyder 16872 (LPB holo, K! iso).

**Illustrations (Journals):** *Kew Bulletin* (61: 282, Fig. 1 (2006)).

**Classification.** Subfamily Panicoideae. Tribe: Andropogoneae. Subtribe SACCHARINAE.

**Habit, Vegetative Morphology.** Perennial. Rootstock evident. Rhizomes short. Culms erect, 75–120 cm long, 2–3 mm diam. Culm-internodes terete. Leaves basal and cauline. Leaf-sheaths open for most of their length, striately veined, glabrous on surface or puberulous (sparsely). Ligule an eciliate membrane, 2–3 mm long, membranous, lacerate (somewhat), obtuse. Leaf-blade base cordate, symmetrical. Leaf-blades tapering towards tip, flat, 25–40 cm long, 5–10 mm wide, indurate, stiff. Leaf-blade venation distinct. Leaf-blade surface glabrous. Leaf-blade apex acuminate.

**Inflorescence.** Inflorescence a panicle with branches tipped by a raceme. Panicle contracted, linear or lanceolate, 10–25 cm long. Panicle axis smooth. Racemes flexuous. Rhachis fragile at the nodes, pilose on surface. Rhachis hairs white, 8 mm long. Rhachis internodes filiform, 5–8 mm long. Rhachis internode tip discoid, oblique. Spikelets ascending, in pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, filiform, 6–8 mm long, pubescent, hairy on surface, with white hairs (spreading), with 8 mm long hairs.

**Sterile Spikelets.** Companion sterile spikelets represented by barren pedicels.

**Fertile Spikelets.** Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. 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 ovate (narrowly), dorsally compressed, 6.5–9 mm long, with hairs extending 3–5 mm beyond apex, falling entire, deciduous with accessory branch structures. Spikelet callus oblong, 1 mm long, pilose, base obtuse, attached obliquely.

**Glumes.** Glumes dissimilar, firmer than fertile lemma. Lower glume ovate (narrowly), 6.5–8 mm long, coriaceous, light brown (golden brown), without keels, 7–9 -veined. Lower glume lateral veins obscure. Lower glume surface asperulous, pilose, hairy below, with an apical beard. Lower glume apex dentate, 2 -fid. Upper glume narrowly ovate, 7.5–8 mm long, 1 length of spikelet, coriaceous, light brown (golden brown), without

keels, 5 -veined. Upper glume primary vein obscure. Upper glume surface asperulous, glabrous. Upper glume apex acute.

**Florets.** Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret oblong, 5–6 mm long, hyaline, 2 -veined, minutely scaberulous, ciliate on margins (and apex), dentate (minutely), 2 -fid. Fertile lemma oblong (narrowly), 5–6 mm long, hyaline, without keel, 1 -veined, 0–3 -veined, one-veined. Lemma surface asperulous, pilose. Lemma apex awned, 1 -awned. Principal lemma awn straight, 20–25 mm long overall, limb scaberulous. Palea absent or minute.

**Flower and Fruit.** Anthers 3, oblong, 3.5 mm long. Stigmas 2.

**Distribution (TDWG). Continent.** South America.

**Country /Province /State.** Western South America. Bolivia.

### **Sorghastrum elliotii** (Mohr) Nash. *N. Amer. Fl.* xvii. 130 (1912).

**Accepted by:** R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

**TYPE** from USA. **Basionym or Replaced Name:** *Chrysopogon elliotii* C. Mohr, *Bull. Torrey Bot. Club* 24(1): 21 (1897). T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: NT: *Chapman* 22, 1884, USA: Florida (W). NT designated by Davila, *Syst. Rev. Sorghastrum*, 175, 185 (1988), Ph. D. diss., ined..

**Illustrations (Books):** M.E.Barkworth et al, *Flora of North America north of Mexico Vol 25 Poaceae*, part 2 (2003) (632).

**Derivation** (Clifford & Bostock 2007): in honor of Stephen E. Elliott (1771–1830) United States banker, politician and amateur botanist.

**Classification.** Subfamily Panicoideae. Tribe: Andropogoneae. Subtribe SACCHARINAE.

**Habit, Vegetative Morphology.** Perennial, caespitose. Culms erect or geniculately ascending, 70–190 cm long, 2–4 mm diam. Leaf-sheaths 15–30 cm long. Ligule a ciliate membrane, 2–4 mm long. Leaf-blades flat or conduplicate, 20–50 cm long, 2.5–5.5 mm wide. Leaf-blade surface scabrous, rough on both sides, glabrous or pubescent, hairy adaxially. Leaf-blade margins scabrous. Leaf-blade apex acute.

**Inflorescence.** Inflorescence a panicle with branches tipped by a raceme. Peduncle 20–50 cm long. Panicle open, lanceolate, equilateral or nodding, 10–25 cm long. Panicle axis smooth or scabrous. Racemes bearing a triad of spikelets or few fertile spikelets, 1–3 fertile spikelets on each. Rhachis fragile at the nodes. Rhachis internodes filiform. 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, filiform, 3–6 mm long, pubescent.

**Sterile Spikelets.** Companion sterile spikelets represented by barren pedicels.

**Fertile Spikelets.** Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets lanceolate, dorsally compressed, 6–7.5 mm long, falling entire, deciduous with accessory branch structures. Spikelet callus pubescent, base obtuse.

**Glumes.** Glumes dissimilar, firmer than fertile lemma. Lower glume oblong, 1 length of spikelet, coriaceous, dark brown, without keels, 7–9 -veined. Lower glume surface pubescent. Lower glume apex truncate. Upper glume oblong, 1 length of spikelet, coriaceous, dark brown, without keels, 5 -veined. Upper glume surface glabrous. Upper glume apex acute.

**Florets.** Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret oblong, 4–6 mm long, hyaline, 2 -veined, ciliate on margins, dentate, 2 -fid. Fertile lemma oblong, 2–3.5 mm long, hyaline, without keel, 3 -veined, 0–3 -veined. Lemma margins ciliolate. Lemma apex lobed, 2 -fid, awned, 1 -awned. Principal lemma awn from a sinus, bigenulate, 25–40 mm long overall, with twisted column. Column of lemma awn hispidulous. Palea absent or minute.

**Flower and Fruit.** Lodicules 2, glabrous. Anthers 3, 2–3 mm long. Caryopsis 2–2.5 mm long.

$2n = 20$  (1 ref TROPICOS).

**Distribution (TDWG). Continent.** North America.

**Country /Province /State.** South-central USA, Southeastern USA. Texas. Alabama, Arkansas, Delaware, Florida, Georgia, Louisiana, Maryland, Mississippi, North Carolina, South Carolina, Tennessee, District of Columbia.

### **Sorghastrum fuscescens** (Pilger) Clayton. *Kew Bull.*, 30(3): 509 (1975).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online.

**TYPE** from Tanzania. **Basionym or Replaced Name:** *Miscanthidium fuscescens* Pilg., *Notizbl. Bot. Gart. Berlin-Dahlem* 11: 806 (1933). T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: HT: *Schlieben 1010*, May 1931, Tanzania: Njombe District: Misma (B; IT: K).

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): *L. fuscesco*, become dark. Lemma brown.

**Classification.** Subfamily Panicoideae. Tribe: Andropogoneae. Subtribe SACCHARINAE.

**Habit, Vegetative Morphology.** Perennial, caespitose. Culms 80–200 cm long. Ligule an eciliate membrane. Leaf-blades 10–60 cm long, 2–7 mm wide.

**Inflorescence.** Inflorescence a panicle with branches tipped by a raceme. Panicle open, lanceolate, 15–30 cm long. Racemes flexuous, 3–10 cm long, bearing 5–15 fertile spikelets on each. Rhachis fragile at the nodes, ciliate on margins. Rhachis internodes filiform. Spikelets in pairs. Fertile spikelets sessile or sessile and pedicelled, 1 in the cluster or 2 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster or 0 in the cluster. Pedicels present, filiform, ciliate.

**Sterile Spikelets.** Companion sterile spikelets represented by barren pedicels.

**Fertile Spikelets.** Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets lanceolate, dorsally compressed, 5.5–7 mm long, falling entire, deciduous with accessory branch structures or from the base. Spikelet callus pilose, base obtuse.

**Glumes.** Glumes dissimilar, firmer than fertile lemma. Lower glume oblong, 1 length of spikelet, coriaceous, dark brown, without keels. Lower glume surface pilose. Lower glume apex truncate. Upper glume oblong, without keels.

**Florets.** Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret oblong, 1 length of spikelet, hyaline, 2 -veined, ciliate on margins. Fertile lemma oblong, hyaline, without keel. Lemma margins ciliolate. Lemma apex lobed, 2 -fid, awned, 1 -awned. Principal lemma awn from a sinus, bigeniculate, 12–20 mm long overall, with twisted column. Column of lemma awn hispidulous. Palea absent or minute.

**Flower and Fruit.** Lodicules 2, glabrous.

**Distribution (TDWG). Continent.** Africa.

**Country /Province /State.** East tropical Africa, South tropical Africa. Tanzania. Malawi, Zambia.

### **Sorghastrum incompletum** (Presl) Nash. *N. Amer. Fl.* xvii. 130 (1912).

**Accepted by:** R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

**TYPE** from Mexico. **Basionym or Replaced Name:** *Andropogon incompletus* J. Presl, *Reliq. Haenk.* 1(4–5): 342 (1830). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *T. Haenke s.n.*, no date, Mexico (PR; IT: US-76474 (fragm. ex PR)).

**Illustrations (Books):** G.V.Pope et al., *Flora Zambesiaca* 10 (4(2002):29, t. 11 as var. *bipennatum*), W.Burger, *Flora Costaricensis* 15, Gramineae: *Fieldiana Botany New Series* 4 (1980) (534, Fig 200).

**Derivation** (Clifford & Bostock 2007): *L. imperfect.* Pedicellate florets sterile.

**Classification.** Subfamily Panicoideae. Tribe: Andropogoneae. Subtribe SACCHARINAE.

**Habit, Vegetative Morphology.** Annual. Culms erect or geniculately ascending, 50–200 cm long, 0.8–4 mm diam., without nodal roots or rooting from lower nodes. Leaf-sheaths 5–30 cm long. Ligule an eciliate membrane, 1–3 mm long, truncate. Leaf-blades 5–40 cm long, 1–10 mm wide. Leaf-blade margins scabrous. Leaf-blade apex attenuate.

**Inflorescence.** Inflorescence a panicle with branches tipped by a raceme. Peduncle 20–50 cm long. Panicle open, lanceolate, nodding, 10–40 cm long. Panicle axis with occasional prickles. Panicle branches capillary. Racemes bearing a triad of spikelets or few fertile spikelets, 1–2 fertile spikelets on each. 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, filiform, 2.5–4.5 mm long, pubescent.

**Sterile Spikelets.** Companion sterile spikelets represented by barren pedicels.

**Fertile Spikelets.** Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets lanceolate, dorsally compressed, 4–6 mm long, falling entire, deciduous with accessory branch structures. Spikelet callus pilose, base obtuse. Spikelet callus hairs white.

**Glumes.** Glumes dissimilar, firmer than fertile lemma, shiny. Lower glume lanceolate, 0.9 length of spikelet, coriaceous, light brown, without keels, 7–9 -veined. Lower glume surface pilose. Lower glume apex truncate. Upper glume lanceolate, 1 length of spikelet, light brown, without keels, 3 -veined. Upper glume surface glabrous. Upper glume apex acute.

**Florets.** Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret oblong, 2–4.5 mm long, hyaline, 2 -veined, ciliate on margins, dentate, 2 -fid. Fertile lemma oblong, 2–4 mm long, hyaline, without keel, 3 -veined, 0–3 -veined. Lemma margins ciliolate. Lemma apex dentate, 2 -fid, awned, 1 -awned. Principal lemma awn from a sinus, bigeniculate, 10–45 mm long overall, with twisted column. Column of lemma awn pubescent, hairy on the spiral. Palea absent or minute.

**Flower and Fruit.** Lodicules 2, glabrous. Anthers 3, 1–3.5 mm long. Caryopsis 1.5–3 mm long.

**Distribution (TDWG). Continent.** Africa, North America, South America.

**Country /Province /State.** West-central tropical Africa, Northeast tropical Africa, Western Indian ocean. Congo, Gabon, DRC. Chad. Madagascar. **Mexico.** Central Mexico, Northeast Mexico, Gulf (Mexico), Southwest Mexico, Southeast Mexico. **Mesoamerica, Northern South America, Western South America, Brazil.** Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua, Panama. Venezuela. Bolivia, Colombia. Brazil Northeast, Brazil North.

**TDWG4.** Maranhao, Piaui. Mexico State, Morelos. Guanajuato, Hidalgo, Queretaro, Zacatecas. Veracruz. Colima, Guerrero, Jalisco, Michoacan, Nayarit, Oaxaca. Campeche, Chiapas, Yucatan.

**Sorghastrum minarum** (Nees) Hitchcock. *Contrib. U. S. Nat. Herb.* xxiv. 501 (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 Brazil. **Basionym or Replaced Name:** *Trachypogon minarum* Nees, *Fl. Bras. Enum. Pl.* 2(1): 349 (1829). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: ST: *Riedel*, Feb 1826, Brasilia: in campis siccis frequentis pr. Capivary et alibi (LE). Teste E. Hackel (*Sorghum minarum* Hack.). ST: *Riedel 2141*, Feb 1834, Brasilia: in camp. Ytu (LE). Teste E. Hackel (*Sorghum minarum* Hack.). ST: *Riedel 207*, Brasilia (LE). Teste E. Hackel (*Sorghum minarum* Hack.). ST: *207/28*, Feb 1826, Prov. St. Paulo: in campis siccis prope Capivari (LE, LE). ST: *F. Sellow 1184*, no date, Brazil: Minas Gerais: between Villa Rica and Tejuco. Itambe (US-926123 (fragm.)).

**Illustrations (Books):** S.A.Renvoize, *Gramineas de Bolivia* (1998) (576, Fig. 135), L.B. Smith, D.C. Wasshausen, R.M. Klein *Flora Illustrada Catarinensis Gramineas* (1981–1982) (1232, Fig. 242 & 1233, Fig. 243), R.Pilger, *Die Naturlichen Pflanzenfamilien* 14e (1940) (143, Fig. 78).

**Illustrations (Journals):** *Iheringia* (42: 49, Figs 36–42 (1992)).

**Derivation** (Clifford & Bostock 2007): from Minas Gerais Province, Brazil.

**Classification.** Subfamily Panicoideae. Tribe: Andropogoneae. Subtribe SACCHARINAE.

**Habit, Vegetative Morphology.** Perennial. Culms erect, 80–150 cm long, 2–4 mm diam. Leaf-sheaths 15–30 cm long. Ligule an eciliate membrane, 3–4 mm long. Leaf-blades flat or convolute, 20–40 cm long, 4–7.5 mm wide. Leaf-blade surface glabrous. Leaf-blade margins scabrous. Leaf-blade apex acute.

**Inflorescence.** Inflorescence a panicle with branches tipped by a raceme. Peduncle 35–45 cm long. Panicle contracted, linear or lanceolate, 10–25 cm long. Panicle axis smooth. Racemes bearing a triad of spikelets or few fertile spikelets, 1–2 fertile spikelets on each. Rhachis fragile at the nodes. Rhachis internodes filiform. 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, filiform, 3–4.5 mm long, pubescent.

**Sterile Spikelets.** Companion sterile spikelets represented by barren pedicels.

**Fertile Spikelets.** Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets lanceolate, dorsally compressed, 5.5–7 mm long, falling entire, deciduous with accessory branch structures. Spikelet callus linear, 2.5–3 mm long, pilose, base pungent.

**Glumes.** Glumes dissimilar, firmer than fertile lemma. Lower glume oblong, 1 length of spikelet, coriaceous, without keels, 7–9 -veined. Lower glume surface pubescent. Lower glume apex truncate. Upper glume oblong, 1 length of spikelet, coriaceous, without keels, 5 -veined. Upper glume surface glabrous. Upper glume apex acute.

**Florets.** Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret oblong, 4–5 mm long, hyaline, 2 -veined, ciliate on margins, dentate, 2 -fid. Fertile lemma oblong, 3–4.2 mm long, hyaline, without keel, 3 -veined, 0–3 -veined. Lemma margins ciliolate. Lemma apex lobed, 2 -fid, awned, 1 -awned. Principal lemma awn from a sinus, bigenulate, 60–85 mm long overall, with twisted column. Column of lemma awn hispidulous. Palea absent or minute.

**Flower and Fruit.** Lodicules 2, glabrous. Anthers 3, 2–2.5 mm long. Caryopsis 3–3.5 mm long.

$2n = 20$  (4 refs TROPICOS).

**Distribution (TDWG). Continent.** South America.

**Country /Province /State.** Western South America, Brazil, Southern South America. Bolivia. Brazil West Central, Brazil Southeast, Brazil South. Paraguay.

**TDWG4.** Mato Grosso, Goias, Minas Gerais, Rio de Janeiro, Espirito Santo, Sao Paulo Parana, Catarina, Rio Grande do Sul. Corrientes, Misiones.

**Sorghastrum nudipes** Nash. *N. Ammer. Fl.* xvii. 129 (1912).

**Accepted by:** R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

**TYPE** from Mexico. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: HT: C.G. Pringle 1433, 18 Sep 1887, Mexico: Chihuahua (NY; IT: F, US-740665, US-821313).

**Recent Synonyms:** *Sorghastrum friesii* (Pilger) C.E.Hubb., *Kew Bull.* 1934, 109 (1934).

**Illustrations (Books):** L.K.A. Chippindall, *Grasses and Pastures of South Africa* (1955) (467, Fig. 382 as *S. friesii*), G.E.Gibbs Russell et al., *Grasses of Southern Africa* (1990) (300, Fig 193 as *S. friesii*).

**Derivation** (Clifford & Bostock 2007): *L. nudus*, bare; *pes*, foot. Pedicel glabrous.

**Classification.** Subfamily Panicoideae. Tribe: Andropogoneae. Subtribe SACCHARINAE.

**Habit, Vegetative Morphology.** Perennial, caespitose. Rhizomes elongated. Basal innovations extravaginal. Culms erect, 55–120 cm long, 1–2.5 mm diam. Leaf-sheaths 7–20 cm long, glabrous on surface. Ligule an eciliate membrane, 15–25 mm long. Leaf-blades 10–30 cm long, 2–5 mm wide. Leaf-blade surface smooth or scabrous, glabrous or pubescent. Leaf-blade margins scabrous. Leaf-blade apex acute.

**Inflorescence.** Inflorescence a panicle with branches tipped by a raceme. Peduncle 15–30 cm long. Panicle open, oblong, 10–30 cm long. Panicle axis smooth. Panicle branches capillary. Racemes bearing a triad of spikelets or few fertile spikelets, 1–3 fertile spikelets on each. Rhachis fragile at the nodes. Rhachis internodes filiform. 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, filiform, 3–6 mm long, pubescent.

**Sterile Spikelets.** Companion sterile spikelets represented by barren pedicels.

**Fertile Spikelets.** Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets lanceolate, dorsally compressed, 5.5–7.5(–9) mm long, falling entire, deciduous with accessory branch structures. Spikelet callus bearded, base obtuse.

**Glumes.** Glumes dissimilar, firmer than fertile lemma. Lower glume oblong, 1 length of spikelet, chartaceous or coriaceous, without keels, 7–9 -veined. Lower glume lateral veins distinct. Lower glume surface pubescent. Lower glume apex truncate. Upper glume oblong, 1 length of spikelet, chartaceous or coriaceous, without keels, 5 -veined. Upper glume surface glabrous or pubescent, hairy below. Upper glume apex acute.

**Florets.** Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret oblong, 5–6.5 mm long, hyaline, 2 -veined, ciliate on margins, dentate, 2 -fid. Fertile lemma oblong, 3.5–5.3 mm long, hyaline, without keel, 3 -veined, 0–3 -veined. Lemma margins ciliolate. Lemma apex lobed, 2 -fid, awned, 1 -awned. Principal lemma awn from a sinus, straight or geniculate, 12–18 mm long overall, with twisted column. Column of lemma awn hispidulous. Palea absent or minute.

**Flower and Fruit.** Lodicules 2, glabrous. Anthers 3, 3–4 mm long. Caryopsis 2–3 mm long.

**Distribution (TDWG). Continent.** Africa, North America.

**Country /Province /State.** West-central tropical Africa, South tropical Africa, Southern Africa. DRC. Angola, Zambia, Zimbabwe. Namibia, Botswana, Limpopo, Mpumalanga. **Mexico.** Northeast Mexico. Chihuahua, Durango.

## **Sorghastrum nutans** (L.) Nash. *Fl. S. E. U. S.* 66 (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), D.Sharp, D. & B.K.Simon, *AusGrass* (2002), N.L.Bor, *Grasses of Burma, Ceylon, India and Pakistan* (1960).

**TYPE** from USA. **Basionym or Replaced Name:** *Andropogon nutans* L., *Sp. Pl.* 2: 1045 (1753). T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: LT: *Kalm s.n.*, USA (LINN-1211.3; ILT: US-76596 (fragm. ex LINN)). LT designated by Hitchcock, *Contr. U.S. Natl. Herb.* 12: 125 (1908); also see Veldkamp, *Taxon* 33: 95–97 (1984) for a discussion of the type.

**Recent Synonyms:** *Sorghastrum albescens* (Fourn.) Beetle, *Phytologia* 52(1): 17 (1982).

**Illustrations (Books):** D.Sharp & B.K.Simon, *AusGrass*. Grasses of Australia. CD-Rom Version 1.0. (2002), K.F.Best, et al, *Prairie Grasses* (1971) (215), M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 25 *Poaceae*, part 2 (2003) (632), F.W.Gould, *The Grasses of Texas* (1975) (578, Fig. 303), A.Burkat, *Flora Illustrada de Entre Rios (Argentina)*, Pt II, Gramineas (1969) (475, Fig. 201).

**Illustrations (Journals):** *Iheringia* (42): 47, Figs 18–26 (1992) as *S. albescens*).

**Images:** R.Darke, *Ornamental Grasses* (2004);, R.Darke, *The Encyclopaedia of Grasses for Liveable Landscapes* (2007);.

**Derivation** (Clifford & Bostock 2007): *L. nuto*, nod. Inflorescence branches slender, bending under the weight of the spikelets.

**Classification.** Subfamily Panicoideae. Tribe: Andropogoneae. Subtribe SACCHARINAE.

**Habit, Vegetative Morphology.** Perennial. Rhizomes elongated, scaly. Culms erect, 50–230 cm long, 1.5–4.5 mm diam. Leaf-sheaths 10–40 cm long, glabrous on surface or pilose. Leaf-sheath auricles erect. Ligule an eciliate membrane, 2–5 mm long. Leaf-blades 10–50 cm long, 1–4 mm wide. Leaf-blade surface glabrous or pubescent. Leaf-blade margins scabrous. Leaf-blade apex attenuate.

**Inflorescence.** Inflorescence a panicle with branches tipped by a raceme. Peduncle 20–60 cm long. Panicle open, oblong, dense, 10–35 cm long. Panicle axis villous. Racemes bearing a triad of spikelets or few fertile spikelets, 1–3 fertile spikelets on each. Rhachis fragile at the nodes. Rhachis internodes filiform. 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, filiform, 3–6 mm long, pubescent.

**Sterile Spikelets.** Companion sterile spikelets represented by barren pedicels.

**Fertile Spikelets.** Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets lanceolate, dorsally compressed, 5–8 mm long, falling entire, deciduous with accessory branch structures. Spikelet callus bearded, base obtuse.

**Glumes.** Glumes dissimilar, firmer than fertile lemma. Lower glume oblong, 1 length of spikelet, coriaceous, light brown, without keels, 7–9 -veined. Lower glume surface pubescent. Lower glume apex truncate. Upper glume oblong, 1 length of spikelet, coriaceous, light brown, without keels, 5 -veined. Upper glume surface glabrous. Upper glume apex acute.

**Florets.** Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret oblong, 4–6 mm long, hyaline, 2 -veined, ciliate on margins, dentate, 2 -fid. Fertile lemma oblong, 3–5.5 mm long, hyaline, without keel, 3 -veined, 0–3 -veined. Lemma margins ciliolate. Lemma apex lobed, 2 -fid, awned, 1 -awned. Principal lemma awn from a sinus, geniculate, 10–22 mm long overall, with twisted column. Column of lemma awn hispidulous. Palea absent or minute.

**Flower and Fruit.** Lodicules 2, glabrous. Anthers 3, 3–5 mm long. Caryopsis 2.3 mm long.

$N = 20$  (1 ref TROPICOS).  $2n = 40$  (3 refs TROPICOS).

**Distribution (TDWG). Continent.** Australasia (\*), North America, South America.

**Country /Province /State. Australia.** Western Australia (\*). **Eastern Canada, Northwest USA, North-central USA, Northeast USA, Southwestern USA, South-central USA, Southeastern USA, Mexico.** Ontario, Quebec. **Montana.** 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.** 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), Pacific Is (Mexico), Northwest Mexico, Southwest Mexico, Southeast Mexico.** **Mesoamerica, Caribbean, Western South America, Brazil, Southern South America.** Honduras. Bolivia, Ecuador. Argentina Northeast, Uruguay.

**TDWG4.** Bihar, Gujarat. Maharashtra, Uttah Pradesh, West Bengal. South-West. Entre Rios. Mexico State, Puebla. Coahuila, Chihuahua, Guanajuato, Neuvo Leon, Queretaro, San Luis Potosi, Tamaulipas, Zacatecas. Veracruz. Revillagigedo Is. Baja California, Sonora. Guerrero, Jalisco, Michoacan, Nayarit, Oaxaca. Chiapas.

**Sorghastrum pellitum** (Hack.) Parodi. *Rev. Fac. Agron. & Vet., Buenos Aires*, vii. 154 (1930).

**Accepted by:** R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

**TYPE** from Argentina. **Basionym or Replaced Name:** *Sorghum nutans* subsp. *pellitum* Hack., *Fl. Bras.* 2(4): 275 (1883). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *Gillies 33*, Argentina: Mendoza (W; IT: NY, US).

**Illustrations (Books):** E.G.Nicora, *Los Generos de Gramineas de America Austral* (1987) (524, Fig. 188), A.L.Cabrera, *Flora de la Provincia de Buenos Aires, IV Pt 2 Gramineas* (1970) (583, Fig. 156), B.Rosengurt, *Gramineas Uruguayas I* (1970) (198, Fig. 81).

**Illustrations (Journals):** *Iheringia* (42: 49, Figs 36–42 & 50, Fig.43 (1992)).

**Derivation** (Clifford & Bostock 2007): L. covered with skins. The fertile floret(s) is protected by hairy investing glumes or sterile florets.

**Classification.** Subfamily Panicoideae. Tribe: Andropogoneae. Subtribe SACCHARINAE.

**Habit, Vegetative Morphology.** Perennial, caespitose. Culms erect, 40–120 cm long, 1.2–3 mm diam. Culm-internodes distally glabrous or pubescent. Leaf-sheaths 10–25 cm long, glabrous on surface. Ligule an eciliate membrane, 1.4–4 mm long, pubescent on abaxial surface, obtuse. Leaf-blades filiform, convolute, 15–60 cm long, 1–5 mm wide. Leaf-blade surface glabrous or pilose. Leaf-blade margins scabrous. Leaf-blade apex acute.

**Inflorescence.** Inflorescence a panicle with branches tipped by a raceme. Peduncle 15–45 cm long. Panicle open, elliptic, 15–30 cm long. Panicle axis pubescent. Racemes bearing a triad of spikelets or few fertile spikelets, 1–2 fertile spikelets on each. Rhachis fragile at the nodes. Rhachis internodes filiform. 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, filiform, 3.5–7.5 mm long, pubescent.

**Sterile Spikelets.** Companion sterile spikelets represented by barren pedicels.

**Fertile Spikelets.** Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets lanceolate or oblong, dorsally compressed, 4.5–7 mm long, falling entire, deciduous with accessory branch structures. Spikelet callus pubescent, base obtuse.

**Glumes.** Glumes dissimilar, firmer than fertile lemma. Lower glume oblong, 1 length of spikelet, coriaceous, dark brown, without keels, 7–9 -veined. Lower glume surface pubescent. Lower glume apex truncate. Upper glume oblong, 1 length of spikelet, coriaceous, dark brown, without keels, 5 -veined. Upper glume surface glabrous. Upper glume apex acute.

**Florets.** Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret oblong, 3.5–6 mm long, hyaline, 2 -veined, ciliate on margins, dentate, 2 -fid. Fertile lemma oblong, 3–6 mm long, hyaline, without keel, 3 -veined, 0–3 -veined. Lemma margins ciliolate. Lemma apex lobed, 2 -fid, awned, 1 -awned. Principal lemma awn from a sinus, geniculate or bigeniculate, 10–23 mm long overall, with twisted column. Column of lemma awn hispidulous. Palea absent or minute.

**Flower and Fruit.** Lodicules 2, glabrous. Anthers 3, 2.5–4.5 mm long. Caryopsis 2.5–3 mm long.

**Distribution (TDWG).** Continent. South America.

**Country /Province /State.** Brazil, Southern South America. Argentina Northeast, Argentina Northwest, Paraguay, Uruguay.

**TDWG4.** Jujuy, Mendoza, Salta, San Luis, Tucuman. Buenos Aires, Chaco, Cordoba, Corrientes, Entre Rios, La Pampa, Misiones, Santa Fe.

**Sorghastrum pogonostachyum** (Stapf) Clayton. *Kew Bull.*, 30(3): 509 (1975).

**Accepted by:** W.D. Clayton & K. Harman, *GrassBase* (2008) and online.

**TYPE** from Angola. **Basionym or Replaced Name:** *Sorghum pogonostachyum* Stapf, *Fl. Trop. Afr.* 9: 144 (1917). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *Gossweiler 2225*, Angola: Benguella: country of the Ganguellas and Ambuellas (K).

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): Gk. pogon, beard; stachys, ear of corn. Callus with a low spreading beard.

**Classification.** Subfamily Panicoideae. Tribe: Andropogoneae. Subtribe SACCHARINAE.

**Habit, Vegetative Morphology.** Perennial, caespitose. Rhizomes short. Culms 45–120 cm long. Ligule an eciliate membrane. Leaf-blades convolute, 9–15 cm long, 1.5–2 mm wide.

**Inflorescence.** Inflorescence a panicle with branches tipped by a raceme. Panicle open, linear, 6–15 cm long. Primary panicle branches 4–8 in number, simple. Racemes 4–7 cm long, bearing few fertile spikelets, bearing 3–7 fertile spikelets on each. Rhachis fragile at the nodes, ciliate on margins. Spikelet packing lax. Rhachis internodes filiform. Spikelets in pairs. Fertile spikelets sessile or sessile and pedicelled, 1 in the cluster or 2 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster or 0 in the cluster. Pedicels present, filiform, ciliate.

**Sterile Spikelets.** Companion sterile spikelets represented by barren pedicels.

**Fertile Spikelets.** Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets lanceolate, dorsally compressed, 5–6.5 mm long, falling entire, deciduous with accessory branch structures or from the base. Spikelet callus bearded, base obtuse. Spikelet callus hairs white, 0.33–0.75 length of spikelet.

**Glumes.** Glumes dissimilar, firmer than fertile lemma. Lower glume oblong, 1 length of spikelet, coriaceous, dark brown, without keels, 9 -veined. Lower glume surface pilose. Lower glume apex truncate. Upper glume oblong, without keels.

**Florets.** Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret oblong, 1 length of spikelet, hyaline, 2 -veined, ciliate on margins. Fertile lemma oblong, hyaline, without keel. Lemma margins ciliolate. Lemma apex entire, muticous or awned, 1 -awned. Principal lemma awn apical, straight, 3–6 mm long overall, without a column. Palea absent or minute.

**Flower and Fruit.** Lodicules 2, glabrous.

**Distribution (TDWG).** Continent. Africa.

**Country /Province /State.** East tropical Africa, South tropical Africa. Tanzania. Angola, Malawi, Zambia.

**Sorghastrum pohlianum** P. Davila, L.I. Cabrera & R. Lira. *Brittonia*, 50(3): 305 (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>: *vide* TROPICOS and Kew Synonymy Database: Mexico: Colima: Socorro Island, 60 m of summit, Everman Peak, 18.46N 110.57.07W, prairie, 1000 m, 21 Mar 1967, *Felger 15767* (HT: MEXU; IT: MEXU).

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): L. *-anum*, indicating connection. In honor of Richard Walter Pohl (1916–1993) United States agrostologist.

**Classification.** Subfamily Panicoideae. Tribe: Andropogoneae. Subtribe SACCHARINAE.

**Habit, Vegetative Morphology.** Perennial, caespitose. Rhizomes elongated, scaly. Culms erect, 90–160 cm long, 2–3.5 mm diam. Culm-internodes thin-walled, smooth, distally glabrous. Culm-nodes brown, pubescent. Leaf-sheaths 14–23 cm long, glabrous on surface. Leaf-sheath auricles erect, 3–4.6 mm long. Ligule an eciliate membrane, 2.5–3.5 mm long. Leaf-blades 16–30 cm long, 3.8–7 mm wide. Leaf-blade margins smooth or scaberulous. Leaf-blade apex acute.

**Inflorescence.** Inflorescence a panicle with branches tipped by a raceme. Peduncle 34–40 cm long. Panicle open, pyramidal, 16–20 cm long. Primary panicle branches 3.3–5.9 cm long. Panicle branches capillary. Racemes bearing a triad of spikelets or few fertile spikelets. Rhachis fragile at the nodes. Rhachis internodes filiform. Spikelets in pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, filiform, 4–4.5 mm long, villous.

**Sterile Spikelets.** Companion sterile spikelets represented by barren pedicels.

**Fertile Spikelets.** Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets lanceolate, dorsally compressed, 5.9–6.5 mm long, 1–1.2 mm wide, falling entire, deciduous with accessory branch structures. Spikelet callus bearded, base obtuse.

**Glumes.** Glumes dissimilar, firmer than fertile lemma. Lower glume lanceolate, 5–5.8 mm long, 1 length of spikelet, chartaceous or coriaceous, light brown, without keels. Lower glume lateral veins distinct. Lower glume surface pilose. Lower glume apex truncate. Upper glume lanceolate, 5.9–6 mm long, 1 length of spikelet, chartaceous or coriaceous, 1-keeled, 5 -veined. Upper glume apex acute.

**Florets.** Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret oblong, 2.2–4.6 mm long, hyaline, 2 -veined, ciliate on margins, dentate, 2 -fid. Fertile lemma oblong, 2.4–4.4 mm long, 1–1.3 mm wide, hyaline, without keel, 0–3 -veined. Lemma apex lobed, 2 -fid, awned, 1 -awned. Principal lemma awn from a sinus, geniculate, 25–30 mm long overall, with twisted column. Palea absent or minute.

**Flower and Fruit.** Anthers 3, 2.2–2.5 mm long, yellow.

**Distribution (TDWG). Continent.** North America.

**Country /Province /State.** Mexico. Southwest Mexico.

**TDWG4.** Colima.

**Sorghastrum scaberrimum** (Nees) Herter. *Rev. Sudamer. Bot.* vi. 136 (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 Brazil. **Basionym or Replaced Name:** *Trachypogon scaberrimus* Nees, *Fl. Bras. Enum. Pl.* 2(1): 354 (1829). T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: NT: *Widgren 927*, 1845, Brazil: Minas Gerais (US-703312). NT designated by Davila, *Syst. Rev. Sorghastrum* 254, 262 (1988), Ph. D. diss., ined.

**Illustrations (Journals):** *Iheringia* (42: 51, Figs 44–52 (1992)).

**Derivation** (Clifford & Bostock 2007): L. *scaber*, rough; *-rima*, most. Leaf-blades very scabrous.

**Classification.** Subfamily Panicoideae. Tribe: Andropogoneae. Subtribe SACCHARINAE.

**Habit, Vegetative Morphology.** Perennial, caespitose. Culms erect, 70–180 cm long, 2–3.8 mm diam. Culm-internodes distally glabrous. Lateral branches lacking. Leaf-sheaths 19–30 cm long, antrorsely scabrous. Ligule an eciliate membrane, 15–35 mm long, truncate. Leaf-blades flat or involute, 10–40 cm long, 3–9 mm wide. Leaf-blade surface smooth or scabrous, glabrous or pubescent, hairy abaxially or on both sides. Leaf-blade margins scabrous. Leaf-blade apex acute.

**Inflorescence.** Inflorescence a panicle with branches tipped by a raceme. Peduncle 30–60 cm long. Panicle open, lanceolate, 15–37 cm long. Panicle axis glabrous. Racemes bearing a triad of spikelets or few fertile spikelets, 1–3 fertile spikelets on each. Rhachis fragile at the nodes. Rhachis internodes filiform. 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, filiform, 2.5–4 mm long, pubescent.

**Sterile Spikelets.** Companion sterile spikelets represented by barren pedicels.



**Fertile Spikelets.** Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. 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, 3.8–5 mm long, falling entire, deciduous with accessory branch structures. Spikelet callus pubescent, base obtuse.

**Glumes.** Glumes dissimilar, firmer than fertile lemma. Lower glume oblong, 1 length of spikelet, coriaceous, without keels, 7–9 -veined. Lower glume surface pubescent. Lower glume apex truncate. Upper glume lanceolate, 1 length of spikelet, coriaceous, without keels, 5 -veined. Upper glume surface glabrous. Upper glume apex acute.

**Florets.** Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret oblong, 3–4.5 mm long, hyaline, 2 -veined, ciliate on margins, dentate, 2 -fid. Fertile lemma oblong, 2.5–4 mm long, hyaline, without keel, 3 -veined, 0–3 -veined. Lemma margins ciliolate. Lemma apex lobed, 2 -fid, awned, 1 -awned. Principal lemma awn from a sinus, geniculate or bigeniculate, 13–22 mm long overall, with twisted column. Column of lemma awn hispidulous. Palea absent or minute.

**Flower and Fruit.** Lodicules 2, glabrous. Anthers 3, 2–3 mm long. Caryopsis 1–2 mm long.

$N = 10$  (1 ref TROPICOS).  $2n = 20$  (3 refs TROPICOS).

**Distribution (TDWG).** Continent. South America.

**Country /Province /State.** Brazil. Brazil Southeast.

### **Sorghastrum secundum** (Ell.) Nash. *Fl. S. E. U. S.* 67 (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:** *Andropogon secundus* Elliott, *Sketch Bot. S. Carolina* 1: 580 (1821). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: NT: A.H. Curtiss 3644, Oct, USA: Florida: dry, sandy soil near Jacksonville (US-740694; INT: F-148757, F-308697, NY US-740696, US-740698). NT designated by Davila, *Syst. Rev. Sorghastrum* 262, 272 (1988), Ph. D. diss., ined.

**Illustrations (Books):** M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 25 *Poaceae*, part 2 (2003) (632).

**Images:** R.Darke, *The Encyclopaedia of Grasses for Liveable Landscapes* (2007);.

**Classification.** Subfamily Panicoideae. Tribe: Andropogoneae. Subtribe SACCHARINAE.

**Habit, Vegetative Morphology.** Perennial. Culms erect, 90–150 cm long, 1.5–3 mm diam. Culm-internodes distally glabrous or pubescent. Lateral branches lacking. Leaf-sheaths 20–45 cm long, glabrous on surface. Ligule an eciliate membrane, 2.5–4 mm long. Leaf-blades flat or involute, 20–50 cm long, 3–6 mm wide. Leaf-blade surface scabrous, rough on both sides. Leaf-blade margins scabrous. Leaf-blade apex acute.

**Inflorescence.** Inflorescence a panicle with branches tipped by a raceme. Peduncle 25–50 cm long. Panicle open, lanceolate, secund, 15–40 cm long. Primary panicle branches appressed. Panicle axis glabrous. Racemes bearing a triad of spikelets or few fertile spikelets, 1–3 fertile spikelets on each. Rhachis fragile at the nodes. Rhachis internodes filiform. 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, filiform, 4–6 mm long, pubescent.

**Sterile Spikelets.** Companion sterile spikelets represented by barren pedicels.

**Fertile Spikelets.** Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets lanceolate, dorsally compressed, 6–8 mm long, falling entire, deciduous with accessory branch structures. Spikelet callus pilose, base obtuse.

**Glumes.** Glumes dissimilar, firmer than fertile lemma. Lower glume oblong, 1 length of spikelet, coriaceous, dark brown, without keels, 7–9 -veined. Lower glume surface pubescent. Lower glume apex truncate. Upper glume oblong, 1 length of spikelet, coriaceous, dark brown, without keels, 5 -veined. Upper glume surface glabrous. Upper glume apex acute.

**Florets.** Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret oblong, 4–5.5 mm long, hyaline, 2 -veined, ciliate on margins, dentate, 2 -fid. Fertile lemma oblong, 4–5.5 mm long, hyaline, without keel, 3 -veined, 0–3 -veined. Lemma margins ciliolate. Lemma apex lobed, 2 -fid, awned, 1 -awned. Principal lemma awn from a sinus, bigeniculate, 30–40 mm long overall, with twisted column. Column of lemma awn hispidulous. Palea absent or minute.

**Flower and Fruit.** Lodicules 2, glabrous. Anthers 3, 2.5–4.5 mm long. Caryopsis 2–3 mm long.

**Distribution (TDWG).** Continent. North America.

**Country /Province /State.** South-central USA, Southeastern USA. Alabama, Florida, Georgia, Mississippi, North Carolina, South Carolina.

**Sorghastrum setosum** (Griseb.) Hitchcock. *Contrib. U. S. Nat. Herb.* xii. 195 (1909).

**Accepted by:** R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

**TYPE** from Cuba. **Basionym or Replaced Name:** *Sorghastrum agrostoides*, *Andropogon setosus* Griseb., *Cat. Pl. Cub.* 235 (1866). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: LT: *Wright 208*, 1865, Cuba (GOET; IT: K, Sauvalle Herb., US-76607 (fragm. ex K)). LT designated by Hitchcock, *Contr. U.S. Natl. Herb.* 9: 195 (1909).

**Recent Synonyms:** *Sorghastrum agrostoides* (Speg.) Hitchc., *Bot. Gaz.* 51: 300 (1911).

**Illustrations (Books):** A.S.Hitchcock, *Manual of the Grasses of the West Indies* (1936) (411, Fig. 362), J.A.Steyermark et al, *Flora of the Venezuelan Guayana* Vol. 8 (2004) (270, Fig. 219), A.Burkat, *Flora Illustrada de Entre Rios (Argentina)*, Pt II, Gramineas (1969) (475, Fig. 201 as *S. agrostoides*), W.Burger, *Flora Costaricensis* 15, Gramineae: *Fieldiana Botany New Series* 4 (1980) (534, Fig. 200), E.Judziewicz, *Flora of the Guianas*, 187. *Poaceae* (1990) (76, Fig. 10).

**Illustrations (Journals):** *Iheringia* (42: 46, Figs 9–17 as *S. agrostoides* & 53, Figs 61–69 (1992)).

**Derivation** (Clifford & Bostock 2007): L. seta, bristle; -osa, abundance. Glumes and/or lemmas awned or attenuated.

**Classification.** Subfamily Panicoideae. Tribe: Andropogoneae. Subtribe SACCHARINAE.

**Habit, Vegetative Morphology.** Perennial. Culms erect, slender, 80–180 cm long, 2.5–3.5 mm diam. Culm-internodes distally glabrous or pubescent. Leaf-sheaths 9–10 cm long, glabrous on surface or pubescent. Ligule an eciliate membrane, 1.5–3.5 mm long. Leaf-blades convolute, 15–50 cm long, 4–8 mm wide. Leaf-blade surface glabrous or pubescent, sparsely hairy, hairy on both sides. Leaf-blade margins scabrous. Leaf-blade apex acute.

**Inflorescence.** Inflorescence a panicle with branches tipped by a raceme. Peduncle 15–50 cm long. Panicle open, elliptic, 10–40 cm long. Panicle axis glabrous. Racemes bearing a triad of spikelets or few fertile spikelets, 1–2 fertile spikelets on each. Rhachis fragile at the nodes. Rhachis internodes filiform. 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, filiform, 2–4.5 mm long, pubescent.

**Sterile Spikelets.** Companion sterile spikelets represented by barren pedicels.

**Fertile Spikelets.** Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets lanceolate, dorsally compressed, 3.5–5 mm long, falling entire, deciduous with accessory branch structures. Spikelet callus pilose, base obtuse.

**Glumes.** Glumes dissimilar, firmer than fertile lemma. Lower glume oblong, 1 length of spikelet, coriaceous, without keels, 7–9 -veined. Lower glume surface pubescent. Lower glume apex truncate. Upper glume oblong, 1 length of spikelet, coriaceous, without keels, 5 -veined. Upper glume surface glabrous. Upper glume apex acute.

**Florets.** Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret oblong, 2.5–4 mm long, hyaline, 2 -veined, ciliate on margins, dentate, 2 -fid. Fertile lemma oblong, 2–4 mm long, hyaline, without keel, 3 -veined, 0–3 -veined. Lemma margins ciliolate. Lemma apex lobed, 2 -fid, awned, 1 -awned. Principal lemma awn from a sinus, straight or geniculate, 1–12 mm long overall, without a column or with a straight or slightly twisted column. Column of lemma awn hispidulous. Palea absent or minute.

**Flower and Fruit.** Lodicules 2, glabrous. Anthers 3, 1.5–3 mm long. Caryopsis 3–3.5 mm long.

$N = 10$  (1 ref TROPICOS).  $2n = 20$  (3 refs TROPICOS).

**Distribution (TDWG). Continent.** North America, South America.

**Country /Province /State.** Mexico. Gulf (Mexico), Southeast Mexico. 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, Venezuela. Bolivia, Colombia. Brazil West Central, Brazil Southeast, Brazil North. Argentina Northeast, Paraguay, Uruguay.

**TDWG4.** Roraima, Mato Grosso, Goias, Sao Paulo Parana, Catarina, Rio Grande do Sul. Tucuman. Chaco, Corrientes, Distrito Federal, Entre Rios, Formosa, Misiones, Santa Fe. Veracruz. Chiapas, Tabasco.

**Sorghastrum stipoides** (Kunth) Nash. *N. Amner. Fl.* xvii. 129 (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 Colombia. **Basionym or Replaced Name:** *Sorghastrum trichopus*, *Andropogon stipoides* Kunth, *Nov. Gen. Sp. (quarto ed.)* 1: 189 (1815 [1816]). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *Humboldt & Bonpland s.n.*, Oct, Colombia: inter Popayan et Almaguer (P-Bonpl.; IT: US-2942181 (fragm. ex P)).

**Illustrations (Books):** R.M.Polhill, F.T.E.A., *Gramineae* (3(1982):733, Fig 169), G.V.Pope et al., *Flora Zambesiaca* 10 (4(2002):31, t. 12), S.A.Rennoize, *Gramineas de Bolivia* (1998) (576, Fig 135), B.Rosengurtt, *Gramineas Uruguayas I* (1970) (198, Fig. 81 as ssp. *stipoides*), G.Harling & C.Persson, *Flora of Ecuador* (2006) (78: 179, Fig. 21 (2006)).

**Illustrations (Journals):** *Ruizia* (13:430 Fig 57e-f (1993)), *Iheringia* (42: 53, Figs 61–69 (1992)).

**Derivation** (Clifford & Bostock 2007): Gk. -oides, resembling. With spikelets resembling those of *Stipa*.

**Classification.** Subfamily Panicoideae. Tribe: Andropogoneae. Subtribe SACCHARINAE.

**Habit, Vegetative Morphology.** Perennial, caespitose. Rhizomes short. Culms 90–200 cm long. Culm-internodes thin-walled. Ligule an eciliate membrane. Leaf-blades flat or convolute, 15–50 cm long, 3–7(–12) mm wide, stiff.

**Inflorescence.** Inflorescence a panicle with branches tipped by a raceme. Panicle open, linear to lanceolate, 15–40 cm long. Primary panicle branches whorled at lower nodes. Panicle branches capillary. Racemes bearing few fertile spikelets, 1–4 fertile spikelets on each. Rhachis fragile at the nodes, ciliate on margins. Rhachis internodes filiform. Spikelets in pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, filiform, ciliate.

**Sterile Spikelets.** Companion sterile spikelets represented by barren pedicels.

**Fertile Spikelets.** Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets lanceolate, dorsally compressed, 4–6(–6.5) mm long, falling entire, deciduous with accessory branch structures. Spikelet callus pilose, base obtuse.

**Glumes.** Glumes dissimilar, firmer than fertile lemma, shiny. Lower glume oblong, 1 length of spikelet, coriaceous, dark brown, without keels, 9 -veined. Lower glume lateral veins obscure. Lower glume surface glabrous or pilose. Lower glume apex truncate. Upper glume oblong, without keels.

**Florets.** Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret oblong, 1 length of spikelet, hyaline, 2 -veined, ciliate on margins. Fertile lemma oblong, 4–6 mm long, hyaline, without keel, 3 -veined, 0–3 -veined. Lemma margins ciliolate. Lemma apex lobed, 2 -fid, incised 0.2 of lemma length, muticous or awned, 1 -awned. Principal lemma awn from a sinus, straight or geniculate, (0–)4–13(–25) mm long overall, with twisted column. Column of lemma awn glabrous or hispidulous. Palea absent or minute.

**Flower and Fruit.** Lodicules 2, glabrous.

$2n = 20$  (1 ref TROPICOS).

**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. Gambia, Guinea, Mali, Nigeria. Chad, Ethiopia (inc. Eritrea). Kenya, Tanzania, Uganda. Mozambique, Zambia, Zimbabwe. Mpumalanga, Swaziland, Kwazulu-Natal. Mexico. Central Mexico, Southwest Mexico, Southeast Mexico. Caribbean, Northern South America, Western South America, Brazil, Southern South America. Cuba. French Guiana, Guyana, Surinam, Venezuela. Bolivia, Colombia, Ecuador, Peru. Brazil Southeast, Brazil North. Argentina Northwest, Paraguay, Uruguay.

**TDWG4.** Jujuy, Salta, Tucuman. Buenos Aires, Chaco, Formosa, Misiones. Morelos. Oaxaca. Chiapas.

**Sorghastrum tisserantii** Clayton. *Kew Bull.*, 30(3): 509 (1975).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online.

**TYPE** from CAR. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Central African Republic: Waka, 16 Nov 1927, *Tisserant s.n.* (HT: K).

**Derivation** (Clifford & Bostock 2007): in honor of Charles Tisserant (1886–1962) French cleric ethnologist, botanist and traveller.

**Classification.** Subfamily Panicoideae. Tribe: Andropogoneae. Subtribe SACCHARINAE.

**Habit, Vegetative Morphology.** Annual, caespitose. Culms 60 cm long. Ligule a fringe of hairs. Leaf-blades convolute, 15–30 cm long, 1–2 mm wide.

**Inflorescence.** Inflorescence a panicle with branches tipped by a raceme. Panicle open, lanceolate, 10–14 cm long. Primary panicle branches spreading, simple or sparsely divided, 0.3–2.5 cm long. Panicle branches capillary, villous, hairy at tip. Racemes bearing a triad of spikelets. Rhachis obsolete. Spikelets in threes. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 2 in the cluster. Pedicels present, filiform, 0.5 length of fertile spikelet, ciliate.

**Sterile Spikelets.** Companion sterile spikelets represented by barren pedicels.

**Fertile Spikelets.** Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets lanceolate, dorsally compressed, 10–11 mm long, falling entire, deciduous with accessory branch structures. Spikelet callus linear, 3 mm long, pubescent, base pungent.

**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. Lower glume surface pilose. Upper glume oblong, 0.9 length of spikelet, without keels.

**Florets.** Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret lanceolate, 8 mm long, hyaline, 2 -veined. Fertile lemma oblong, hyaline, without keel. Lemma apex dentate, 2 -fid, awned, 1 -awned. Principal lemma awn from a sinus, geniculate, 45–55 mm long overall, with twisted column. Column of lemma awn pubescent, hairy on the spiral. Palea absent or minute.

**Flower and Fruit.** Lodicules 2. Caryopsis with adherent pericarp, oblanceolate, 4 mm long.

**Distribution (TDWG). Continent.** Africa.

**Country /Province /State.** West-central tropical Africa. Central African Republic.

**Sorghastrum viride** Swallen. *Phytologia*, xiv. 98 (1966).

**Accepted by:** R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

**TYPE** from Brazil. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *G. Eiten & L.T. Eiten 2336*, 20 Sep 1960, Brazil: São Paulo: Moji-guacu Mun.: Campos das Sete Lagoas (US-2378565; IT: F, NY).

**Illustrations (Journals):** *Iheringia* (42: 54, Figs 70–72 (1992)).

**Derivation** (Clifford & Bostock 2007): L. green. Widely applied but especially to species with green spikelets.

**Classification.** Subfamily Panicoideae. Tribe: Andropogoneae. Subtribe SACCHARINAE.

**Habit, Vegetative Morphology.** Perennial. Culms erect, 125 cm long. Culm-internodes thin-walled. Culm-nodes constricted, pubescent. Leaf-sheaths longer than adjacent culm internode, glabrous on surface. Ligule an ciliate membrane, 3–4 mm long. Leaf-blades 20–40 cm long, 2–4 mm wide.

**Inflorescence.** Inflorescence a panicle with branches tipped by a raceme. Panicle open, linear to lanceolate, 22 cm long. Panicle branches capillary. Racemes bearing few fertile spikelets. Rhachis fragile at the nodes. Rhachis internodes filiform. Spikelets in pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, filiform, ciliate.

**Sterile Spikelets.** Companion sterile spikelets represented by barren pedicels.

**Fertile Spikelets.** Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets lanceolate, dorsally compressed, 5.5–6 mm long, falling entire, deciduous with accessory branch structures. Spikelet callus pilose, base obtuse.

**Glumes.** Glumes dissimilar, firmer than fertile lemma. Lower glume oblong, 1 length of spikelet, coriaceous, without keels, 9 -veined. Lower glume surface villous. Upper glume oblong, without keels, 5 -veined. Upper glume surface glabrous. Upper glume margins ciliate.

**Florets.** Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret oblong, 1 length of spikelet, hyaline, 2 -veined, ciliate on margins, fringed above. Fertile lemma oblong, 4–6 mm long, hyaline, without keel, 2 -veined, 0–3 -veined. Lemma apex lobed, 2 -fid, awned, 1 -awned. Principal lemma awn from a sinus, geniculate, 15 mm long overall, with twisted column. Palea absent or minute.

**Flower and Fruit.** Anthers 3, 3 mm long.

**Distribution (TDWG). Continent.** South America.

**Country /Province /State.** Brazil, Southern South America. Paraguay, Uruguay.

**TDWG4.** Chaco, Corrientes, Entre Rios, Misiones.

**Sorghum arundinaceum** (Desv.) Stapf. Prain, *Fl. Trop. Afr.* ix. 114 (1917).

**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*), N.L.Bor, Grasses of Burma, Ceylon, India and Pakistan (1960) (as *S. pugionifolium*, *S. arundinaceum*), W.D.Clayton & N.Snow, Key to Pacific Grasses (2010).

**TYPE** from Ghana. **Basionym or Replaced Name:** *Rhaphis arundinacea* Desv., *Mem. Soc. Agric. Angers* 1: 173 (1831); *Andropogon arundinaceus* Willd. *Sp. Pl.* 4: 906 (1806), non Bergius (1767). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *Isert s.n.*, Ghana (B-W-18639).

**Recent Synonyms:** *Sorghum lanceolatum* Stapf in Prain, *Fl. Trop. Afr.* 9: 112 (1917). *Sorghum vogelianum* (Piper) Stapf in Prain, *Fl. Trop. Afr.* ix. 116 (1917).

*Sorghum aethiopicum* (Desv.) Stapf in Prain, *Fl. Trop. Afr.* 9: 114 (1917).

*Sorghum brevicarinatum* Snowden, *Journ. Linn. Soc. Lond., Bot.* 55: 242 (1955).

*Sorghum verticilliflorum* (Steud.) Stapf in Prain, *Fl. Trop. Afr.* 9: 116 (1917).

*Sorghum virgatum* (Hack.) Stapf in Prain, *Fl. Trop. Afr.* 9 : 111 (1917).

*Sorghum pugionifolium* Snowden, *Journ. Linn. Soc. Lond., Bot.* 55: 240 (1955).

**Illustrations (Books):** H.Jacques-Felix, *Les Graminees d'Afrique tropicale* (1962) (288, Fig. 224), W. Robyns (1929 and 1934). *Flora Agrostologique du Congo Belge et du Ruanda-Urundi*, I. Maydees et Andropogonees and II. Panicees. Bruxelles, Goemaere (95, Pl.7), F.N.Hepper, *F.W.T.A.* 3(2) (1972) (469, Fig.449), R.M.Polhill, F.T.E.A., *Gramineae* (3(1982):728, Fig. 168), G.V.Pope et al., *Flora Zambesiaca* 10, M.A.N.Muller, *Grasses of South West Africa/Namibia* (1984) (as *S. verticilliflorum*), J.Bosser, *Graminees des Paturage et des Cultures a Madagascar* (1969) (225, Fig. 80 as *S. verticilliflorum*), L.Boulos, *Flora of Egypt* 4 (2005) (330, Pl. 97), T.A.Cope, in M.Thulin, *Poaceae* (Gramineae). *Flora of Somalia* (1995) (253, Fig. 147), N.L.Bor, *The grasses of Burma, Ceylon, India and Pakistan* (1960) (225, Fig. 14as *Sorghum verticilliflorum*), H.J.Noltie, *The Grasses of Bhutan* (2000) (763, Fig. 50), E.E.Henty, *A Manual of the Grasses of New Guinea* (1969) (182, Pl. 68 as *Sorghum verticilliflorum*), S.A.Renvoize, *Gramineas de Bolivia* (1998) (576, Fig. 135), S.A.Renvoize, *The Grasses of Bahia*, 1984 (264, Fig. 99), L.B. Smith, D.C. Wasshausen, R.M. Klein *Flora Illustrada Catarinensis Gramineas* (1981–1982) (1225, Fig. 241).

**Images:** D.Sharp & B.K.Simon, *AusGrass*. Grasses of Australia. CD-Rom Version 1.0. (2002);

**Derivation** (Clifford & Bostock 2007): *L. arundo*, reed; -acea, like. Culm tall, thereby resembling a reed.

**Classification.** Subfamily Panicoideae. Tribe: Andropogoneae. Subtribe SACCHARINAE.

**Habit, Vegetative Morphology.** Annual or perennial. Rhizomes absent. Basal innovations extravaginal. Culms erect, 30–400 cm long, 2–15 mm diam., without nodal roots or with prop roots. Culm-internodes thin-walled. Culm-nodes glabrous or pubescent. Leaves cauline. Leaf-sheaths narrower than blade at the collar, without keel, smooth, glabrous on surface. Ligule a ciliolate membrane, 2–3 mm long, glabrous on abaxial surface, entire, truncate. Collar glabrous. Leaf-blades 5–75 cm long, 5–70 mm wide. Leaf-blade surface smooth. Leaf-blade margins scabrous, glabrous. Leaf-blade apex acute.

**Inflorescence.** Inflorescence a panicle with branches tipped by a raceme. Panicle open, linear or lanceolate or ovate, 10–60 cm long. Primary panicle branches not whorled, moderately divided. Panicle branches flexuous, scaberulous, pubescent in axils. Racemes 0.8–2 cm long, bearing 2–7 fertile spikelets on each. Rhachis fragile at the nodes, ciliate on margins. Rhachis hairs 0.5–1.5 mm long. Rhachis internodes filiform, 2–5 mm long. Rhachis internode tip transverse, cupuliform. Spikelets appressed, in pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, filiform, flattened, 0.5 length of fertile spikelet, ciliate.

**Sterile Spikelets.** Companion sterile spikelets well-developed, comprising 2 subequal glumes without lemmas or male, linear to lanceolate, dorsally compressed, 3–8 mm long, shorter than fertile, separately deciduous. Companion sterile spikelet glumes chartaceous, smooth, glabrous, acute, muticous. Companion sterile spikelet lemmas enclosed by glumes.

**Fertile Spikelets.** Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets lanceolate to ovate, dorsally compressed, acute, 4–9 mm long, falling entire, deciduous with accessory branch structures. Spikelet callus base obtuse.

**Glumes.** Glumes dissimilar, with lower wider than upper, exceeding apex of florets, firmer than fertile lemma, shiny. Lower glume ovate, 1 length of spikelet, coriaceous, much thinner above, without keels, keel-less except near apex. Lower glume surface pubescent. Lower glume hairs white or yellow. Lower glume apex acute. Upper glume ovate, coriaceous, much thinner above, without keels. Upper glume surface pubescent. Upper glume apex acute.

**Florets.** Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret lanceolate, 0.8 length of spikelet, hyaline, 2 -veined, ciliate on margins, acute. Fertile lemma ovate, dorsally compressed, 1–3 mm long, hyaline, 1 -veined, 0–3 -veined, one-veined. Lemma margins ciliate. Lemma apex dentate, 2 -fid, muticous or awned, 1 -awned. Principal lemma awn from a sinus, geniculate, 0–30 mm long overall, with twisted column. Column of lemma awn glabrous. Palea absent or minute.

**Flower and Fruit.** Lodicules 2, oblong, fleshy, ciliate, hairy across the apex. Anthers 3, 2 mm long. Stigmas 2, laterally exerted. Caryopsis with adherent pericarp, oblong, dorsally compressed, 2 mm long. Embryo 0.6 length of caryopsis. Hilum punctiform. Endosperm farinose. Disseminule comprising a rhachis internode.

*N* = 10 (1 ref TROPICOS).

**Distribution (TDWG).** **Continent.** Europe (\*), Africa, Temperate Asia, Tropical Asia, Australasia (\*), Pacific, North America, South America.

**Region.** Northern Europe (\*).

**Country /Province /State.** : GB Aliens (Ryves et al). **Northern Africa, Macaronesia, West tropical Africa, West-central tropical Africa, Northeast tropical Africa, East tropical Africa, South tropical Africa, Southern Africa, Western Indian ocean.** Egypt (unconfirmed). Canary Is. Burkina, Gambia, Ghana, Guinea, Ivory Coast, Mali, Mauritania, Nigeria, Senegal, Niger. Cameroon, Congo, Gabon, Annobon, Principe

& Sao Tome, Bioko, Rwanda, DRC. Chad, Eritrea, Ethiopia (inc. Eritrea), Somalia, Sudan. Kenya, Tanzania, Uganda. Angola, Malawi, Mozambique, Zambia, Zimbabwe. Mauritius (\*), Madagascar (\*), Reunion (\*), Rodrigues (\*), Seychelles (\*). **Arabian Peninsula, Indian Subcontinent, Indo-China, Malesia, Papuasia.** Eastern Himalaya, Pakistan, West Himalaya. New Guinea. **Australia.** Queensland (\*), New South Wales, Lord Howe-Norfolk Is (\*). **Southwestern Pacific, South-central Pacific.** Fiji (\*), Niue (\*), New Caledonia (\*), Samoa (\*). Cook Is (\*), Pitcairn Is (\*). Caroline Is (\*). Hawaii (\*). **Southwestern USA.** California. **Caribbean, Western South America, Brazil.** Jamaica (as *S. verticilliflorum*), Leeward Is (as *S. verticilliflorum*). Bolivia, Colombia, Ecuador. Brazil Northeast, Brazil Southeast.

**TDWG4.** Bhutan. Orissa, Punjab. North, Central, South East. Coast, Tablelands, Western Slopes, Western Plains.

## **Sorghum bicolor** (L.) Moench. *Meth.* 207 (1794).

**Accepted by:** R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), D.Sharp, D. & B.K.Simon, *AusGrass* (2002), E.Edgar, & H.Connor, *Flora of New Zealand Gramineae* 5 (2000), S-L Chen et al, *Flora of China* 22 (Poaceae) (2006), J.F.Veldkamp, Poaceae ms (*Flora Malesiana*), N.L.Bor, Grasses of Burma, Ceylon, India and Pakistan (1960) (& as *S. caudatum*), T.G.Tutin et al, *Flora Europaea* 5 (1980), N.Tsvelev, *Grasses of the Soviet Union* (1983) (& as *S. saccharatum*, *S. durra*), W.D.Clayton & N.Snow, Key to Pacific Grasses (2010).

**TYPE** from ? (Herb. Clifford). **Basionym or Replaced Name:** *Holcus bicolor* L., *Mant. Pl.* 2: 301 (1771). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: LT: *Herbium Cliffordianum* 468. *Holcus* 1, (BM). LT designated by Davidse in Cafferty et al., *Taxon* 49(2): 251 (2000).

**Recent Synonyms:** *Sorghum saccharatum* (L.) Moench, nom ambig., *Meth.* 207 (1794). *Sorghum dochna* (Forsk.) Snowden, *Kew Bull.* 1935, 234 (1935).

**Illustrations (Books):** G.Hegi, *Flora von Mitteleuropa* 1 (1909) (as *Andropogon sorghum* var. *eusorghum*), H.Jacques-Felix, *Les Graminees d'Afrique tropicale* (1962) (as *S. guineense*), N.L.Bor, *Gramineae in Flora of Iraq* (1968) (545, Pl. 209 & 546, Pl. 210), C-C Hsu, *Flora of Taiwan*, Vol 5 (1978) (768), C-C Hsu, *Taiwan Grasses* (1975), N.L.Bor, *The grasses of Burma, Ceylon, India and Pakistan* (1960) (229, Fig. 15, 233, Fig. 16 & 19 as many *Sorghum* species), K.M.Matthew, *Flora Palni Hills* (1996) (868, Pl. 868), H.J.Noltie, *The Grasses of Bhutan* (2000) (763, Fig. 50), H.Duistermaat, *Field Guide to the Grasses of Singapore* (2005) (125, Fig. 130), J.P.Jessop, G.R.M. Dashorst & F.M.James, *Grasses of South Australia* (2006) (531, Fig. 453), S.W.L.Jacobs, R.D.B.Whalley & D.J.B.Wheeler., *Grasses of New South Wales*, 4th edn (2008) (as subspecies *bicolor*), M.E.Barkworth et al, *Flora of North America north of Mexico Vol 25 Poaceae*, part 2 (2003) (629 as subspecies *bicolor* & *xdrummondii* & *arundinaceum*), J.A.Steyermark et al, *Flora of the Venezuelan Guayana* Vol. 8 (2004) (271, Fig. 220), L.B. Smith, D.C. Wasshausen, R.M. Klein *Flora Illustrada Catarinensis Gramineas* (1981–1982) (1225, Fig. 241), A.Burkat, *Flora Illustrada de Entre Rios (Argentina)*, Pt II, Gramineas (1969) (471, Fig. 200 as *S. technicum* & *S. caffrorum*), B.Rosengurt, *Gramineas Uruguayas I* (1970) (202, Fig. 83 as *S. caffrorum* & *S. technicum*), S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 842 as *Sorghum bicolor* 'nervosum' & *S. bicolor* 'bicolor'), E.Hafliger & E.Schultz, Grass Weeds, CIBA-GEIGY (1:135(1980)).

**Images:** D.Sharp & B.K.Simon, *AusGrass*. Grasses of Australia. CD-Rom Version 1.0. (2002);, F.van Oudtshoorn, *Guide to Grasses of Southern Africa* (1999).

**Derivation** (Clifford & Bostock 2007): L. bis, twice; color, color. Two-colored, usually with respect to spikelets or florets.

**Classification.** Subfamily Panicoideae. Tribe: Andropogoneae. Subtribe SACCHARINAE.

**Habit, Vegetative Morphology.** Annual. Culms erect, robust, 100–600 cm long, 50–300 mm diam. Culm-nodes glabrous. Leaves cauline. Ligule an eciliate membrane, 1–3 mm long. Leaf-blade base broadly rounded. Leaf-blades 30–100 cm long, 5–10 mm wide.

**Inflorescence.** Inflorescence a panicle with branches tipped by a raceme. Peduncle straight or deflexed. Panicle open or contracted, lanceolate or ovate or globose, equilateral or nodding, 4–50 cm long, 2–20 cm wide. Primary panicle branches appressed or spreading, not whorled, moderately divided. Panicle branches pubescent or villous. Racemes bearing few fertile spikelets, 1–6 fertile spikelets on each. Rhachis tough, ciliate on margins. Rhachis internodes filiform or linear, 0.5–5 mm long. Rhachis internode tip transverse. Spikelets in pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, filiform, ciliate.

**Sterile Spikelets.** Companion sterile spikelets well-developed, male, lanceolate, as long as fertile, separately deciduous. Companion sterile spikelet glumes herbaceous, muticous. Companion sterile spikelet lemmas enclosed by glumes.

**Fertile Spikelets.** Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets oblong or ovate or obovate or orbicular, dorsally compressed, 3–10 mm long, persistent on plant. Spikelet callus glabrous or pilose, base obtuse.

**Glumes.** Glumes dissimilar, with lower wider than upper, exceeding apex of florets, firmer than fertile lemma, parallel to lemmas or gaping. Lower glume ovate, 1 length of spikelet, chartaceous or coriaceous, pallid or red or black, 2-keeled, keeled above. Lower glume surface glabrous or pilose. Lower glume apex obtuse or acute. Upper glume ovate, chartaceous or coriaceous, 1-keeled, keeled above, 5–7 -veined. Upper glume surface glabrous or pubescent. Upper glume margins ciliate. Upper glume apex entire or dentate, 2 -fid.

**Florets.** Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret elliptic, 0.8 length of spikelet, hyaline, 2–5 -veined, ciliolate on margins. Fertile lemma obovate, 1–3 mm long, hyaline, 1–3 -veined, 0–3 -veined, one-veined or several-veined. Lemma margins ciliate. Lemma apex entire or dentate, 2 -fid, muticous or awned, 1 -awned. Principal lemma awn from a sinus, geniculate, with twisted column. Column of lemma awn pubescent, hairy on the spiral. Palea present.

**Flower and Fruit.** Lodicules 2, ciliate. Caryopsis exposed between gaping lemma and palea at maturity.

$N = 10$  (2 refs TROPICOS).  $2n = 20$  (5 refs TROPICOS).

**Distribution (TDWG).** **Continent.** Europe (\*), Africa, Temperate Asia, Tropical Asia, Australasia (\*), Pacific, North America, South America.

**Region.** Northern Europe (\*), Middle Europe, Southwestern Europe, Southeastern Europe, Eastern Europe.

**Country /Province /State.** : Great Britain (\*). : Austria, Czechoslovakia, Hungary. : Corsica, France, Portugal, Spain. : Bulgaria, Greece, Italy, Romania, Yugoslavia. Krym, Central European Russia, 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.** Egypt (+), Libya. Cape Verde, Madeira. Rwanda. Chad, Ethiopia (inc. Eritrea), Sudan. Angola. Namibia, Botswana, Limpopo, North-West, Gauteng, Mpumalanga, Swaziland, Free State, Kwazulu-Natal, Northern Cape. Mauritius (\*), Madagascar (\*), Seychelles. Siberia, Russian far east, **Middle Asia, Caucasus, Western Asia, Arabian Peninsula, China (+), Mongolia, Eastern Asia.** Buryatiya, Chita. Amur, Primorye, Sakhalin. Kazakhstan, Kirgizistan, Turkmenistan, Tadjikistan, Uzbekistan. Afghanistan, Iraq. Gulf States, Oman. Japan, Nansei-Shoto, Taiwan. Japan Honshu, or Shikoku, or Kyushu. **Indian Subcontinent, Indo-China, Malesia, Papuaia.** Bangladesh, Eastern Himalaya, Pakistan, Sri Lanka. Andaman Is, Myanmar, Vietnam. Cocos (Keeling) Is, Java, Malaya, Singapore, Christmas I. Solomon Is (\*). **Australia, New Zealand.** Western Australia (\*), Northern Territory (\*), South Australia (\*), Queensland (\*), New South Wales (\*), Victoria (\*). New Zealand North I, New Zealand South I. **Southwestern Pacific, South-central Pacific, Northwestern Pacific, North-central Pacific.** Fiji (\*), Niue (\*), New Caledonia (\*), Samoa (\*), Tonga (\*), Wallis-Futuna Is (\*). Cook Is (\*), Society Is (\*). Marianas (\*), Marshall Is (\*), Wake Is (\*). Hawaii (\*). **Western Canada, Northwest USA, North-central USA, Southwestern USA, South-central USA, Southeastern USA, Mexico.** British Columbia. Oregon, Washington. Illinois, Nebraska, Wisconsin. Arizona, California, Nevada, Utah. New Mexico, Texas. Florida, Louisiana. Central Mexico, Northeast Mexico, Gulf (Mexico), Northwest Mexico, Southwest Mexico, Southeast Mexico. **Mesoamerica, Caribbean, Western South America, Brazil, Southern South America.** Colombia. Brazil West Central, Brazil North, Brazil Southeast, Brazil South. Argentina Northeast.

**TDWG4.** Darjeeling, Bhutan, Sikkim. Kimberley, South-West. Darwin & Gulf, Victoria R & Barkly Tableland, Central Australia. Southern. North, Central, South East, Inland. Coast, Tablelands, Western Slopes, Western Plains. Buenos Aires, Entre Rios. Mexico State, Morelos, Puebla. Coahuila, Chihuahua, Durango, Guanajuato, Neuvo Leon, Queretaro, San Luis Potosi, Tamaulipas, Zacatecas. Veracruz. Baja California, Sinaloa, Sonora. Guerrero, Jalisco, Michoacan, Nayarit, Oaxaca. Campeche, Chiapas, Quintana Roo, Yucatan.

**Sorghum burmahicum** Raiz. *Indian Forester*, 1 iii. 315 (1957).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online, N.L.Bor, Grasses of Burma, Ceylon, India and Pakistan (1960).

**TYPE** from Myanmar. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *C.E. Parkinson 15608*, 21 Nov 1937, Burma: Minbu District: Mon Chaung (DD).

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): L. -icum, belonging to. From Burma, now Myanmar.

**Classification.** Subfamily Panicoideae. Tribe: Andropogoneae. Subtribe SACCHARINAE.

**Habit, Vegetative Morphology.** Annual. Culms erect, 120–150 cm long. Culm-nodes bearded. Leaves cauline. Ligule an eciliate membrane, 3 mm long. Leaf-blades 25–50 cm long, 4–8 mm wide. Leaf-blade surface pubescent, hairy on both sides. Leaf-blade margins spinulose. Leaf-blade apex acuminate.

**Inflorescence.** Inflorescence a panicle with branches tipped by a raceme. Panicle open, oblong, 10–23 cm long. Primary panicle branches whorled at most nodes, simple, 1–8 cm long. Panicle branches capillary, scaberulous. Racemes bearing few fertile spikelets, 4–5 fertile spikelets on each. Rhachis fragile at the nodes, ciliate on margins. Rhachis internodes filiform, 3.5–4 mm long. Rhachis internode tip transverse, cupuliform. Spikelets in pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, filiform, 3.5–4.25 mm long, 1 length of fertile spikelet, ciliate.

**Sterile Spikelets.** Companion sterile spikelets well-developed, male, lanceolate, 4 mm long, as long as fertile, separately deciduous. Companion sterile spikelet glumes chartaceous, 5–7 -veined, setose, mucous. Companion sterile spikelet lemmas enclosed by glumes.

**Fertile Spikelets.** Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets elliptic, dorsally compressed, obtuse, 4 mm long, falling entire, deciduous with accessory branch structures. Spikelet callus pubescent, base obtuse. Spikelet callus hairs red.

**Glumes.** Glumes dissimilar, with lower wider than upper, exceeding apex of florets, firmer than fertile lemma. Lower glume elliptic, 1 length of spikelet, chartaceous, much thinner above, dark brown, without keels, keel-less except near apex, 5 -veined. Lower glume surface pilose. Lower glume apex dentate, 2 -fid. Upper glume elliptic, chartaceous, much thinner above, dark brown, without keels, 5 -veined. Upper glume surface glabrous. Upper glume margins ciliate. Upper glume apex acuminate.

**Florets.** Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret elliptic, 0.8 length of spikelet, hyaline, 2 -veined, ciliolate on margins. Fertile lemma oblong, 1.5 mm long, hyaline, 1 -veined, 0–3 -veined, one-veined. Lemma margins ciliate. Lemma apex dentate, 2 -fid, awned, 1 -awned. Principal lemma awn from a sinus, geniculate, 10–20 mm long overall, with twisted column. Column of lemma awn pubescent, hairy on the spiral. Palea absent or minute.

**Flower and Fruit.** Lodicules 2, glabrous. Anthers 3, 2 mm long.

**Distribution (TDWG). Continent.** Tropical Asia.

**Country /Province /State. Indo-China.** Myanmar, Thailand.

### **Sorghum cernuum** (Ard.) Host. *Gram. Austr.* 4:2 (1809).

Regarded by K as a synonym (*S. bicolor*).

**Accepted by:** N.L.Bor, *Grasses of Burma, Ceylon, India and Pakistan* (1960), N.Tsvelev, *Grasses of the Soviet Union* (1983).

**Basionym or Replaced Name:** *Holcus cernuus* Ard., *Saggi Sci. Lett. Accad. Padova* 1: 128, pl. 3, f. 1, 2 (1786).

**Illustrations (Books):** N.L.Bor, *The grasses of Burma, Ceylon, India and Pakistan* (1960) (230, Fig 17 as var. *globosum*), K.M.Matthew, *Flora Palni Hills* (1996) (869, Pl 869).

**Derivation** (Clifford & Bostock 2007): *L. nodding*. Panicle branches pendant.

**Classification.** Subfamily Panicoideae. Tribe: Andropogoneae. Subtribe SACCHARINAE.

**Distribution (TDWG). Continent.** Temperate Asia.

**Country /Province /State. China.** Xinjiang.

**TDWG4.**

### **Sorghum controversum** (Steud.) Snowden. *Journ. Linn. Soc. Lond., Bot.*, lv. 210 (1955).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online, N.L.Bor, *Grasses of Burma, Ceylon, India and Pakistan* (1960).

**Basionym or Replaced Name:** *Andropogon controversus* Steud., *Syn. Pl. Glumac.* 1: 391 (1854). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: *A. laxus* Willd. missapplied by Roxb., *Fl. Ind.* 1: 275. 1820..

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): *L. controversum*. Usually applied to species which had been inadvertently misidentified.

**Classification.** Subfamily Panicoideae. Tribe: Andropogoneae. Subtribe SACCHARINAE.

**Habit, Vegetative Morphology.** Perennial, caespitose. Rhizomes elongated. Culms erect, 50–200 cm long, 3–10 mm diam. Culm-nodes glabrous or pubescent. Lateral branches lacking. Leaf-sheaths 7–15 cm long, glabrous on surface. Ligule a ciliolate membrane. Leaf-blades 25–60 cm long, 8–22 mm wide. Leaf-blade surface glabrous.

**Inflorescence.** Inflorescence a panicle with branches tipped by a raceme. Panicle open, ovate or pyramidal, 15–30 cm long, 5–15 cm wide. Primary panicle branches 3–4 -nate, whorled at lower nodes, 5–16 cm long. Panicle branches flexuous, pubescent in axils. Racemes 0.8–2.2 cm long, bearing few fertile spikelets, bearing



2–5 fertile spikelets on each. Rhachis fragile at the nodes, ciliate on margins. Rhachis hairs white or tawny, 0.7–1 mm long. Rhachis internodes linear, 2–4 mm long. Rhachis internode tip transverse. Spikelets in pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, filiform, flattened, 2–4 mm long, ciliate.

**Sterile Spikelets.** Companion sterile spikelets well-developed, male, linear or lanceolate, dorsally compressed, 6–6.25 mm long, longer than fertile, separately deciduous. Companion sterile spikelet glumes chartaceous, 7–9 -veined, pubescent, mucous. Companion sterile spikelet lemmas enclosed by glumes.

**Fertile Spikelets.** Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets elliptic, dorsally compressed, acute or acuminate, 5–6.2 mm long, 1.5–2.7 mm wide, falling entire, deciduous with accessory branch structures. Spikelet callus pilose, base obtuse.

**Glumes.** Glumes dissimilar, with lower wider than upper, exceeding apex of florets, firmer than fertile lemma. Lower glume ovate, 1 length of spikelet, chartaceous, much thinner above, without keels, keel-less except near apex, 9–11 -veined. Lower glume surface pubescent. Lower glume margins ciliolate. Lower glume apex emarginate or acute. Upper glume ovate, chartaceous, much thinner above, without keels, 7 -veined. Upper glume margins scaberulous, ciliolate.

**Florets.** Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret oblong, 4.5–4.7 mm long, hyaline, 2 -veined, ciliolate on margins, acute. Fertile lemma oblong, 3–4 mm long, hyaline, 1 -veined, 0–3 -veined, one-veined. Lemma margins ciliolate. Lemma apex lobed, 2 -fid, incised 0.25–0.33 of lemma length, awned, 1 -awned. Principal lemma awn from a sinus, geniculate, 10–14 mm long overall, with twisted column. Column of lemma awn glabrous. Palea lanceolate, 2.5–3 mm long, hyaline, 0 -veined.

**Flower and Fruit.** Lodicules 2, oblong, fleshy, ciliate. Anthers 3, 3–3.75 mm long. Stigmas 2. Caryopsis with adherent pericarp.

**Distribution (TDWG). Continent.** Tropical Asia.

**Country /Province /State. Indian Subcontinent.** India.

**TDWG4.** Tamilnadu.

**Sorghum deccanense** Stapf ex Raiz. Indian Forester, 80: 43 (1954).

**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, Madhya Pradesh: Duthie 10025 (K syn) ; India, Madhya Pradesh: Duthie 8538 (K syn) ; India, Deccan: Woodrow (K syn).

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): L. -*ense*, denoting origin. From the Deccan region of India.

**Classification.** Subfamily Panicoideae. Tribe: Andropogoneae. Subtribe SACCHARINAE.

**Habit, Vegetative Morphology.** Annual. Culms erect, 80–150 cm long. Culm-nodes bearded. Ligule a ciliolate membrane, pilose on abaxial surface. Leaf-blades 10–50 cm long, 2–10 mm wide.

**Inflorescence.** Inflorescence a panicle with branches tipped by a raceme. Panicle open, oblong, 10–20 cm long. Primary panicle branches whorled at most nodes, simple. Racemes bearing 2–4 fertile spikelets on each. Rhachis fragile at the nodes, ciliate on margins. Rhachis hairs white or red. Rhachis internodes filiform. Rhachis internode tip transverse, cupuliform. Spikelets in pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, filiform, ciliate.

**Sterile Spikelets.** Companion sterile spikelets well-developed, male, linear to lanceolate, 5–7 mm long, shorter than fertile, separately deciduous. Companion sterile spikelet glumes chartaceous, mucous. Companion sterile spikelet lemmas enclosed by glumes.

**Fertile Spikelets.** Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets lanceolate, dorsally compressed, 5.5–8 mm long, falling entire, deciduous with accessory branch structures. Spikelet callus bearded, base obtuse. Spikelet callus hairs white or red.

**Glumes.** Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma, shiny. Lower glume ovate, 1 length of spikelet, coriaceous, dark brown or black, without keels, keel-less except near apex. Lower glume surface villous. Lower glume hairs 3–4 mm long. Lower glume apex dentate, 2 -fid, rostrate. Upper glume ovate, coriaceous, without keels.

**Florets.** Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret elliptic, hyaline. Fertile lemma oblong, 2–4 mm long, hyaline, 1 -veined, 0–3 -veined, one-veined. Lemma apex dentate, 2 -fid, awned, 1 -awned. Principal lemma awn from a sinus, geniculate, 20–40 mm long overall, with twisted column. Column of lemma awn pubescent, hairy on the spiral. Palea absent or minute.

**Distribution (TDWG). Continent.** Temperate Asia and Tropical Asia.

**Country /Province /State.** Arabian Peninsula. Oman. Indian Subcontinent. India.

**Sorghum halepense** (L.) Pers. *Syn.* i. 101 (1805).

**Accepted by:** R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), 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), 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), W.D.Clayton & N.Snow, *Key to Pacific Grasses* (2010).

**TYPE** from Syria. **Basionym or Replaced Name:** *Holcus halepensis* L., *Sp. Pl.* 2: 1047–1048 (1753). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Syria:, (HT: ?; ST: LINN-1212.7).

**Illustrations (Books):** L.K.A. Chippindall, *Grasses and Pastures of South Africa* (1955) (460, Fig. 377), G.E.Gibbs Russell et al, *Grasses of Southern Africa* (1990) (301, Fig. 194), J.Bosser, *Graminees des Paturage et des Cultures a Madagascar* (1969) (263, Fig. 95), N.Feinbrun-Dothan, *Flora Palaestina* 4 (1986) (Pl. 427), L.Boulos, *Flora of Egypt* 4 (2005) (330, Pl. 97), N.L.Bor, *Gramineae in Flora of Iraq* (1968) (549, Pl. 211), T.Koyama, *Grasses of Japan and its neighbouring regions* (1987) (432, Fig 169), C-C Hsu, *Flora of Taiwan, Vol 5* (1978) (770), C-C Hsu, *Taiwan Grasses* (1975), K.M.Matthew, *Illustrations on the Flora of Tamilnadu Carnatic* (1982) (Pl. 937 & 938), T.A.Cope, *Flora of Pakistan 143: Poaceae* (1982) (296, Fig. 32), J.P.Jessop, G.R.M. Dashorst & F.M.James, *Grasses of South Australia* (2006), S.W.L.Jacobs, R.D.B.Whalley & D.J.B.Wheeler., *Grasses of New South Wales, 4th edn* (2008) (373), J.C.Tothill, & J.B.Hacker. *The grasses of southern Queensland* (1983) (378), W.L.Wagner et al., *Manual of the Flowering Plants of Hawai'i, Vol. 2* (1990) (1595, Pl. 236), M.E.Barkworth et al, *Flora of North America north of Mexico Vol 25 Poaceae, part 2* (2003) (629), F.W.Gould, *The Grasses of Texas* (1975) (576, Fig. 302), A.S.Hitchcock, *Manual of the Grasses of the West Indies* (1936) (408, Fig. 361), E.G.Nicora, *Los Generos de Gramineas de America Austral* (1987) (521, Fig. 187), L.B. Smith, D.C. Wasshausen, R.M. Klein *Flora Illustrada Catarinensis Gramineas* (1981–1982) (1223, Fig. 240 & 1225, Fig. 241 as var. *muticum*), A.Burkat, *Flora Illustrada de Entre Rios (Argentina), Pt II, Gramineas* (1969) (466 Fig. 197 & 470, Fig. 200), W.Burger, *Flora Costaricensis* 15, Gramineae: *Fieldiana Botany New Series* 4 (1980) (538, Fig 201), A.L.Cabrera, *Flora de la Provincia de Buenos Aires, IV Pt 2 Gramineas* (1970) (580, Fig. 155), M.N.Correa, *Flora Patagonica Parte III, Gramineae* (1978) (553, Fig 373 as var. *muticum*), B.Rosengurt, *Gramineas Uruguayas I* (1970), E.Judziewicz, *Flora of the Guianas*, 187. *Poaceae* (1990) (599, Fig 102), R.Pilger, *Die Naturlichen Pflanzenfamilien* 14e (1940) (145, Fig. 79), S-L Chen et al, *Flora of China, Illustrations, Poaceae* (2007) (Fig. 840), E.Hafliger & E.Schultz, *Grass Weeds, CIBA-GEIGY* (1:136(1980)).

**Illustrations (Journals):** *Ruizia* (13:430 Fig 57a-b (1993)).

**Images:** D.Sharp & B.K.Simon, *AusGrass. Grasses of Australia. CD-Rom Version 1.0. (2002);*, F.van Oudtshoorn, *Guide to Grasses of Southern Africa* (1999).

**Derivation** (Clifford & Bostock 2007): L. -ense, denoting origin. From Halab, Arabic for Aleppo, Syria.

**Classification.** Subfamily Panicoideae. Tribe: Andropogoneae. Subtribe SACCHARINAE.

**Habit, Vegetative Morphology.** Perennial. Rhizomes elongated, scaly. Culms erect or geniculately ascending or decumbent, 50–300 cm long. Culm-nodes pubescent. Leaves cauline. Ligule a ciliolate membrane. Leaf-blades 20–90 cm long, 5–40 mm wide. Leaf-blade margins scaberulous.

**Inflorescence.** Inflorescence a panicle with branches tipped by a raceme. Panicle open, lanceolate or pyramidal, 10–55 cm long, 3–25 cm wide. Primary panicle branches whorled at most nodes, moderately divided. Racemes 1.2–2.5 cm long, bearing few fertile spikelets, bearing 1–5 fertile spikelets on each. Rhachis fragile at the nodes, ciliate on margins. Rhachis internodes filiform. Rhachis internode tip transverse, cupuliform. Spikelets in pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, filiform, ciliate.

**Sterile Spikelets.** Companion sterile spikelets well-developed, male, lanceolate, 4.5–6.5 mm long, as long as fertile, separately deciduous. Companion sterile spikelet glumes chartaceous, 5 -veined, muticous. Companion sterile spikelet lemmas enclosed by glumes.

**Fertile Spikelets.** Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets elliptic, dorsally compressed, 4.5–5(–5.5) mm long, falling entire, deciduous with accessory branch structures. Spikelet callus pubescent, base obtuse.

**Glumes.** Glumes dissimilar, with lower wider than upper, exceeding apex of florets, firmer than fertile lemma. Lower glume elliptic, 1 length of spikelet, coriaceous, pallid or dark brown or red or purple or black, 2-keeled, keeled above. Lower glume surface glabrous or pubescent. Lower glume apex dentate, 3 -fid. Upper glume ovate, coriaceous, without keels. Upper glume surface glabrous or pubescent.

**Florets.** Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret elliptic, 0.8 length of spikelet, hyaline, 2 -veined, ciliolate on margins. Fertile lemma elliptic, 2–2.5 mm long, hyaline, 1 -veined, 0–3 -veined, one-veined. Lemma margins ciliate. Lemma apex entire or dentate, 2 -fid, mucicous or awned, 1 -awned. Principal lemma awn from a sinus, geniculate, 10–16 mm long overall, with twisted column. Column of lemma awn pubescent, hairy on the spiral. Palea present.

**Flower and Fruit.** Lodicules 2, ciliate.

$N = 9$  (1 ref TROPICOS), or 20 (8 refs TROPICOS), or 30 (1 ref TROPICOS).  $2n = 40$  (6 refs TROPICOS).

**Distribution (TDWG).** **Continent.** Europe (\*), Africa, Temperate Asia, Tropical Asia, Australasia (\*), Pacific, North America, South America.

**Region.** Northern Europe (\*), Middle Europe, Southwestern Europe, Southeastern Europe, Eastern Europe.

**Country /Province /State.** : Great Britain (\*). : Czechoslovakia, Hungary, Switzerland. : Balears, Corsica, France, Portugal, Sardinia, Spain. : Albania, Bulgaria, Greece, Italy, Crete, Romania, Sicily, Turkey Europe, Yugoslavia. Krym, Northwest European Russia, Ukraine. **Northern Africa, Macaronesia, West tropical Africa, South tropical Africa, Southern Africa** (\*), **Western Indian ocean.** Algeria, Egypt, Libya, Tunisia. Azores, Canary Is, Cape Verde, Madeira. Benin, Senegal. Malawi, Mozambique, Zimbabwe. Namibia, Limpopo, North-West, Gauteng, Mpumalanga, Swaziland, Free State, Kwazulu-Natal, Northern Cape, Western Cape, Eastern Cape. Madagascar. **Middle Asia, Caucasus, Western Asia, Arabian Peninsula, China, Eastern Asia.** Kazakhstan, Kirgizistan, Turkmenistan, Tadjikistan, Uzbekistan. Afghanistan, Iran, Iraq. Gulf States, Oman. China South Central, Hainan, China Southeast. Japan, Nansei-Shoto, Ogasawara-shoto, Taiwan. Japan Honshu. **Indian Subcontinent, Indo-China, Papuasia.** Bangladesh, India, Nepal, Pakistan, West Himalaya. Myanmar, Thailand. New Guinea, Solomon Is (\*). **Australia, New Zealand.** Western Australia (\*), South Australia (\*), Queensland (\*), New South Wales (\*), A.C.T. (\*), Victoria (\*). New Zealand North I, New Zealand South I. **Southwestern Pacific, South-central Pacific, Northwestern Pacific, North-central Pacific.** Fiji (\*), Niue (\*), New Caledonia (\*), Samoa (\*), Tonga (\*). Cook Is (\*), Easter Is (\*), Marquesas (\*), Pitcairn Is (\*), Society Is (\*). Caroline Is (\*), Marianas (\*). Hawaii (\*). **Eastern Canada, Northeast USA, Southwestern USA, South-central USA, Southeastern USA, Mexico.** Ontario. 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.** Bahamas, Bermuda, Cayman Is, Cuba, Dominican Republic, Haiti, Jamaica, Leeward Is, Windward Islands, Puerto Rico, Trinidad-Tobago. Bolivia, Colombia. Brazil West Central, Brazil Northeast, Brazil Southeast, Brazil South. Argentina Northeast, Argentina Northwest, Chile North, Chile Central, Chile South, Desventurados Is.

**TDWG4.** Anhui, Fujian, Guangdong. Sichuan, Yunnan. Kerala. Punjab. Kimberley, Ereman, South-West. NW & Lake Eyre, Southern. North, Central, South East. Coast, Tablelands, Western Slopes, Western Plains. Jujuy (\*), La Rioja, Salta, Tucuman. Buenos Aires, Chaco, Cordoba, Corrientes, Distrito Federal, Entre Rios, La Pampa, Misiones, Santa Fe. Río Negro. Tarapaca, Antofagasta, Atacama. Coquimbo, Valparaiso, O'Higgins, Biobio, La Araucania. Magellanes. Distrito Federal, Mexico State, Morelos, Puebla. Coahuila, Chihuahua, Durango, Guanajuato, Hidalgo, Neuvo Leon, Queretaro, San Luis Potosi, Tamaulipas, Zacatecas. Veracruz. Baja California, Sinaloa, Sonora. Colima, Guerrero, Jalisco, Michoacan, Nayarit, Oaxaca. Campeche, Chiapas, Quintana Roo, Tabasco, Yucatan.

**Sorghum miliaceum** (Roxb.) Snowden. *Journ. Linn. Soc. Lond., Bot.*, iv. 205 (1955).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), N.L.Bor, *Grasses of Burma, Ceylon, India and Pakistan* (1960).

**TYPE** from India. **Basionym or Replaced Name:** *Andropogon miliaceus* Roxb., *Fl. Ind.*, ed. 1820 1: 276 (1820). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: India: cult. at Calcutta from seeds collected in the mountains north of Oude, *Wallich herb.* 8778B (NT: K).

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): L. -acea, resembling. Resembling *Milium*.

**Classification.** Subfamily Panicoideae. Tribe: Andropogoneae. Subtribe SACCHARINAE.

**Habit, Vegetative Morphology.** Perennial, caespitose, clumped loosely. Rhizomes elongated. Culms 200–300 cm long, 5–10 mm diam. Culm-nodes glabrous or pubescent. Lateral branches lacking or sparse. Ligule a ciliolate membrane. Leaf-blades linear or lanceolate, 30–90 cm long, 10–40 mm wide. Leaf-blade surface smooth. Leaf-blade margins scabrous.

**Inflorescence.** Inflorescence a panicle with branches tipped by a raceme. Panicle open, ovate or pyramidal, 25–55 cm long, 10–25 cm wide. Primary panicle branches 4–5-nate, whorled at most nodes, 10–20 cm long. Panicle branches flexuous. Racemes 1–2.2 cm long, bearing few fertile spikelets, bearing 2–5 fertile spikelets on each. Rhachis fragile at the nodes, ciliate on margins. Rhachis hairs white or tawny, 0.5–1 mm long. Rhachis internodes linear, 2–4 mm long. Rhachis internode tip transverse. Spikelets in pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, filiform, flattened, 2–4 mm long, ciliate.

**Sterile Spikelets.** Companion sterile spikelets well-developed, male, lanceolate, dorsally compressed, 5–6.5 mm long, longer than fertile, separately deciduous. Companion sterile spikelet glumes chartaceous, 7–8-veined, muticous. Companion sterile spikelet lemmas enclosed by glumes.

**Fertile Spikelets.** Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets elliptic, dorsally compressed, subacute, 4–5.5 mm long, 1.5–2.3 mm wide, falling entire, deciduous with accessory branch structures. Spikelet callus pilose, base obtuse.

**Glumes.** Glumes dissimilar, with lower wider than upper, exceeding apex of florets, firmer than fertile lemma. Lower glume ovate, 1 length of spikelet, coriaceous, much thinner above, without keels, keel-less except near apex, 8–12-veined. Lower glume lateral veins with cross-veins. Lower glume margins ciliolate. Lower glume apex dentate, 3-fid. Upper glume ovate, coriaceous, much thinner above, without keels, 7-veined. Upper glume lateral veins with cross-veins. Upper glume margins scabrous.

**Florets.** Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret lanceolate, 3.5–5 mm long, hyaline, 2-veined, ciliolate on margins, acute. Fertile lemma ovate, 2.5–4 mm long, hyaline, 1-veined, 0–3-veined, one-veined. Lemma margins ciliolate. Lemma apex dentate, 2-fid, incised 0.2–0.25 of lemma length, muticous or awned, 1-awned. Principal lemma awn from a sinus, geniculate, 10–16 mm long overall, with twisted column. Column of lemma awn glabrous. Palea absent or minute.

**Flower and Fruit.** Lodicules 2, oblong, fleshy, ciliate. Anthers 3, 2.5–3.5 mm long. Stigmas 2. Caryopsis with adherent pericarp.

**Distribution (TDWG). Continent.** Tropical Asia.

**Country /Province /State. Indian Subcontinent.** India, Nepal.

### **Sorghum nervosum** Bess. ex Schult. *Mant.* 2(Add. 2): 669 (1827).

Regarded by K as a synonym (*S. bicolor*).

**Accepted by:** N.L.Bor, *Grasses of Burma, Ceylon, India and Pakistan* (1960), N.Tsvelev, *Grasses of the Soviet Union* (1983).

**Illustrations (Books):** N.L.Bor, *The grasses of Burma, Ceylon, India and Pakistan* (1960) (240, Fig 23 as var. *nervosum*).

**Derivation** (Clifford & Bostock 2007): *L. nervus*, nerve; -osa, abundance. With conspicuous nerves in the glumes or lemmas.

**Classification.** Subfamily Panicoideae. Tribe: Andropogoneae. Subtribe SACCHARINAE.

**Distribution (TDWG). Continent.** Temperate Asia.

**Country /Province /State. China, Eastern Asia.** Japan.

**TDWG4.**

### **Sorghum nitidum** (Vahl) Pers. *Syn.* i. 101 (1805).

**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), T.Koyama, *Grasses of Japan and its neighboring regions* (1987), W.D.Clayton & N.Snow, *Key to Pacific Grasses* (2010).

**TYPE** from India. **Basionym or Replaced Name:** *Holcus nitidus* Vahl, *Symb. Bot.* 2: 102 (1791). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: Hab. in India orientalis (C?).

**Illustrations (Books):** T.Koyama, *Grasses of Japan and its neighbouring regions* (1987) (431, Fig 168), C-C Hsu, *Flora of Taiwan*, Vol 5 (1978) (772), C-C Hsu, *Taiwan Grasses* (1975) (696, Pl. 1479), K.M.Matthew, *Flora Palni Hills* (1996) (870, Pl 870), H.J.Noltie, *The Grasses of Bhutan* (2000) (787, Fig. 55), S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (fig. 839).

**Images:** D.Sharp & B.K.Simon, *AusGrass*. Grasses of Australia. CD-Rom Version 1.0. (2002);

**Derivation** (Clifford & Bostock 2007): *L. niteo*, shine; Spikelets or lemmas shiny.

**Classification.** Subfamily Panicoideae. Tribe: Andropogoneae. Subtribe SACCHARINAE.

**Habit, Vegetative Morphology.** Perennial. Rhizomes absent. Culms erect, 100–200 cm long, wiry. Culm-nodes bearded. Ligule an eciliate membrane. Leaf-blades 30–60 cm long, 4–15 mm wide.

**Inflorescence.** Inflorescence a panicle with branches tipped by a raceme. Panicle open, lanceolate, dense or loose, 10–30 cm long. Primary panicle branches whorled at most nodes, moderately divided, 2–5 cm long. Panicle branches flexuous. Racemes bearing few fertile spikelets, 2–4 fertile spikelets on each. Rhachis fragile at the nodes, ciliate on margins. Rhachis hairs red. Rhachis internodes filiform. Rhachis internode tip transverse, cupuliform. Spikelets appressed, in pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, filiform, ciliate.

**Sterile Spikelets.** Companion sterile spikelets well-developed, comprising 2 subequal glumes without lemmas or male, ovate, dorsally compressed, 3–4.5 mm long, as long as fertile, separately deciduous. Companion sterile spikelet glumes chartaceous, acute, mucous. Companion sterile spikelet lemmas when present 2, enclosed by glumes, mucous.

**Fertile Spikelets.** Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. 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, 3–4.5 mm long, falling entire, deciduous with accessory branch structures. Spikelet callus bearded, base obtuse. Spikelet callus hairs red.

**Glumes.** Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma, shiny. Lower glume ovate, 1 length of spikelet, coriaceous, much thinner above, without keels, keel-less except near apex. Lower glume surface pubescent, hairy above. Lower glume hairs red. Lower glume apex acute. Upper glume ovate, coriaceous, much thinner above, without keels. Upper glume surface pubescent. Upper glume apex acute.

**Florets.** Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret lanceolate, hyaline, 2 -veined, ciliate on margins, acute. Fertile lemma ovate, hyaline, 1 -veined, 0–3 -veined, one-veined. Lemma margins ciliate. Lemma apex dentate, 2 -fid, mucous or awned, 1 -awned. Principal lemma awn from a sinus, geniculate, 7–17 mm long overall, with twisted column. Column of lemma awn glabrous. Palea absent or minute.

**Flower and Fruit.** Lodicules 2, oblong, fleshy, ciliate, hairy across the apex. Anthers 3. Stigmas 2, laterally exerted. Caryopsis with adherent pericarp.

$N = 10$  (1 ref TROPICOS).  $2n = 10$  (2 refs TROPICOS), or 40 (1 ref TROPICOS).

**Distribution (TDWG), Continent.** Temperate Asia, Tropical Asia, Australasia, Pacific.

**Country /Province /State.** **China, Eastern Asia.** China South Central, Hainan, China North-Central, China Southeast. Japan, Korea, Nansei-Shoto, Ogosawara-shoto, Taiwan. Japan Kyushu. **Indian Subcontinent, Indo-China, Malesia, Papuasia.** Eastern Himalaya, India, Pakistan, Sri Lanka, West Himalaya. Laos, Myanmar, Thailand, Vietnam. Java, Lesser Sunda Is, Philippines, Sulawesi, Sumatra. New Guinea. **Australia.** Queensland. **Northwestern Pacific.** Caroline Is, Marianas.

**TDWG4.** Shandong. Anhui, Fujian, Guangdong, Guangxi, Hunan, Jiangsu, Jiangxi, Zhejiang. Guizhou, Hubei, Sichuan, Yunnan. Bhutan. North, Central, South East.

**Sorghum propinquum** (Kunth) Hitchcock. *Lingnan Sc. Journ.* vii. 249 (1931).

**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), W.D.Clayton & N.Snow, Key to Pacific Grasses (2010).

**Basionym or Replaced Name:** *Andropogon propinquus* Kunth, *Enum. Pl.* 1: 502 (1833). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: 'Ins. Neu-Hannover, ad ripas (24. 7. 75), *c.i.* (HT: ?).

**Illustrations (Books):** C-C Hsu, *Flora of Taiwan*, Vol 5 (1978) (774), C-C Hsu, *Taiwan Grasses* (1975), H.B.Gilliland, *Grasses of Malaya* (1971) (230, Fig 50), H.Duistermaat, *Field Guide to the Grasses of Singapore* (2005) (129, Fig. 131), S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 841).

**Images:** H.B.Gilliland et al., *Flora of Malaya Vol. 3 Grasses* (1971);

**Derivation** (Clifford & Bostock 2007): L. near to. Similar to another species.

**Classification.** Subfamily Panicoideae. Tribe: Andropogoneae. Subtribe SACCHARINAE.

**Habit, Vegetative Morphology.** Perennial. Rhizomes elongated. Culms erect, 200–300 cm long. Culm-nodes pubescent. Ligule an eciliate membrane. Leaf-blades 30–100 cm long, 10–50 mm wide.

**Inflorescence.** Inflorescence a panicle with branches tipped by a raceme. Panicle open, ovate, loose, 20–60 cm long. Primary panicle branches moderately divided. Panicle branches flexuous. Racemes bearing few fertile spikelets, 2–6 fertile spikelets on each. Rhachis fragile at the nodes, ciliate on margins. Rhachis internodes filiform. Rhachis internode tip transverse, cupuliform. Spikelets appressed, in pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, filiform, ciliate.

**Sterile Spikelets.** Companion sterile spikelets well-developed, comprising 2 subequal glumes without lemmas or male, linear to lanceolate, dorsally compressed, 4–5.5 mm long, as long as fertile, separately deciduous. Companion sterile spikelet glumes chartaceous, acute, mucous. Companion sterile spikelet lemmas when present 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 elliptic, dorsally compressed, acute, 3.8–5 mm long, falling entire, deciduous with accessory branch structures. Spikelet callus pubescent, base obtuse. Spikelet callus hairs white.

**Glumes.** Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma. Lower glume ovate, 1 length of spikelet, coriaceous, much thinner above, pallid or purple, without keels, keel-less except near apex. Lower glume surface pubescent. Lower glume apex entire or dentate, 3 -fid, acute. Upper glume ovate, coriaceous, much thinner above, without keels. Upper glume surface pubescent. Upper glume apex acute.

**Florets.** Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret lanceolate, hyaline, 2 -veined, ciliate on margins, acute. Fertile lemma ovate, hyaline, 1 -veined, 0–3 -veined, one-veined. Lemma margins ciliate. Lemma apex dentate, 2 -fid, mucous. Palea absent or minute.

**Flower and Fruit.** Lodicules 2, oblong, fleshy, ciliate, hairy across the apex. Anthers 3. Stigmas 2, laterally exerted. Caryopsis with adherent pericarp.

**Distribution (TDWG). Continent.** Temperate Asia, Tropical Asia, Pacific.

**Country /Province /State. China, Eastern Asia.** China South Central, Hainan, China Southeast. Taiwan. **Indian Subcontinent, Indo-China, Malesia, Papuasiasia.** India, Sri Lanka. Cambodia, Laos, Vietnam. Borneo, Java, Lesser Sunda Is, Malaya, Singapore, Moluccas, Philippines, Sulawesi, Sumatra, Christmas I. New Guinea West Papua (Irian Jaya). New Guinea. **Northwestern Pacific.** Caroline Is, Marianas.

**TDWG4.** Fujian, Guangdong, Sichuan, Yunnan.

### **Sorghum purpureosericeum** (A.Rich.) Schweinf. & Aschers. *Beitr. Fl. Aethiop.* 310 (1867).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), N.L.Bor, *Grasses of Burma, Ceylon, India and Pakistan* (1960).

**TYPE** from Ethiopia. **Basionym or Replaced Name:** *Andropogon purpureosericeus* Hochst. ex A. Rich., *Tent. Fl. Abyss.* . . . 2: 469 (1850). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: ST: *Quartin Dillon & Petit s.n.*, Ethiopia: in convalle fluvii Mareb (P; IST: K).

LT: *Schimper, pl. Schimp. Abyss., sect. III, 1551*, Ethiopia: in regione montana Walcha provinciae Sana (K; ILT: P, MO-1837436). LT designated by Spangler, *Austral. Syst. Bot.* 16: 291 (2003).

**Illustrations (Books):** S.Phillips, *Poaceae* (Gramineae) in I.Hedberg & S.Edwards, *Flora of Ethiopia and Eritrea* (1995) (302, Fig 120).

**Illustrations (Journals):** *Hooker's Icones Plantarum* (t.3234 (1934) as *S. dimidiatum*).

**Derivation** (Clifford & Bostock 2007): *L. purpurea*, purple to reddish; *sericeum*, silky. Inflorescence invested with long purple to reddish hairs.

**Classification.** Subfamily Panicoideae. Tribe: Andropogoneae. Subtribe SACCHARINAE.

**Habit, Vegetative Morphology.** Annual. Culms erect, 30–150 cm long. Culm-nodes bearded. Leaves cauline. Ligule a ciliolate membrane, pilose on abaxial surface. Leaf-blades 10–50 cm long, 2–10 mm wide.

**Inflorescence.** Inflorescence a panicle with branches tipped by a raceme. Panicle open, oblong, 5–35 cm long. Primary panicle branches whorled at most nodes, simple. Racemes bearing 3–5 fertile spikelets on each. Rhachis fragile at the nodes, ciliate on margins. Rhachis hairs white or red, 2–3 mm long. Rhachis internodes filiform, 5 mm long. Rhachis internode tip transverse, cupuliform. Spikelets in pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, filiform, ciliate.

**Sterile Spikelets.** Companion sterile spikelets well-developed, male, linear to lanceolate, 6–10 mm long, shorter than fertile, separately deciduous. Companion sterile spikelet glumes chartaceous, mucous. Companion sterile spikelet lemmas enclosed by glumes.

**Fertile Spikelets.** Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets lanceolate, dorsally compressed, 7.5–10 mm long, falling entire, deciduous with accessory branch structures. Spikelet callus bearded, base obtuse. Spikelet callus hairs white or red.

**Glumes.** Glumes dissimilar, with lower wider than upper, exceeding apex of florets, firmer than fertile lemma, shiny. Lower glume ovate, 1 length of spikelet, coriaceous, dark brown or black, without keels, keel-less except near apex. Lower glume surface glabrous or villous. Lower glume apex acute. Upper glume ovate, coriaceous, without keels. Upper glume surface glabrous or villous.

**Florets.** Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret elliptic, 0.8 length of spikelet, hyaline, 2 -veined, ciliolate on margins. Fertile lemma oblong, 3–6 mm long, hyaline, 1 -

veined, 0–3 -veined, one-veined. Lemma margins ciliate. Lemma apex dentate, 2 -fid, awned, 1 -awned. Principal lemma awn from a sinus, geniculate, 20–40 mm long overall, with twisted column. Column of lemma awn pubescent, hairy on the spiral. Palea absent or minute.

**Flower and Fruit.** Lodicules 2, ciliate.

$N = 5$  (1 ref TROPICOS).  $2n = 10$  (1 ref TROPICOS).

**Distribution (TDWG). Continent.** Africa, Temperate Asia, Tropical Asia.

**Country /Province /State.** West tropical Africa, West-central tropical Africa, Northeast tropical Africa, East tropical Africa. Nigeria. Chad, Eritrea, Ethiopia (inc. Eritrea), Somalia, Sudan. Kenya, Tanzania, Uganda. Arabian Peninsula. Yemen. Indian Subcontinent. India.

### **Sorghum trichocladum** (Hack.) Kuntze. *Rev. Gen.* 792 (1891).

**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:** *Andropogon trichocladus* Rupr. ex Hack., *Monogr. Phan.* 6: 525 (1889). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: ST: *Liebmann* 23, Mexico: Oaxaca: in montosis graminosis inter la Galera et Pochutla (C; IST: MO-3054229). LT: *Liebmann* 24, Mexico: Oaxaca: prope Talca (C; ILT: US). LT designated by McVaugh, *Fl. Novo-Galiciana* 14: 369 (1983). ST: *Karwinsky s.n.*, Mexico: loco non indicato (W).

**Illustrations (Books):** No illustration found (BKS).

**Classification.** Subfamily Panicoideae. Tribe: Andropogoneae. Subtribe SACCHARINAE.

**Habit, Vegetative Morphology.** Perennial, caespitose. Culms 100–150 cm long. Culm-nodes bearded. Ligule an eciliate membrane. Leaf-blades 20–40 cm long, 3–8 mm wide.

**Inflorescence.** Inflorescence a panicle with branches tipped by a raceme. Panicle open, oblong, 10–15 cm long. Primary panicle branches simple, 2–4 cm long. Panicle branches capillary, flexuous. Racemes 2–3 cm long, bearing few fertile spikelets, bearing 2–5 fertile spikelets on each. Rhachis fragile at the nodes, 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, filiform, flattened, 4–5 mm long, villous, with dark brown hairs.

**Sterile Spikelets.** Companion sterile spikelets well-developed, containing empty lemmas or male, linear, dorsally compressed, 4–5 mm long, as long as fertile, separately deciduous. Companion sterile spikelet glumes chartaceous, pubescent, with white hairs, mucous. Companion sterile spikelet lemmas enclosed by glumes.

**Fertile Spikelets.** Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets ovate, dorsally compressed, 4–5 mm long, falling entire, deciduous with accessory branch structures. Spikelet callus base obtuse.

**Glumes.** Glumes dissimilar, with lower wider than upper, exceeding apex of florets, firmer than fertile lemma. Lower glume ovate, 1 length of spikelet, coriaceous, much thinner above, dark brown, without keels, keel-less except near apex. Lower glume surface villous. Lower glume hairs dark brown, 1–3 mm long. Lower glume apex obtuse. Upper glume ovate, coriaceous, much thinner above, without keels.

**Florets.** Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret lanceolate, hyaline, 2 -veined, acute. Fertile lemma oblong, hyaline, 1 -veined, 0–3 -veined, one-veined. Lemma apex lobed, 2 -fid, incised 0.33 of lemma length, awned, 1 -awned. Principal lemma awn from a sinus, geniculate, 15–25 mm long overall, with twisted column. Column of lemma awn glabrous. Palea absent or minute.

**Flower and Fruit.** Lodicules 2, oblong, fleshy, ciliate. Anthers 3. Stigmas 2. Caryopsis with adherent pericarp.

**Distribution (TDWG). Continent.** North America, South America.

**Country /Province /State.** Mexico. Northwest Mexico, Southwest Mexico. Mesoamerica. Guatemala, Honduras.

**TDWG4.** Sinaloa. Colima, Guerrero, Jalisco, Michoacan, Nayarit, Oaxaca. Chiapas.

### **Sorghum versicolor** Anderss. Peters, *Reise Mossamb. Bot.* 563. (1864).

**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: Mozambique: Boror, Peters.

**Illustrations (Books):** G.V.Pope et al., *Flora Zambesiaca* 10 (4(2002):28, t. 10), L.K.A. Chippindall, *Grasses and Pastures of South Africa* (1955) (Plt. 14).

**Images:** F.van Oudtshoorn, *Guide to Grasses of Southern Africa* (1999).

**Derivation** (Clifford & Bostock 2007): L. variously colored. Spikelets variously colored as with glumes being green in the lower third, purple in the middle and brown in the upper third.

**Classification.** Subfamily Panicoideae. Tribe: Andropogoneae. Subtribe SACCHARINAE.

**Habit, Vegetative Morphology.** Annual or perennial, short-lived. Culms erect, 25–250 cm long. Culm-nodes bearded. Leaves cauline. Ligule a ciliolate membrane, pilose on abaxial surface. Leaf-blades 10–30 cm long, 3–10 mm wide.

**Inflorescence.** Inflorescence a panicle with branches tipped by a raceme. Panicle open, oblong, 5–25 cm long. Primary panicle branches whorled at most nodes, simple. Racemes bearing 3–7 fertile spikelets on each. Rhachis fragile at the nodes, ciliate on margins. Rhachis hairs red, 2 mm long. Rhachis internodes filiform, 3.5–5 mm long. Rhachis internode tip transverse, cupuliform. Spikelets in pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, filiform, ciliate.

**Sterile Spikelets.** Companion sterile spikelets well-developed, male, linear to lanceolate, 3–5 mm long, shorter than fertile, separately deciduous. Companion sterile spikelet glumes chartaceous, muticous. Companion sterile spikelet lemmas enclosed by glumes.

**Fertile Spikelets.** Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets elliptic or oblong, dorsally compressed, 5–7 mm long, falling entire, deciduous with accessory branch structures. Spikelet callus bearded, base obtuse. Spikelet callus hairs white or red.

**Glumes.** Glumes dissimilar, with lower wider than upper, exceeding apex of florets, firmer than fertile lemma, shiny. Lower glume ovate, 1 length of spikelet, coriaceous, dark brown or black, without keels, keel-less except near apex. Lower glume surface glabrous or pilose. Lower glume apex acute. Upper glume ovate, coriaceous, without keels. Upper glume surface glabrous or pilose.

**Florets.** Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret elliptic, 0.8 length of spikelet, hyaline, 2 -veined, ciliolate on margins. Fertile lemma oblong, 3–5 mm long, hyaline, 1 -veined, 0–3 -veined, one-veined. Lemma margins ciliate. Lemma apex dentate, 2 -fid, awned, 1 -awned. Principal lemma awn from a sinus, geniculate, 25–40 mm long overall, with twisted column. Column of lemma awn pubescent, hairy on the spiral. Palea absent or minute.

**Flower and Fruit.** Lodicules 2, ciliate.

$2n = 10$  (3 refs TROPICOS).

**Distribution (TDWG), Continent.** Africa.

**Country /Province /State.** Northeast tropical Africa, East tropical Africa, South tropical Africa, Southern Africa. Chad, Ethiopia (inc. Eritrea), Somalia. Kenya, Tanzania. Angola, Malawi, Mozambique, Zambia, Zimbabwe. Namibia, Botswana, Limpopo, North-West, Gauteng, Mpumalanga, Kwazulu-Natal.

**Sorghum virgatum** (Hack.) Stapf. *Prain, Fl. Trop. Afr.* ix. 111. (1917).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online.

**TYPE** from Egypt, Sudan. **Basionym or Replaced Name:** *Andropogon sorghum* var. *virgatus* Hack., *Monogr. Phan.* 6: 504 (1889). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: ST: *Ehrenberg s.n.*, Egypt: ad Damiette ST: *Kotschy 173*, Sudan: Kordofan (K).

**Illustrations (Books):** No illustration found (BKS).

**Images:** L.Boulos, *Flora of Egypt* 4 (2005);.

**Derivation** (Clifford & Bostock 2007): L. virga, broom; -ata, possessing. Inflorescence arms or culms held erect.

**Classification.** Subfamily Panicoideae. Tribe: Andropogoneae. Subtribe SACCHARINAE.

**Habit, Vegetative Morphology.** Annual. Culms erect, 50–100 cm long. Culm-nodes glabrous or pubescent. Leaves cauline. Ligule a ciliolate membrane, 2 mm long. Leaf-blades 15–45 cm long, 4–8 mm wide.

**Inflorescence.** Inflorescence a panicle with branches tipped by a raceme. Panicle open, lanceolate, 15–60 cm long. Racemes 1–4 cm long, bearing 3–7 fertile spikelets on each. Rhachis fragile at the nodes, ciliate on margins. Rhachis internodes filiform. Rhachis internode tip transverse, cupuliform. Spikelets appressed, in pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, filiform, flattened, ciliate.

**Sterile Spikelets.** Companion sterile spikelets well-developed, male, linear to lanceolate, dorsally compressed, 6–7 mm long, as long as fertile, separately deciduous. Companion sterile spikelet glumes chartaceous, acute, muticous. Companion sterile spikelet lemmas enclosed by glumes.

**Fertile Spikelets.** Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets lanceolate, dorsally compressed, acute, 6.5–7 mm long, falling entire, deciduous with accessory branch structures. Spikelet callus base obtuse.



**Glumes.** Glumes dissimilar, with lower wider than upper, exceeding apex of florets, firmer than fertile lemma. Lower glume lanceolate, 1 length of spikelet, coriaceous, much thinner above, without keels, keel-less except near apex. Lower glume surface glabrous to pubescent. Lower glume margins ciliolate. Lower glume apex acute. Upper glume lanceolate, coriaceous, much thinner above, without keels. Upper glume surface glabrous to pubescent. Upper glume apex acute.

**Florets.** Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret lanceolate, 0.8 length of spikelet, hyaline, 2 -veined, acute. Fertile lemma lanceolate, dorsally compressed, 1–3 mm long, hyaline, 1 -veined, 0–3 -veined, one-veined. Lemma apex dentate, 2 -fid, awned, 1 -awned. Principal lemma awn from a sinus, geniculate, 8–16 mm long overall, with twisted column. Column of lemma awn glabrous. Palea absent or minute.

**Flower and Fruit.** Lodicules 2, oblong, fleshy. Anthers 3. Stigmas 2. Caryopsis with adherent pericarp. Hilum punctiform. Endosperm farinose. Disseminule comprising a rachis internode.

$2n = 20$  (1 ref TROPICOS).

**Distribution (TDWG).** Continent. Africa, Temperate Asia.

**Country /Province /State.** Northern Africa, West tropical Africa, Northeast tropical Africa. Egypt. Mauritania, Senegal, Niger. Chad, Sudan. Western Asia, Arabian Peninsula. Saudi Arabia.

**Sorghum x alмум** L. Parodi. *Rev. Argent. Agron.* x. 361 (1943).

**Accepted by:** R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), D.Sharp, D. & B.K.Simon, *AusGrass* (2002), N.L.Bor, *Grasses of Burma, Ceylon, India and Pakistan* (1960).

**TYPE** from Argentina. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Argentina: Córdoba: Santa Rosa, Mar 1943; semillas enviadas pro G. Niedfeld y cultivadas en el Jardín Botánico de la Facultad de Agronomía de Buenos Aires, *L.G. Parodi 14442*.

**Illustrations (Books):** J.P.Jessop, G.R.M. Dashorst & F.M.James, *Grasses of South Australia* (2006) (531, Fig. 452), A.Burkat, *Flora Ilustrada de Entre Rios (Argentina)*, Pt II, Gramineas (1969) (468, Fig. 198, 469, Fig. 199 & 471, Fig. 200), S.W.L.Jacobs, R.D.B.Whalley & D.J.B.Wheeler, *Grasses of New South Wales*, 4th edn (2008) (as *S.bicolor* subsp. *x alмум*), B.Rosengurt, *Gramineas Uruguayas I* (1970) (202, Fig. 83).

**Images:** D.Sharp & B.K.Simon, *AusGrass*. Grasses of Australia. CD-Rom Version 1.0. (2002);

**Derivation** (Clifford & Bostock 2007): L. nourishing. A nutritious forage grass.

**Classification.** Subfamily Panicoideae. Tribe: Andropogoneae. Subtribe SACCHARINAE.

**Habit, Vegetative Morphology.** Perennial. Rhizomes short. Culms erect, 200–320 cm long, 6–10 mm diam., 8–10 -noded. Culm-internodes solid, 7–40 cm long, smooth, distally glabrous. Culm-nodes pubescent. Leaves cauline. Leaf-sheaths smooth, glabrous on surface. Leaf-sheath oral hairs ciliate. Ligule a ciliolate membrane, 2.5–3.5 mm long. Leaf-blades 30–100 cm long, 25–40 mm wide. Leaf-blade surface smooth, glabrous. Leaf-blade margins scaberulous. Leaf-blade apex attenuate.

**Inflorescence.** Inflorescence a panicle with branches tipped by a raceme, terminal or terminal and axillary. Panicle open, pyramidal, 20–60 cm long, 8–25 cm wide. Primary panicle branches 4–9 -nate, whorled at most nodes, 10–15 cm long. Racemes 1.2–2.5 cm long, bearing few fertile spikelets, bearing 1–5 fertile spikelets on each. Rhachis fragile at the nodes, ciliate on margins. Rhachis internodes filiform. Rhachis internode tip transverse, cupuliform. Spikelets in pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, filiform, 3–3.5 mm long, ciliate.

**Sterile Spikelets.** Companion sterile spikelets well-developed, male, lanceolate, 5 mm long, shorter than fertile or as long as fertile, persistent or separately deciduous. Companion sterile spikelet glumes chartaceous, 9 -veined, muticous. Companion sterile spikelet lemmas enclosed by glumes.

**Fertile Spikelets.** Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets ovate, dorsally compressed, 5.5–6.5 mm long, falling entire, deciduous with accessory branch structures. Spikelet callus pubescent, base obtuse.

**Glumes.** Glumes dissimilar, with lower wider than upper, exceeding apex of florets, firmer than fertile lemma. Lower glume ovate, 1 length of spikelet, coriaceous, dark brown, 2-keeled, keeled above, 9–11 -veined. Lower glume surface flat, pubescent, hairy below. Lower glume hairs 0.5–0.8 mm long. Lower glume apex dentate, 3 -fid. Upper glume ovate, coriaceous, without keels. Upper glume surface pubescent, hairy below.

**Florets.** Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret elliptic, hyaline, 2 -veined, ciliolate on margins. Fertile lemma elliptic, hyaline, 1 -veined, 0–3 -veined, one-veined. Lemma margins ciliolate. Lemma apex entire or dentate, 2 -fid, muticous or awned, 1 -awned. Principal lemma awn from a sinus, geniculate, 8–10 mm long overall, with twisted column, deciduous.

**Flower and Fruit.** Anthers 3, 2–2.5 mm long. Caryopsis with adherent pericarp, obovoid, 3–3.8 mm long, dark brown. Embryo 0.5 length of caryopsis.

**Distribution (TDWG). Continent.** Africa, Temperate Asia, Australasia (\*), South America.

**Country /Province /State. Western Indian ocean.** Madagascar (\*). **Australia.** Western Australia (\*), Northern Territory (\*), South Australia (\*), Queensland (\*), New South Wales (\*). New Caledonia. **Western South America, Southern South America.** Peru. Argentina Northeast, Paraguay.

**TDWG4.** Kimberley, Eremean, South-West. Darwin & Gulf, Victoria R & Barkly Tableland, Central Australia. NW & Lake Eyre. North, Central, South East, Inland. Coast. Entre Rios.

**Sorghum x drummondii** (Steud.) Millsp. & Chase. *Publ. Field. Mus. Bot.* 3:21 (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), D.Sharp, D. & B.K.Simon, *AusGrass* (2002), S-L Chen et al, *Flora of China* 22 (Poaceae) (2006) (as *S. sudanense*), T.G.Tutin et al, *Flora Europaea* 5 (1980) (as *S. sudanense*), N.Tsvelev, *Grasses of the Soviet Union* (1983) (as *S. sudanense*), W.D.Clayton & N.Snow, Key to Pacific Grasses (2010).

**TYPE** from USA. **Basionym or Replaced Name:** *Andropogon drummondii* Nees ex Steud., *Syn. Pl. Glumac.* 1: 393 (1854). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *Drummond* 588, USA: Louisiana: near New Orleans and St. Louis (P?; IT: BM, K).

**Recent Synonyms:** *Sorghum sudanense* (Piper) Stapf in Prain, *Fl. Trop. Afr.* 9: 113 (1917).

**Illustrations (Books):** S.W.L.Jacobs, R.D.B.Whalley & D.J.B.Wheeler., *Grasses of New South Wales*, 4th edn (2008) (372 as *S. bicolor* subsp. *drummondii*), L.B. Smith, D.C. Wasshausen, R.M. Klein *Flora Illustrata Catarinensis Gramineas* (1981–1982) (1225, Fig. 241 as *S. sudanense*), A.Burkat, *Flora Illustrada de Entre Rios (Argentina)*, Pt II, Gramineas (1969) (471, Fig. 200 as *S. sudanense*), B.Rosengurtt, *Gramineas Uruguayas I* (1970) (as *S. sudanense*).

**Images:** D.Sharp & B.K.Simon, *AusGrass*. Grasses of Australia. CD-Rom Version 1.0. (2002);, L.Boulos, *Flora of Egypt* 4 (2005);, F.van Oudtshoorn, *Guide to Grasses of Southern Africa* (1999) (as *S. bicolor* subsp. *drummondii*).

**Derivation** (Clifford & Bostock 2007): in honor of Thomas Drummond (c. 1790–1835) Scots-born naturalist and traveller in North America.

**Classification.** Subfamily Panicoideae. Tribe: Andropogoneae. Subtribe SACCHARINAE.

**Habit, Vegetative Morphology.** Annual, culms solitary. Culms erect, 150–200 cm long, 3–6 mm diam. Leaves cauline. Ligule a ciliolate membrane. Leaf-blades 15–20 cm long, 8–12 mm wide.

**Inflorescence.** Inflorescence a panicle with branches tipped by a raceme. Panicle open, ovate or pyramidal, 15–30 cm long, 8–15 cm wide. Primary panicle branches ascending or spreading, 2–5 cm long, 5–15 cm long. Panicle branches flexuous, scaberulous. Racemes 1.5–2.5 cm long, bearing few fertile spikelets, bearing 2–5 fertile spikelets on each. Rhachis tough, ciliate on margins. Rhachis hairs 0.5–0.75 mm long. Rhachis internodes filiform, 2.5–4 mm long. Rhachis internode tip transverse, cupuliform. Spikelets appressed, in pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, filiform, flattened, 2–3.5 mm long, ciliate, with 0.5–0.75 mm long hairs.

**Sterile Spikelets.** Companion sterile spikelets well-developed, male, lanceolate, dorsally compressed, 5.5–8 mm long, shorter than fertile, persistent. Companion sterile spikelet glumes chartaceous, 9–11 -veined, glabrous, acute, muticous. Companion sterile spikelet lemmas enclosed by glumes.

**Fertile Spikelets.** Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets elliptic, dorsally compressed, subacute, 6–7.5 mm long, 2–3 mm wide, persistent on plant. Spikelet callus pilose, base obtuse.

**Glumes.** Glumes dissimilar, with lower wider than upper, exceeding apex of florets, firmer than fertile lemma, shiny. Lower glume elliptic, 1 length of spikelet, coriaceous, much thinner above, yellow or light brown, without keels, keel-less except near apex, 11–15 -veined. Lower glume primary vein scabrous. Lower glume lateral veins with cross-veins. Lower glume surface glabrous or puberulous. Lower glume apex acute. Upper glume elliptic, coriaceous, much thinner above, without keels, keel-less except near apex, 7 -veined. Upper glume primary vein scabrous. Upper glume lateral veins with cross-veins. Upper glume apex acute.

**Florets.** Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret elliptic, 5–6.5 mm long, hyaline, 2 -veined, ciliate on margins, acute. Fertile lemma ovate, 3.5–4.5 mm long, hyaline, 1 -veined, 0–3 -veined, one-veined. Lemma margins ciliate. Lemma apex dentate, 2 -fid, with lobes 0.5–1 mm long, awned, 1 -awned. Principal lemma awn from a sinus, geniculate, 10–16 mm long overall, with twisted column. Column of lemma awn glabrous. Palea absent or minute.

**Flower and Fruit.** Lodicules 2, oblong, fleshy, ciliate, hairy across the apex. Anthers 3, 4 mm long. Stigmas 2, laterally exerted. Caryopsis with adherent pericarp, ellipsoid or obovoid, dorsally compressed, 3.5–4.5 mm long. Hilum punctiform. Endosperm farinose.

**Distribution (TDWG). Continent.** Europe, Africa, Temperate Asia, Tropical Asia, Australasia (\*), Pacific, North America, South America.

**Region.** Middle Europe, Southeastern Europe, Eastern Europe.

**Country /Province /State.** : Austria, Czechoslovakia, Hungary. : Bulgaria, Romania. Krym, Central European Russia, East European Russia, South 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.** Egypt (+). Madagascar (\*). Siberia, **Middle Asia, Caucasus, Western Asia, Arabian Peninsula, China.** Kazakhstan, Kirgizistan, Turkmenistan, Tadzhikistan, Uzbekistan. Gulf States, Oman. China South Central, Inner Mongolia, Manchuria, China North-Central, China Southeast, Xinjiang. **Indian Subcontinent, Malesia (+).** Pakistan. Java. **Australia.** Western Australia (\*), Queensland (\*), New South Wales (\*). **Southwestern Pacific, South-central Pacific, Northwestern Pacific, North-central Pacific.** New Caledonia (\*), Samoa (\*). Pitcairn Is (\*), Society Is (\*). Caroline Is (\*), Marianas (\*). Hawaii (\*). **North-central USA, Southwestern USA, South-central USA, Southeastern USA.** Illinois. Arizona, California. Alabama, Mississippi. **Mesoamerica, Caribbean, Northern South America, Brazil, Southern South America.** El Salvador, Honduras. Venezuela. Brazil Southeast. Argentina Northeast.

**TDWG4.** Beijing, Shaanxi. Anhui, Fujian, Henan, Zhejiang. Guizhou. Kimberley. Central, South East, Inland. Coast, Tablelands, Western Slopes, Western Plains. Entre Rios.

**Sorghum x randolphianum** L. Parodi. *Revista Argent. Agron.* 13: 16, 17–18, f. 4 (1946).

**Accepted by:** R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

**Illustrations (Books):** No illustration found (BKS).

**Classification.** Subfamily Panicoideae. Tribe: Andropogoneae. Subtribe SACCHARINAE.

**Distribution (TDWG). Continent.** South America.

**Country /Province /State.** Southern South America.

**Spartina alterniflora** Loisel. *Fl. Gail.* 719 (1807).

**Accepted by:** R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), E.Edgar, & H.Connor, *Flora of New Zealand Gramineae* 5 (2000), S-L Chen et al, *Flora of China* 22 (Poaceae) (2006), T.G.Tutin et al, *Flora Europaea* 5 (1980).

**TYPE** from France. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: T: Sul da Franca.

**Illustrations (Books):** C.E.Hubbard, *Grasses* (1968) (360), M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 25 *Poaceae*, part 2 (2003) (245), F.W.Gould, *The Grasses of Texas* (1975) (363, Fig. 191), S.A.Rennoize, *The Grasses of Bahia*, 1984 (75, Fig. 26), J.A.Steyermark et al, *Flora of the Venezuelan Guayana* Vol. 8 (2004) (272, Fig. 221), L.B. Smith, D.C. Wasshausen, R.M. Klein *Flora Illustrada Catarinensis Gramineas* (1981–1982) (395, Fig. 90 & 399, Fig. 92), A.L.Cabrera, *Flora de la Provincia de Buenos Aires, IV Pt 2 Gramineas* (1970) (389, Fig. 100), M.N.Correa, *Flora Patagonica* Parte III, Gramineae (1978) (510, Fig. 343), E.Judziewicz, *Flora of the Guianas*, 187. *Poaceae* (1990) (602, Fig. 103).

**Images:** R.Darke, *The Encyclopaedia of Grasses for Liveable Landscapes* (2007);

**Derivation** (Clifford & Bostock 2007): L. alternus, placed alternately; flos, flower. The spikelets clearly in two rows on one side of the axis.

**Classification.** Subfamily Chloridoideae. Tribe: Zoysieae.

**Habit, Vegetative Morphology.** Perennial. Rhizomes elongated, fleshy. Culms erect, 40–100 cm long. Leaf-sheaths without keel. Ligule a fringe of hairs, 1–1.8 mm long. Leaf-blades persistent, 10–40 cm long, 5–10 mm wide. Leaf-blade surface ribbed. Leaf-blade apex acuminate, hardened.

**Inflorescence.** Inflorescence composed of racemes. Racemes 5–13, digitate or borne along a central axis, erect, unilateral, 10–20 cm long. Central inflorescence axis 1–5 cm long. Rhachis angular, smooth on margins, terminating in a barren extension, extension bristle-like, extension 15–27 mm long. Spikelet packing broadside to rhachis, regular, 2 -rowed. Spikelets appressed, solitary. Fertile spikelets sessile.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate or oblong, laterally compressed, compressed strongly, 10–15 mm long, falling entire.

**Glumes.** Glumes dissimilar, exceeding apex of florets. Lower glume linear, 0.66 length of upper glume, membranous, 1-keeled, 1–3 -veined. Lower glume primary vein scaberulous. Lower glume surface glabrous. Lower glume apex acute. Upper glume lanceolate, 10–15 mm long, 1.1 length of adjacent fertile lemma,

herbaceous, with membranous margins, 1-keeled, 5–9 -veined. Upper glume primary vein scabrous. Upper glume surface glabrous. Upper glume apex acute.

**Florets.** Fertile lemma ovate, 8–12 mm long, herbaceous, much thinner on margins, keeled, 1–5 -veined, 0–3 -veined or more than 3-veined. Lemma surface glabrous. Lemma apex acute. Palea 1.1 length of lemma, 2 -veined.

**Flower and Fruit.** Lodicules absent. Anthers 3, 5–6 mm long. Stigmas protogynous, terminally exerted, pubescent. Caryopsis with tardily free pericarp, linear. Hilum punctiform.

$2n = 62$  (6 refs TROPICOS).

**Distribution (TDWG). Continent.** Europe, Temperate Asia, Australasia, North America, South America.

**Region.** Northern Europe, Southwestern Europe.

**Country /Province /State.** : Great Britain. : France, Spain. **China.** China North-Central, China Southeast. **New Zealand.** New Zealand North I. **Eastern Canada, Northeast USA, South-central USA, Southeastern USA.** New Brunswick, Nova Scotia, Prince Edward I, Quebec. Maine, Massachusetts, New Hampshire, New Jersey, Rhode Island. Texas. Florida, Georgia, Louisiana, North Carolina, South Carolina. **Caribbean, Northern South America, Brazil, Southern South America.** Trinidad-Tobago. French Guiana, Guyana, Surinam. Brazil Southeast, Brazil South. Argentina Northeast, Uruguay.

**TDWG4.** Hebei, Shandong. Fujian, Guangdong, Guangxi, Jiangsu, Zhejiang. Buenos Aires. Río Negro.

### **Spartina anglica** C.E.Hubb. *Bot. J. Linn. Soc.*, 76(4): 364 (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), D.Sharp, D. & B.K.Simon, *AusGrass* (2002), E.Edgar, & H.Connor, *Flora of New Zealand Gramineae* 5 (2000), S-L Chen et al, *Flora of China* 22 (Poaceae) (2006), T.G.Tutin et al, *Flora Europaea* 5 (1980).

**TYPE** from UK. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: England: W. Sussex: Bosham, fringing shore on mud-flats and muddy shingle, extending into water of Chichester Harbour, forming extensive masses, 17 Aug 1868, *C.E. Hubbard D17868A* (HT: K; IT: L, US-2907471).

**Illustrations (Books):** C.E.Hubbard, *Grasses* (1968) (358), K.O.Mallett (ed.), *Flora of Australia*, Vol 44B. *Poaceae* (2004) (317, Fig 55), D.Sharp & B.K.Simon, *AusGrass*. Grasses of Australia. CD-Rom Version 1.0. (2002), E.Edgar. & H.E.Connor, *Flora of New Zealand* 5, *Gramineae* (2000) (512, Fig. 19), M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 25 *Poaceae*, part 2 (2003) (248), M.N.Correa, *Flora Patagonica* Parte III, *Gramineae* (1978) (504, Fig 340), S-L Chen et al, *Flora of China*, Illustrations, *Poaceae* (2007) (Fig. 699).

**Images:** D.Sharp & B.K.Simon, *AusGrass*. Grasses of Australia. CD-Rom Version 1.0. (2002);, E.Edgar & H.E.Connor, *Flora of New Zealand* 5, *Gramineae* (2000);

**Derivation** (Clifford & Bostock 2007): L. -ica, belonging to. From Anglia, that is England.

**Classification.** Subfamily Chloridoideae. Tribe: Zoysieae.

**Habit, Vegetative Morphology.** Perennial. Rhizomes elongated, fleshy. Culms erect, 30–130 cm long. Leaf-sheaths without keel. Ligule a fringe of hairs, 2–3 mm long. Leaf-blades persistent, 10–45 cm long, 6–15 mm wide. Leaf-blade surface ribbed. Leaf-blade apex acuminate, hardened.

**Inflorescence.** Inflorescence composed of racemes. Racemes 2–12, digitate or borne along a central axis, erect, unilateral, 10–25 cm long. Central inflorescence axis 0–15 cm long. Rhachis angular, smooth on margins, terminating in a barren extension, extension bristle-like, extension 20–50 mm long. Spikelet packing broadside to rhachis, regular, 2 -rowed. Spikelets appressed, solitary. Fertile spikelets sessile.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets oblong, laterally compressed, compressed strongly, 14–21 mm long, 2.5–3 mm wide, falling entire.

**Glumes.** Glumes dissimilar, reaching apex of florets. Lower glume linear, 0.6–0.8 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume lateral veins absent. Lower glume surface pubescent. Lower glume apex acute. Upper glume lanceolate, 14–21 mm long, 1 length of adjacent fertile lemma, herbaceous, with membranous margins, 1-keeled, 3–6 -veined. Upper glume surface pubescent. Upper glume apex acute.

**Florets.** Fertile lemma oblong, 14–21 mm long, herbaceous, much thinner on margins, keeled, 1–3 -veined, 0–3 -veined. Lemma surface pubescent, hairy all along. Lemma apex acute. Palea 1.1 length of lemma, 2 -veined.

**Flower and Fruit.** Lodicules absent. Anthers 3, 8–13 mm long, dehiscent by a longitudinal slit. Stigmas protogynous, terminally exerted, pubescent. Caryopsis with tardily free pericarp, linear. Embryo 1 length of caryopsis. Hilum punctiform.

$2n = 120$  (1 ref TROPICOS), or 122 (1 ref TROPICOS), or 127 (1 ref TROPICOS).

**Distribution (TDWG). Continent.** Europe, Temperate Asia, Australasia (\*), North America.

**Region. Northern Europe, Middle Europe, Southwestern Europe.**

**Country /Province /State.** : Denmark, Great Britain, Ireland. : Belgium, Germany, Netherlands. : France. **Western Asia, China** (\*). China Southeast. **Australia, New Zealand.** Victoria (\*), Tasmania (\*). New Zealand North I, New Zealand South I, Stewart Is. **Southwestern USA.** California.

**TDWG4.** Jiangsu, Zhejiang.

**Spartina arundinacea** (Thouars) Carmich. *Trans. Linn. Soc.* xii. 504. (1819).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online.

**TYPE** from Tristan da Cunha. **Basionym or Replaced Name:** *Ponceletia arundinacea* Thouars, *Esquisse Fl. Tristan D'Acugna* 36 (1808). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Tristan da Cunha: Thouars.

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): *L. arundo*, reed; -acea, like. Culm tall, thereby resembling a reed.

**Classification.** Subfamily Chloridoideae. Tribe: Zoysieae.

**Habit, Vegetative Morphology.** Perennial. Rhizomes short. Culms erect, 100–150 cm long. Leaf-sheath oral hairs ciliate. Ligule a fringe of hairs, 1 mm long. Leaf-blades involute, 3–10 mm wide. Leaf-blade surface smooth or scabrous. Leaf-blade margins scabrous. Leaf-blade apex acuminate.

**Inflorescence.** Inflorescence composed of racemes. Racemes numerous, 20–50, borne along a central axis, closely spaced, in a multilateral false spike, appressed, unilateral, 2–4 cm long, bearing 20–40 fertile spikelets on each. Central inflorescence axis 8–16 cm long. Rhachis angular, smooth on margins to scabrous on margins, glabrous on margins, terminating in a spikelet. Spikelet packing broadside to rhachis, regular, 2 -rowed. Spikelets appressed, solitary. Fertile spikelets pedicelled. Pedicels present, 1 mm long.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, laterally compressed, 6–12 mm long, 1–3 mm wide, falling entire.

**Glumes.** Glumes dissimilar, exceeding apex of florets. Lower glume linear, 4–10 mm long, 0.6–0.8 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume primary vein scabrous. Lower glume lateral veins absent. Lower glume apex acuminate. Upper glume lanceolate, 6–12 mm long, 1.5 length of adjacent fertile lemma, herbaceous, 1-keeled, 1–3 -veined. Upper glume primary vein scabrous. Upper glume surface smooth to scabrous. Upper glume margins smooth or scaberulous. Upper glume apex acuminate.

**Florets.** Fertile lemma ovate, 4–10 mm long, herbaceous, keeled, 3 -veined, 0–3 -veined. Lemma midvein scabrous. Lemma surface smooth or scaberulous. Lemma apex emarginate. Palea 2 -veined.

**Flower and Fruit.** Lodicules absent. Anthers 3, 2.5–3 mm long.

$2n = 40$  (1 ref TROPICOS).

**Distribution (TDWG). Continent.** Antarctica.

**Country /Province /State. Subantarctic islands.** Amsterdam-St Paul Is, Tristan de Cunha.

**Spartina bakeri** Merrill. *U. S. Dept. Agric. Pl. Industry Bull.* ix. 14. (1902).

**Accepted by:** R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

**TYPE** from USA. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: IT: *C.H. Baker* 14, 19 Apr 1898, USA: Florida (US-81737).

**Illustrations (Books):** M.E.Barkworth et al, *Flora of North America north of Mexico Vol 25 Poaceae*, part 2 (2003).

**Images:** R.Darke, *Ornamental Grasses* (2004);, R.Darke, *The Encyclopaedia of Grasses for Liveable Landscapes* (2007);.

**Derivation** (Clifford & Bostock 2007): In honor of Charles Henry Baker (1848-?) United States botanist.

**Classification.** Subfamily Chloridoideae. Tribe: Zoysieae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Rootstock evident. Culms erect, 100–200 cm long. Leaf-sheath oral hairs lacking. Ligule a fringe of hairs, 0.5–2 mm long. Leaf-blades filiform, involute, 2–3 mm wide. Leaf-blade surface scabrous, glabrous. Leaf-blade margins smooth. Leaf-blade apex acuminate.

**Inflorescence.** Inflorescence composed of racemes. Racemes 3–16, borne along a central axis, appressed, unilateral, 2–6 cm long, bearing 10–30 fertile spikelets on each. Central inflorescence axis 8–25 cm long. Rhachis angular, smooth on margins or scabrous on margins, glabrous on margins, terminating in a spikelet. Spikelet packing broadside to rhachis, regular, 2 -rowed. Spikelets pectinate, 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, 6–9 mm long, falling entire.

**Glumes.** Glumes dissimilar, exceeding apex of florets. Lower glume linear, 3–6 mm long, 0.33 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume primary vein ciliolate. Lower glume lateral veins absent. Lower glume apex acuminate. Upper glume lanceolate, 6–9 mm long, 1.2 length of adjacent fertile lemma, herbaceous, 1-keeled, 3–4 -veined. Upper glume primary vein ciliolate. Upper glume lateral veins prominent (on one side). Upper glume surface puberulous. Upper glume margins ciliolate. Upper glume apex acuminate.

**Florets.** Fertile lemma oblong, 4–7 mm long, herbaceous, keeled, 3 -veined, 0–3 -veined. Lemma midvein ciliate. Lemma margins eciliate or ciliolate. Lemma apex obtuse or acute. Palea 2 -veined.

**Flower and Fruit.** Lodicules absent. Anthers 3, 5 mm long.

$2n = 40$  (1 ref TROPICOS).

**Distribution (TDWG). Continent.** North America.

**Country /Province /State. Southeastern USA.** Florida, Georgia, Louisiana, South Carolina.

**Spartina ciliata** Brongn. Duperrey, *Voy. Coq. Bot.* :15 (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: IT: *D'Urville 1304*, Brazil: Ilha de Santa Catarina (P; IT: US-s.n. (fragm. ex P), US-878777 (fragm. ex P)).

**Illustrations (Books):** L.B. Smith, D.C. Wasshausen, R.M. Klein *Flora Illustrada Catarinensis Gramineas* (1981–1982) (395, Fig. 90 & 396, Fig. 91), A.L.Cabrera, *Flora de la Provincia de Buenos Aires, IV Pt 2 Gramineas* (1970) (386, Fig. 99), M.N.Correa, *Flora Patagonica Parte III, Gramineae* (1978) (510, Fig. 344 as *Spartina coarctata*), B.Rosengurt, *Gramineas Uruguayas I* (1970) (246, Fig. 100).

**Derivation** (Clifford & Bostock 2007): *L. cilium*, eyelid; -ata, possessing. Plant hairy overall or in part.

**Classification.** Subfamily Chloridoideae. Tribe: Zoysieae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Rootstock evident. Rhizomes absent or short. Culms erect, 100–200 cm long. Leaf-sheaths smooth, outer margin glabrous. Leaf-sheath oral hairs ciliate. Ligule a fringe of hairs, 2–3 mm long. Leaf-blades involute, 2–3 mm wide. Leaf-blade surface scabrous, rough adaxially. Leaf-blade margins smooth or scabrous. Leaf-blade apex acuminate.

**Inflorescence.** Inflorescence composed of racemes. Racemes numerous, 10–50, borne along a central axis, closely spaced, in a multilateral false spike, appressed, unilateral, 2–5 cm long, bearing 15–25 fertile spikelets on each. Central inflorescence axis 15–40 cm long, pilose. Rhachis angular, smooth on margins, ciliate on margins, terminating in a spikelet. Spikelet packing broadside to rhachis, regular, 2 -rowed. Spikelets pectinate, 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 ovate, laterally compressed, 10–20 mm long, 4–8 mm wide, falling entire.

**Glumes.** Glumes dissimilar, exceeding apex of florets. Lower glume linear, 6–10 mm long, 0.5–0.6 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume primary vein ciliate. Lower glume lateral veins absent. Lower glume surface glabrous or pilose. Lower glume apex acute. Upper glume lanceolate, 10–20 mm long, 1.5 length of adjacent fertile lemma, scariosus, 1-keeled, 1–3 -veined. Upper glume primary vein ciliate. Upper glume surface glabrous or pilose. Upper glume apex attenuate, muticous or awned, 1 -awned, awn 0–2 mm long.

**Florets.** Fertile lemma oblong, 8–12 mm long, herbaceous, keeled, 3 -veined, 0–3 -veined. Lemma midvein ciliate, hairy above. Lemma margins scaberulous. Lemma apex emarginate. Palea 2 -veined.

**Flower and Fruit.** Lodicules absent. Anthers 3, 4–7 mm long.

**Distribution (TDWG). Continent.** South America.

**Country /Province /State. Brazil, Southern South America.** Brazil Southeast, Brazil South. Argentina Northeast, Uruguay.

**TDWG4.** Buenos Aires.

**Spartina cynosuroides** (L.) Roth. *Catalect. fasc.* iii. 10 (1806).

**Accepted by:** R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

**TYPE** from USA. **Basionym or Replaced Name:** *Dactylis cynosuroides* L., *Sp. Pl.* 1: 71 (1753). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: LT: *D. Clayton 577*, USA: Virginia (BM; ILT: US-A865636 (fragm.)). LT designated by Hitchcock, *Contr. U.S. Natl. Herb.* 12: 121 (1908).

**Illustrations (Books):** M.E.Barkworth et al, *Flora of North America north of Mexico Vol 25 Poaceae*, part 2 (2003) (248).

**Images:** R.Darke, *The Encyclopaedia of Grasses for Liveable Landscapes* (2007);

**Derivation** (Clifford & Bostock 2007): Gk. -oides, resembling. Inflorescence resembling that of *Cynosurus*.

**Classification.** Subfamily Chloridoideae. Tribe: Zoysieae.

**Habit, Vegetative Morphology.** Perennial, culms solitary. Rhizomes elongated, scaly. Culms erect, 200–350 cm long. Leaf-sheath oral hairs lacking or ciliate. Ligule a fringe of hairs, 1–3 mm long. Leaf-blades 8–15 mm wide. Leaf-blade surface glabrous. Leaf-blade margins scabrous. Leaf-blade apex acuminate.

**Inflorescence.** Inflorescence composed of racemes. Racemes few or numerous, 5–67, borne along a central axis, spreading, unilateral, 6–15 cm long, bearing 10–70 fertile spikelets on each. Central inflorescence axis 15–40 cm long. Rhachis angular, smooth on margins or scabrous on margins, glabrous on margins, terminating in a spikelet. Spikelet packing broadside to rhachis, regular, 2 -rowed. Spikelets pectinate, 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, 9–14 mm long, falling entire.

**Glumes.** Glumes dissimilar, exceeding apex of florets. Lower glume linear, 3–7 mm long, 0.25–0.33 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume primary vein ciliate. Lower glume lateral veins absent. Lower glume margins ciliate. Lower glume apex acute. Upper glume lanceolate, 9–10 mm long, 1.3 length of adjacent fertile lemma, herbaceous, 1-keeled, 3 -veined. Upper glume primary vein ciliate. Upper glume lateral veins prominent. Upper glume surface glabrous or puberulous. Upper glume margins ciliate. Upper glume apex acuminate.

**Florets.** Fertile lemma oblong, 7–11 mm long, herbaceous, keeled, 3 -veined, 0–3 -veined. Lemma midvein ciliate. Lemma surface glabrous or puberulous, hairy all along or above. Lemma apex obtuse. Palea 2 -veined.

**Flower and Fruit.** Lodicules absent. Anthers 3, 4–6 mm long.

$2n = 40$  (1 ref TROPICOS).

**Distribution (TDWG). Continent.** North America.

**Country /Province /State.** Northeast USA, South-central USA, Southeastern USA, Mexico. Connecticut, Massachusetts, New Jersey, Rhode Island. Texas. Florida, Georgia, Louisiana, Mississippi, North Carolina, South Carolina, Virginia. Northeast Mexico.

Chihuahua.

**Spartina densiflora** Brongn. Duperr. *Voy. Coq. Bot.* 14. (1829).

**Accepted by:** R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), T.G.Tutin et al, *Flora Europaea* 5 (1980).

**TYPE** from Chile. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: IT: *D'Urville s.n.*, (US-610991 (fragm. ex P), US-92018 (fragm. ex P & photo)).

**Illustrations (Books):** M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 25 *Poaceae*, part 2 (2003) (251), E.G.Nicora, *Los Generos de Gramineas de America Austral* (1987) (338, Fig. 115), L.B. Smith, D.C. Wasshausen, R.M. Klein *Flora Illustrada Catarinensis Gramineas* (1981–1982) (395, Fig. 87 & 399, Fig. 92), A.L.Cabrera, *Flora de la Provincia de Buenos Aires, IV Pt 2 Gramineas* (1970) (389, Fig. 100), M.N.Correa, *Flora Patagonica Parte III, Gramineae* (1978) (510, Fig. 345), B.Rosengurt, *Gramineas Uruguayas I* (1970) (246, Fig. 100 as *S. montevidensis*).

**Derivation** (Clifford & Bostock 2007): L. densus, dense; flos, flower. Inflorescences congested.

**Classification.** Subfamily Chloridoideae. Tribe: Zoysieae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Rootstock evident. Butt sheaths indurate, glossy. Culms erect, 100–150 cm long. Leaf-sheath oral hairs lacking or ciliate. Ligule a fringe of hairs, 1–2 mm long. Leaf-blades involute, 3–8 mm wide. Leaf-blade surface scabrous, rough adaxially, glabrous. Leaf-blade margins scabrous. Leaf-blade apex acuminate.

**Inflorescence.** Inflorescence composed of racemes. Racemes 2–15, borne along a central axis, appressed, unilateral, 1–11 cm long, bearing 10–30 fertile spikelets on each. Central inflorescence axis 10–30 cm long. Rhachis angular, scabrous on margins, glabrous on margins, terminating in a spikelet. Spikelet packing broadside to rhachis, regular, 2 -rowed. Spikelets pectinate, 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, 8–14 mm long, 1–2 mm wide, falling entire.

**Glumes.** Glumes dissimilar, exceeding apex of florets. Lower glume linear, 4–7 mm long, 0.5 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume primary vein ciliate. Lower glume lateral veins absent. Lower glume surface glabrous or puberulous. Lower glume margins eciliate or ciliate. Lower glume apex obtuse. Upper glume lanceolate, 8–14 mm long, 1.1–1.2 length of adjacent fertile lemma, herbaceous, 1-

keeled, 1–3 -veined. Upper glume primary vein ciliolate. Upper glume surface puberulous. Upper glume margins ciliolate. Upper glume apex acuminate.

**Florets.** Fertile lemma oblong, 6–12 mm long, herbaceous, keeled, 3 -veined, 0–3 -veined. Lemma midvein ciliolate, hairy above. Lemma surface scaberulous. Lemma apex obtuse to acuminate. Palea 2 -veined. Palea keels scaberulous, adorned above.

**Flower and Fruit.** Lodicules absent. Anthers 3, 3–5 mm long.

**Distribution (TDWG). Continent.** Europe, North America, South America.

**Region.** Southwestern Europe.

**Country /Province /State.** : Spain. **Northwest USA, Southwestern USA, South-central USA.** Oregon, Washington. California. Texas. **Brazil, Southern South America.** Brazil Southeast, Brazil South. Argentina Northeast, Argentina South, Chile Central, Chile South, Uruguay.

**TDWG4.** San Luis. Buenos Aires, Chaco, Cordoba, Distrito Federal, La Pampa, Santa Fe. Chubut, Río Negro, Santa Cruz. Biobio, La Araucania. Los Lagos.

**Spartina foliosa** Trin. *Mem. Acad. Petersb. Ser. VI. v. II. 114* (1840).

**Accepted by:** R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

**TYPE** from USA. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: IT: *D. Peters s.n.*, 1831, California (US-610993(fragm. ex LE), US-92016 (fragm.)).

**Illustrations (Books):** M.E.Barkworth et al, *Flora of North America north of Mexico Vol 25 Poaceae*, part 2 (2003) (245).

**Derivation** (Clifford & Bostock 2007): *L. folium*, leaf; -osa, abundance. Culms with many leaves often separated by long evenly spaced internodes.

**Classification.** Subfamily Chloridoideae. Tribe: Zoysieae.

**Habit, Vegetative Morphology.** Perennial, culms solitary or caespitose. Rhizomes elongated. Culms erect, 100–150 cm long, spongy, rooting from lower nodes. Leaf-sheath oral hairs ciliate. Ligule a fringe of hairs, 1–2 mm long. Leaf-blades flat or involute, 3–6 mm wide. Leaf-blade surface glabrous. Leaf-blade margins smooth or scaberulous. Leaf-blade apex acuminate.

**Inflorescence.** Inflorescence composed of racemes, exserted or embraced at base by subtending leaf. Racemes 3–25, borne along a central axis, closely spaced, in a multilateral false spike, appressed, unilateral, 2–8 cm long, bearing 8–30 fertile spikelets on each. Central inflorescence axis 12–25 cm long. Rhachis angular, smooth on margins, glabrous on margins, terminating in a spikelet or barren extension. Spikelet packing broadside to rhachis, regular, 2 -rowed. Spikelets appressed, solitary. Fertile spikelets sessile.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets oblong, laterally compressed, 8–25 mm long, falling entire.

**Glumes.** Glumes dissimilar, reaching apex of florets or exceeding apex of florets. Lower glume linear, 6–12 mm long, 0.5–0.75 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume primary vein eciliate or ciliate. Lower glume lateral veins absent. Lower glume surface glabrous or pilose. Lower glume apex obtuse to acuminate. Upper glume lanceolate, 8–25 mm long, 1–1.2 length of adjacent fertile lemma, herbaceous, 1-keeled, 1–3 -veined. Upper glume primary vein eciliate or ciliate. Upper glume surface glabrous or pilose. Upper glume margins eciliate or ciliate. Upper glume apex obtuse to acuminate.

**Florets.** Fertile lemma oblong, 8–20 mm long, herbaceous, keeled, 3 -veined, 0–3 -veined. Lemma surface glabrous or pilose. Lemma margins eciliate or ciliate. Lemma apex emarginate or obtuse. Palea 2 -veined.

**Flower and Fruit.** Lodicules absent. Anthers 3, 3–6 mm long.

$2n = 60$  (1 ref TROPICOS).

**Distribution (TDWG). Continent.** North America.

**Country /Province /State.** **Southwestern USA, Mexico.** California. Northwest Mexico. Baja California.

**Spartina gracilis** Trin. *Mem. Acad. Petersb. Ser. VI. v. II. 119.* (1840).

**Accepted by:** R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

**TYPE** from Canada. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: IT: *Hooker s.n.*, (LE-TRIN-2058.01, US-92014(fragm. ex LE)).

**Illustrations (Books):** K.F.Best, et al, *Prairie Grasses* (1971) (217), M.E.Barkworth et al, *Flora of North America north of Mexico Vol 25 Poaceae*, part 2 (2003) (251).

**Derivation** (Clifford & Bostock 2007): *L. slender*. Culms or inflorescences slender.



**Classification.** Subfamily Chloridoideae. Tribe: Zoysieae.

**Habit, Vegetative Morphology.** Perennial, culms solitary. Rhizomes elongated, scaly. Culms erect, 50–100 cm long. Leaf-sheath oral hairs lacking. Ligule a fringe of hairs, 0.5–1 mm long. Leaf-blades flat or involute, 2–5 mm wide. Leaf-blade surface scabrous, rough adaxially, glabrous. Leaf-blade margins scabrous. Leaf-blade apex acuminate.

**Inflorescence.** Inflorescence composed of racemes. Racemes 4–12, borne along a central axis, appressed, unilateral, 1.5–8 cm long, bearing 10–30 fertile spikelets on each. Central inflorescence axis 8–25 cm long. Rhachis angular, scabrous on margins, glabrous on margins, terminating in a spikelet. Spikelet packing broadside to rhachis, regular, 2-rowed. Spikelets pectinate, 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 or ovate, laterally compressed, 6–11 mm long, falling entire.

**Glumes.** Glumes dissimilar, reaching apex of florets. Lower glume linear, 3–7 mm long, 0.5 length of upper glume, membranous, 1-keeled, 1-veined. Lower glume primary vein eciliate or ciliate. Lower glume lateral veins absent. Lower glume surface glabrous or pilose. Lower glume margins ciliolate. Lower glume apex acute, muticous or mucronate. Upper glume lanceolate, 6–10 mm long, 1 length of adjacent fertile lemma, herbaceous, 1-keeled, 3-veined. Upper glume primary vein eciliate or ciliate. Upper glume lateral veins prominent (on one side). Upper glume surface glabrous or pilose. Upper glume margins eciliate or ciliolate. Upper glume apex acute, muticous or mucronate.

**Florets.** Fertile lemma oblong, 6–10 mm long, herbaceous, keeled, 3-veined, 0–3-veined. Lemma midvein ciliate, hairy above. Lemma surface glabrous or pilose. Lemma margins ciliolate. Lemma apex obtuse. Palea 2-veined.

**Flower and Fruit.** Lodicules absent. Anthers 3, 2.5–5 mm long.

$2n = 40$  (2 refs TROPICOS).

**Distribution (TDWG). Continent.** North America.

**Country /Province /State.** Subarctic America, Western Canada, Eastern Canada, Northwest USA, North-central USA, Southwestern USA, South-central USA, Mexico. Northwest Territories. Alberta, British Columbia, Manitoba, Saskatchewan. Ontario. Colorado, Idaho, Montana, Oregon, Washington, Wyoming. Kansas, North Dakota, Nebraska, South Dakota. Arizona, California, Nevada. New Mexico. Northeast Mexico. Chihuahua.

**Spartina longispica** Hauman & Parodi ex St.-Yves. *Candollea*, v. 27, 92 (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 Argentina. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: ST: *Parodi 5014*, Argentina (P; US-92012 (fragm. ex BAA)). ST: *Parodi 9567*, Argentina (P). LT: *L. Parodi 5030*, 24 Mar 1923, Argentina: Buenos Aires: Pipinas (US(fragm. ex SI)). LT selected by Parodi in letter to A. Chase & published in *Index to Grass Species* vol. 3: 336 (1962).

**Illustrations (Books):** M.N.Correa, *Flora Patagonica* Parte III, Gramineae (1978) (517, Fig 347), B.Rosengurt, *Gramineas Uruguayas I* (1970) (246, Fig. 100).

**Derivation** (Clifford & Bostock 2007): *L. longus*, long; *spica*, thorn. With long spikelets or inflorescence branches.

**Classification.** Subfamily Chloridoideae. Tribe: Zoysieae.

**Habit, Vegetative Morphology.** Perennial, culms solitary. Rhizomes elongated. Culms erect, 100–200 cm long, spongy or firm. Leaf-sheath oral hairs lacking. Ligule a fringe of hairs, 1–2 mm long. Leaf-blades 6–10 mm wide. Leaf-blade surface smooth or scabrous, glabrous. Leaf-blade margins smooth or scabrous. Leaf-blade apex acuminate.

**Inflorescence.** Inflorescence composed of racemes, exerted or embraced at base by subtending leaf. Racemes 4–16, borne along a central axis, appressed, unilateral, 4–18 cm long, bearing 10–35 fertile spikelets on each. Central inflorescence axis 14–45 cm long. Rhachis angular, 1–1.5 mm wide, smooth on margins or scabrous on margins, glabrous on margins, terminating in a spikelet. Spikelet packing broadside to rhachis, regular, 2-rowed. Spikelets appressed, solitary. Fertile spikelets sessile.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets oblong, laterally compressed, 12–24 mm long, 1.5–2.5 mm wide, falling entire.

**Glumes.** Glumes dissimilar, exceeding apex of florets. Lower glume linear, 6–12 mm long, 0.5 length of upper glume, membranous, 1-keeled, 1-veined. Lower glume primary vein ciliate. Lower glume lateral veins absent. Lower glume surface glabrous or pilose. Lower glume margins eciliate. Lower glume apex obtuse to acuminate. Upper glume lanceolate, 12–24 mm long, 1.1 length of adjacent fertile lemma, herbaceous, 1-keeled,

1–3 -veined. Upper glume primary vein ciliate. Upper glume surface glabrous or pilose. Upper glume margins ciliate. Upper glume apex obtuse to acuminate.

**Florets.** Fertile lemma oblong, 10–20 mm long, herbaceous, keeled, 3 -veined, 0–3 -veined. Lemma midvein ciliate, hairy above. Lemma surface glabrous or pilose. Lemma apex obtuse to acuminate. Palea 2 -veined.

**Flower and Fruit.** Lodicules absent. Anthers 3, 3–7 mm long.

**Distribution (TDWG). Continent.** South America.

**Country /Province /State. Southern South America.** Argentina Northeast, Argentina South, Uruguay.

**TDWG4.** Buenos Aires, Chaco.

### **Spartina maritima** (Curtis) Fernald. *Rhodora* xviii. 180 (1916).

**Accepted by:** R.J.Soreng et al., *Catalogue of 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 UK. **Basionym or Replaced Name:** *Dactylis maritima* Curtis, *Enum. Brit. Grasses* 46 (1787). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Britain: Coll?.

**Illustrations (Books):** C.E.Hubbard, *Grasses* (1968) (354), H.Jacques-Felix, *Les Graminees d'Afrique tropicale* (1962) (215, Fig. 140), L.K.A. Chippindall, *Grasses and Pastures of South Africa* (1955) (as *S. capensis*), L.K.A. Chippindall, *Grasses and Pastures of South Africa* (1955) (208, Fig. 185), G.E.Gibbs Russell et al, *Grasses of Southern Africa* (1990) (302, Fig. 195), M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 25 *Poaceae*, part 2 (2003) (248).

**Derivation** (Clifford & Bostock 2007): L. belonging to the sea. Growing by the seaside.

**Classification.** Subfamily Chloridoideae. Tribe: Zoysieae.

**Habit, Vegetative Morphology.** Perennial. Rhizomes elongated, firm. Culms erect, 15–50 cm long. Leaf-sheaths without keel. Ligule a fringe of hairs, 0.2–0.6 mm long. Leaf-blades deciduous at the ligule, 4–18 cm long, 2–5 mm wide. Leaf-blade surface ribbed. Leaf-blade apex acuminate, hardened.

**Inflorescence.** Inflorescence composed of racemes. Racemes (1–)2–3(–5), digitate or borne along a central axis, erect, unilateral, 4–5 cm long. Central inflorescence axis 1–6 cm long. Rhachis angular, smooth on margins, terminating in a barren extension, extension bristle-like, extension 5–14 mm long. Spikelet packing broadside to rhachis, regular, 2 -rowed. Spikelets appressed, solitary. Fertile spikelets sessile.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, laterally compressed, compressed strongly, 11–15 mm long, falling entire.

**Glumes.** Glumes dissimilar, exceeding apex of florets. Lower glume linear, 0.7–0.8 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume lateral veins absent. Lower glume surface pubescent. Lower glume apex acute. Upper glume lanceolate, 11–15 mm long, 1.1 length of adjacent fertile lemma, herbaceous, with membranous margins, 1-keeled, 3 -veined. Upper glume surface pubescent. Upper glume apex acute.

**Florets.** Fertile lemma ovate, 9–12 mm long, herbaceous, much thinner on margins, keeled, 1 -veined, 0–3 -veined. Lemma surface puberulous, hairy above. Lemma apex acute. Palea 1.1 length of lemma, 2 -veined.

**Flower and Fruit.** Lodicules absent. Anthers 3, 4–6 mm long. Stigmas protogynous, terminally exerted, pubescent. Caryopsis with tardily free pericarp, linear. Embryo 0.6–0.8 length of caryopsis. Hilum punctiform.

$2n = 60$  (1 ref TROPICOS).

**Distribution (TDWG). Continent.** Europe, Africa, North America.

**Region. Northern Europe, Middle Europe, Southwestern Europe, Southeastern Europe.**

**Country /Province /State.** : Great Britain. : Germany, Netherlands. : France, Portugal, Spain. : Italy, Yugoslavia. **Northern Africa, West tropical Africa, Southern Africa.** Morocco. Namibia, Western Cape, Eastern Cape. **Southeastern USA.** Mississippi.

### **Spartina patens** (Ait.) Muhl. *Desc. Gram.* 55. (1817).

**Accepted by:** R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

**TYPE** from USA. **Basionym or Replaced Name:** *Dactylis patens* Aiton, *Hort. Kew.* . . . 1: 104 (1789). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: North America,.

**Illustrations (Books):** M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 25 *Poaceae*, part 2 (2003) (251), F.W.Gould, *The Grasses of Texas* (1975) (365, Fig. 192), A.S.Hitchcock, *Manual of the Grasses of the West Indies* (1936) (118, Fig. 75).

**Images:** R.Darke, *The Encyclopaedia of Grasses for Liveable Landscapes* (2007);.

**Derivation** (Clifford & Bostock 2007): L. pateo, lie open. Panicle branches spreading or reflexed or habit open.

**Classification.** Subfamily Chloridoideae. Tribe: Zoysieae.

**Habit, Vegetative Morphology.** Perennial, culms solitary or caespitose. Rhizomes elongated, wiry. Culms erect, 100–150 cm long. Leaf-sheath oral hairs lacking. Ligule a fringe of hairs, 0.5 mm long. Leaf-blades involute, 1–5 mm wide. Leaf-blade surface scabrous, rough adaxially, glabrous. Leaf-blade margins scabrous. Leaf-blade apex acuminate.

**Inflorescence.** Inflorescence composed of racemes. Racemes 2–15, borne along a central axis, spreading, unilateral, 1–7 cm long, bearing 10–30 fertile spikelets on each. Central inflorescence axis 3–15 cm long. Rhachis angular, scabrous on margins, glabrous on margins, terminating in a spikelet. Spikelet packing broadside to rhachis, regular, 2 -rowed. Spikelets pectinate, solitary. Fertile spikelets sessile.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets linear or lanceolate, laterally compressed, 7–12 mm long, falling entire.

**Glumes.** Glumes dissimilar, exceeding apex of florets. Lower glume linear, 3–8 mm long, 0.33 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume primary vein ciliolate. Lower glume lateral veins absent. Lower glume surface glabrous or puberulous. Lower glume margins ciliolate. Lower glume apex acuminate. Upper glume lanceolate, 7–12 mm long, 1.1 length of adjacent fertile lemma, herbaceous, 1-keeled, 3 -veined. Upper glume primary vein ciliate. Upper glume lateral veins prominent (on one side). Upper glume surface glabrous or puberulous. Upper glume margins ciliolate. Upper glume apex acuminate.

**Florets.** Fertile lemma oblong, 6–10 mm long, herbaceous, keeled, 3 -veined, 0–3 -veined. Lemma midvein ciliolate, hairy above. Lemma surface glabrous or puberulous. Lemma margins eciliate or ciliolate. Lemma apex obtuse. Palea 2 -veined.

**Flower and Fruit.** Lodicules absent. Anthers 3, 3–5 mm long.

$2n = 40$  (3 refs TROPICOS).

**Distribution (TDWG). Continent.** Africa, North America, South America.

**Country /Province /State. Northern Africa.** Algeria, Tunisia. **Eastern Canada, Northwest USA, Northeast USA, Southwestern USA, South-central USA, Southeastern USA, Mexico.** New Brunswick, Nova Scotia, Prince Edward I, Quebec. Oregon. Maine, Massachusetts. California, Utah. Texas. Florida, Georgia, Louisiana, Mississippi, North Carolina, South Carolina, Virginia. Northeast Mexico. **Caribbean.** Bahamas, Bermuda, Cayman Is, Cuba, Dominican Republic, Haiti, Jamaica, Leeward Is, Windward Islands, Puerto Rico.

Chihuahua, Tamaulipas.

**Spartina pectinata** Bosc ex Link. *Jahrb. i. III.* 92. (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, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

**TYPE** from USA. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *Bosc s.n.*, USA (B; IT: US-92011 (fragm. ex B)).

**Illustrations (Books):** K.F.Best, et al, *Prairie Grasses* (1971) (219), M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 25 *Poaceae*, part 2 (2003) (251), F.W.Gould, *The Grasses of Texas* (1975) (361, Fig. 190).

**Images:** R.Darke, *Ornamental Grasses* (2004);, R.Darke, *The Encyclopaedia of Grasses for Liveable Landscapes* (2007);.

**Derivation** (Clifford & Bostock 2007): L. pecten, comb; -ata, possessing. Inflorescence with spikes or racemes bearing a fanciful resemblance to a comb.

**Classification.** Subfamily Chloridoideae. Tribe: Zoysieae.

**Habit, Vegetative Morphology.** Perennial, culms solitary. Rhizomes elongated, scaly. Culms erect, 100–250 cm long. Leaf-sheath oral hairs lacking or ciliate. Ligule a fringe of hairs, 1–3 mm long. Leaf-blades flat or involute, 5–10 mm wide. Leaf-blade surface glabrous. Leaf-blade margins scabrous. Leaf-blade apex acuminate.

**Inflorescence.** Inflorescence composed of racemes. Racemes few or numerous, 5–50, borne along a central axis, appressed or ascending, unilateral, 1.5–15 cm long, bearing 10–80 fertile spikelets on each. Central inflorescence axis 10–50 cm long. Rhachis angular, smooth on margins or scabrous on margins, glabrous on margins, terminating in a spikelet. Spikelet packing broadside to rhachis, regular, 2 -rowed. Spikelets pectinate, 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, 8–17 mm long, falling entire.

**Glumes.** Glumes dissimilar, exceeding apex of florets. Lower glume linear, 5–10 mm long, 0.33 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume primary vein ciliate. Lower glume lateral veins absent. Lower glume surface glabrous or puberulous. Lower glume apex acute, awned. Upper glume lanceolate, 8–17 mm long, 1.5 length of adjacent fertile lemma, herbaceous, 1-keeled, 1–3 -veined. Upper glume primary vein pectinately ciliate. Upper glume surface glabrous or puberulous. Upper glume apex acuminate, awned, 1 -awned, awn 4–8 mm long.

**Florets.** Fertile lemma oblong, 6–12 mm long, herbaceous, keeled, 3 -veined, 0–3 -veined. Lemma midvein pectinately ciliate, hairy above. Lemma margins ciliolate. Lemma apex dentate, 2 -fid. Palea 2 -veined.

**Flower and Fruit.** Lodicules absent. Anthers 3, 4–6 mm long.

$2n = 40$  (5 refs TROPICOS).

**Distribution (TDWG).** Continent. Europe (\*), North America.

**Region.** Northern Europe (\*).

**Country /Province /State.** : Great Britain (\*). **Western Canada, Eastern Canada, Northwest USA, North-central USA, Northeast USA, Southwestern USA, South-central USA, Southeastern USA.** Alberta, Manitoba, Saskatchewan. Labrador, New Brunswick, 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. Utah. New Mexico, Texas. North Carolina, Tennessee.

**Spartina spartinae** (Trin.) Merrill. *US Dept. Agr. Bur. Pl. Ind. Bull.* 9:11 (1902).

**Accepted by:** R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

**TYPE** from USA. **Basionym or Replaced Name:** *Vilfa spartinae* Trin., *Mem. Acad. Imp. Sci. Saint-Petersbourg, Ser. 6, Sci. Math., Seconde Pt. Sci. Nat.* 6,4(1–2): 82 (1840). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *Hooker s.n.*, USA: Texas (LE-TRIN-1742.01).

**Illustrations (Books):** M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 25 *Poaceae*, part 2 (2003) (245), F.W.Gould, *The Grasses of Texas* (1975) (360, Fig. 189), W.Burger, *Flora Costaricensis* 15, Gramineae: *Fieldiana Botany New Series* 4 (1980) (541, Fig 202).

**Derivation** (Clifford & Bostock 2007): resembling *Spartina*.

**Classification.** Subfamily Chloridoideae. Tribe: Zoysieae.

**Habit, Vegetative Morphology.** Perennial, caespitose, clumped densely. Rhizomes absent. Culms erect, robust, 100–200 cm long. Ligule a fringe of hairs. Leaf-blades filiform, involute, 2–3 mm wide, stiff. Leaf-blade surface glabrous.

**Inflorescence.** Inflorescence composed of racemes. Racemes numerous, borne along a central axis, closely spaced, in a multilateral false spike, appressed, unilateral, 2–3 cm long. Central inflorescence axis 10–30 cm long. Rhachis angular, glabrous on margins, terminating in a spikelet. Spikelet packing broadside to rhachis, regular, 2 -rowed. Spikelets appressed, solitary. Fertile spikelets sessile.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets oblong, laterally compressed, 6–8 mm long, falling entire.

**Glumes.** Glumes dissimilar, exceeding apex of florets. Lower glume lanceolate, 0.66 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 oblong, 6–8 mm long, 1.2 length of adjacent fertile lemma, herbaceous, 1-keeled, 3 -veined. Upper glume primary vein ciliolate. Upper glume apex obtuse.

**Florets.** Fertile lemma oblong, 5–7 mm long, herbaceous, keeled, 3 -veined, 0–3 -veined. Palea 2 -veined.

**Flower and Fruit.** Lodicules absent. Anthers 3.

$N = 20$  (1 ref TROPICOS).  $2n = 40$  (2 refs TROPICOS).

**Distribution (TDWG).** Continent. North America, South America.

**Country /Province /State.** **South-central USA, Southeastern USA, Mexico.** Texas. Alabama, Florida, Louisiana, Mississippi. Northeast Mexico, Gulf (Mexico), Southwest Mexico, Southeast Mexico. **Mesoamerica, Caribbean, Northern South America, Southern South America.** Belize, Costa Rica, Honduras, Panama. Venezuela. Paraguay.

Coahuila, San Luis Potosi. Veracruz. Oaxaca. Quintana Roo, Tabasco, Yucatan.

**Spartina versicolor** Fabre. *Ann. Sc. Nat. Ser. III.* xiii. 123. t. 3. (1849).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online, T.G.Tutin et al, *Flora Europaea* 5 (1980).

**TYPE** from Mediterranean. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: Mediterranean: Fabre (K iso).

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): L. variously colored. Spikelets variously colored as with glumes being green in the lower third, purple in the middle and brown in the upper third.

**Classification.** Subfamily Chloridoideae. Tribe: Zoysieae.

**Habit, Vegetative Morphology.** Perennial, caespitose, clumped loosely. Rhizomes elongated. Culms erect, 60–150 cm long. Ligule a fringe of hairs, 0.2 mm long. Leaf-blades filiform, 0.8–1.5 mm wide.

**Inflorescence.** Inflorescence composed of racemes. Racemes 2–6, paired or digitate or borne along a central axis, distant, erect, unilateral, 6–10 cm long. Central inflorescence axis 1–5 cm long. Rhachis angular, terminating in a spikelet. Spikelet packing broadside to rhachis, regular, 2 -rowed. Spikelets appressed, solitary. Fertile spikelets sessile.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate or oblong, laterally compressed, compressed strongly, 5–7 mm long, falling entire.

**Glumes.** Glumes dissimilar, exceeding apex of florets. Lower glume linear, 0.66 length of upper glume, membranous, 1-keeled, 1–3 -veined. Lower glume primary vein scaberulous. Lower glume lateral veins absent or obscure. Lower glume surface glabrous. Lower glume apex acute. Upper glume lanceolate, 5–7 mm long, 1.1 length of adjacent fertile lemma, herbaceous, with membranous margins, 1-keeled, 3 -veined. Upper glume primary vein scabrous. Upper glume surface glabrous. Upper glume apex acute.

**Florets.** Fertile lemma ovate, 4–6 mm long, herbaceous, much thinner on margins, keeled, 1–3 -veined, 0–3 -veined. Lemma surface glabrous. Lemma apex acute. Palea 2 -veined.

**Flower and Fruit.** Lodicules absent. Anthers 3, 4 mm long. Hilum punctiform.

**Distribution (TDWG). Continent.** Europe, Africa.

**Region.** Southwestern Europe, Southeastern Europe.

**Country /Province /State.** : Corsica, France, Portugal, Sardinia, Spain, Azores. : Italy, Sicily. Macaronesia. Azores.

**Spartina x caespitosa** A.A. Eaton. *Bull. Torrey Bot. Club* 25(6): 338–339 (1898).

**Accepted by:** R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online.

**Illustrations (Books):** M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 25 *Poaceae*, part 2 (2003).

**Derivation** (Clifford & Bostock 2007): L. caespes, grass that has been cut; -osa, abundance. Habit tufted.

**Classification.** Subfamily Chloridoideae. Tribe: Zoysieae.

**Habit, Vegetative Morphology.** Perennial, culms solitary or caespitose. Rhizomes short or elongated. Culms erect, 90–100 cm long. Ligule a fringe of hairs. Leaf-blades flat or involute, 10–40 cm long, 3–7 mm wide. Leaf-blade surface scabrous, rough adaxially, glabrous. Leaf-blade margins scabrous.

**Inflorescence.** Inflorescence composed of racemes. Racemes 2–7, borne along a central axis, ascending, unilateral, 3–9 cm long. Rhachis angular, glabrous on margins, terminating in a spikelet. Spikelet packing broadside to rhachis, regular, 2 -rowed. Spikelets pectinate, 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, 12–16 mm long, falling entire.

**Glumes.** Glumes dissimilar, exceeding apex of florets. Lower glume lanceolate, 0.5 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume primary vein ciliolate. Lower glume lateral veins absent. Lower glume apex acuminate, awned, 1 -awned, awn 2 mm long. Upper glume oblong, 12–16 mm long, 1.5–2 length of adjacent fertile lemma, herbaceous, 1-keeled, 3 -veined. Upper glume primary vein ciliolate. Upper glume apex acuminate, awned, 1 -awned, awn 2 mm long.

**Florets.** Fertile lemma oblong, 8 mm long, herbaceous, keeled, 3 -veined, 0–3 -veined. Lemma apex dentate, 2 -fid. Palea 2 -veined.

**Flower and Fruit.** Lodicules absent. Anthers 3.

$2n = 40$  (1 ref TROPICOS).

**Distribution (TDWG). Continent.** North America.

**Country /Province /State.** Northeast USA. Connecticut, Maine, Massachusetts, New Hampshire, New York, Rhode Island.

**Spartina x townsendii** H. & J. Groves. *Bot. Exch. Club Rep.* 1880, 37 (1881).

**Accepted by:** R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), D.Sharp, D. & B.K.Simon, *AusGrass* (2002), E.Edgar, & H.Connor, *Flora of New Zealand Gramineae* 5 (2000), T.G.Tutin et al, *Flora Europaea* 5 (1980).

**TYPE** from UK. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: OM: [*H. Groves* {on US-878793}], 1 Sep 1879, Great Britain: England: South Hampshire, St. G., mud flats near Hythe (W (ex hb. Groves), US-1127161 (fragm. ex W), US-878793 (ex hb. Groves)). [presumably an iso or syn type].

**Illustrations (Books):** C.E.Hubbard, *Grasses* (1968) (356), J.P.Jessop, G.R.M. Dashorst & F.M.James, *Grasses of South Australia* (2006) (394, Fig 326), N.Walsh & T.Entwistle, *Flora of Victoria* Vol 2 (1994) (577, Fig 116), M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 25 *Poaceae*, part 2 (2003).

**Images:** D.Sharp & B.K.Simon, *AusGrass*. Grasses of Australia. CD-Rom Version 1.0. (2002);

**Derivation** (Clifford & Bostock 2007): in honor of Frederick Townsend (1822–1905) English amateur botanist.

**Classification.** Subfamily Chloridoideae. Tribe: Zoysieae.

**Habit, Vegetative Morphology.** Perennial. Rhizomes elongated, fleshy. Culms erect, 30–130 cm long. Leaf-sheaths without keel. Ligule a fringe of hairs, 1–2 mm long. Leaf-blades persistent, 6–30 cm long, 4–12 mm wide. Leaf-blade surface ribbed. Leaf-blade apex acuminate, hardened.

**Inflorescence.** Inflorescence composed of racemes. Racemes 2–9, digitate or borne along a central axis, erect, unilateral, 4–15 cm long. Central inflorescence axis 0–10 cm long. Rhachis angular, smooth on margins, terminating in a barren extension, extension bristle-like, extension 10–20 mm long. Spikelet packing broadside to rhachis, regular, 2 -rowed. Spikelets appressed, solitary. Fertile spikelets sessile.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate or oblong, laterally compressed, compressed strongly, 12–18 mm long, 2–2.5 mm wide, falling entire.

**Glumes.** Glumes dissimilar, reaching apex of florets. Lower glume linear, 0.6–0.7 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume lateral veins absent. Lower glume surface pubescent. Lower glume apex acute. Upper glume lanceolate, 12–18 mm long, 1 length of adjacent fertile lemma, herbaceous, with membranous margins, 1-keeled, 1–3 -veined. Upper glume surface pubescent. Upper glume apex acute.

**Florets.** Fertile lemma oblong, 12–18 mm long, herbaceous, much thinner on margins, keeled, 1–3 -veined, 0–3 -veined. Lemma surface puberulous, hairy above. Lemma apex acute. Palea 1.1 length of lemma, 2 -veined.

**Flower and Fruit.** Lodicules absent. Anthers 3, 5–7.9 mm long, indehiscent. Stigmas protogynous, terminally exserted, pubescent. Caryopsis with tardily free pericarp, linear. Embryo 1 length of caryopsis. Hilum punctiform.

$2n = 51$  (1 ref TROPICOS), or 59 (1 ref TROPICOS).

**Distribution (TDWG). Continent.** Europe, Australasia (\*).

**Region.** Northern Europe, Southwestern Europe, Southeastern Europe, Middle Europe.

**Country /Province /State.** : Denmark, Great Britain, Ireland. : Belgium, Germany, Netherlands. : France, Spain. : Italy. **Australia, New Zealand.** South Australia (\*), Victoria (\*). New Zealand North I, New Zealand South I.

**TDWG4.** Southern.

**Spartochloa scirpoidea** (Steud.) C.E.Hubb. *Kew Bull.* 1952, 308 (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. **Basionym or Replaced Name:** *Brizopyrum scirpoideum* Steud., *Syn. Pl. Glumac.* 1: 282 (1854). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: New Holl., *Drummond IV.* 102.

**Illustrations (Books):** D.Sharp & B.K.Simon, *AusGrass*. Grasses of Australia. CD-Rom Version 1.0. (2002), C.A.Gardner, *Flora of Western Australia*, Vol 1, Part 1, *Gramineae* (1952) (93, Pl. 26 as *Festuca*).

**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. scirpus*, a rush; *-oidea*, resembling. Similar in habit to *Scirpus*.

**Classification.** Subfamily Panicoideae. Tribe: Cyperochloaeae.

**Habit, Vegetative Morphology.** Perennial, caespitose, clumped densely. Cataphylls evident. Butt sheaths papery, pallid. Basal innovations extravaginal. Culms erect, 50–70 cm long, wiry. Leaves with blades commonly suppressed, transferring photosynthetic function to sheath and culm. Leaf-sheaths without keel, smooth, glabrous on surface. Ligule a fringe of hairs, 0.5 mm long. Leaf-blades deciduous at the ligule,

triangular to linear, 0.5–3 cm long, 0.5–1 mm wide. Leaf-blade midrib evident. Leaf-blade surface ribbed. Leaf-blade apex acute.

**Inflorescence.** Inflorescence a panicle. Panicle contracted, linear, 3–23 cm long, 0.8–1.5 cm wide. Primary panicle branches appressed, simple, 0.3–2 cm long, bearing 1–5 fertile spikelets on each lower branch. Panicle branches stiff (on a stiff central axis), terete. Spikelets appressed, solitary. Fertile spikelets pedicelled. Pedicels present, filiform, terete, eglandular, smooth.

**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, 6–10 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes eventually visible between lemmas.

**Glumes.** Glumes similar, subequal in width, shorter than spikelet, thinner than fertile lemma. Lower glume ovate, 1 length of upper glume, membranous, without keels, 3 -veined. Lower glume apex acute. Upper glume ovate, 0.75 length of adjacent fertile lemma, membranous, without keels, 3 -veined. Upper glume apex acute.

**Florets.** Fertile lemma ovate, laterally compressed, 4–4.5 mm long, cartilaginous, without keel, 5–7 -veined, more than 3-veined. Lemma apex acute. Palea elliptic, 1 length of lemma, 2 -veined. Palea apex obtuse. Apical sterile florets resembling fertile though underdeveloped.

**Flower and Fruit.** Lodicules 2, cuneate, fleshy. Anthers 3. Caryopsis with adherent pericarp, ovoid, trigonous, without sulcus, 1.5 mm long. Endosperm farinose.

**Distribution (TDWG). Continent.** Australasia.

**Country /Province /State.** Australia. Western Australia.

**TDWG4.** South-West.

**Spathia neurosa** Ewart & Archer. Ewart & Davies, *Fl. N. Terr.* 26 (1917).

**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: 30 miles S.E. of Newcastle Waters, ... 9/8/11, *G.F. Hill 504*.

**Illustrations (Books):** J.C.Tothill, & J.B.Hacker. *The grasses of southern Queensland* (1983) (382), D.Sharp & B.K.Simon, *AusGrass*. Grasses of Australia. CD-Rom Version 1.0. (2002).

**Derivation** (Clifford & Bostock 2007): Gk. neuron, nerve; L. -osa, abundance. Spathes prominently nerved.

**Classification.** Subfamily Panicoideae. Tribe: Andropogoneae. Subtribe SACCHARINAE.

**Habit, Vegetative Morphology.** Annual, caespitose. Culms 15–30 cm long. Leaf-sheaths inflated. Ligule a ciliolate membrane, 1–2.5 mm long. Leaf-blades 5–15 cm long, 2–4 mm wide. Leaf-blade surface scaberulous, rough on both sides.

**Inflorescence.** Inflorescence composed of racemes, terminal and axillary, subtended by a spatheole, enclosed. Spatheole lanceolate, 7–10 cm long, membranous. Racemes 3, digitate, 3–3.5 cm long. Rhachis fragile at the nodes, ciliate on margins. Rhachis hairs dark brown, 3 mm long. Rhachis internodes filiform or linear, 2.5–3 mm long, 0.66 length of fertile spikelet. Rhachis internode tip oblique, cupuliform. Spikelets in pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, filiform, 0.5 length of fertile spikelet, ciliate, tip oblique.

**Sterile Spikelets.** Basal sterile spikelets well-developed, 2 in number, 2 in upper racemes, male, lanceolate, equalling fertile.

Companion sterile spikelets well-developed, comprising 2 unequal glumes without lemmas, oblong, 5 mm long, shorter than fertile, separately deciduous. Companion sterile spikelet callus oblong, obtuse. Companion sterile spikelet glumes membranous, 13 -veined, villous, ciliate on margins, dentate.

**Fertile Spikelets.** Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. 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, 5.5–6.2 mm long, falling entire, deciduous with accessory branch structures. Spikelet callus bearded, base obtuse, attached obliquely. Spikelet callus hairs dark brown, 0.75 length of spikelet.

**Glumes.** Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma. Lower glume lanceolate, 1 length of spikelet, coriaceous, without keels, 6–8 -veined. Lower glume surface tuberculate (base of transverse hairs), pilose, with a transverse fringe of hair. Lower glume margins ciliate. Lower glume hairs dark brown. Lower glume apex dentate, 2 -fid. Upper glume lanceolate, 5.5–6.2 mm long, coriaceous, with hyaline margins, 1-keeled, keeled above, 3 -veined. Upper glume primary vein ciliate. Upper glume surface villous, hairy below. Upper glume margins ciliate. Upper glume apex acute.

**Florets.** Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret lanceolate, 2.5–2.7 mm long, hyaline, 0 -veined, ciliate on margins, acute. Fertile lemma linear, 1.8–2.7 mm long, hyaline, without keel, 1 -veined, 0–3 -veined, one-veined. Lemma apex entire, awned, 1 -awned. Principal lemma awn

geniculate, 19–33 mm long overall, with twisted column. Column of lemma awn glabrous. Palea absent or minute.

**Flower and Fruit.** Lodicules 2, cuneate, 0.6–0.7 mm long, membranous, truncate. Anthers 3, 0.5 mm long. Caryopsis with adherent pericarp, oblong, 2–2.8 mm long.

**Distribution (TDWG). Continent.** Australasia.

**Country /Province /State.** Australia. Northern Territory, Queensland.

**TDWG4.** Victoria R & Barkly Tableland, Central Australia. North, Inland.

### **Sphaerobambos hirsuta** S. Dransfield. *Kew Bull.*, 44(3): 428 (1989).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

**TYPE** from Malaysia. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Borneo: Sabah: Lohan River, only one clump, flowering and fruiting, 27 Feb 1986, *Dransfield SD844* (HT: K; IT: SAN).

**Illustrations (Journals):** *Kew Bulletin* (44: 427, Fig.1; 430, Fig.2; 431, Fig.3 (1989)).

**Derivation** (Clifford & Bostock 2007): L. hairy. Plant hairy in respect to all or some parts.

**Classification.** Subfamily Bambusoideae. Tribe: Bambuseae.

**Habit, Vegetative Morphology.** Perennial, woody bamboo, caespitose, clumped loosely. Rhizomes short, pachymorph. Butt sheaths absent. Culms leaning or scandent, zigzag, 1000 cm long, 30–40 mm diam., woody. Culm-internodes terete, thin-walled, 20–40 cm long, smooth or antrorsely scabrous, distally glabrous or pubescent. Lateral branches dendroid. Branch complement several, with 1 branch dominant. Culm-sheaths present, 10–20 cm long, antrorsely scabrous, pilose, auriculate, with 7 mm high auricles, ciliate on shoulders, shoulders with 6–7 mm long hairs. Culm-sheath blade ovate, spreading or reflexed, 10–25 cm long, 60 mm wide, pubescent. Leaf-sheaths pubescent. Leaf-sheath oral hairs ciliate, 6 mm long. Leaf-sheath auricles falcate, 5 mm long. Ligule an eciliate membrane, lacerate. Leaf-blade base broadly rounded, with a brief petiole-like connection to sheath, petiole pubescent. Leaf-blades lanceolate, 11–23 cm long, 30–40 mm wide. Leaf-blade surface pubescent, hairy on both sides. Leaf-blade apex acuminate.

**Inflorescence.** Synflorescence bractiferous, clustered at the nodes, in stellate clusters, with glumaceous subtending bracts, with axillary buds at base of spikelet, prophyllate below lateral spikelets, leafy between clusters or leafless between clusters.

Fertile spikelets sessile.

**Fertile Spikelets.** Spikelets comprising 5 fertile florets, with a barren rhachilla extension. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets oblong, laterally compressed, 15 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes several, 3 empty glumes, persistent, similar, shorter than spikelet. Lower glume ovate, 1–1.5 mm long, 0.7–0.8 length of upper glume, chartaceous, without keels, 3 -veined. Lower glume surface pubescent. Lower glume margins ciliate. Lower glume apex obtuse. Upper glume ovate. Upper glume surface pubescent.

**Florets.** Fertile lemma ovate, 7 mm long, chartaceous, without keel, 3 -veined, 0–3 -veined. Lemma margins ciliate. Lemma apex obtuse. Palea 6 -veined. Palea keels winged, narrowly winged. Palea surface pubescent, hairy on flanks.

**Flower and Fruit.** Lodicules absent. Anthers 6. Stigmas 3. Ovary umbonate, glabrous. Caryopsis with adherent pericarp, orbicular, isodiametric, 6 mm long.

**Distribution (TDWG). Continent.** Tropical Asia.

**Country /Province /State.** Malesia. Borneo.

### **Sphaerobambos philippinensis** (Gamble) S. Dransfield. *Kew Bull.*, 44(3): 432: (1989).

**Accepted by:** R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

**TYPE** from The Philippines. **Basionym or Replaced Name:** *Guadua philippinensis* Gamble, *Philipp. J. Sci.* 8(4): 203 (1913). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *C.V. Piper* 475, 8 May 1911, Philippines: Mindanao: Distr. Davao, Mati (K; IT: US-900313).

**Illustrations (Journals):** *Kew Bulletin* (44: 431, Fig.4 (1989)).

**Derivation** (Clifford & Bostock 2007): L. -ensis, denoting origin. From the Philippines.

**Classification.** Subfamily Bambusoideae. Tribe: Bambuseae.

**Habit, Vegetative Morphology.** Perennial, woody bamboo. Rhizomes short, pachymorph. Butt sheaths absent. Culms leaning or scandent, 40–60 cm long, 25–50 mm diam., woody. Culm-internodes terete, thin-walled, 60–70 cm long, smooth, distally glabrous. Lateral branches dendroid. Branch complement several.



Culm-sheaths present, 9 cm long, smooth, glabrous, auriculate, with 2 mm high auricles, setose on shoulders. Culm-sheath blade lanceolate or narrowly ovate, 6–16 cm long, 20 mm wide, glabrous on surface. Leaf-sheath oral hairs setose. Ligule an eciliate membrane. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades lanceolate, 10–17 cm long, 15 mm wide. Leaf-blade apex acuminate.

**Inflorescence.** Synflorescence bractiferous, clustered at the nodes, in untidy tufts, with glumaceous subtending bracts, with axillary buds at base of spikelet, prophyllate below lateral spikelets, leafless between branches.

Fertile spikelets sessile.

**Fertile Spikelets.** Spikelets comprising 5 fertile florets, with a barren rhachilla extension. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets ovate, laterally compressed, 15 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes persistent, similar, shorter than spikelet. Lower glume ovate, 3 mm long, chartaceous, without keels. Lower glume apex acute. Upper glume ovate, 3 mm long, chartaceous. Upper glume apex acute.

**Florets.** Fertile lemma ovate, 6 mm long, chartaceous, without keel, 9 -veined, more than 3-veined. Lemma surface glabrous. Lemma apex acute. Palea 8 mm long. Palea keels ciliolate. Palea surface pubescent, hairy on flanks.

**Flower and Fruit.** Lodicules absent. Anthers 6. Stigmas 3.

**Distribution (TDWG). Continent.** Tropical Asia.

**Country /Province /State.** Indo-China, Malesia. Philippines.

### **Sphaerobambos subtilis** S. Dransfield. *Kew Bull.*, 44(3): 432 (1989).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

**TYPE** from Indonesia. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: IT: *P.J. Eyma* 3426, 19 Aug 1938, Indonesia: Sulawesi, Sulaewsi Utara, Manado (L).

**Illustrations (Journals):** *Kew Bulletin* (44: 433, Fig.5 (1989)).

**Derivation** (Clifford & Bostock 2007): L. fine. Leaf-blades linear.

**Classification.** Subfamily Bambusoideae. Tribe: Bambuseae.

**Habit, Vegetative Morphology.** Perennial, woody bamboo. Rhizomes short, pachymorph. Butt sheaths absent. Culms leaning or scandent, 3–4 mm diam., woody. Culm-internodes terete, thin-walled, smooth, distally glabrous. Lateral branches dendroid. Branch complement many, with 1 branch dominant. Culm-sheaths present. Leaf-sheath oral hairs ciliate, deciduous. Ligule an eciliate membrane. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades lanceolate, 10–13 cm long, 7–10 mm wide. Leaf-blade surface pubescent, hairy on both sides. Leaf-blade apex acuminate.

**Inflorescence.** Synflorescence bractiferous, clustered at the nodes, in untidy tufts, with glumaceous subtending bracts, with axillary buds at base of spikelet, prophyllate below lateral spikelets, leafless between branches.

Fertile spikelets sessile.

**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 ovate, laterally compressed, 6–8 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes persistent, similar, shorter than spikelet. Lower glume ovate, 1 mm long, chartaceous, without keels. Lower glume apex acute. Upper glume ovate, 1.5 mm long, chartaceous. Upper glume apex acute.

**Florets.** Fertile lemma ovate, 3–3.5 mm long, chartaceous, without keel, 5–7 -veined, more than 3-veined. Lemma surface glabrous. Lemma apex acute. Palea 4.5 mm long, 8 -veined. Palea keels winged, narrowly winged, ciliolate. Palea surface pilose, hairy on margins.

**Flower and Fruit.** Lodicules absent. Anthers 6. Stigmas 3.

**Distribution (TDWG). Continent.** Tropical Asia.

**Country /Province /State.** Malesia. Sulawesi.

### **Sphaerocaryum malaccense** (Trin.) Pilger. Fedde, *Repert.* xlv. 2 (1938).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), S-L Chen et al, *Flora of China* 22 (Poaceae) (2006), N.L.Bor, *Grasses of Burma, Ceylon, India and Pakistan* (1960).

**TYPE** from India. **Basionym or Replaced Name:** *Panicum malaccense* Trin., *Gram. Panic.* 204 (1826). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: T - frag & drawing: ...*am Stephan, ex coll. patris, cui comm. b. Willdenow s.n. Agrostios malaccensis*, India (LE-TRIN-0806.01 (ex hrbr. Willd. 1737 & fig.)).

**Illustrations (Books):** T.Koyama, *Grasses of Japan and its neighbouring regions* (1987) (138, Fig 45), C-C Hsu, *Flora of Taiwan*, Vol 5 (1978) (464), C-C Hsu, *Taiwan Grasses* (1975) (515, Pl. 1416), H.B.Gilliland, *Grasses of Malaya* (1971) (127, Fig. 23), H.Duistermaat, *Field Guide to the Grasses of Singapore* (2005) (129, Fig. 132), S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 782).

**Derivation** (Clifford & Bostock 2007): L. -ense, denoting origin. From Malacca, Malaysia.

**Classification.** Subfamily Micrairoideae. Tribe Isachneae.

**Habit, Vegetative Morphology.** Annual. Culms prostrate, 7–30 cm long, rooting from lower nodes. Leaf-sheaths hispid, with tubercle-based hairs. Ligule a fringe of hairs. Leaf-blade base amplexicaul. Leaf-blades ovate, 0.8–4 cm long, 5–15 mm wide. Leaf-blade venation with obscure cross veins. Leaf-blade margins tuberculate-ciliate.

**Inflorescence.** Inflorescence a panicle. Panicle open, ovate, dense, 2.5–5 cm long. Primary panicle branches spreading. Panicle branches capillary, glandular. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets elliptic, subterete, 0.7–1.2 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes deciduous, similar, reaching apex of florets, similar to fertile lemma in texture. Lower glume ovate, 0.75 length of spikelet, hyaline, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume apex obtuse. Upper glume ovate, 1 length of adjacent fertile lemma, hyaline, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume apex obtuse.

**Florets.** Fertile lemma ovate, 0.7–1.2 mm long, hyaline, without keel, 1 -veined, 0–3 -veined, one-veined. Lemma surface pubescent. Lemma apex obtuse. Palea ovate, 1 length of lemma, hyaline, 3 -veined, without keels. Palea surface pubescent. Palea apex obtuse.

**Flower and Fruit.** Anthers 3, 0.5 mm long.

*N* = 10 (2 refs TROPICOS).

**Distribution (TDWG). Continent.** Temperate Asia, Tropical Asia.

**Country /Province /State.** **China, Eastern Asia.** China South Central, China Southeast. Taiwan. **Indian Subcontinent, Indo-China, Malesia.** Assam, India, Sri Lanka. Myanmar, Thailand, Vietnam. Borneo, Malaya, Singapore, Philippines, Sumatra.

**TDWG4.** Anhui, Fujian, Guangdong, Guangxi, Jiangxi, Zhejiang, Yunnan.

**Spheneria kegelii** (C.Muell.) Pilger. *Repert. Spec. Nov. Regni Veg.* 26(15): 228 (1929).

**Accepted by:** R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

**Basionym or Replaced Name:** *Paspalum kegelii* Müll. Hal., *Bot. Zeitung (Berlin)* 19(44): 324 (1861). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *H.A.H. Kegel 1316*, May 1846, Surinam (B; IT: US-2855309 (fragm. ex B), W).

**Illustrations (Books):** E.Judziewicz, *Flora of the Guianas*, 187. *Poaceae* (1990) (605, Fig 104), R.Pilger, *Die Natürlichen Pflanzenfamilien* 14e (1940).

**Derivation** (Clifford & Bostock 2007): in honor of Hermann Aribert Heinrich Kegel (1819–56) German botanist.

**Classification.** Subfamily Panicoideae. Tribe: Paspaleae. Subtribe PASPALINAE.

**Habit, Vegetative Morphology.** Perennial, caespitose. Culms 10–40 cm long. Ligule a fringe of hairs. Leaf-blades filiform, 3–8 cm long, 0.5–1 mm wide. Leaf-blade surface pilose, hairy abaxially, with tubercle-based hairs.

**Inflorescence.** Inflorescence composed of racemes. Racemes 2–3, borne along a central axis, unilateral, 1–2.5 cm long. Central inflorescence axis 0.5–1.5 cm long, tip filiform (forked). Rhachis terminating in a barren extension, extension subulate. Spikelet packing abaxial, regular, 1 -rowed. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, linear, 1.2–2 mm long, 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 obovate (turbinate), dorsally compressed, obtuse, 2.5–3.5 mm long, falling entire. Spikelet callus linear, 1–1.5 mm long, pubescent, base pungent, attached obliquely.

**Glumes.** Glumes one the lower absent or obscure, shorter than spikelet, thinner than fertile lemma. Upper glume oblong, 0.9 length of adjacent fertile lemma, membranous, without keels, 5 -veined. Upper glume surface pubescent, with a transverse fringe of hair. Upper glume apex obtuse.

**Florets.** Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret obovate, 0.9 length of spikelet, membranous, 5 -veined, pubescent, with a transverse fringe of hair, obtuse. Fertile lemma obovate, 1.5–2 mm long, indurate, dark brown, without keel. Lemma apex rostrate (slightly incurved). Palea indurate.

**Distribution (TDWG). Continent.** South America.

**Country /Province /State.** Northern South America, Brazil. Guyana, Surinam. Brazil West Central, Brazil North.

Para, Amapa, Amazonas, Acre, Rondonia, Goias.

### **Sphenopholis filiformis** (Chapm.) Scribn. *Rhodora*, viii. 144 (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:** *Eatonia pensylvanica* var. *filiformis* Chapm., *Fl. South U.S.* 560 (1860). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: IT: *D. Chapman s.n.*, 18--, USA: Florida (US-868687).

**Illustrations (Books):** M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 24 *Poaceae*, part 1 (2007) (622).

**Classification.** Subfamily Pooideae. Tribe: Poeae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Culms 20–100 cm long. Leaf-sheaths glabrous on surface or pubescent. Ligule an eciliate membrane. Leaf-blades involute, 30–45 cm long (basal blades), 1–2 mm wide. Leaf-blade surface glabrous to pubescent.

**Inflorescence.** Inflorescence a panicle. Panicle contracted, lanceolate, 5–20 cm long. Primary panicle branches ascending. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, linear.

**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 obovate, laterally compressed, 3–4 mm long, falling entire. Rhachilla internodes 0.6–1.1 mm long, pubescent.

**Glumes.** Glumes dissimilar, with lower narrower than upper, shorter than spikelet, gaping. Lower glume lanceolate, 1.1–2.5 mm long, 0.7–0.8 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 obovate, 1.5–3.5 mm long, 0.8–1 length of adjacent fertile lemma, membranous, 1-keeled, 3 -veined. Upper glume primary vein smooth or scaberulous. Upper glume apex truncate.

**Florets.** Fertile lemma elliptic, 1.8–3.2 mm long, membranous, without keel, 5 -veined, more than 3-veined. Lemma surface scaberulous, rough above. Lemma apex acute, muticous or mucronate or awned, 1 -awned. Principal lemma awn subapical, curved, 0–2 mm long overall. Palea gaping, 0.8 length of lemma. Palea keels scaberulous. Rhachilla extension 0.75 length of fertile floret.

**Flower and Fruit.** Ovary glabrous. Caryopsis with adherent pericarp, oblong, glabrous. Endosperm liquid.

**Distribution (TDWG). Continent.** North America.

**Country /Province /State.** South-central USA, Southeastern USA. Texas. Alabama, Arkansas, Delaware, Florida, Georgia, Louisiana, Maryland, Mississippi, North Carolina, South Carolina, Tennessee.

### **Sphenopholis intermedia** (Rydb.) Rydb. *Bull. Torr. Bot. Club*, vi. 533 (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 USA. **Basionym or Replaced Name:** *Eatonia intermedia* Rydb., *Bull. Torrey Bot. Club* 32(11): 602–603 (1905). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: IT: *P.A. Rydberg 3174*, 24 Jul 1896, USA: Montana (US-72675).

**Illustrations (Books):** M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 24 *Poaceae*, part 1 (2007) (622).

**Derivation** (Clifford & Bostock 2007): *L. intermedia*. Having affinities with but distinct from other species.

**Classification.** Subfamily Pooideae. Tribe: Poeae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Culms erect, 30–120 cm long. Leaf-sheaths glabrous on surface to pubescent. Ligule an eciliate membrane. Leaf-blades 2–15 cm long, 2–6 mm wide. Leaf-blade surface scaberulous, glabrous or pilose, sparsely hairy.

**Inflorescence.** Inflorescence a panicle. Panicle open, lanceolate or ovate, dense or loose, nodding, 10–20 cm long. Primary panicle branches ascending, 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 obovate, laterally compressed, 3–5 mm long, falling entire. Rhachilla internodes 0.6–1.2 mm long, pubescent.

**Glumes.** Glumes dissimilar, with lower narrower than upper, shorter than spikelet, gaping. Lower glume linear, 1–4 mm long, 1 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume lateral veins absent. Upper glume obovate, 1–4 mm long, membranous, 1-keeled, 3 -veined. Upper glume apex acute.

**Florets.** Fertile lemma elliptic, 2.5–4.4 mm long, membranous, without keel, 5 -veined, more than 3-veined. Lemma surface smooth. Lemma apex acute, muticous or mucronate. Palea gaping. Rhachilla extension 0.75 length of fertile floret.

**Flower and Fruit.** Ovary glabrous. Caryopsis with adherent pericarp.

$2n = 14$  (1 ref TROPICOS).

**Distribution (TDWG).** Continent. North America.

**Country /Province /State.** Subarctic America, Western Canada, Eastern Canada, Northwest USA, North-central USA, Northeast USA, Southwestern USA, South-central USA, and Southeastern USA. Alaska, Yukon, Northwest Territories. Alberta, British Columbia, Manitoba, Saskatchewan. New Brunswick, Newfoundland, Nova Scotia, Ontario, Prince Edward I, Quebec. Idaho, Montana, 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, Nevada, Utah. New Mexico, Texas. Alabama, Arkansas, Delaware, Kentucky, Louisiana, Maryland, Mississippi, North Carolina, South Carolina, Tennessee, Virginia, District of Columbia.

**Sphenopholis interrupta** (Buckl.) Scribn. *Rhodora*, viii. 145 (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:** *Trisetum interruptum* Buckley, *Proc. Acad. Nat. Sci. Philadelphia* 14: 100 (1862). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: LT: *Buckley s.n.*, USA: Middle Texas (PH; IT: US (fragm. ex PH & photo; left-hand specimen)). LT designated by Hitchcock, *Man. Grass. U.S.* 973 (1935), but without citing a specific sheet in a specific herbarium; Specific sheet designated by Finot et al., *Ann Missouri Bot. Gard.* 91(1): 4 (2004).

**Illustrations (Books):** M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 24 *Poaceae*, part 1 (2007) (752 as *Trisetum interruptum*), F.W.Gould, *The Grasses of Texas* (1975) (a131, Fig. 64s *Trisetum interruptum*).

**Derivation** (Clifford & Bostock 2007): L. not continuous. Spikelets or inflorescence branches clustered at intervals along an axis.

**Classification.** Subfamily Pooideae. Tribe: Poeae.

**Habit, Vegetative Morphology.** Annual, caespitose. Culms erect or geniculately ascending, 10–50 cm long. Culm-internodes distally glabrous or pubescent. Leaf-sheaths without keel, hispid, with simple hairs or reflexed hairs. Ligule a ciliolate membrane, 1.5–2 mm long, entire or lacerate, obtuse. Leaf-blades 2–10 cm long, 1–4 mm wide. Leaf-blade surface glabrous to pubescent.

**Inflorescence.** Inflorescence a panicle. Panicle contracted, linear, interrupted, 5–10 cm long, 0.4–1.5 cm wide. Primary panicle branches appressed. Panicle branches glabrous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1–2 fertile florets, with diminished florets at the apex. Spikelets of 1 fertile floret with or without additional sterile florets, or of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets oblong, laterally compressed, 4–6 mm long, falling entire, readily shedding fertile florets. Floret callus evident.

**Glumes.** Glumes similar, with lower narrower than upper, shorter than spikelet or reaching apex of florets, thinner than fertile lemma. Lower glume obovate, 4–5 mm long, 1 length of upper glume, membranous, 1-keeled, 3 -veined. Lower glume primary vein smooth or scaberulous. Lower glume apex acute. Upper glume obovate, 4–5 mm long, 1–1.1 length of adjacent fertile lemma, membranous, 1-keeled, 5 -veined. Upper glume primary vein smooth or scaberulous. Upper glume apex acute.

**Florets.** Fertile lemma lanceolate, 3.5–5 mm long, membranous, without keel, 5 -veined, more than 3-veined. Lemma lateral veins obscure. Lemma apex lobed, 2 -fid, setaceously acuminate, awned, 1 -awned. Principal lemma awn dorsal, arising 0.75 way up back of lemma, bigeniculate, 5–8 mm long overall, with

twisted column. Palea gaping, 0.66 length of lemma, hyaline. Apical sterile florets resembling fertile though underdeveloped.

**Flower and Fruit.** Anthers 3. Caryopsis with adherent pericarp. Hilum punctiform.

**Distribution (TDWG). Continent.** North America.

**Country /Province /State.** Northwest USA, Southwestern USA, South-central USA, Mexico. Colorado. Arizona. New Mexico, Texas. Northwest Mexico. Baja California.

### **Sphenopholis longiflora** (Vasey ex Dewey) Hitchcock. *Journ. Wash. Acad. Sc.* xxiii. 453 (1933).

Regarded by K as a synonym (*S. intermedia*).

**Accepted by:** R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online.

**TYPE** from USA. **Basionym or Replaced Name:** *Eatonia pensylvanica* var. *longiflora* Vasey ex L.H. Dewey, *Contr. U.S. Natl. Herb.* 2(3): 544 (1894). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: IT: *G.C. Nealley 15*, Mar 1892, USA: Texas: Houston Co. (US-72673).

**Illustrations (Books):** M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 24 *Poaceae*, part 1 (2007) (623).

**Derivation** (Clifford & Bostock 2007): *L. longus*, long; flos, flower. Having long spikelets.

**Classification.** Subfamily Pooideae. Tribe: Poeae.

**Distribution (TDWG). Continent.** North America.

**Country /Province /State.** South-central USA, Southeastern USA. Texas. Arkansas, Louisiana.

### **Sphenopholis nitida** (Biehler) Scribn. *Rhodora*, viii. 144 (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:** *Aira nitida* Biehler, *Pl. Nov. Herb. Spreng.* 8 (1807). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: USA: Pennsylvania, *Muhlenberg*.

**Illustrations (Books):** M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 24 *Poaceae*, part 1 (2007) (622).

**Derivation** (Clifford & Bostock 2007): *L. niteo*, shine; Spikelets or lemmas shiny.

**Classification.** Subfamily Pooideae. Tribe: Poeae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Culms 30–70 cm long. Ligule an eciliate membrane. Leaf-blades 2–8 cm long, 1–3 mm wide. Leaf-blade surface glabrous or pubescent.

**Inflorescence.** Inflorescence a panicle. Panicle open, oblong, effuse, 7–20 cm long. Primary panicle branches ascending, whorled at most nodes. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, linear, 0.2–1.5 mm long.

**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 obovate, laterally compressed, 2.5–4 mm long, falling entire. Rhachilla internodes 0.7–1 mm long, pubescent.

**Glumes.** Glumes dissimilar, with lower narrower than upper, shorter than spikelet, gaping. Lower glume oblong, 1.5–2.5 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 obtuse. Upper glume obovate, 1.5–2.5 mm long, 0.7 length of adjacent fertile lemma, membranous, 1-keeled, 3 -veined. Upper glume primary vein scaberulous. Upper glume apex truncate.

**Florets.** Fertile florets all alike or with the lowest dissimilar (smooth). Fertile lemma elliptic, 2–3.5 mm long, membranous, without keel, 5 -veined, more than 3-veined. Lemma surface scaberulous, rough generally. Lemma apex obtuse or acute, muticous or mucronate or awned, 1 -awned. Principal lemma awn subapical, curved, 0–3.5 mm long overall. Palea gaping, 0.8 length of lemma. Palea keels scaberulous. Rhachilla extension 0.75 length of fertile floret.

**Flower and Fruit.** Ovary glabrous. Caryopsis with adherent pericarp, oblong, glabrous. Endosperm liquid.

**Distribution (TDWG). Continent.** North America.

**Country /Province /State.** North-central USA, Northeast USA, South-central USA, Southeastern USA. Illinois, Missouri. Connecticut, Indiana, Maine, Massachusetts, Michigan, Ohio, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, Vermont, West Virginia. Texas. Alabama, Arkansas, Delaware, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, North Carolina, South Carolina, Tennessee, Virginia, District of Columbia.

**Sphenopholis obtusata** (Michx.) Scribn. *Rhodora*, viii. 144 (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:** *Aira obtusata* Michx., *Fl. Bor.-Amer.* 1: 62 (1803). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: LT: *Michaux s.n.* (*slender specimen*), USA: in Florida juxta domum Wiggin (P (photo, NY, US); IT: US-72667 (fragm.)). LT designated by Hitchcock, *Contr. U.S. Natl. Herb.* 12: 152 (1908).

**Illustrations (Books):** K.F.Best, et al, *Prairie Grasses* (1971) (221), F.W.Gould, *The Grasses of Texas* (1975) (129, Fig. 63 as var. *obtusata*), R.McVaugh, *Flora Nova-Galiciana Vol.14 Gramineae* (1983), A.S.Hitchcock, *Manual of the Grasses of the West Indies* (1936) (65, Fig. 35), M.E.Barkworth et al, *Flora of North America north of Mexico Vol 24 Poaceae*, part 1 (2007) (623).

**Derivation** (Clifford & Bostock 2007): *L. obtusus*, blunt; -ata, possessing. Glumes truncate.

**Classification.** Subfamily Pooideae. Tribe: Poeae.

**Habit, Vegetative Morphology.** Annual or perennial, caespitose. Culms 20–70(–120) cm long. Ligule an eciliate membrane, 1.5–3 mm long. Leaf-blades 4–10(–15) cm long (basal blades), 2–8 mm wide.

**Inflorescence.** Inflorescence a panicle. Panicle open or contracted, lanceolate, 5–25 cm long. Primary panicle branches appressed. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, linear, 0.2–2 mm long.

**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 obovate, laterally compressed, 1.5–5 mm long, falling entire. Rhachilla internodes 0.3–1.2 mm long, smooth or scaberulous.

**Glumes.** Glumes dissimilar, with lower narrower than upper, shorter than spikelet, gaping. Lower glume lanceolate, 1–4 mm long, 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 obovate, 1.2–4.2 mm long, 0.8 length of adjacent fertile lemma, membranous, 1-keeled, 3 -veined. Upper glume primary vein scaberulous. Upper glume surface smooth or asperulous, rough on veins. Upper glume apex obtuse or acute.

**Florets.** Fertile lemma ovate, 1.4–4.4 mm long, membranous, keeled, 5 -veined, more than 3-veined. Lemma surface smooth or scaberulous. Lemma apex obtuse or acute. Palea gaping, 0.8 length of lemma. Palea keels scaberulous. Rhachilla extension 0.75 length of fertile floret.

**Flower and Fruit.** Ovary glabrous. Caryopsis with adherent pericarp, oblong, glabrous. Endosperm liquid.  $2n = 14$  (1 ref TROPICOS).

**Distribution (TDWG). Continent.** Pacific, North America, South America.

**Country /Province /State. North-central Pacific.** Hawaii (\*). **Western Canada, Eastern Canada, Northwest USA, North-central USA, Northeast USA, Southwestern USA, South-central USA, Southeastern USA, Mexico.** Alberta, British Columbia, Manitoba, Saskatchewan. New Brunswick, Nova Scotia. Colorado, Idaho, Montana, Oregon, Washington, Wyoming. Illinois, Iowa, Kansas, Minnesota, Missouri, North Dakota, Nebraska, Oklahoma, South Dakota, Wisconsin. Connecticut, Indiana, 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, Northwest Mexico, Southwest Mexico. **Caribbean.** Dominican Republic.

**TDWG4.** Distrito Federal, Puebla. Aguascalientes, Coahuila, Chihuahua, Durango, Guanajuato, Neuvo Leon. Baja California, Sonora. Jalisco, Oaxaca.

**Sphenopholis pensylvanica** (L.) Hitchcock. *Amer. Journ. Bot.* ii. 304 (1915).

**Accepted by:** R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

**TYPE** from USA. **Basionym or Replaced Name:** *Avena pensylvanica* L., *Sp. Pl.* 79 (1753). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *Kalm s.n.*, USA: Pennsylvania (LINN). see Hitchcock, *Contr. U.S. Natl. Herb.* 12: 123 (1908).

**Illustrations (Books):** M.E.Barkworth et al, *Flora of North America north of Mexico Vol 24 Poaceae*, part 1 (2007) (622).

**Derivation** (Clifford & Bostock 2007): *L. -ica*, belonging to. From Pennsylvania, USA. In the 17th and 18th centuries the spelling was Pennsylvania.

**Classification.** Subfamily Pooideae. Tribe: Poeae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Culms 30–120 cm long. Leaf-sheaths glabrous on surface or pubescent. Ligule an eciliate membrane. Leaf-blades 5–20 cm long, 1–7 mm wide. Leaf-blade surface glabrous or pubescent.

**Inflorescence.** Inflorescence a panicle. Panicle open, oblong, effuse, 7–35 cm long. Primary panicle branches appressed. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, linear.

**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 obovate, laterally compressed, 5–9.5 mm long, falling entire. Rhachilla internodes 1–2.1 mm long, pubescent, with 0.5–0.8 mm long hairs.

**Glumes.** Glumes dissimilar, with lower narrower than upper, shorter than spikelet, gaping. Lower glume lanceolate, 3.5–5.5 mm long, 0.9 length of upper glume, membranous, 1-keeled, 1–3 -veined. Lower glume primary vein scaberulous. Lower glume apex acute, mucicous or mucronate. Upper glume obovate, 3.8–6.2 mm long, 0.9–1 length of adjacent fertile lemma, membranous, 1-keeled, 3–5 -veined. Upper glume primary vein scaberulous. Upper glume apex acute, mucicous or mucronate.

**Florets.** Fertile florets all alike or with the lowest dissimilar (smooth, mucronate). Fertile lemma ovate, 3.9–7.2 mm long, membranous, without keel, 5 -veined, more than 3-veined. Lemma surface scabrous, rough generally. Lemma apex acute, awned, 1 -awned. Principal lemma awn subapical, curved, 3.5–7 mm long overall. Palea gaping, 0.8 length of lemma. Palea keels scaberulous. Rhachilla extension 0.75 length of fertile floret.

**Flower and Fruit.** Ovary glabrous. Caryopsis with adherent pericarp, oblong, glabrous. Endosperm liquid.

**Distribution (TDWG). Continent.** North America.

**Country /Province /State. Northeast USA, Southeastern USA.** Connecticut, Massachusetts, Ohio, New Jersey, New York, Rhode Island, Vermont. Alabama, Arkansas, Delaware, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, North Carolina, South Carolina, Tennessee, Virginia, District of Columbia.

**Sphenopholis x pallens** (Biehler) Scribn. *Rhodora*, viii. 145 (1906).

**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 USA. **Basionym or Replaced Name:** *Aira pallens* Biehler, *Pl. Nov. Herb. Spreng.* 8 (1807). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: USA: Pennsylvania, *Muhlenberg s.n.*

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): L. pale. Inflorescences pale.

**Classification.** Subfamily Pooideae. Tribe: Poeae.

**Distribution (TDWG). Continent.** North America.

**Country /Province /State. Northwest USA.** Washington.

**Sphenopus divaricatus** (Gouan) Reichb. *Fl. Germ. Excurs.* 45 (1830).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), D.Sharp, D. & B.K.Simon, *AusGrass* (2002), T.G.Tutin et al, *Flora Europaea* 5 (1980), N.Tsvelev, *Grasses of the Soviet Union* (1983).

**TYPE** from France. **Basionym or Replaced Name:** *Poa divaricata* Gouan, *Ill. Observ. Bot.* 3: 4, t. 2, f. 1 (1773). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: LT: Gouan, *Obs. Bot.* t. 2, f. 1 (1773) LT designated by ?.

**Illustrations (Books):** G.E.Gibbs Russell et al, *Grasses of Southern Africa* (1990) (303, Fig 196), N.Feinbrun-Dothan, *Flora Palaestina* 4 (1986) (Pl. 315), L.Boulos, *Flora of Egypt* 4 (2005) (147, Fig 41), N.L.Bor, *Gramineae* in K.H.Rechinger, *Flora Iranica*. No. 70/30 (1970), N.L.Bor, *Gramineae* in *Flora of Iraq* (1968) (111, Pl. 38), J.P.Jessop, G.R.M. Dashorst & F.M.James, *Grasses of South Australia* (2006) (169, Fig 119), A.Wilson (ed.), *Flora of Australia*, Vol 44A. *Poaceae* (2009) (341, Fig 45), 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);, L.Boulos, *Flora of Egypt* 4 (2005);.

**Derivation** (Clifford & Bostock 2007): L. divarico, spread out. Inflorescence branches or culms regularly dividing into equal branches.

**Classification.** Subfamily Pooideae. Tribe: Poeae.

**Habit, Vegetative Morphology.** Annual. Culms erect or decumbent, 10–30 cm long. Culm-nodes black. Ligule an eciliate membrane, 2.5–4 mm long, obtuse or acute. Leaf-blades filiform, convolute, 6–7 cm long, 1 mm wide.

**Inflorescence.** Inflorescence a panicle. Panicle open, ovate, 2–10 cm long. Primary panicle branches 2-nate, branching divaricately. Panicle branches capillary. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, cuneate, 2–4 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 elliptic, laterally compressed, 2–3 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes persistent, dissimilar, shorter than spikelet, thinner than fertile lemma. Lower glume orbicular, 0.1–0.4 mm long, 0.2–0.4 length of upper glume, hyaline, without keels, 0-veined. Lower glume lateral veins absent. Lower glume apex obtuse. Upper glume oblong, 0.6–1 mm long, 0.25–0.5 length of adjacent fertile lemma, hyaline, 1-keeled, (0–)1-veined. Upper glume apex emarginate or obtuse.

**Florets.** Fertile lemma ovate, 1.5–2 mm long, membranous, keeled, keeled above, 3-veined, 0–3-veined. Lemma midvein scabrous. Lemma apex truncate or obtuse, mucicous. Palea keels scabrous, adorned above. Apical sterile florets resembling fertile though underdeveloped.

**Flower and Fruit.** Anthers 3, oblong, 0.2–0.6 mm long. Ovary glabrous. Caryopsis with adherent pericarp, oblong, 0.75–1.25 mm long. Embryo 0.2–0.25 length of caryopsis. Hilum punctiform.

$N = 7$  (1 ref TROPICOS).  $2n = 12$  (1 ref TROPICOS), or 28 (1 ref TROPICOS).

**Distribution (TDWG). Continent.** Europe, Africa, Temperate Asia, Australasia (\*).

**Region. Northern Europe** (\*), **Southwestern Europe**, **Southeastern Europe**.

**Country /Province /State.** : GB Aliens (Ryves et al). **Northern Africa**, **Macaronesia**, **Southern Africa**. Algeria, Egypt, Libya, Tunisia. Canary Is, Madeira. Northern Cape, Western Cape. **Middle Asia**, **Caucasus**, **Western Asia**, **Arabian Peninsula**. Turkmenistan, Tadjikistan. Afghanistan, Iran, Iraq. Gulf States, Kuwait. **Australia**. South Australia (\*).

**TDWG4.** Southern.

**Sphenopus ehrenbergii** Hausskn. *Mitth. Thuring. Bot. Ver.* n. s. xiii. 57. (1899).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online.

**TYPE** from Egypt. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: Egypt: Alexandria, *Ehrenberg s.n.*

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): in honor of Christian Gottfried Ehrenberg (1795–1876) German physician and naturalist.

**Classification.** Subfamily Pooideae. Tribe: Poeae.

**Habit, Vegetative Morphology.** Annual. Culms geniculately ascending or decumbent, 5–30 cm long. Ligule an eciliate membrane, 2–4 mm long. Leaf-blades filiform, convolute, 4–7 cm long, 0.5–1 mm wide. Leaf-blade apex callose.

**Inflorescence.** Inflorescence a panicle. Panicle open or contracted, lanceolate or ovate, 2–7 cm long. Primary panicle branches branching divaricately. Panicle branches capillary. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, cuneate.

**Fertile Spikelets.** Spikelets comprising 2–6 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets cuneate, laterally compressed, 4–5 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes persistent, dissimilar, shorter than spikelet, thinner than fertile lemma. Lower glume orbicular, 0.3–0.5 mm long, 0.2–0.5 length of upper glume, hyaline, without keels, 0-veined. Lower glume lateral veins absent. Lower glume apex obtuse. Upper glume oblong, 0.6–1 mm long, 0.25–0.5 length of adjacent fertile lemma, hyaline, without keels, (0–)1-veined. Upper glume apex acute.

**Florets.** Fertile lemma elliptic, 2 mm long, membranous, keeled, keeled above, 5-veined, more than 3-veined. Lemma lateral veins with distinct primaries but obscure intermediates. Lemma apex obtuse, mucronate. Palea keels ciliate. Apical sterile florets resembling fertile though underdeveloped.

**Flower and Fruit.** Anthers 3, linear, 0.75–1 mm long. Ovary glabrous. Caryopsis with adherent pericarp, linear, 1 mm long. Hilum punctiform.

**Distribution (TDWG). Continent.** Africa.

**Country /Province /State.** **Northern Africa.** Libya, Tunisia.

**Spinifex hirsutus** Labill. *Nov. Holl. Pl.* ii. 81. tt. 230, 231. (1806).

**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: *Labillardiere s.n.*, Australia: Esperance Bay (FI). LT designated by Craig, *Nuytsia* 5: 70 (1984).

**Illustrations (Books):** J.P.Jessop, G.R.M. Dashorst & F.M.James, *Grasses of South Australia* (2006) (485, Fig 420), J.C.Tothill, & J.B.Hacker. *The grasses of southern Queensland* (1983) (384).

**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) (334, Fig.76 as *S. inermis*).

**Derivation** (Clifford & Bostock 2007): L. hairy. Plant hairy in respect to all or some parts.

**Classification.** Subfamily Panicoideae. Tribe: Paniceae. Subtribe SETARIINAE.

**Habit, Vegetative Morphology.** Perennial, mat forming. Stolons present. Culms 30–90 cm long, woody. Culm-nodes glabrous. Leaf-sheaths pubescent, outer margin hairy. Ligule a fringe of hairs, 2–7 mm long. Leaf-blades flat or involute, 20–40 cm long, 5–17 mm wide, indurate, stiff, glaucous. Leaf-blade surface pubescent, hairy on both sides. Leaf-blade apex acuminate, pungent. Dioecious.

**Inflorescence.** Synflorescence compound, stellate, 15–30 cm long, with principal spatheoles embracing a compact fascicle of racemes, each subtended by a subsidiary bract.

Inflorescence composed of racemes, terminal and axillary, deciduous as a whole (first synflorescence, subsequently racemes), subtended by a spatheole, embraced at base by subtending leaf. Spatheole expanded, lanceolate, 4–8 cm long, scarios. Racemes 1, single, radiating, unilateral, 7–15(–19) cm long, bearing 1 spikelet (at the base). Rhachis subterete, pubescent on surface or pilose on surface, terminating in a barren extension, extension subulate (quill-like, spinous), extension 70–190 mm long. Spikelet packing abaxial. Spikelets appressed, solitary. Fertile spikelets sessile. Male 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 lanceolate, dorsally compressed, acute or acuminate, 12–16 mm long, falling entire, deciduous with accessory branch structures. Spikelet callus pubescent.

**Glumes.** Glumes similar, reaching apex of florets, firmer than fertile lemma. Lower glume lanceolate, 1 length of spikelet, chartaceous, without keels, 7–9 -veined. Lower glume surface glabrous or puberulous. Lower glume apex acuminate. Upper glume lanceolate, 0.9–1 length of spikelet, chartaceous, without keels, 7–9 -veined. Upper glume surface glabrous or puberulous. Upper glume margins eciliate or ciliate. 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, chartaceous, 5–9 -veined, smooth or scaberulous, rough on veins, ciliate on margins, acuminate. Fertile florets female. Fertile lemma lanceolate, 11–15 mm long, membranous, much thinner on margins, without keel. Lemma apex acuminate.

**Flower and Fruit.** Disseminule comprising a synflorescence. Secondary disseminule an inflorescence.

Male inflorescence unlike female (racemes bearing 4–8 spikelets), a single raceme (in a compound capitulum). Male spikelets distinct from female, 2 flowered, lanceolate, 8–12 mm long, hairy. Male spikelet glumes 2.

**Distribution (TDWG). Continent.** Australasia.

**Country /Province /State.** Australia. Western Australia, South Australia.

**TDWG4.** South-West. Southern.

**Spinifex littoreus** (Burm.f.) Merrill. *Philip. Journ. Sc., Bot.* vii. 229 (1912).

**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), T.Koyama, *Grasses of Japan and its neighboring regions* (1987).

**TYPE** from India. **Basionym or Replaced Name:** *Stipa littorea* Burm. f., *Fl. Indica* 29 (1768). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: T: India.

**Illustrations (Books):** T.Koyama, *Grasses of Japan and its neighbouring regions* (1987) (385, Fig 151), C-C Hsu, *Flora of Taiwan*, Vol 5 (1978) (630A-B), C-C Hsu, *Taiwan Grasses* (1975) (611, Pl. 1451), K.M.Matthew, *Illustrations on the Flora of Tamilnadu Carnatic* (1982) (Pl. 939 & 940), H.B.Gilliland, *Grasses of Malaya* (1971) (209, Fig 45), *Flora of Australia Oceanic Islands Poaceae* 50(1993) & 49(1994) (50:501 Fig.92 (1993)), S-L Chen et al, *Flora of China*, *Illustrations, Poaceae* (2007) (Fig. 774).

**Images:** H.B.Gilliland et al., *Flora of Malaya Vol. 3 Grasses* (1971);

**Derivation** (Clifford & Bostock 2007): L. lit(t)us, seashore; -eus, pertaining to. Seashore plants.

**Classification.** Subfamily Panicoideae. Tribe: Paniceae. Subtribe SETARIINAE.

**Habit, Vegetative Morphology.** Perennial, mat forming. Stolons present. Culms 40–80 cm long, woody. Ligule a fringe of hairs. Leaf-blades involute, 5–20 cm long, 2–3 mm wide, indurate, stiff, glaucous. Leaf-blade apex acuminate, pungent. Dioecious.

**Inflorescence.** Synflorescence compound, stellate, 20–30 cm long, with principal spatheoles embracing a compact fascicle of racemes, each subtended by a subsidiary bract.

Inflorescence composed of racemes, terminal and axillary, deciduous as a whole (first synflorescence, subsequently racemes), subtended by a spatheole, embraced at base by subtending leaf. Spatheole expanded, lanceolate, scariosus. Racemes 1, single, radiating, unilateral, 8–15 cm long, bearing 1 spikelet (at the base). Rhachis subterete, scabrous on surface, glabrous on surface, terminating in a barren extension, extension subulate (quill-like, spinous). Spikelet packing abaxial. Spikelets appressed, solitary. Fertile spikelets sessile. Male 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 lanceolate, dorsally compressed, 9–10 mm long, falling entire, deciduous with accessory branch structures.

**Glumes.** Glumes similar, reaching apex of florets, firmer than fertile lemma. Lower glume lanceolate, 1 length of spikelet, chartaceous, without keels, 9 -veined. Lower glume apex acute. Upper glume ovate, 1 length of spikelet, chartaceous, without keels, 7 -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, chartaceous, 5 -veined, acute. Fertile florets female. Fertile lemma ovate, 8.5–9.5 mm long, membranous, much thinner on margins, without keel, 5 -veined, more than 3-veined. Lemma apex acute.

**Flower and Fruit.** Disseminule comprising a synflorescence. Secondary disseminule an inflorescence.

Male inflorescence unlike female, a single raceme (in compound fascicles). Male spikelets distinct from female, 2 flowered, 10 mm long. Male spikelet glumes 2. Male spikelet lemma 7–9 -veined.

**Distribution (TDWG). Continent.** Temperate Asia, Tropical Asia, Australasia.

**Country /Province /State. China, Eastern Asia.** Hainan, China Southeast. Nansei-Shoto, Ogosawarashoto, Taiwan. **Indian Subcontinent, Indo-China, Malesia, Papuasia.** India, Sri Lanka. Andaman Is, Cambodia, Myanmar, Nicobar Is, Thailand, Vietnam. Borneo, Java, Lesser Sunda Is, Malaya, Moluccas, Philippines, Sulawesi, Sumatra. New Guinea West Papua (Irian Jaya). New Guinea. **Australia.** Western Australia.

**TDWG4.** Fujian, Guangdong, Guangxi. Andhra Pradesh, Kerala, Karnataka. Maharashtra, Orissa, Tamilnadu, West Bengal.

## **Spinifex longifolius** R. Br. *Prod.* 198. (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), J.F.Veldkamp, *Poaceae ms (Flora Malesiana)*.

**TYPE** from Australia. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Australia: Baudin.

**Illustrations (Books):** J.P.Jessop, G.R.M. Dashorst & F.M.James, *Grasses of South Australia* (2006) (488, Fig 422), C.A.Gardner, *Flora of Western Australia*, Vol 1, Part 1, *Gramineae* (1952) (251, Pl 74), R.Pilger, *Die Natürlichen Pflanzenfamilien* 14e (1940) (94, Fig. 58).

**Images:** D.Sharp & B.K.Simon, *AusGrass*. Grasses of Australia. CD-Rom Version 1.0. (2002);

**Derivation** (Clifford & Bostock 2007): *L. longus*, long; folium, leaf. With long leaf-blades.

**Classification.** Subfamily Panicoideae. Tribe: Paniceae. Subtribe SETARIINAE.

**Habit, Vegetative Morphology.** Perennial, mat forming. Stolons present. Culms 30–80 cm long, woody. Culm-nodes glabrous. Leaf-sheaths longer than adjacent culm internode, glabrous on surface, outer margin glabrous. Ligule a fringe of hairs, 2.5–3.2 mm long. Leaf-blades flat or involute, 15–35 cm long, 1.5–4 mm wide, indurate, stiff, glaucous. Leaf-blade surface glabrous. Leaf-blade apex acuminate, pungent. Dioecious.

**Inflorescence.** Synflorescence compound, stellate, 8–20 cm long, with principal spatheoles embracing a compact fascicle of racemes, each subtended by a subsidiary bract.

Inflorescence composed of racemes, terminal and axillary, deciduous as a whole (first synflorescence, subsequently racemes), subtended by a spatheole, embraced at base by subtending leaf. Spatheole expanded, lanceolate, 2–4 cm long, scariosus. Racemes 1, single, radiating, unilateral, 4–12 cm long, bearing 1 spikelet (at the base). Rhachis subterete, glabrous on surface, terminating in a barren extension, extension bristle-like, extension 40–120 mm long. Spikelet packing abaxial. Spikelets appressed, solitary. Fertile spikelets sessile. Male 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 lanceolate or elliptic, dorsally compressed, 6–6.5 mm long, falling entire, deciduous with accessory branch structures.

**Glumes.** Glumes similar, reaching apex of florets, firmer than fertile lemma. Lower glume lanceolate or elliptic, 1 length of spikelet, chartaceous, without keels, 7–9 -veined. Lower glume apex acute. Upper glume lanceolate or elliptic, 1 length of spikelet, chartaceous, 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, lanceolate or elliptic, 1 length of spikelet, chartaceous, 5 -veined, smooth or scabrous, rough on veins, acute. Fertile florets female. Fertile lemma lanceolate, 5.6–6.3 mm long, membranous, much thinner on margins, without keel. Lemma apex acute.

**Flower and Fruit.** Anthers 3, 3.5–4.1 mm long. Disseminal comprising a synflorescence. Secondary disseminal an inflorescence.

Male inflorescence unlike female (racemes bearing 4–8 spikelets), a single raceme (in a compound capitulum). Male spikelets distinct from female, 2 flowered, lanceolate, 6–7 mm long, glabrous. Male spikelet glumes 2.

**Distribution (TDWG). Continent.** Tropical Asia, Australasia.

**Country /Province /State.** Indo-China, Malasia, Papuaia. Thailand. Java, Lesser Sunda Is, Moluccas, Sulawesi. New Guinea PNG. New Guinea. Australia. Western Australia, Northern Territory, Queensland.

**TDWG4.** Kimberley, Eremean, South-West. Darwin & Gulf. North.

### **Spinifex sericeus** R. Br. *Prod.* 198 (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), E.Edgar, & H.Connor, *Flora of New Zealand Gramineae* 5 (2000), W.D.Clayton & N.Snow, *Key to Pacific Grasses* (2010).

**TYPE** from Australia. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: HT: *Brown s.n.*, 10 Sep 1802, Australia: Broad Sound (BM).

**Illustrations (Books):** N.Walsh & T.Entwistle, *Flora of Victoria* Vol 2 (1994) (616, Fig 124), S.W.L.Jacobs, R.D.B.Whalley & D.J.B.Wheeler., *Grasses of New South Wales*, 4th edn (2008) (374), *Flora of Australia Oceanic Islands Poaceae* 50(1993) & 49(1994) (49: 468 Fig.95 (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*;, E.Edgar & H.E.Connor, *Flora of New Zealand* 5, *Gramineae* (2000);.

**Derivation** (Clifford & Bostock 2007): *L. sericus*, silken; -ea, indicating resemblance. Densely invested in part or totally with long hairs.

**Classification.** Subfamily Panicoideae. Tribe: Paniceae. Subtribe SETARIINAE.

**Habit, Vegetative Morphology.** Perennial. Rhizomes elongated. Stolons present. Culms decumbent, 30–90 cm long, 2–4 mm diam., woody, 5–20 -noded. Culm-nodes glabrous. Leaf-sheaths without keel, pubescent, outer margin hairy. Ligule a fringe of hairs, 1.8–4.5 mm long. Collar pubescent. Leaf-blades flat or involute, 20–40 cm long, 5–17 mm wide, stiff. Leaf-blade surface pubescent. Leaf-blade margins smooth. Leaf-blade apex acuminate. Dioecious.

**Inflorescence.** Synflorescence compound, stellate, with principal spatheoles embracing a compact fascicle of racemes, each subtended by a subsidiary bract.

Inflorescence composed of racemes, terminal and axillary, deciduous as a whole (first synflorescence, subsequently racemes), subtended by a spatheole, embraced at base by subtending leaf. Spatheole expanded, lanceolate, scarious. Racemes 1, single, radiating, unilateral, 12–17 cm long, bearing 1 spikelet (at the base). Rhachis subterete, scabrous on surface, pubescent on surface, terminating in a barren extension, extension subulate (quill-like, spinous), extension 120–170 mm long. Spikelet packing abaxial. Spikelets appressed, solitary. Fertile spikelets sessile. Male 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 lanceolate, dorsally compressed, acute or acuminate, 12–18 mm long, falling entire, deciduous with accessory branch structures. Spikelet callus pubescent.

**Glumes.** Glumes similar, reaching apex of florets, firmer than fertile lemma. Lower glume lanceolate, 1 length of spikelet, membranous or chartaceous, without keels, 7–9 -veined. Lower glume surface glabrous to pubescent. Lower glume apex acuminate. Upper glume lanceolate, 1 length of spikelet, membranous or chartaceous, without keels, 7–9 -veined. Upper glume surface glabrous to pubescent. Upper glume margins eciliate or ciliate. 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, chartaceous or cartilaginous, 5–9 -veined, prominently veined, smooth or scaberulous, rough on veins, ciliate on margins, acuminate. Fertile florets female. Fertile lemma lanceolate, 11–15 mm long, membranous, without keel. Lemma apex acuminate.

**Flower and Fruit.** Disseminule comprising a synflorescence. Secondary disseminule an inflorescence.

Male inflorescence unlike female (racemes 2–3cm long bearing 5–8 spikelets), a single raceme (in a compound capitulum). Male spikelets distinct from female, 2 flowered, lanceolate, 8–10 mm long, hairy. Male spikelet glumes 2.

**Distribution (TDWG). Continent.** Australasia.

**Country /Province /State.** Australia, New Zealand. South Australia, Queensland, New South Wales, Victoria, Tasmania, Lord Howe-Norfolk Is. New Zealand North I, New Zealand South I. Fiji, New Caledonia, Tonga.

**TDWG4.** Southern. North, Central, South East. Coast.

**Spinifex x alterniflorus** Nees. Lehm. *Pl. Preiss.* ii. 96 (1846).

**Accepted by:** D.Sharp, D. & B.K.Simon, *AusGrass* (2002).

**TYPE** from Australia. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Australia: Swan River, *Preiss 1883* (IT: MEL).

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): *L. alternu*, placed alternately; *flos*, flower. The spikelets clearly in two rows on one side of the axis.

**Classification.** Subfamily Panicoideae. Tribe: Paniceae. Subtribe SETARIINAE.

**Distribution (TDWG). Continent.** Australasia.

**Country /Province /State.** Western Australia.

**TDWG4.** South-West.

**Spodiopogon baiyuensis** L. Liou. *Pl. Res. Gram.* 11: 85 (1989).

**Illustrations (Books):** No illustration found (BKS).

**Classification.** Subfamily Panicoideae. Tribe: Andropogoneae.

**Distribution (TDWG). Continent.** Temperate Asia.

**Country /Province /State.** China. China South Central.

**TDWG4.** Sichuan.

**Spodiopogon bambusoides** (Keng f.) S.M. Phillips & S.L. Chen. *Novon* 15(3): 468–469. 2005.

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online, S-L Chen et al, *Flora of China* 22 (Poaceae) (2006).

**TYPE** from China. **Basionym or Replaced Name:** *Eccoilopus bambusoides* Keng f., *Guihaia* 13(3): 320–321 (1993). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: China: Guangxi: Guilin, Qixingyan, ad pratum declivitatis, 27 Sept. 1953, *Guangxi Exped.* 3820 (HT: PE).

**Recent Synonyms:** *Eccoilopus hookeri* Hack. in DC. *Monog. Phan.* 6: 143. (1889).

**Illustrations (Books):** S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 797).

**Derivation** (Clifford & Bostock 2007): Gk. -oides, resembling. Culms wooden resembling those of *Bambusa*.

**Classification.** Subfamily Panicoideae. Tribe: Andropogoneae. Subtribe ANDROPOGONINAE.

**Habit, Vegetative Morphology.** Perennial, caespitose. Culms decumbent, 100–140 cm long, 2–3 mm diam., rooting from lower nodes. Lateral branches ample. Leaf-sheaths smooth, glabrous on surface. Ligule a ciliolate membrane, 1 mm long. Leaf-blade base cuneate. Leaf-blades deciduous at the ligule, 9–15 cm long, 10–17 mm wide. Leaf-blade surface smooth, glabrous. Leaf-blade apex acuminate.

**Inflorescence.** Inflorescence a panicle with branches tipped by a raceme. Panicle open, elliptic, 10–12 cm long. Primary panicle branches spreading, profusely divided, rebranched above middle, 3–5 cm long. Panicle branches hirsute, hairy at tip. Racemes bearing a triad of spikelets. Spikelets in pairs or in threes. Fertile spikelets pedicelled, 2 in the cluster or 3 in the cluster. Pedicels present, clavate, 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, 4–4.7 mm long, falling entire. Spikelet callus pubescent, base obtuse. Spikelet callus hairs 0.7 mm long.

**Glumes.** Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma. Lower glume lanceolate or oblong, 1 length of spikelet, chartaceous, pallid, without keels. Lower glume lateral veins ribbed. Lower glume surface pilose (except near apex). Lower glume apex acute, mucicous or mucronate. Upper glume lanceolate, chartaceous, pallid, without keels. Upper glume lateral veins ribbed. Upper glume apex obtuse.

**Florets.** Basal sterile florets 1, male, with palea. Lemma of lower sterile floret oblong or ovate, hyaline, acute. Fertile lemma linear, hyaline. Lemma apex lobed, 2 -fid, with linear lobes, incised 0.5–0.6 of lemma length, awned, 1 -awned. Principal lemma awn from a sinus, geniculate, 6–8 mm long overall, with twisted column.

**Flower and Fruit.** Anthers 3, 2.8–3 mm long.

**Distribution (TDWG). Continent.** Temperate Asia.

**Country /Province /State. China.** China South Central, China Southeast.

**TDWG4.** Guangxi, Guizhou.

### **Spodiopogon cotulifer** (Thunb.) Hack. *DC. Monog. Phan.* vi. 187 (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) (as *Eccoilopus*), T. Koyama, *Grasses of Japan and its neighboring regions* (1987) (as *Eccoilopus*).

**TYPE** from Japan. **Basionym or Replaced Name:** *Eccoilopus andropogonoides*, *Ecciolopus cotulifer*, *Andropogon cotulifer* Thunb., *Fl. Jap.* . . . 41 (1784). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Japan.; *C.P. Thunberg s.n.* (HT: ?; IT: L).

**Illustrations (Books):** T. Koyama, *Grasses of Japan and its neighbouring regions* (1987) (394, Fig 154 as *Eccoilopus*), C-C Hsu, *Flora of Taiwan*, Vol 5 (1978) (674 as *Eccoilopus*), C-C Hsu, *Taiwan Grasses* (1975) (643, Pl. 1462 as *Eccoilopus cotulifer* forma *cotulifer*), S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 798).

**Derivation** (Clifford & Bostock 2007): Gk. kotyle, small cup; fero, bear. The pedicel tips are concave after the shedding of the spikelets.

**Classification.** Subfamily Panicoideae. Tribe: Andropogoneae. Subtribe ANDROPOGONINAE.

**Habit, Vegetative Morphology.** Perennial. Culms erect, 80–150 cm long, 4–6 -noded. Ligule an eciliate membrane, 2–4 mm long, obtuse. Leaf-blade base tapering to the midrib. Leaf-blades 15–50 cm long, 8–12 mm wide. Leaf-blade margins scabrous. Leaf-blade apex acuminate.

**Inflorescence.** Inflorescence a panicle with branches tipped by a raceme. Panicle open, oblong, nodding, 15–20 cm long. Primary panicle branches whorled at most nodes, 2.5–7.5 cm long. Panicle branches bearded in axils. Racemes 3–5 cm long. Rhachis tough, subterete. Rhachis internodes cuneate. Spikelets in pairs. Fertile spikelets pedicelled, 2 in the cluster. Pedicels present, cuneate, unequal, 0.3–1 length of fertile spikelet, tip cupuliform.

**Fertile Spikelets.** Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets lanceolate, dorsally compressed, 5–6 mm long, falling entire. Spikelet callus pubescent, base obtuse, inserted. Spikelet callus hairs white.

**Glumes.** Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma. Lower glume lanceolate, 1 length of spikelet, chartaceous, pallid, without keels, 7–9 -veined. Lower glume lateral veins ribbed. Lower glume surface scabrous. Lower glume margins ciliate. Lower glume apex dentate, 2 -fid, mucronate. Upper glume lanceolate, chartaceous, pallid, without keels, 7 -veined. Upper glume lateral veins ribbed. Upper glume surface scabrous, pilose. Upper glume margins ciliate. Upper glume apex dentate, 2 -fid, mucronate.

**Florets.** Basal sterile florets 1, barren, with palea or without significant palea. Lemma of lower sterile floret oblong, 4.5 mm long, hyaline, scaberulous, rough above, obtuse. Fertile lemma linear, 4 mm long, hyaline. Lemma apex lobed, 2 -fid, with linear lobes, incised 0.4–0.5 of lemma length, awned, 1 -awned. Principal lemma awn from a sinus, geniculate, 12–15 mm long overall, with twisted column. Palea lanceolate, 1 length of lemma, hyaline, 0 -veined, without keels. Palea apex dentate, 2 -fid.

**Flower and Fruit.** Lodicules 2. Anthers 3, 3 mm long.

**Distribution (TDWG). Continent.** Temperate Asia, Tropical Asia.

**Country /Province /State. China, Eastern Asia.** China South Central, China North-Central, China Southeast. Japan, Korea, Nansei-Shoto, Ogasawara-shoto, Taiwan. **Indian Subcontinent.** India, Pakistan, West Himalaya.

**TDWG4.** Gansu, Shaanxi. Anhui, Fujian, Guangdong, Guangxi, Henan, Hunan, Jiangsu, Jiangxi, Zhejiang. Guizhou, Hubei, Sichuan, Yunnan. Meghalaya. Uttah Pradesh. Jammu Kashmir.

**Spodiopogon depauperatus** Hack. *Bull. Herb. Boiss.* vii. 641. (1899).

**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>: *vide* TROPICOS and Kew Synonymy Database: Japan: in prov. Uzen, *Matsumura s.n.*

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): L. reduced. Small compared with related species.

**Classification.** Subfamily Panicoideae. Tribe: Andropogoneae. Subtribe **ANDROPOGONINAE**.

**Habit, Vegetative Morphology.** Perennial, culms solitary. Rhizomes short, knotty, scaly. Culms erect, 60–80 cm long, 1.5–3 mm diam., 4–6 -noded. Culm-internodes 4–25 cm long. Leaves cauline. Leaf-sheaths glabrous on surface. Ligule an eciliate membrane, 0.7–1 mm long, pubescent on abaxial surface. Leaf-blades lanceolate, 6–20 cm long, 7–15 mm wide. Leaf-blade surface glabrous. Leaf-blade apex acuminate.

**Inflorescence.** Inflorescence a panicle with branches tipped by a raceme. Panicle open, lanceolate or oblong, 8–12 cm long, 1.7–3.5 cm wide. Primary panicle branches whorled at most nodes, 3–5 cm long. Racemes 1–1.5 cm long, bearing few fertile spikelets, bearing 2–3 fertile spikelets on each. Rhachis fragile at the nodes, subterete, glabrous on margins. Rhachis internodes linear, 3–8 mm long. Spikelets in pairs. Fertile spikelets sessile and pedicelled, 2 in the cluster. Pedicels present, linear, glabrous or ciliate, tip cupuliform.

**Fertile Spikelets.** Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets lanceolate or elliptic, dorsally compressed, 4–5.5 mm long, 1.25–1.7 mm wide, falling entire, deciduous from the base or with accessory branch structures. Spikelet callus bearded, base obtuse, inserted. Spikelet callus hairs white, 0.2 length of spikelet.

**Glumes.** Glumes similar, exceeding apex of florets, firmer than fertile lemma. Lower glume ovate, 1 length of spikelet, chartaceous, pallid, without keels, 9–13 -veined. Lower glume lateral veins ribbed. Lower glume surface convex, pilose. Lower glume apex entire or dentate, 2 -fid, acute. Upper glume ovate, chartaceous, pallid, without keels, 5–7 -veined. Upper glume lateral veins ribbed. Upper glume surface pilose. Upper glume margins ciliate. Upper glume apex entire or dentate, 2 -fid, acute.

**Florets.** Basal sterile florets 1, male, with palea. Lemma of lower sterile floret lanceolate, 4 mm long, 1 length of spikelet, membranous, 3 -veined, acute. Palea of lower sterile floret 1 length of lemma. Fertile lemma linear, 4 mm long, hyaline. Lemma apex lobed, 2 -fid, with linear lobes, incised 0.5–0.66 of lemma length, awned, 1 -awned. Principal lemma awn from a sinus, geniculate, 10–12 mm long overall, with twisted column. Palea lanceolate, 1 length of lemma, hyaline, 0 -veined, without keels.

**Flower and Fruit.** Lodicules 2. Anthers 3.

**Distribution (TDWG). Continent.** Temperate Asia.

**Country /Province /State.** Eastern Asia. Japan. Japan Honshu.

**Spodiopogon dubius** Hack. *DC. Monog. Phan.* vi. 187 (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 Nepal. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: Nepal: 'In Himalayae boreali-occidentalis regione tropica', ca. 2400 m, *Hook. f. & Thomas s.n.* (HT: B) IGS: type in Berlin not in Vienna.

**Illustrations (Books):** S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 800).

**Derivation** (Clifford & Bostock 2007): L. doubtful. Readily confused with other species.

**Classification.** Subfamily Panicoideae. Tribe: Andropogoneae. Subtribe **ANDROPOGONINAE**.

**Habit, Vegetative Morphology.** Perennial. Culms erect, 90–150 cm long. Leaves cauline. Leaf-sheaths pubescent. Ligule an eciliate membrane, 1–2 mm long, pubescent on abaxial surface, obtuse. Leaf-blade base simple or broadly rounded. Leaf-blades linear to lanceolate, 20–30 cm long, 10–15 mm wide. Leaf-blade surface pubescent, hairy on both sides, with tubercle-based hairs. Leaf-blade margins scabrous. Leaf-blade apex acuminate, filiform.

**Inflorescence.** Inflorescence a panicle with branches tipped by a raceme. Panicle contracted, linear or oblong, 15–20 cm long. Racemes 1–1.5 cm long, bearing few fertile spikelets, bearing 2–4 fertile spikelets on each. Rhachis fragile at the nodes, subterete, ciliate on margins. Rhachis internodes linear, 0.5 length of fertile spikelet. Spikelets in pairs. Fertile spikelets sessile and pedicelled, 2 in the cluster. Pedicels present, linear, 0.5 length of fertile spikelet, ciliate, tip cupuliform.

**Fertile Spikelets.** Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets lanceolate, dorsally compressed, 5 mm long, falling entire, deciduous

from the base or with accessory branch structures. Spikelet callus bearded, base obtuse, inserted. Spikelet callus hairs white, 0.33 length of spikelet.

**Glumes.** Glumes similar, exceeding apex of florets, firmer than fertile lemma. Lower glume ovate, 1 length of spikelet, chartaceous, pallid, without keels, 5–7 -veined. Lower glume lateral veins ribbed. Lower glume surface convex, pubescent. Lower glume apex dentate, 2 -fid. Upper glume lanceolate, chartaceous, pallid, without keels, 3–5 -veined. Upper glume primary vein scabrous. Upper glume lateral veins ribbed. Upper glume margins ciliate. Upper glume apex acute.

**Florets.** Basal sterile florets 1, male, with palea. Lemma of lower sterile floret lanceolate, 5 mm long, 1 length of spikelet, membranous, 3 -veined, acute. Fertile lemma linear, 4.5 mm long, hyaline, 3 -veined, 0–3 -veined. Lemma apex lobed, 2 -fid, with linear lobes, awned, 1 -awned. Principal lemma awn from a sinus, geniculate, 8–10 mm long overall, with twisted column. Palea lanceolate, 1 length of lemma, hyaline, 0 -veined, without keels.

**Flower and Fruit.** Lodicules 2. Anthers 3.

**Distribution (TDWG). Continent.** Temperate Asia, Tropical Asia.

**Country /Province /State. China.** Tibet. **Indian Subcontinent.** India, Nepal.

**TDWG4.** Uttah Pradesh. Himachal Pradesh, Jammu Kashmir.

### **Spodiopogon duclouxii** A.Camus. *Bull. Mus. Hist. Nat. Paris*, xxvii. 551. (1921).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online, S-L Chen et al, *Flora of China* 22 (Poaceae) (2006).

**TYPE** from China. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: China: Yunnan: Yunnan-sen, Tchong-chan ..., *Ducloux 4212* (HT: ?).

**Illustrations (Books):** S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 759).

**Derivation** (Clifford & Bostock 2007): In honor of Francois Ducloux (1864–1945) French cleric and amateur botanist who collected in China.

**Classification.** Subfamily Panicoideae. Tribe: Andropogoneae. Subtribe **ANDROPOGONINAE**.

**Habit, Vegetative Morphology.** Perennial. Rhizomes elongated. Culms erect, 120–140 cm long, 8 -noded. Culm-internodes distally glabrous. Lateral branches lacking. Leaf-sheaths striately veined, glabrous on surface. Ligule an eciliate membrane, 1.5 mm long, truncate. Leaf-blade base with a false petiole, petiole 0.5–1.5 cm long. Leaf-blades linear to lanceolate, 15–25 cm long, 12–18 mm wide. Leaf-blade midrib conspicuous. Leaf-blade surface scaberulous, rough adaxially, pilose, hairy abaxially. Leaf-blade margins scabrous. Leaf-blade apex acuminate.

**Inflorescence.** Inflorescence a panicle with branches tipped by a raceme. Panicle open, ovate, 10–12 cm long. Primary panicle branches ascending, whorled at most nodes, simple, 1.5–5 cm long. Panicle branches capillary, apically expanded. Racemes 1–1.2 cm long, bearing few fertile spikelets, bearing 4–8 fertile spikelets on each. Rhachis fragile at the nodes, subterete, ciliate on margins. Spikelets in pairs. Fertile spikelets sessile and pedicelled, 2 in the cluster. Pedicels present, ciliate, tip cupuliform.

**Fertile Spikelets.** Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets lanceolate, dorsally compressed, acute, 5 mm long, falling entire, deciduous from the base or with accessory branch structures. Spikelet callus pilose, base obtuse, inserted. Spikelet callus hairs 0.15–0.2 length of spikelet.

**Glumes.** Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma. Lower glume lanceolate, 1 length of spikelet, chartaceous, pallid, without keels, 6 -veined. Lower glume lateral veins ribbed. Lower glume surface pubescent. Lower glume apex acuminate. Upper glume lanceolate, chartaceous, pallid, without keels, 5 -veined. Upper glume lateral veins ribbed. Upper glume surface pubescent. Upper glume margins ciliate. Upper glume apex dentate, 2 -fid.

**Florets.** Basal sterile florets 1, male, with palea. Lemma of lower sterile floret ovate, 4 mm long, hyaline, dentate, 2 -fid, awned. Awn of lower sterile floret 1 mm long. Fertile lemma lanceolate, 4 mm long, hyaline. Lemma apex lobed, 2 -fid, awned, 1 -awned. Principal lemma awn from a sinus, geniculate, 7–8 mm long overall, with twisted column. Palea hyaline, without keels.

**Flower and Fruit.** Lodicules 2. Anthers 3.

**Distribution (TDWG). Continent.** Temperate Asia.

**Country /Province /State. China.** China South Central.

**TDWG4.** Sichuan, Yunnan.

**Spodiopogon formosanus** Rendle. *Journ. Linn. Soc.* vi. 351. (1904).

**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 *Eccoilopus*).

**TYPE** from China. **Basionym or Replaced Name:** *Spodiopogon formosanus* Rendle, *Journ. Linn. Soc.* xxxvi. 351. (1904). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: China: Taiwan: dry mountain slopes, 1000–2000 m, A. Henry 76 (HT: K).

**Recent Synonyms:** *Spodiopogon tohoensis* Hayata,  *Ic. Pl. Formos.* 7: 69 (1918). *Eccoilopus formosanus* (Rendle) A.Camus, *Ann. Soc. Linn. Lyon*, n. s. 70: 93 (1924).

**Illustrations (Books):** C-C Hsu, *Taiwan Grasses* (1975) (as *Eccoilopus formosanus* var. *formosanus*).

**Derivation** (Clifford & Bostock 2007): L. -ana, indicating location. For Formosa, now Taiwan.

**Classification.** Subfamily Panicoideae. Tribe: Andropogoneae. Subtribe **ANDROPOGONINAE**.

**Habit, Vegetative Morphology.** Perennial. Rhizomes elongated. Culms erect, 60–90 cm long, 2.5–5 mm diam., 4–6 -noded. Culm-internodes 7–10 cm long, smooth, distally glabrous. Leaf-sheaths 10–30 cm long, longer than adjacent culm internode, smooth, glabrous on surface. Ligule an eciliate membrane, 1.7–4 mm long. Leaf-blade base with a false petiole, petiole 0.7–2 cm long. Leaf-blades linear to lanceolate, 10–30 cm long, 5–15 mm wide. Leaf-blade surface scaberulous, rough adaxially, glabrous, hairless except near base.

**Inflorescence.** Inflorescence a panicle with branches tipped by a raceme, exerted or embraced at base by subtending leaf. Panicle open, ovate or pyramidal, dense, 10–17 cm long, 2–8 cm wide. Primary panicle branches ascending, whorled at most nodes, 3–6 cm long. Panicle axis angular, smooth. Panicle branches capillary, bearded in axils. Racemes 2–3 cm long, bearing few fertile spikelets, bearing 2–6 fertile spikelets on each. Rhachis tough, subterete, glabrous on margins. Rhachis internodes 2–3 mm long. Spikelets in pairs. Fertile spikelets pedicelled, 2 in the cluster. Pedicels present, 0.2–1.7 mm long or 2.5–3.5 mm long, tip cupuliform.

**Fertile Spikelets.** Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets elliptic or ovate, dorsally compressed, 4–5 mm long, 1–1.5 mm wide, falling entire, deciduous from the base. Spikelet callus pilose, base obtuse, inserted. Spikelet callus hairs 1 mm long, 0.2–0.25 length of spikelet.

**Glumes.** Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma. Lower glume ovate, 1 length of spikelet, chartaceous, pallid, without keels, 7–9 -veined. Lower glume lateral veins ribbed. Lower glume surface pubescent. Lower glume apex dentate, 2 -fid. Upper glume ovate, chartaceous, pallid, without keels, 5–7 -veined. Upper glume lateral veins ribbed. Upper glume surface pubescent. Upper glume apex dentate, 2 -fid.

**Florets.** Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret ovate, 3 mm long, membranous, puberulous, erose, obtuse. Fertile lemma oblong, 2 mm long, hyaline. Lemma apex entire, emarginate, muticous or awned, 1 -awned. Principal lemma awn from a sinus, straight or geniculate, 0–7 mm long overall, without a column or with twisted column. Palea 1 length of lemma, hyaline, without keels.

**Flower and Fruit.** Lodicules 2. Anthers 3.

**Distribution (TDWG). Continent.** Temperate Asia.

**Country /Province /State.** China, Eastern Asia. Taiwan.

**Spodiopogon grandiflorus** L. Liou. *Pl. Res. Gram.* 11: 85 (1989).

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): L. grandis, large; flos, flower. Spikelets with more florets than those of related species.

**Classification.** Subfamily Panicoideae. Tribe: Andropogoneae. Subtribe **ANDROPOGONINAE**.

**Distribution (TDWG). Continent.** Temperate Asia.

**Country /Province /State.** China. China South Central.

**TDWG4.** Sichuan.

**Spodiopogon jainii** V.J. Nair, A.N. Singh & N.C. Nair. *Curr. Sci.*, 50(16): 730 (1981).

**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, Supkhar: Nair 18431 (CAL holo, BSA, K, MH).

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): in honor of Sudhanshu Kumar Jain (1926-) Indian botanist.

**Classification.** Subfamily Panicoideae. Tribe: Andropogoneae. Subtribe **ANDROPOGONINAE**.

**Habit, Vegetative Morphology.** Annual. Culms slender, 50–60 cm long. Culm-nodes glabrous. Leaf-sheaths 6–10 cm long, glabrous on surface. Ligule a ciliolate membrane, acute. Leaf-blade base with a false



petiole, petiole 1–6 cm long. Leaf-blades lanceolate or elliptic, 5–13 cm long, 15–30 mm wide. Leaf-blade surface pilose, sparsely hairy, hairy on both sides. Leaf-blade apex acuminate.

**Inflorescence.** Inflorescence a panicle with branches tipped by a raceme. Panicle open, oblong, 8–10 cm long. Racemes bearing few fertile spikelets. Rhachis fragile at the nodes. Spikelets in pairs. Fertile spikelets sessile and pedicelled, 2 in the cluster, the upper smaller (3–3.5 mm). Pedicels present, clavate, 2–3 mm long, ciliate, hairy on margins, tip cupuliform.

**Fertile Spikelets.** Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets ovate, dorsally compressed, 3.5–4 mm long, falling entire, deciduous from the base or with accessory branch structures. Spikelet callus inserted.

**Glumes.** Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma. Lower glume ovate, 3.5–4 mm long, 1 length of spikelet, chartaceous, pallid, without keels, 5–7 -veined. Lower glume lateral veins ribbed. Lower glume surface pilose. Lower glume margins ciliate. Lower glume hairs purple, 2 mm long. Lower glume apex truncate. Upper glume ovate, 1 length of spikelet, chartaceous, pallid, without keels, 7 -veined. Upper glume lateral veins ribbed. Upper glume surface pilose. Upper glume hairs purple, 2 mm long. Upper glume apex acute, mucronate.

**Florets.** Basal sterile florets 1, male, with palea. Lemma of lower sterile floret ovate, 3 mm long, hyaline, ciliate on margins, fringed above, truncate. Palea of lower sterile floret 1.25 mm long. Fertile lemma oblong, 2.5 mm long, hyaline. Lemma apex dentate, 2 -fid, awned, 1 -awned. Principal lemma awn from a sinus, geniculate, 6–10 mm long overall, with twisted column. Palea obovate, 2 mm long, hyaline. Palea apex ciliate.

**Flower and Fruit.** Anthers 3, 3 mm long.

**Distribution (TDWG). Continent.** Tropical Asia.

**Country /Province /State. Indian Subcontinent.** India.

### **Spodiopogon lacei** Hole. *Indian Forest Rec.* v. 185 (1915).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), N.L.Bor, *Grasses of Burma, Ceylon, India and Pakistan* (1960).

**TYPE** from Myanmar. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: ST: *Lace no. 4372*, Burma: Maymyo ST: *Lace no. M(6)*, Burma: Maymyo ST: *Lace 6025 in herbm. Dehra.*, Burma: Maymyo.

**Illustrations (Books):** H.J.Noltie, *The Grasses of Bhutan* (2000) (761, Fig. 49).

**Derivation** (Clifford & Bostock 2007): in honor of John Henry Lace (1857–1918) English-born Indian forester.

**Classification.** Subfamily Panicoideae. Tribe: Andropogoneae. Subtribe ANDROPOGONINAE.

**Habit, Vegetative Morphology.** Perennial, caespitose. Culms erect, 200–300 cm long. Ligule an eciliate membrane. Leaf-blade base sagittate, with a false petiole. Leaf-blades 20–30 cm long, 8–20 mm wide. Leaf-blade surface glabrous or hirsute, with tubercle-based hairs. Leaf-blade margins scabrous. Leaf-blade apex acuminate.

**Inflorescence.** Inflorescence a panicle with branches tipped by a raceme. Panicle open, lanceolate or ovate, 10–20 cm long. Primary panicle branches whorled at most nodes, simple, 0.5–3 cm long. Racemes 0.5–2 cm long, bearing few fertile spikelets, bearing 3–11 fertile spikelets on each. Rhachis fragile at the nodes, flattened, ciliate on margins. Rhachis hairs dark brown. Rhachis internodes clavate, 3–3.5 mm long. Spikelets in pairs. Fertile spikelets sessile and pedicelled, 2 in the cluster. Pedicels present, clavate, flattened, 3–3.5 mm long, ciliate, tip cupuliform.

**Fertile Spikelets.** Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets lanceolate, dorsally compressed, 5 mm long, falling entire, deciduous from the base or with accessory branch structures. Spikelet callus pubescent, base obtuse, inserted. Spikelet callus hairs dark brown, 0.5–1 mm long.

**Glumes.** Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma. Lower glume lanceolate, 1 length of spikelet, chartaceous, pallid, without keels, 7–9 -veined. Lower glume lateral veins ribbed. Lower glume surface villous. Lower glume hairs dark brown. Lower glume apex emarginate or obtuse. Upper glume lanceolate, chartaceous, pallid, 1-keeled, 3–5 -veined. Upper glume lateral veins ribbed. Upper glume surface glabrous or pilose. Upper glume hairs dark brown. Upper glume apex emarginate or obtuse.

**Florets.** Basal sterile florets 1, male, with palea. Lemma of lower sterile floret lanceolate, 1 length of spikelet, hyaline, 0–3 -veined, pubescent, hairy above, eciliate on margins or ciliate on margins, emarginate or obtuse. Fertile lemma oblong, 4 mm long, hyaline, 3 -veined, 0–3 -veined. Lemma apex lobed, 2 -fid, incised 0.66 of lemma length, awned, 1 -awned. Principal lemma awn from a sinus, geniculate, 7–12 mm long overall, with twisted column. Palea lanceolate, hyaline, 0 -veined, without keels.

**Flower and Fruit.** Lodicules 2, cuneate. Anthers 3.  
**Distribution (TDWG). Continent.** Tropical Asia.  
**Country /Province /State. Indian Subcontinent, Indo-China.** Eastern Himalaya. Myanmar, Thailand.  
**TDWG4.** Bhutan. Manipur.

**Spodiopogon ludingensis** L. Liou. *Pl. Res. Gram.* 11: 86 (1989).

**TYPE** from China. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: China: Sichuan: dry mountain slopes, 1500–1600 m.,  
**Illustrations (Books):** No illustration found (BKS).  
**Classification.** Subfamily Panicoideae. Tribe: Andropogoneae. Subtribe ANDROPOGONINAE.  
**Distribution (TDWG). Continent.** Temperate Asia.  
**Country /Province /State. China.** China South Central.  
**TDWG4.** Sichuan.

**Spodiopogon paucistachyus** L. Liou. *Pl. Res. Gram.* 11: 87 (1989).

**TYPE** from China. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: China: Sichuan: mountain slopes, 2600–2700 m.,  
**Illustrations (Books):** No illustration found (BKS).  
**Classification.** Subfamily Panicoideae. Tribe: Andropogoneae. Subtribe ANDROPOGONINAE.  
**Distribution (TDWG). Continent.** Temperate Asia.  
**Country /Province /State. China.** China South Central.  
**TDWG4.** Sichuan.

**Spodiopogon pogonanthus** (Bal.) Boiss. *Fl. Orient.* v. 457. (1884).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online.  
**TYPE** from Turkey. **Basionym or Replaced Name:** *Andropogon pogonanthus* Boiss. & Bal., *Bull. Soc. Bot. Fr.* 5: 168 (1857). T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: Turkey, Ouchak: Balansa 1338 (G holo, K).  
**Illustrations (Books):** N.L.Bor, *Gramineae in Flora of Iraq* (1968) (551 Pl. 212).  
**Derivation** (Clifford & Bostock 2007): Gk *pogon*, beard; *anthos*, flower. Spikelets densely hirsute.  
**Classification.** Subfamily Panicoideae. Tribe: Andropogoneae. Subtribe ANDROPOGONINAE.  
**Habit, Vegetative Morphology.** Perennial. Rhizomes elongated. Culms erect, robust, 100–200 cm long. Ligule a ciliolate membrane. Leaf-blades 20–40 cm long, 7–14 mm wide. Leaf-blade apex acuminate.  
**Inflorescence.** Inflorescence a panicle with branches tipped by a raceme. Panicle open, elliptic, 6–8 cm long, 1.5 cm wide. Panicle branches bearded in axils. Racemes bearing few fertile spikelets. Rhachis fragile at the nodes. Rhachis internodes linear. Spikelets in pairs. Fertile spikelets sessile and pedicelled, 2 in the cluster. Pedicels present, linear, tip cupuliform.  
**Fertile Spikelets.** Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets lanceolate, dorsally compressed, 7 mm long, falling entire, deciduous from the base or with accessory branch structures. Spikelet callus bearded, base obtuse, inserted. Spikelet callus hairs 0.66 length of spikelet.  
**Glumes.** Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma. Lower glume elliptic, 1 length of spikelet, chartaceous, pallid, without keels, 7–9 -veined. Lower glume lateral veins ribbed. Lower glume surface glabrous. Lower glume margins ciliolate. Lower glume apex acute. Upper glume lanceolate, chartaceous, pallid, without keels, 3–5 -veined. Upper glume lateral veins ribbed. Upper glume margins ciliolate. Upper glume apex acute.  
**Florets.** Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret lanceolate, 7 mm long, 1 length of spikelet, hyaline, ciliolate on margins, acute. Fertile lemma linear, 5.5–6 mm long, hyaline, 5 -veined, more than 3-veined. Lemma surface puberulous. Lemma apex lobed, 2 -fid, incised 0.33 of lemma length, awned, 1 -awned. Principal lemma awn from a sinus, geniculate, 10–12 mm long overall, with twisted column. Palea lanceolate, hyaline, 0 -veined, without keels.  
**Flower and Fruit.** Lodicules 2, ciliate, 2-toothed. Anthers 3. Caryopsis with adherent pericarp, fusiform, laterally compressed. Embryo 0.5–0.66 length of caryopsis. Hilum punctiform.  
**Distribution (TDWG). Continent.** Temperate Asia.  
**Country /Province /State. Western Asia.** Iraq, Lebanon-Syria, Palestine, Israel & Jordan.

### **Spodiopogon ramosus** Keng. *Sinensia*, x. 295 (1939).

Regarded by K as a synonym (*S. tainanensis*).

**TYPE** from China. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: China: Sichuan: Lifan Xian, 3400 m, July 1930, *F.T. Wang 21560a* (HT: Nat. Res. Inst. of Biol., Acad. Sinica, Nanjing).

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): *L. ramus*, branch; -osa, abundance. Inflorescences or culms much branched.

**Classification.** Subfamily Panicoideae. Tribe: Andropogoneae. Subtribe **ANDROPOGONINAE**.

**Distribution (TDWG). Continent.** Temperate Asia.

**Country /Province /State.** China. China South Central, China North-Central.

### **Spodiopogon rhizophorus** (Steud.) Pilger. *Engl. & Prantl, Nat. Pflanzenfam. Aufl. 2*, xiv e. 119 (1940).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), N.L.Bor, *Grasses of Burma, Ceylon, India and Pakistan* (1960).

**TYPE** from Nepal. **Basionym or Replaced Name:** *Andropogon rhizophorus* Steud., *Syn. Pl. Glumac.* 1: 381 (1854). T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: IT: *unknown s.n.*, Nepal (L).

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): *Gk. rhiza*, a root; *phero*, bear. Rooting at the lower nodes.

**Classification.** Subfamily Panicoideae. Tribe: Andropogoneae. Subtribe **ANDROPOGONINAE**.

**Habit, Vegetative Morphology.** Annual. Culms decumbent, 20–70 cm long. Culm-nodes glabrous. Leaf-sheaths glabrous on surface or hispid, outer margin hairy. Ligule a ciliate membrane, 4 mm long. Leaf-blade base with a false petiole. Leaf-blades lanceolate or elliptic, 4–27 cm long, 6–27 mm wide. Leaf-blade surface glabrous or hispid. Leaf-blade margins scabrous. Leaf-blade apex acuminate.

**Inflorescence.** Inflorescence a panicle with branches tipped by a raceme. Panicle open, lanceolate or oblong, 3–15 cm long. Racemes bearing few fertile spikelets. Rhachis fragile at the nodes, flattened, ciliate on margins. Rhachis internodes clavate, 3–3.25 mm long. Spikelets in pairs. Fertile spikelets sessile and pedicelled, 2 in the cluster. Pedicels present, clavate, flattened, 2.5–3 mm long, ciliate (brown hairs), tip cupuliform.

**Fertile Spikelets.** Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets lanceolate or elliptic, dorsally compressed, 5–5.5 mm long, falling entire, deciduous from the base or with accessory branch structures. Spikelet callus pilose, base obtuse, inserted. Spikelet callus hairs 1 mm long.

**Glumes.** Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma. Lower glume linear or elliptic, 1 length of spikelet, chartaceous, pallid, without keels, 7 -veined. Lower glume lateral veins ribbed. Lower glume surface pilose. Lower glume apex truncate, mucicous or mucronate. Upper glume lanceolate, chartaceous, pallid, without keels, 7 -veined. Upper glume primary vein ciliate. Upper glume lateral veins ribbed. Upper glume apex acute, mucronate.

**Florets.** Basal sterile florets 1, male, with palea. Lemma of lower sterile floret oblong or ovate, 3–3.25 mm long, 0.6 length of spikelet, hyaline, 0 -veined, without midvein, without lateral veins, truncate. Fertile lemma lanceolate or oblong, 3.75–4 mm long, hyaline. Lemma apex lobed, 2 -fid, incised 0.5–0.6 of lemma length, awned, 1 -awned. Principal lemma awn from a sinus, geniculate, 10–11 mm long overall, with twisted column. Palea lanceolate, 0.75 length of lemma, hyaline, 0 -veined, without keels.

**Flower and Fruit.** Lodicules 2. Anthers 3, 2.75–3 mm long. Caryopsis with adherent pericarp, fusiform, 3 mm long.

*N* = 10 (2 refs TROPICOS).

**Distribution (TDWG). Continent.** Tropical Asia.

**Country /Province /State.** Indian Subcontinent. India.

**TDWG4.** Gujarat, Karaikal, Karnataka. Maharashtra, Rajasthan, Tamilnadu.

### **Spodiopogon sagittifolius** Rendle. *Journ. Linn. Soc.* vi. 352. (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: Yunnan: Mengzi, grass mountains, 5500 Ft., *A. Henry 10997* (ST: BM; ST: K).

**Illustrations (Books):** S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 799).

**Derivation** (Clifford & Bostock 2007): *L. sagittus*, shaped like an arrow-head; folium, leaf. With leaf-blades resembling an arrow-head.

**Classification.** Subfamily Panicoideae. Tribe: Andropogoneae. Subtribe **ANDROPOGONINAE**.

**Habit, Vegetative Morphology.** Perennial. Culms erect, 100–150 cm long, 2 mm diam., 3–4 -noded. Leaf-sheaths mostly shorter than adjacent culm internode, glabrous on surface. Leaf-sheath oral hairs ciliate. Ligule a ciliolate membrane, 4–6 mm long, pilose on abaxial surface, obtuse. Leaf-blade base sagittate, with a false petiole, petiole 0.5–12 cm long, petiole glabrous or pubescent. Leaf-blades linear to lanceolate, 12–25 cm long, 5–9 mm wide. Leaf-blade surface pubescent, hairy abaxially. Leaf-blade apex acute.

**Inflorescence.** Inflorescence a panicle. Panicle open, ovate, 6–11 cm long, 3–6 cm wide, with spikelets clustered towards branch tips. Primary panicle branches whorled at most nodes, 2–4 cm long, bearing 2 fertile spikelets on each lower branch. Panicle branches capillary, apically expanded, pubescent in axils. Spikelets in pairs. Fertile spikelets sessile and pedicelled, 2 in the cluster. Pedicels present, filiform, 4 mm long, ciliate, with purple hairs, tip cupuliform.

**Fertile Spikelets.** Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets ovate, dorsally compressed, 5 mm long, falling entire, deciduous from the base or with accessory branch structures. Spikelet callus pilose, base obtuse, inserted. Spikelet callus hairs 1 mm long, 0.2 length of spikelet.

**Glumes.** Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma. Lower glume ovate, 1 length of spikelet, chartaceous, pallid, without keels, 10 -veined. Lower glume lateral veins ribbed. Lower glume surface pilose. Lower glume apex obtuse. Upper glume ovate, chartaceous, pallid, without keels, 8 -veined. Upper glume lateral veins ribbed. Upper glume surface pilose. Upper glume margins ciliate. Upper glume apex emarginate.

**Florets.** Basal sterile florets 1, male, with palea. Lemma of lower sterile floret oblong, 5 mm long, hyaline, 1 -veined, without lateral veins, puberulous, hairy above, ciliolate on margins, dentate, 2 -fid. Palea of lower sterile floret 1 length of lemma. Fertile lemma oblong, 4–5 mm long, hyaline. Lemma apex lobed, 2 -fid, with linear lobes, awned, 1 -awned. Principal lemma awn from a sinus, geniculate, 20 mm long overall, with twisted column. Palea 4.5 mm long, hyaline, without keels.

**Flower and Fruit.** Lodicules 2, cuneate. Anthers 3, 4.5 mm long.

**Distribution (TDWG). Continent.** Temperate Asia.

**Country /Province /State.** China. China South Central.

**TDWG4.** Yunnan.

## **Spodiopogon sibiricus** Trin. *Fund. Agrost.* 192. (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, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), S-L Chen et al, *Flora of China* 22 (Poaceae) (2006), T.Koyama, *Grasses of Japan and its neighboring regions* (1987).

**TYPE** from Russia. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Russia: Siberia:, *Herb. Haupt* (LT: LE).

**Illustrations (Books):** T.Koyama, *Grasses of Japan and its neighbouring regions* (1987) (407, Fig 160), M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 25 *Poaceae*, part 2 (2003) (610), S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 801 as *S. sibiricus* var. *sibiricus*).

**Images:** R.Darke, *Ornamental Grasses* (2004);, R.Darke, *The Encyclopaedia of Grasses for Liveable Landscapes* (2007);.

**Derivation** (Clifford & Bostock 2007): *L. -ica*, belonging to. From Siberia.

**Classification.** Subfamily Panicoideae. Tribe: Andropogoneae. Subtribe **ANDROPOGONINAE**.

**Habit, Vegetative Morphology.** Perennial. Rhizomes elongated, scaly. Culms erect, 90–150 cm long, 2–4 mm diam., 5–7 -noded. Leaves cauline. Ligule a ciliolate membrane, 2–3 mm long. Leaf-blades linear to lanceolate, (7–)15–35 cm long, 8–20 mm wide. Leaf-blade surface pilose, hairy on both sides. Leaf-blade margins scabrous. Leaf-blade apex acuminate.

**Inflorescence.** Inflorescence a panicle with branches tipped by a raceme. Panicle open, lanceolate, nodding, 12–20 cm long, 2–4 cm wide. Primary panicle branches whorled at most nodes, 2–6 cm long. Panicle branches glabrous in axils or bearded in axils. Racemes 2–3.5 cm long, bearing few fertile spikelets, bearing 7–11 fertile spikelets on each. Rhachis fragile at the nodes, subterete. Rhachis internodes cuneate, 2–3 mm long. Spikelets in pairs. Fertile spikelets sessile and pedicelled, 2 in the cluster. Pedicels present, cuneate, tip cupuliform.

**Fertile Spikelets.** Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets ovate, dorsally compressed, 4.5–5.5 mm long, falling entire,

deciduous from the base or with accessory branch structures. Spikelet callus bearded, base obtuse, inserted. Spikelet callus hairs white, 0.25 length of spikelet.

**Glumes.** Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma. Lower glume ovate, 1 length of spikelet, chartaceous, pallid, without keels, 5–9 -veined. Lower glume lateral veins ribbed. Lower glume surface pilose. Lower glume apex acute or acuminate. Upper glume ovate, chartaceous, pallid, without keels, 3–7 -veined. Upper glume lateral veins ribbed. Upper glume surface pilose. Upper glume margins ciliate. Upper glume apex acute or acuminate, mucronate.

**Florets.** Basal sterile florets 1, male, with palea. Lemma of lower sterile floret ovate, 4.5–5.5 mm long, 1 length of spikelet, hyaline, pilose, hairy above, acute. Fertile lemma linear, 4 mm long, hyaline. Lemma apex lobed, 2 -fid, with linear lobes, incised 0.66 of lemma length, awned, 1 -awned. Principal lemma awn from a sinus, geniculate, 7–12 mm long overall, with twisted column. Palea lanceolate, 0.8 length of lemma, hyaline, 0 -veined, without keels. Palea apex dentate, 2 -fid.

**Flower and Fruit.** Lodicules 2. Anthers 3, 3 mm long.

**Distribution (TDWG). Continent.** Temperate Asia.

**Country /Province /State.** Siberia, Russian far east, **China, Mongolia, Eastern Asia, Russia.** Buryatiya, Chita, Irkutsk, Tuva. Amur, Primorye. China South Central, Hainan, Inner Mongolia, Manchuria, China North-Central, China Southeast. Mongolia. Japan, Korea. Japan Hokkaido, or Honshu, or Shikoku, or Kyushu.

**TDWG4.** Gansu, Hebei, Shaanxi, Shandong, Shanxi. Anhui, Guangdong, Henan, Hunan, Jiangsu, Jiangxi, Zhejiang. Guizhou, Hubei, Sichuan.

### **Spodiopogon tainanensis** Hayata. *Bot. Mag., Tokyo*, xxi. 53 (1907). (1907).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), S-L Chen et al, *Flora of China* 22 (Poaceae) (2006), T.Koyama, *Grasses of Japan and its neighboring regions* (1987).

**TYPE** from China. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: China: Taiwan: Tainan, 2300–3400 m, Oct. 1905, *G. Naikahara s.n.* (HT: TI).

**Illustrations (Books):** T.Koyama, *Grasses of Japan and its neighbouring regions* (1987) (409, Fig 161), C-C Hsu, *Flora of Taiwan*, Vol 5 (1978) (776), C-C Hsu, *Taiwan Grasses* (1975) (699, Pl. 1480 as forma *tainanensis*), S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 802).

**Derivation** (Clifford & Bostock 2007): L. -ensis, denoting origin. From Tainan, Japan.

**Classification.** Subfamily Panicoideae. Tribe: Andropogoneae. Subtribe ANDROPOGONINAE.

**Habit, Vegetative Morphology.** Perennial. Rhizomes elongated, scaly. Culms erect or geniculately ascending, 40–70 cm long, 1.5–2 mm diam., 8–15 -noded. Lateral branches ample. Leaf-sheaths pilose, with tubercle-based hairs, outer margin hairy. Ligule an eciliate membrane, 0.5–1 mm long, erose, truncate. Leaf-blades linear to lanceolate, 6–10 cm long, 3–8 mm wide. Leaf-blade surface glabrous or pubescent, sparsely hairy. Leaf-blade margins scabrous.

**Inflorescence.** Inflorescence a panicle with branches tipped by a raceme. Panicle open, lanceolate or oblong, 6–12 cm long, 1.8–3 cm wide. Primary panicle branches ascending, whorled at most nodes, 2–4 cm long. Panicle axis smooth. Panicle branches capillary, smooth. Racemes bearing few fertile spikelets, 2–6 fertile spikelets on each. Rhachis fragile at the nodes, subterete, ciliate on margins. Rhachis internodes 3–4 mm long. Spikelets in pairs. Fertile spikelets sessile and pedicelled, 2 in the cluster. Pedicels present, 2.5–3 mm long, ciliate, tip cupuliform.

**Fertile Spikelets.** Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets lanceolate or oblong, dorsally compressed, 4.5–5 mm long, 1 mm wide, falling entire, deciduous from the base or with accessory branch structures. Spikelet callus pilose, base obtuse, inserted. Spikelet callus hairs 1 mm long, 0.2–0.25 length of spikelet.

**Glumes.** Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma. Lower glume ovate, 1 length of spikelet, chartaceous, pallid, without keels, 7–11 -veined. Lower glume lateral veins ribbed. Lower glume surface pilose. Lower glume apex acuminate, mucronate. Upper glume ovate, chartaceous, with membranous margins, pallid, without keels, 3–7 -veined. Upper glume lateral veins ribbed. Upper glume surface pilose. Upper glume apex acute, mucicous or mucronate.

**Florets.** Basal sterile florets 1, male, with palea. Lemma of lower sterile floret lanceolate, 4.5–5 mm long, membranous, acute. Palea of lower sterile floret 1 length of lemma. Fertile lemma lanceolate, 3.7–4 mm long, hyaline. Lemma apex lobed, 2 -fid, incised 0.5 of lemma length, awned, 1 -awned. Principal lemma awn from a sinus, geniculate, 7–10 mm long overall, with twisted column. Palea lanceolate, 0.9 length of lemma, hyaline, without keels.

**Flower and Fruit.** Lodicules 2. Anthers 3, 2.7–3 mm long.

**Distribution (TDWG). Continent.** Temperate Asia.

**Country /Province /State.** China, Eastern Asia. China South Central, China North-Central, China Southeast, Tibet. Taiwan.

**TDWG4.** Gansu. Jiangsu. Sichuan, Yunnan.

**Spodiopogon velutinus** Holttum. *Gard. Bull. Singapore*, xi. 297 (1947).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online, J.F.Veldkamp, Poaceae ms (*Flora Malesiana*) (as *Saccharum*).

**TYPE** from Malaysia. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Malay Peninsula: Cameron Highlands, 5500 ft alt, in overgrown tea estate clearing, 4 Aug 1946, *Holttum s.n.*.

**Recent Synonyms:** *Saccharum velutinum* (Holttum) T.A. Cope, *Kew Bull.* 35(3): 703 (1980).

**Illustrations (Books):** No illustration found (BKS).

**Images:** H.B.Gilliland et al., *Flora of Malaya Vol. 3 Grasses* (1971);

**Derivation** (Clifford & Bostock 2007): L. velvety. Plant in whole or in part covered with dense short hairs.

**Classification.** Subfamily Panicoideae. Tribe: Andropogoneae. Subtribe **ANDROPOGONINAE**.

**Habit, Vegetative Morphology.** Perennial. Culms rambling, robust, 200–300 cm long, 5–6 mm diam. Leaf-sheaths 13–13.5 cm long, striately veined, glabrous on surface or pilose. Ligule an eciliate membrane, 1 mm long, pilose on abaxial surface. Leaf-blades lanceolate, 15–30 cm long, 20–40 mm wide. Leaf-blade surface pubescent, densely hairy, hairy on both sides. Leaf-blade margins scaberulous. Leaf-blade apex acuminate.

**Inflorescence.** Inflorescence a panicle with branches tipped by a raceme. Panicle open, lanceolate, 25 cm long. Primary panicle branches whorled at lower nodes. Panicle axis pubescent. Racemes bearing few fertile spikelets, 2 fertile spikelets on each. Rhachis fragile at the nodes, subterete. Rhachis internodes clavate. Rhachis internode tip with hairy rim. Spikelets in pairs. Fertile spikelets sessile and pedicelled, 2 in the cluster. Pedicels present, clavate, puberulous, hairy at tip.

**Fertile Spikelets.** Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets ovate, dorsally compressed, 3 mm long, falling entire, deciduous from the base or with accessory branch structures. Spikelet callus bearded, base obtuse, inserted. Spikelet callus hairs white, 5–6.5 mm long, 2 length of spikelet.

**Glumes.** Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma. Lower glume ovate, 1 length of spikelet, chartaceous, without keels, 5 -veined. Lower glume surface puberulous, hairy below. Lower glume apex acute. Upper glume oblong, chartaceous, without keels, 5 -veined. Upper glume margins ciliate. Upper glume apex truncate.

**Florets.** Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret ovate, 2.5 mm long, hyaline, 3 -veined, dentate, 2 -fid. Fertile lemma linear, 2.2 mm long, hyaline, 3 -veined, 0–3 -veined. Lemma apex lobed, 2 -fid, awned, 1 -awned. Principal lemma awn from a sinus, geniculate, 6.2 mm long overall, with twisted column. Palea lanceolate, 1.8 mm long, hyaline. Palea surface pilose, hairy on margins.

**Flower and Fruit.** Lodicules 2. Anthers 3, 1.8 mm long, yellow.

**Distribution (TDWG). Continent.** Tropical Asia.

**Country /Province /State.** Malesia. Malaya.

**Spodiopogon villosus** Nees. *Hook. & Arn. Bot. Beech. Voy.* 242 (1838).

Regarded by K as a synonym (*Ischaemum ciliare* var. *villosum*).

**TYPE** from China. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: China, Macao: Coll?.

**Illustrations (Books):** No illustration found (BKS).

**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**.

**Distribution (TDWG). Continent.** Temperate Asia.

**Country /Province /State.** China. Tibet.

**Spodiopogon yuexiensis** S.L. Zhong. *J. Southwest. Agric. Coll. (Chongqing)*, 1982(4): 7 (1982).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online, S-L Chen et al, *Flora of China* 22 (Poaceae) (2006).

**TYPE** from China. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: China: Sichuan: Yuexi, 3 Sept/ 1976, *West Sichuan Veget. Exped. 14256* (HT: CDBI; IT: SWAU).

**Illustrations (Books):** S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 800).

**Classification.** Subfamily Panicoideae. Tribe: Andropogoneae. Subtribe **ANDROPOGONINAE**.

**Habit, Vegetative Morphology.** Perennial, caespitose. Culms erect, 100–200 cm long, 2–6 mm diam. Culm-internodes distally pruinose or glabrous. Leaf-sheaths loose, glabrous on surface. Ligule a ciliolate membrane, scarious. Leaf-blades 8–30 cm long, 4–22 mm wide. Leaf-blade surface hispid, densely hairy, hairy adaxially, with tubercle-based hairs. Leaf-blade margins scabrous.

**Inflorescence.** Inflorescence a panicle with branches tipped by a raceme. Panicle open, elliptic, 12–27 cm long, 4–9 cm wide. Primary panicle branches whorled at most nodes, 3–8 cm long. Panicle axis glabrous. Racemes 1–1.5 cm long, bearing few fertile spikelets, bearing 3–5 fertile spikelets on each. Rhachis fragile at the nodes, subterete. Rhachis internodes 5–6 mm long. Spikelets in pairs. Fertile spikelets sessile and pedicelled, 2 in the cluster. Pedicels present, 5–6 mm long, glabrous.

**Fertile Spikelets.** Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets lanceolate, dorsally compressed, 5 mm long, falling entire, deciduous from the base or with accessory branch structures. Spikelet callus pubescent, base obtuse, inserted.

**Glumes.** Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma. Lower glume lanceolate, 1 length of spikelet, chartaceous, pallid, without keels, 11 -veined. Lower glume lateral veins ribbed. Lower glume surface pilose. Lower glume apex acute or acuminate. Upper glume lanceolate, chartaceous, pallid, without keels, 9–11 -veined. Upper glume lateral veins ribbed. Upper glume surface pilose. Upper glume apex acute or acuminate.

**Florets.** Basal sterile florets 1, male, with palea. Lemma of lower sterile floret lanceolate, hyaline, ciliolate on margins, acute. Fertile lemma 4 mm long, hyaline. Lemma apex lobed, 2 -fid, incised 0.5–0.66 of lemma length, awned, 1 -awned. Principal lemma awn from a sinus, geniculate, 8–12 mm long overall, with twisted column. Palea 0.8 length of lemma, hyaline, 0 -veined, without keels. Palea apex dentate, 2 -fid.

**Flower and Fruit.** Lodicules 2. Anthers 3, 3–3.5 mm long, yellow.

**Distribution (TDWG). Continent.** Temperate Asia.

**Country /Province /State. China.** China South Central.

**TDWG4.** Sichuan.

### **Sporobolus acinifolius** Stapf. Dyer, *Fl. Cap.* vii. 581. (1900).

**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 West Africa: "Kalahari Region: Griqualand West, Hay Div.; at Griqua Town: 1846", *Burchell s.n.*

**Illustrations (Books):** L.K.A. Chippindall, *Grasses and Pastures of South Africa* (1955) (214, Fig 189).

**Classification.** Subfamily Chloridoideae. Tribe: Zoysieae.

**Habit, Vegetative Morphology.** Perennial, mat forming. Rhizomes elongated. Culms 15–43 cm long, 2–5 -noded. Leaves basal and cauline. Ligule a fringe of hairs. Leaf-blades 4–12 cm long, 2–3 mm wide. Leaf-blade apex acuminate.

**Inflorescence.** Inflorescence a panicle. Panicle open, elliptic or ovate, effuse, 6–15 cm long. Primary panicle branches branching dichotomously. Panicle branches capillary, glabrous in axils. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 1–2 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes deciduous, similar, shorter than spikelet, similar to fertile lemma in texture. Lower glume lanceolate, 0.33–0.5 length of upper glume, membranous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume apex obtuse. Upper glume lanceolate, 0.5–0.75 length of adjacent fertile lemma, hyaline, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume apex obtuse.

**Florets.** Fertile lemma ovate, 1–2 mm long, membranous, without keel, 1 -veined, 0–3 -veined, one-veined. Lemma apex acute. Palea 2 -veined. Palea keels approximate.

**Flower and Fruit.** Anthers 3. Caryopsis with free soft pericarp.

**Distribution (TDWG). Continent.** Africa.

**Country /Province /State. South tropical Africa, Southern Africa.** Mozambique, Zambia, Zimbabwe, Namibia, Botswana, Limpopo, North-West, Northern Cape.

**Sporobolus actinocladius** (F.Muell.) F. Muell. *Fragm.* viii. 140. (1873).

**Accepted by:** R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), D.Sharp, D. & B.K.Simon, *AusGrass* (2002).

**TYPE** from Australia. **Basionym or Replaced Name:** *Vilfa actinoclada* F. Muell., *Fragm.* 6: 84 (1867). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *F. Mueller s.n.*, Australia: Sturts Creek (MEL (photo, BRI); IT: K (photo, BRI)).

**Illustrations (Books):** J.P.Jessop, G.R.M. Dashorst & F.M.James, *Grasses of South Australia* (2006) (396, Fig 327), C.A.Gardner, *Flora of Western Australia*, Vol 1, Part 1, *Gramineae* (1952) (161, Pl 48), J.R.Wheeler et al, *Flora of the Kimberley Region* (1992) (1224, Fig. 346), S.W.L.Jacobs, R.D.B.Whalley & D.J.B.Wheeler., *Grasses of New South Wales*, 4th edn (2008) (376), J.C.Tothill, & J.B.Hacker. *The grasses of southern Queensland* (1983), D.Sharp & B.K.Simon, *AusGrass*. Grasses of Australia. CD-Rom Version 1.0. (2002).

**Images:** D.Sharp & B.K.Simon, *AusGrass*. Grasses of Australia. CD-Rom Version 1.0. (2002);.

**Derivation** (Clifford & Bostock 2007): Gk. aktinos, ray; klados, branch. Inflorescence branches verticillate.

**Classification.** Subfamily Chloridoideae. Tribe: Zoysieae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Cataphylls evident. Butt sheaths glabrous. Culms 30–45 cm long. Ligule a fringe of hairs. Leaf-blades linear or lanceolate, 3–12.5 cm long, 3–6 mm wide, light green or glaucous. Leaf-blade surface scaberulous. Leaf-blade margins cartilaginous, scabrous.

**Inflorescence.** Inflorescence a panicle. Panicle open, pyramidal, 5–12 cm long, 2.5–8 cm wide, contracted about primary branches. Primary panicle branches spreading, whorled at lower nodes, 1–4 cm long. Panicle branches bearing congested spikelets. Spikelets appressed, solitary. Fertile spikelets sessile.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 1.25 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes deciduous, shorter than spikelet. Lower glume ovate, 1 mm long, 0.4–0.5 length of upper glume, membranous, without keels, 0 -veined. Lower glume lateral veins absent. Lower glume apex acute. Upper glume ovate, 1.2 mm long, 0.9 length of adjacent fertile lemma, membranous, 1-keeled, 1 -veined. Upper glume primary vein scaberulous. Upper glume lateral veins absent. Upper glume apex acute.

**Florets.** Fertile lemma ovate, 1.25 mm long, membranous, without keel, 1 -veined, 0–3 -veined, one-veined. Lemma apex acute. Palea readily splitting down midline, 1.2 mm long, 2 -veined. Palea keels approximate.

**Flower and Fruit.** Caryopsis with free soft pericarp, oblong, laterally compressed, quadrangular, 0.75 mm long, light brown.

**Distribution (TDWG). Continent.** Australasia.

**Country /Province /State.** Australia. Western Australia, Northern Territory, South Australia, Queensland, New South Wales.

**TDWG4.** Kimberley, Ereman, South-West. Darwin & Gulf, Victoria R & Barkly Tableland, Central Australia. NW & Lake Eyre, Southern. North, Central, South East, Inland. Western Plains.

**Sporobolus acuminatus** (Trin.) Hack. Fedde, *Repert. Nov. Sp.* vii. 373 (1909).

**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:** *Vilfa acuminata* Trin., *Sp. Gram.* 3(29): , t. 348 (1835). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Brazil: Figura ad specimen Brasilianum, Need to lectotypify, no type at LE-TRIN.

**Illustrations (Books):** E.G.Nicora, *Los Generos de Gramineas de America Austral* (1987) (328, Fig. 112).

**Classification.** Subfamily Chloridoideae. Tribe: Zoysieae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Basal innovations extravaginal. Culms erect, 80–130 cm long. Leaf-sheaths glabrous on surface. Ligule a fringe of hairs. Leaf-blades conduplicate, 20–25 cm long, 8–10 mm wide. Leaf-blade surface glabrous. Leaf-blade margins ciliate. Leaf-blade apex acuminate.

**Inflorescence.** Inflorescence a panicle. Panicle open, lanceolate, 20–30 cm long. Primary panicle branches whorled at most nodes, 6–8 cm long, bearing spikelets almost to the base. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets elliptic, subterete, 3–3.5 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes deciduous, reaching apex of florets. Lower glume elliptic, 0.33–0.5 length of upper glume, membranous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume apex acute. Upper



glume elliptic, 1 length of adjacent fertile lemma, membranous, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume apex acute.

**Florets.** Fertile lemma elliptic, 3–3.5 mm long, membranous, light brown, without keel, 1 -veined, 0–3 -veined, one-veined. Lemma apex acute. Palea 2 -veined. Palea keels approximate.

**Flower and Fruit.** Caryopsis with free soft pericarp.

**Distribution (TDWG). Continent.** South America.

**Country /Province /State. Brazil, Southern South America.** Brazil West Central, Brazil Southeast, Brazil South. Paraguay.

**TDWG4.** Minas Gerais, Rio de Janeiro, Espirito Santo. Misiones.

### **Sporobolus adustus** (Trin.) Roseng., Arrill. de Maffei & Izag. de Artucio. *Gramin. Urug.* 270 (1970).

**Accepted by:** R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

**TYPE** from Brazil. **Basionym or Replaced Name:** *Vilfa adusta* Trin., *Mem. Acad. Imp. Sci. Saint-Petersbourg, Ser. 6, Sci. Math., Seconde Pt. Sci. Nat.* 6,4(1–2): 80 (1840). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *J.B.E. Pohl 326*, Brazil: Trichod (LE-TRIN-1673.01; IT: US-1126778).

**Illustrations (Books):** B.Rosengurt, *Gramineas Uruguayas I* (1970) (272, Fig. 112).

**Derivation** (Clifford & Bostock 2007): L. blackened. Spikelets dark-coloured.

**Classification.** Subfamily Chloridoideae. Tribe: Zoysieae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Culms 60–100 cm long. Lateral branches lacking. Leaves mostly basal. Leaf-sheaths glabrous on surface. Ligule a fringe of hairs. Leaf-blades filiform or linear, involute, 10–25 cm long, 2–4 mm wide. Leaf-blade surface glabrous or pilose. Leaf-blade margins glabrous.

**Inflorescence.** Inflorescence a panicle. Panicle open, lanceolate, 13–27 cm long. Primary panicle branches ascending, whorled at most nodes. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rachilla extension. Spikelets of 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, subterete, 3–4.5 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes deciduous, reaching apex of florets. Lower glume elliptic, 0.5 length of upper glume, membranous, without keels. Lower glume primary vein smooth. Lower glume lateral veins absent. Lower glume apex acute. Upper glume elliptic, 1 length of adjacent fertile lemma, membranous, without keels, 1 -veined. Upper glume primary vein smooth. Upper glume lateral veins absent. Upper glume apex acute.

**Florets.** Fertile lemma elliptic, 3–4.5 mm long, membranous, without keel, 1 -veined, 0–3 -veined, one-veined. Lemma apex acute. Palea 2 -veined. Palea keels approximate.

**Flower and Fruit.** Caryopsis with free soft pericarp, ellipsoid, 1.5–2 mm long.

**Distribution (TDWG). Continent.** South America.

**Country /Province /State. Brazil, Southern South America.** Brazil Southeast, Brazil South. Paraguay, Uruguay.

Minas Gerais, Rio de Janeiro, Espirito Santo, Sao Paulo Parana, Catarina, Rio Grande do Sul.

### **Sporobolus aeneus** (Trin.) Kunth. *Enum. Pl.* 1: 213 (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. **Basionym or Replaced Name:** *Vilfa aenea* Trin., *Gram. Panic.* 23 (1826). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: T: *G.H. von Langsdorff s.n.*, Brazil (LE-TRIN-1647.01?).

**Recent Synonyms:** *Sporobolus sprengelii* Kunth, *Rev. Gram.* i. 68. (1829).

**Illustrations (Books):** S.A.Renvoize, *The Grasses of Bahia*, 1984 (62, Fig. 22), L.B. Smith, D.C. Wasshausen, R.M. Klein *Flora Illustrada Catarinensis Gramineas* (1981–1982) (379, Fig. 87).

**Illustrations (Journals):** *Taxon* (59: 1777, Fig.8 (2010) as var. *aeneus*, 1778, Fig. 9 as var. *angustifolius*, 1779, Fig. 10 as var. *eximius*).

**Derivation** (Clifford & Bostock 2007): L. aeneus, of copper. Spikelets copper-colored.

**Classification.** Subfamily Chloridoideae. Tribe: Zoysieae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Culms 40–50 cm long, 2–3 -noded. Culm-nodes glabrous. Leaf-sheaths glabrous on surface. Leaf-sheath oral hairs scanty. Ligule a fringe of hairs. Leaf-blades convolute, 10–15 cm long, 2–2.5 mm wide. Leaf-blade surface glabrous.

**Inflorescence.** Inflorescence a panicle. Panicle open, pyramidal, 10–15 cm long. Primary panicle branches 5–7 -nate, whorled at most nodes, 4–5 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 elliptic, subterete, 3.5 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes deciduous, reaching apex of florets. Lower glume elliptic, 0.33–0.5 length of upper glume, membranous, without keels, 0 -veined. Lower glume lateral veins absent. Lower glume apex acute. Upper glume elliptic, 1 length of adjacent fertile lemma, membranous, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume apex acute.

**Florets.** Fertile lemma elliptic, 3.5 mm long, membranous, without keel, 1 -veined, 0–3 -veined, one-veined. Lemma apex acute. Palea 2 -veined. Palea keels approximate.

**Flower and Fruit.** Anthers 3, 2.3 mm long. Caryopsis with free soft pericarp.

**Distribution (TDWG).** Continent. South America.

**Country /Province /State.** Western South America, Brazil, Southern South America. Bolivia. Brazil West Central, Brazil Northeast, Brazil Southeast, Brazil South. Argentina Northeast, Paraguay, Uruguay.

**TDWG4.** Mato Grosso, Goias, Bahia, Minas Gerais, Rio de Janeiro, Espirito Santo, Sao Paulo Parana, Catarina, Rio Grande do Sul. Corrientes, Entre Rios, Misiones.

**Sporobolus africanus** (Poir.) Robyns & Tournay. *Bull. Jard. Bot. Brux.* xxv. 242 (1955).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), D.Sharp, D. & B.K.Simon, *AusGrass* (2002), E.Edgar, & H.Connor, *Flora of New Zealand Gramineae* 5 (2000), N.L.Bor, *Grasses of Burma, Ceylon, India and Pakistan* (1960), W.D.Clayton & N.Snow, *Key to Pacific Grasses* (2010).

**TYPE** from South Africa. **Basionym or Replaced Name:** *Agrostis africana* Poir., *Encycl., Suppl.* 1: 254 (1810). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *Thunberg s.n.*, South Africa: Cape Province (UPS).

**Recent Synonyms:** *Sporobolus linearis* Mez, *Fedde Repert.* 18: 295 (1921). *Sporobolus capensis* (Beauv.) Kunth, *Enum. Pl.* 1: 212. (1833).

**Illustrations (Books):** F.N.Hepper, *F.W.T.A.* 3(2) (1972) (409, Fig.435), L.K.A. Chippindall, *Grasses and Pastures of South Africa* (1955) (225, Fig 198 as *S. capensis*), G.E.Gibbs Russell et al, *Grasses of Southern Africa* (1990) (304, Fig 197), J.Bosser, *Graminees des Paturage et des Cultures a Madagascar* (1969) (125, Fig 39), S.Phillips, *Poaceae* (Gramineae) in I.Hedberg & S.Edwards, *Flora of Ethiopia and Eritrea* (1995) (149, Fig 61), K.M.Matthew, *Flora Palni Hills* (1996) (871, Pl 871), J.P.Jessop, G.R.M. Dashorst & F.M.James, *Grasses of South Australia* (2006) (397, Fig 328), C.A.Gardner, *Flora of Western Australia*, Vol 1, Part 1, *Gramineae* (1952) (as *S. capensis*), N.Walsh & T.Entwistle, *Flora of Victoria* Vol 2 (1994) (as *S. indicus* var. *capensis*), S.W.L.Jacobs, R.D.B.Whalley & D.J.B.Wheeler, *Grasses of New South Wales*, 4th edn (2008) (376), J.C.Tothill, & J.B.Hacker. *The grasses of southern Queensland* (1983) (388(5)), D.Sharp & B.K.Simon, *AusGrass*. Grasses of Australia. CD-Rom Version 1.0. (2002).

**Illustrations (Journals):** *Austr. Syst. Bot.* (12: 418, Fig 7(1999)).

**Images:** D.Sharp & B.K.Simon, *AusGrass*. Grasses of Australia. CD-Rom Version 1.0. (2002);, F.van Oudtshoorn, *Guide to Grasses of Southern Africa* (1999).

**Derivation** (Clifford & Bostock 2007): L. -ana, indicating location. From Africa.

**Classification.** Subfamily Chloridoideae. Tribe: Zoysieae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Butt sheaths papery. Culms erect, 30–110 cm long, 1.5–3 mm diam. Ligule a fringe of hairs. Leaf-blades flat or convolute, 20–40 cm long, 1–4 mm wide. Leaf-blade apex filiform.

**Inflorescence.** Inflorescence a panicle. Panicle contracted or spiciform, linear, 10–35 cm long, contracted about primary branches. Primary panicle branches appressed, 1–2 cm long, bearing spikelets almost to the base. Panicle branches glabrous in axils. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, (1.5–)2.1–2.8 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes deciduous, dissimilar, shorter than spikelet. Lower glume oblong, 0.4–0.7 mm long, 0.4–0.5 length of upper glume, hyaline, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume apex obtuse. Upper glume ovate, 1–1.5 mm long, 0.5 length of adjacent fertile lemma, membranous, dark green, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume apex acute.

**Florets.** Fertile lemma ovate, (1.5–)2.1–2.8 mm long, membranous, dark green, without keel, 1 -veined, 0–3 -veined, one-veined. Lemma apex acute. Palea 2 -veined. Palea keels approximate.

**Flower and Fruit.** Anthers 3, 0.6–0.8 mm long. Caryopsis with free soft pericarp, ellipsoid, quadrangular, (0.8–)1.1–1.2 mm long.

*N* = 12 (1 ref TROPICOS), or 18 (1 ref TROPICOS), or 24 (all from Spies, J. J., E. van der Merwe, H. du Plessis & E. J. L. Saayman, *Bothalia* 21(2): 163–170 (1991)), or 30 (Spies, J. J. & A. Jonker, *Bothalia* 17: 135–136 (1987)). *2n* = 36 (Morton, J. K. *Opera Botanica* 121: 159–172 (1993)).

**Distribution (TDWG).** **Continent.** Europe (\*), Africa, Temperate Asia, Tropical Asia, Australasia (\*), Pacific.

**Region.** Northern Europe.

**Country /Province /State.** : Great Britain (\*). **Macaronesia, West tropical Africa, West-central tropical Africa, Northeast tropical Africa, East tropical Africa, South tropical Africa, Southern Africa, Middle Atlantic ocean, Western Indian ocean.** Madeira. Nigeria. Cameroon, Rwanda, DRC. Ethiopia (inc. Eritrea). Angola, Malawi, Mozambique, Zambia, Zimbabwe. Namibia, Botswana, Limpopo, North-West, Gauteng, Mpumalanga, Swaziland, Free State, Kwazulu-Natal, Lesotho, Western Cape, Eastern Cape. Ascension, St Helena. Mauritius (\*), Madagascar (\*), Rodrigues (\*). **Arabian Peninsula.** Saudi Arabia, Yemen. **Indian Subcontinent, Malesia, Papuasia.** Sri Lanka. Philippines. New Guinea West Papua (Irian Jaya). New Guinea. **Australia, New Zealand.** Western Australia (\*), Northern Territory (\*), South Australia (\*), Queensland (\*), New South Wales (\*), A.C.T. (\*), Victoria (\*), Tasmania (\*), Lord Howe-Norfolk Is (\*). Kermadec Is, New Zealand North I, New Zealand South I. **South-central Pacific, North-central Pacific.** Niue (\*). Cook Is (\*), Easter Is (\*), Society Is (\*). Marianas (\*). Hawaii (\*).

**TDWG4.** South-West. Central Australia. Southern. North, Central, South East. Coast, Tablelands, Western Slopes, Western Plains.

**Sporobolus agrostoides** Chiov. *Ann. Ist. Bot. Roma*, vii. 67. (1897).

**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, Sidlei, Ganane: Riva 1207 (FT holotype).

**Illustrations (Books):** S.Phillips, *Poaceae* (Gramineae) in I.Hedberg & S.Edwards, *Flora of Ethiopia and Eritrea* (1995) (154, Fig 63).

**Derivation** (Clifford & Bostock 2007): Gk. -oides, resembling. Resembling *Agrostis* in some respect, usually the form of the inflorescence.

**Classification.** Subfamily Chloridoideae. Tribe: Zoysieae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Rhizomes short. Culms erect, 35–140 cm long, 2–3 mm diam. Ligule a fringe of hairs. Leaf-blades flat, 20–40 cm long, 6–9 mm wide, flaccid (shiny). Leaf-blade venation distinct. Leaf-blade surface smooth.

**Inflorescence.** Inflorescence a panicle. Panicle open, lanceolate or ovate, loose or effuse, 15–40 cm long, contracted about secondary branches. Primary panicle branches naked below. Panicle branches glabrous in axils. 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, subterete, 1.6–2 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes deciduous, similar, shorter than spikelet. Lower glume lanceolate, 0.7–1.3 mm long, 0.5–0.8 length of upper glume, membranous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume apex acute. Upper glume ovate, 1.3–1.5 mm long, 0.75–0.8 length of adjacent fertile lemma, membranous, dark green, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume apex acute.

**Florets.** Fertile lemma ovate, 1.6–2 mm long, membranous, dark green, without keel, 1 -veined, 0–3 -veined, one-veined. Lemma apex acute. Palea 2 -veined. Palea keels approximate.

**Flower and Fruit.** Anthers 3, 0.8 mm long. Caryopsis with free soft pericarp, ellipsoid, 0.7 mm long.

**Distribution (TDWG).** **Continent.** Africa.

**Country /Province /State.** **West-central tropical Africa, Northeast tropical Africa, East tropical Africa.** Rwanda, DRC. Ethiopia (inc. Eritrea), Somalia. Kenya, Tanzania, Uganda.

**Sporobolus airiformis** Chiov. *Miss. Biol. Borana, Racc. Bot., Angiosp.-Gymnosp.* 277 (1939).

**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, Arero: *Cufodontis* 335 (FT syn); Somalia: *Gillett* 4898 (K isosyn).

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): L. forma, appearance. Resembling *Aira* with respect to the inflorescence.

**Classification.** Subfamily Chloridoideae. Tribe: Zoysieae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Butt sheaths indurate, yellow, woolly, persistent and investing base of culm, with fibrous dead sheaths. Culms 15–35 cm long. Ligule a fringe of hairs. Leaf-blades flat, 2–6 cm long, 1–2 mm wide.

**Inflorescence.** Inflorescence a panicle. Panicle open, ovate, effuse, 5–8 cm long. Panicle branches capillary. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 1.8–2 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes deciduous, similar, shorter than spikelet. Lower glume oblong or ovate, 0.5–0.8 mm long, 0.7–0.8 length of upper glume, membranous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume apex obtuse. Upper glume ovate, 0.6–1 mm long, 0.33–0.5 length of adjacent fertile lemma, membranous, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume apex cuspidate.

**Florets.** Fertile lemma ovate, 1.8–2 mm long, membranous, without keel, 1 -veined, 0–3 -veined, one-veined. Lemma apex obtuse or acute. Palea 2 -veined. Palea keels approximate.

**Flower and Fruit.** Anthers 3, 1–1.2 mm long. Caryopsis with free soft pericarp, obovoid, 1 mm long.

**Distribution (TDWG). Continent.** Africa, Temperate Asia.

**Country /Province /State.** West-central tropical Africa, Northeast tropical Africa. DRC. Ethiopia (inc. Eritrea), Somalia. Arabian Peninsula. Oman.

**Sporobolus airoides** (Torr.) Torr. *Marcy, Rep.* 300. (1856).

**Accepted by:** R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), N.L.Bor, *Grasses of Burma, Ceylon, India and Pakistan* (1960).

**TYPE** from USA. **Basionym or Replaced Name:** *Agrostis airoides* Torr., *Ann. Lyceum Nat. Hist. New York* 1(1): 151–152 (1824). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *E. James s.n.*, no date, USA: Colorado: headwaters of the Arkansas River (NY-327612; IT: US-76255 (fragm. & photostat ex hb. Torrey)).

**Illustrations (Books):** M.E.Barkworth et al, *Flora of North America north of Mexico Vol 25 Poaceae*, part 2 (2003) (128), F.W.Gould, *The Grasses of Texas* (1975) (300, Fig. 159), E.Hafliger & E.Schultz, *Grass Weeds*, CIBA-GEIGY (2:125(1980)).

**Images:** R.Darke, *Ornamental Grasses* (2004);, R.Darke, *The Encyclopaedia of Grasses for Liveable Landscapes* (2007);.

**Derivation** (Clifford & Bostock 2007): Gk. -oides, resembling. Inflorescences resemble those of *Aira*.

**Classification.** Subfamily Chloridoideae. Tribe: Zoysieae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Culms erect, 50–150 cm long, 1–2 mm diam. Leaf-sheaths without keel, glabrous on surface. Leaf-sheath oral hairs scanty, 2–4 mm long. Ligule a fringe of hairs. Leaf-blades flat or involute, 15–45 cm long, 2–6 mm wide.

**Inflorescence.** Inflorescence a panicle. Panicle open, pyramidal, effuse, 20–45 cm long, 15–25 cm wide. Spikelets spreading, solitary. Fertile spikelets pedicelled. Pedicels present, 0.5–2 mm long.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 1.3–2.5(–2.8) mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes deciduous, shorter than spikelet. Lower glume ovate, 0.4–1.8 mm long, 0.5–0.75 length of upper glume, membranous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume apex acute. Upper glume ovate, 1–1.2 mm long, 0.75 length of adjacent fertile lemma, membranous, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume apex acute.

**Florets.** Fertile lemma ovate, 1.3–2.8 mm long, membranous, without keel, 1 -veined, 0–3 -veined, one-veined. Lemma apex acute. Palea 2 -veined. Palea keels approximate.

**Flower and Fruit.** Anthers 3, 1.5–1.7 mm long, yellow. Caryopsis with free soft pericarp, 1 mm long.

**Distribution (TDWG). Continent.** Temperate Asia, Tropical Asia, North America.

**Country /Province /State.** **Arabian Peninsula.** Saudi Arabia. Hawaii (\*). **Northwest USA, North-central USA, Southwestern USA, South-central USA, Mexico.** Colorado, Idaho, Montana, Oregon, Wyoming. Kansas, North Dakota, Nebraska, Oklahoma, South Dakota. Arizona, California, Nevada, Utah. New Mexico, Texas. Central Mexico, Northeast Mexico.

**TDWG4.** Coahuila, San Luis Potosi.

**Sporobolus albicans** (Nees ex Trin.) Nees. *Fl. Afr. Austr.* 154. (1841).

**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:** *Vilfa adusta* Trin., *Mem. Acad. Imp. Sci. Saint-Petersbourg, Ser. 6, Sci. Math., Seconde Pt. Sci. Nat.* 5, 2: 101 (1840). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: South Africa: "In planitie inter montes Los Tafelberg et Wildschutberg", *Drege s.n.*.

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): *L. albico*, make white. Spikelets greenish-white.

**Classification.** Subfamily Chloridoideae. Tribe: Zoysieae.

**Habit, Vegetative Morphology.** Perennial, mat forming. Rhizomes short. Culms 20–36 cm long. Ligule a fringe of hairs. Leaf-blades 5–12 cm long, 1 mm wide.

**Inflorescence.** Inflorescence a panicle. Panicle spiciform, linear, loose, 2.5–6 cm long. Panicle branches glabrous in axils. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 2–2.5 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes deciduous, similar, shorter than spikelet or reaching apex of florets, similar to fertile lemma in texture. Lower glume lanceolate, 0.25 length of upper glume, hyaline, pallid, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume apex acute. Upper glume lanceolate, 0.75–1 length of adjacent fertile lemma, hyaline, pallid, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume apex acute.

**Florets.** Fertile lemma ovate, 2–2.5 mm long, membranous, without keel, 3 -veined, 0–3 -veined. Lemma apex acute. Palea 2 -veined. Palea keels approximate.

**Flower and Fruit.** Anthers 3. Caryopsis with free soft pericarp.

**Distribution (TDWG). Continent.** Africa.

**Country /Province /State.** **Southern Africa.** Botswana, Limpopo, North-West, Mpumalanga, Free State, Northern Cape, Western Cape, Eastern Cape.

**Sporobolus aldabrensis** Renvoize. *Kew Bull.*, 25(3): 417 (1971).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online.

**TYPE** from Aldabra. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Aldabra: Renvoize 987 (K holo).

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): *L. -ense*, denoting origin. From Aldabra, an island in the Indian Ocean.

**Classification.** Subfamily Chloridoideae. Tribe: Zoysieae.

**Habit, Vegetative Morphology.** Annual or perennial, caespitose. Culms erect, 15–30 cm long. Leaf-sheaths glabrous on surface. Ligule a fringe of hairs, 0.2 mm long. Leaf-blades involute, 1.5–11 cm long, 0.75 mm wide. Leaf-blade surface glabrous.

**Inflorescence.** Inflorescence a panicle. Panicle spiciform, linear, 7–13 cm long, 0.2–0.3 cm wide. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 1.3–1.5 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes deciduous, shorter than spikelet. Lower glume ovate, 0.5 mm long, 0.5–0.66 length of upper glume, membranous, without keels, 0 -veined. Lower glume lateral veins absent. Lower glume apex entire or lobed, truncate. Upper glume ovate, 0.8–1 mm long, 0.66–0.75 length of adjacent fertile lemma, membranous, without keels, 0–1 -veined. Upper glume primary vein absent or distinct. Upper glume lateral veins absent. Upper glume apex truncate or acute.

**Florets.** Fertile lemma ovate, 1.3–1.5 mm long, membranous, without keel, 0–1 -veined, 0–3 -veined, without veins or one-veined. Lemma apex acute. Palea 2 -veined. Palea keels approximate.

**Flower and Fruit.** Anthers 2, 0.5 mm long. Caryopsis with free soft pericarp, oblong, 0.8 mm long.

**Distribution (TDWG). Continent.** Africa.

**Country /Province /State.** Western Indian ocean. Aldabra, Seychelles.

**Sporobolus amaliae** J.F. Veldkamp. *Blumea*, 35(2): 411 (1991).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), J.F.Veldkamp, Poaceae ms (*Flora Malesiana*).

**TYPE** from East timor. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: Timor, Dili: Cinatti IV-140 (L holo, LISC).

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): in honor of Amalia Vissers (1949-) wife of J. F. Veldkamp.

**Classification.** Subfamily Chloridoideae. Tribe: Zoysieae.

**Habit, Vegetative Morphology.** Annual, caespitose. Basal innovations intravaginal. Culms erect, 25–52 cm long. Culm-internodes smooth, distally glabrous. Leaf-sheaths smooth, glabrous on surface, outer margin hairy. Leaf-sheath oral hairs scanty or lacking. Ligule a fringe of hairs or absent, 0.05–0.15 mm long. Leaf-blades 5–9.5 cm long, 2–4.5 mm wide. Leaf-blade midrib keeled beneath. Leaf-blade surface scaberulous, rough adaxially, pubescent, sparsely hairy, hairy adaxially. Leaf-blade margins tuberculate-ciliate. Leaf-blade apex acuminate.

**Inflorescence.** Inflorescence a panicle. Panicle open, lanceolate, effuse, 12 cm long, 4 cm wide. Primary panicle branches ascending, 13–20 -nate, whorled at most nodes, simple, 1.5–2.2 cm long, bearing 3–6 fertile spikelets on each lower branch. Panicle axis 10–13 noded. Panicle branches capillary. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, 0.5–0.75 mm long, smooth.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 1.5–1.75 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes deciduous, similar, reaching apex of florets. Lower glume lanceolate or ovate, 1–1.45 mm long, 0.66–0.9 length of upper glume, hyaline, purple, without keels, 0–1 -veined. Lower glume lateral veins absent. Lower glume surface smooth. Lower glume apex acuminate. Upper glume oblong or ovate, 1.5–1.75 mm long, 1 length of adjacent fertile lemma, hyaline, purple, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume surface smooth. Upper glume apex acute.

**Florets.** Fertile lemma oblong or ovate, 1.5–1.75 mm long, membranous, without keel, 1 -veined, 0–3 -veined, one-veined. Lemma apex obtuse. Palea readily splitting down midline, oblong, 1.4 mm long, 2 -veined. Palea keels approximate. Palea apex truncate or obtuse.

**Flower and Fruit.** Lodicules 2, 0.25–0.3 mm long. Anthers 3, 0.3–0.5 mm long. Caryopsis with free soft pericarp, ellipsoid or obovoid, isodiametric, quadrangular, 0.75–0.9 mm long. Embryo 0.5 length of caryopsis.

**Distribution (TDWG). Continent.** Tropical Asia.

**Country /Province /State.** Malesia. Lesser Sunda Is.

**Sporobolus angustifolius** A.Rich. *Tent. Fl. Abyss.* ii. 396. (1850).

**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>: *vide* TROPICOS and Kew Synonymy Database: Africa: Ethiopia "Abyssinia": "Crescit in locis siccis provinciae montosae Chire.", *Quartin Dillon s.n.*

**Illustrations (Books):** G.V.Pope et al., *Flora Zambesiaca* 10 (2(1999):185 t. 53).

**Derivation** (Clifford & Bostock 2007): *L. angustus*, narrow; folium, leaf. Leaf-blades narrow.

**Classification.** Subfamily Chloridoideae. Tribe: Zoysieae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Butt sheaths persistent and investing base of culm, with fibrous dead sheaths. Culms erect, 12–60 cm long. Ligule a fringe of hairs. Leaf-blades filiform or linear, convolute, 5–12 cm long, 1–2 mm wide.

**Inflorescence.** Inflorescence a panicle. Panicle open, linear or lanceolate or ovate, 5–16 cm long, contracted about primary branches. Primary panicle branches naked below. Panicle branches glabrous in axils. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile

or the upper sterile. Spikelets lanceolate, subterete, 2–3 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes deciduous, similar, shorter than spikelet. Lower glume oblong or ovate, 0.8–1.4 mm long, 0.7–0.8 length of upper glume, membranous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume apex acute. Upper glume ovate, 1.1–1.2 mm long, 0.5–0.75 length of adjacent fertile lemma, membranous, dark green or grey, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume surface smooth or asperulous. Upper glume apex acute.

**Florets.** Fertile lemma ovate, 2–3 mm long, membranous, dark green or grey, without keel, 1 -veined, 0–3 -veined, one-veined. Lemma surface smooth or scaberulous. Lemma apex acute. Palea 2 -veined. Palea keels approximate.

**Flower and Fruit.** Anthers 3, 0.7–1.2 mm long. Caryopsis with free soft pericarp, ellipsoid, 1–1.2 mm long.

**Distribution (TDWG). Continent.** Africa, Temperate Asia.

**Country /Province /State.** West-central tropical Africa, Northeast tropical Africa, East tropical Africa, South tropical Africa. DRC. Eritrea, Ethiopia (inc. Eritrea), Somalia, Sudan. Kenya, Tanzania, Uganda. Malawi, Zambia. **Arabian Peninsula.** Oman.

**Sporobolus apiculatus** S. de Castro Boechat & H.M. Longhi-Wagner. *Bradea*, 6(20): 173 (1993).

**Accepted by:** R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

**TYPE** from Brazil. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Brasil: Distrito Federal: Brasília: 22 Oct 1990, *Brochado & Filgueiras 90* (HT: ICN; IT: IBGE).

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): L. apiculum, small point; -ata, possessing. Glumes or lemmas sharp-pointed.

**Classification.** Subfamily Chloridoideae. Tribe: Zoysieae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Butt sheaths persistent and investing base of culm, with compacted dead sheaths. Basal innovations intravaginal. Culms erect, 25–47 cm long, 2–3 -noded. Leaf-sheaths subequal to internodes, outer margin hairy. Ligule a fringe of hairs, 0.3–0.5 mm long. Leaf-blades 20–32 cm long, 2 mm wide. Leaf-blade surface glabrous. Leaf-blade margins scabrous, glabrous or ciliate.

**Inflorescence.** Inflorescence a panicle. Peduncle 7.5–12 cm long. Panicle open, lanceolate, 3.5–9 cm long, 1–2.3 cm wide. Primary panicle branches whorled at lower nodes, 0.2–2 cm long. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets elliptic, subterete, 3.5–4.5 mm long, 1.3–2 mm wide, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes deciduous, shorter than spikelet. Lower glume lanceolate, 2–2.8 mm long, 0.5 length of upper glume, membranous, without keels, 0 -veined. Lower glume lateral veins absent. Lower glume apex acute. Upper glume elliptic, 3–4.5 mm long, 0.7–0.8 length of adjacent fertile lemma, membranous, grey, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume apex acute.

**Florets.** Fertile lemma lanceolate, 3–4.3 mm long, 0.5–0.9 mm wide, membranous, without keel, 1 -veined, 0–3 -veined, one-veined. Lemma apex acute. Palea readily splitting down midline, 3–4.2 mm long, 2 -veined. Palea keels approximate.

**Flower and Fruit.** Anthers 3, 2.1–2.5 mm long, brown or red. Caryopsis with free soft pericarp, ellipsoid, 1.8–1.9 mm long, dark brown. Embryo 0.5 length of caryopsis.

**Distribution (TDWG). Continent.** South America.

**Country /Province /State.** Brazil. Brazil West Central.

**TDWG4.**

**Sporobolus asper** (Beauv.) Kunth. *Rev. Gram.* i. 68. (1829).

**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:** *Agrostis aspera* Michx., *Fl. Bor.-Amer.* 1: 52 (1803). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *Michaux s.n.*, USA: Illinois (P; IT: US-76431 (fragm. & photo ex P hb. Michaux)).

**Recent Synonyms:** *Sporobolus compositus* (Poir.) Merrill, *U. S. Dept. Agric. Circ. Agrost.* 35: 6 (1901).

**Illustrations (Books):** F.W.Gould, *The Grasses of Texas* (1975) (305, Fig. 161 as var. *asper*).

**Derivation** (Clifford & Bostock 2007): L. rough. Plants with rough pedicels or leaf-blades.

**Classification.** Subfamily Chloridoideae. Tribe: Zoysieae.

**Habit, Vegetative Morphology.** Perennial, culms solitary or caespitose. Rhizomes absent or elongated, scaly. Culms erect, 60–170 cm long, 1–5 mm diam. Leaf-sheaths glabrous on surface. Ligule a fringe of hairs. Leaf-blades flat or conduplicate, 10–30 cm long, 1–4 mm wide. Leaf-blade surface glabrous or pubescent.

**Inflorescence.** Inflorescence a panicle, terminal and axillary, subtended by an inflated leaf-sheath, embraced at base by subtending leaf or enclosed. Axillary inflorescences enclosed. Panicle spiciform, linear, dense or loose, 5–30 cm long, 0.4–1 cm wide. Primary panicle branches 8–35 in number. 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, 4–6 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes deciduous, shorter than spikelet, shiny. Lower glume lanceolate, 0.5–1 length of upper glume, membranous, mid-green or purple, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume apex acute. Upper glume ovate, 1 length of adjacent fertile lemma, membranous, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume apex acute.

**Florets.** Fertile lemma ovate, 1.4–2 mm long, membranous, without keel, 1 -veined, 0–3 -veined, one-veined. Lemma apex acute. Palea 1 length of lemma, 2 -veined. Palea keels approximate.

**Flower and Fruit.** Anthers eventually exerted or retained within floret (when panicle axillary). Caryopsis with free soft pericarp.

$2n = 27$  (1 ref TROPICOS).

**Distribution (TDWG). Continent.** Europe (\*), North America.

**Region. Northern Europe** (\*).

**Country /Province /State.** : GB Aliens (Ryves et al). **Eastern Canada, Northwest USA, North-central USA, Northeast USA, Southwestern USA, South-central USA, Southeastern USA.** New Brunswick, Nova Scotia. Iowa, Kansas, Minnesota, Missouri, North Dakota, Nebraska, Oklahoma, South Dakota. Connecticut, Indiana, Maine, Massachusetts, Michigan, Ohio, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, Vermont, West Virginia. New Mexico, Texas. Arkansas, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, North Carolina, South Carolina, Virginia.

**Sporobolus atrovirens** (Kunth) Kunth. *Rev. Gram.* i. 68. (1829).

**Accepted by:** R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online.

**TYPE** from Mexico. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: HT: *Humboldt & Bonpland 4175*, Apr, Mexico: Meico: in valle Mexicana prope El Peñon del Marques, 1170 hexap (P-Bonpl.; IT: BM).

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): L. ater, dark; virens, green. Glumes greenish-black.

**Classification.** Subfamily Chloridoideae. Tribe: Zoysieae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Culms erect, slender, 10–40 cm long. Leaves mostly basal. Ligule a fringe of hairs. Leaf-blades tapering towards tip, 2–5 cm long, 1–3 mm wide. Leaf-blade surface glabrous.

**Inflorescence.** Inflorescence a panicle. Panicle open, oblong or ovate, effuse, 5–15 cm long, 2–10 cm wide. Primary panicle branches spreading, 1 -nate. Panicle branches capillary, bearing congested spikelets. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, oblong.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 0.9–1.3 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes deciduous, shorter than spikelet. Lower glume lanceolate, 0.25–0.3 mm long, 0.33 length of upper glume, membranous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume apex acute. Upper glume ovate, 0.7–0.8 mm long, 0.66 length of adjacent fertile lemma, membranous, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume apex acute.

**Florets.** Fertile lemma ovate, 0.9–1.3 mm long, membranous, without keel, 1 -veined, 0–3 -veined, one-veined. Lemma apex acute. Palea 1 length of lemma, 2 -veined. Palea keels approximate.

**Flower and Fruit.** Caryopsis with free soft pericarp, 0.7–0.8 mm long.

$2n = 24$  (1 ref TROPICOS).

**Distribution (TDWG). Continent.** North America, South America.



**Country /Province /State.** Mexico. Central Mexico, Northeast Mexico, Southwest Mexico, Southeast Mexico. Mesoamerica, Caribbean, Brazil.

**TDWG4.** Ceara, Rio Grande do Norte, Paraiba, Pernambuco, Alagoas, Sergipe. Distrito Federal, Mexico State, Puebla. Hidalgo, Neuvo Leon, Queretaro, San Luis Potosi, Tamaulipas. Jalisco, Oaxaca. Quintana Roo, Yucatan.

### **Sporobolus australasicus** Domin. Fedde, *Repert.* ix. 553 (1911).

**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: LT: *F. Mueller s.n.*, Australia: Northern Territory: Upper Victoria River (K (photo, BRI)). LT designated by Simon, *Fl. Austral.* 44B: 459 (2005). LT: *Domin s.n.*, Mar 1910, Australia: Queensland: Hyghendon [Hyghenden], Rolling Downs (PR; IT: K, NSW). LT designated by Baaijens & Veldkamp, *Blumea* 35: 451 (1991), but this is not original material and, therefore, is ineligible for lectotypification. See Simon, *Fl. Austral.* 44B 459 (2005).

**Illustrations (Books):** J.P.Jessop, G.R.M. Dashorst & F.M.James, *Grasses of South Australia* (2006) (397, Fig 329), C.A.Gardner, *Flora of Western Australia*, Vol 1, Part 1, *Gramineae* (1952) (161, Pl 48), J.R.Wheeler et al, *Flora of the Kimberley Region* (1992), 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) (351, Fig.77).

**Derivation** (Clifford & Bostock 2007): L. -ica, belonging to. From Australia.

**Classification.** Subfamily Chloridoideae. Tribe: Zoysieae.

**Habit, Vegetative Morphology.** Annual, caespitose. Culms erect or geniculately ascending, 20–40 cm long, 3–5 -noded. Culm-nodes glabrous. Lateral branches lacking. Leaves mostly basal. Leaf-sheaths striately veined, glabrous on surface, outer margin hairy. Leaf-sheath oral hairs ciliate. Ligule a fringe of hairs. Leaf-blade base broadly rounded. Leaf-blades 3–6 cm long, 4–8 mm wide. Leaf-blade surface pubescent, sparsely hairy. Leaf-blade margins cartilaginous, tuberculate-ciliate.

**Inflorescence.** Inflorescence a panicle. Panicle open, oblong or pyramidal, 7–12 cm long, 4–6 cm wide. Primary panicle branches spreading, whorled at most nodes, simple or sparsely divided, 1–2.5 cm long, bearing spikelets almost to the base. Panicle axis scabrous. Panicle branches capillary. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, 0.5–1.5 mm long, tip widened.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets orbicular, subterete, 1 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes deciduous, reaching apex of florets. Lower glume ovate, 0.5 mm long, 0.5 length of upper glume, membranous, much thinner on margins, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume apex obtuse. Upper glume ovate, 1 mm long, 1 length of adjacent fertile lemma, membranous, with hyaline margins, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume apex obtuse.

**Florets.** Fertile lemma ovate, 1 mm long, membranous, without keel, 1 -veined, 0–3 -veined, one-veined. Lemma apex acute. Palea readily splitting down midline, 1 length of lemma, 2 -veined. Palea keels approximate.

**Flower and Fruit.** Caryopsis with free soft pericarp, orbicular, isodiametric, 0.75 mm long.

**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, Southern. North, Central, Inland.

### **Sporobolus bahamensis** Hack. *Oesterr. Bot. Zeitschr.* 56. (1902).

**Accepted by:** R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

**TYPE** from Bahamas. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: West Indies: Bahamas: Insula Bahamensis: Acklins Island, in fruticetis gregaria, *Eggers 3905* (IT: US-3159457 (fragm. ex W)).

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): L. -ensis, denoting origin. From the Bahamas.

**Classification.** Subfamily Chloridoideae. Tribe: Zoysieae.

**Habit, Vegetative Morphology.** Annual. Culms erect, slender, 15–30 cm long. Leaf-sheaths smooth. Ligule a fringe of hairs. Leaf-blades involute, 4–6 cm long, 1 mm wide. Leaf-blade surface glabrous.

**Inflorescence.** Inflorescence a panicle. Panicle open, oblong, 7–15 cm long, 3–4 cm wide, 0.5 of culm length. Primary panicle branches ascending or spreading, 1-nate. Panicle branches capillary, smooth. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, filiform, 2–6 mm long, smooth, glabrous.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 1 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes deciduous, shorter than spikelet. Lower glume lanceolate, 0.3–0.4 mm long, 0.9 length of upper glume, membranous, without keels. Lower glume apex acute. Upper glume elliptic, 0.3–0.4 mm long, 0.3–0.4 length of adjacent fertile lemma, membranous, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume apex obtuse.

**Florets.** Fertile lemma ovate, 1 mm long, membranous, without keel, 1 -veined, 0–3 -veined, one-veined. Lemma apex obtuse. Palea 1 length of lemma, 2 -veined. Palea keels approximate.

**Flower and Fruit.** Caryopsis with free soft pericarp.

**Distribution (TDWG). Continent.** South America.

**Country /Province /State.** Caribbean. Bahamas.

### **Sporobolus balansae** Henrard. Fedde. *Rep.* 21:236 (1925).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online.

**TYPE** from Vietnam. **Basionym or Replaced Name:** *Sporobolus tenellus* Balansa, *J. Bot. (Morot)* 4(8): 164 (1890). T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: HT: *Harmand 930*, [Oct 1876], Vietnam: Isle Poulou Condor (L-908, 97–495).

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): in honor of Benjamin Balansa (1825–1892) French botanist.

**Classification.** Subfamily Chloridoideae. Tribe: Zoysieae.

**Habit, Vegetative Morphology.** Annual, caespitose. Culms erect, 40–50 cm long. Lateral branches lacking. Leaves mostly basal. Leaf-sheath oral hairs ciliate. Ligule a fringe of hairs. Leaf-blades lanceolate, tapering towards tip, 5–6 cm long, 2–3 mm wide.

**Inflorescence.** Inflorescence a panicle. Panicle open, linear, 10–14 cm long, 0.4–0.6 cm wide. Primary panicle branches whorled at most nodes, bearing spikelets almost to the base. Spikelets solitary. Fertile spikelets sessile.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 1.5 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes deciduous, shorter than spikelet or reaching apex of florets. Lower glume oblong, 0.4–0.5 mm long, 0.33 length of upper glume, membranous, without keels, 0 -veined. Lower glume lateral veins absent. Lower glume apex acute. Upper glume oblong, 1.2–1.5 mm long, 0.75–1 length of adjacent fertile lemma, membranous, without keels, 0 -veined. Upper glume primary vein absent. Upper glume lateral veins absent. Upper glume apex acute.

**Florets.** Fertile lemma oblong, 1.5 mm long, membranous, without keel, 1 -veined, 0–3 -veined, one-veined. Lemma apex acute. Palea 1.2–1.4 mm long, 0.8–0.9 length of lemma, 2 -veined. Palea keels approximate.

**Flower and Fruit.** Caryopsis with free soft pericarp, ovoid.

**Distribution (TDWG). Continent.** Tropical Asia.

**Country /Province /State.** Indo-China. Cambodia.

### **Sporobolus bechuanicus** Goossens. *Kew Bull.* 1934, 197. (1934).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

**TYPE** from Botswana. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: Africa: Botswana formerly Bechuanaland: Bushman mine, [*Penz*] (HT: PRE 8417).

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): L. -ica, belonging to. From Bechuanaland, now Botswana.

**Classification.** Subfamily Chloridoideae. Tribe: Zoysieae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Culms 50–80 cm long. Ligule a fringe of hairs. Leaf-blades 12–20 cm long, 3–3.5 mm wide.

**Inflorescence.** Inflorescence a panicle. Panicle spiciform, linear, loose, 6–24 cm long. Panicle branches glabrous in axils. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 2.5–3 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes deciduous, similar, shorter than spikelet, similar to fertile lemma in texture. Lower glume lanceolate, 0.25 length of upper glume, hyaline, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume apex obtuse. Upper glume lanceolate, 0.66 length of adjacent fertile lemma, cartilaginous, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume apex acute.

**Florets.** Fertile lemma ovate, 2.5–3 mm long, cartilaginous, without keel, 1 -veined, 0–3 -veined, one-veined. Lemma apex acute. Palea 2 -veined. Palea keels approximate.

**Flower and Fruit.** Anthers 3. Caryopsis with free soft pericarp.

**Distribution (TDWG). Continent.** Africa.

**Country /Province /State.** South tropical Africa, Southern Africa. Zimbabwe. Botswana.

### **Sporobolus blakei** B.K.Simon. *Austrobaileya*, 4(1): 57 (1993).

**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: *P.K. Latz 2483*, 20 Apr 1972, Australia: Northern Territory: Central Southern Div.: Redbank Gorge (BRI; IT: AD, CANB, DNA).

**Illustrations (Books):** J.P.Jessop, G.R.M. Dashorst & F.M.James, *Grasses of South Australia* (2006) (398, Fig 330), S.W.L.Jacobs, R.D.B.Whalley & D.J.B.Wheeler., *Grasses of New South Wales*, 4th edn (2008) (376), K.O.Mallett (ed.), *Flora of Australia*, Vol 44B. *Poaceae* (2004) (345, Fig 62), D.Sharp & B.K.Simon, *AusGrass*. Grasses of Australia. CD-Rom Version 1.0. (2002).

**Illustrations (Journals):** *Austrobaileya* (4:58, Fig.1 (1993)).

**Derivation** (Clifford & Bostock 2007): in honor of Stanley Thatcher Blake (1911–1973), Queensland botanist.

**Classification.** Subfamily Chloridoideae. Tribe: Zoysieae.

**Habit, Vegetative Morphology.** Perennial. Butt sheaths persistent and investing base of culm, with fibrous dead sheaths. Culms erect, 40–80 cm long, 2–3 -noded. Culm-internodes distally glabrous or pubescent. Lateral branches lacking. Ligule an eciliate membrane, 0.3 mm long. Leaf-blades 15–30 cm long, 2–3 mm wide.

**Inflorescence.** Inflorescence a panicle. Panicle contracted, linear, 15–22 cm long, 1–2 cm wide. Primary panicle branches ascending, 1–2.5 cm long, bearing spikelets almost to the base. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, 0.7–0.9 mm long.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets elliptic, subterete, 1.5–1.8 mm long, 0.7–0.9 mm wide, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes deciduous, shorter than spikelet. Lower glume oblong, 0.6–0.7 mm long, 0.66 length of upper glume, membranous, without keels, 0 -veined. Lower glume lateral veins absent. Lower glume apex obtuse. Upper glume ovate, 0.9–1.1 mm long, 0.6 length of adjacent fertile lemma, membranous, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume apex acute.

**Florets.** Fertile lemma ovate, 1.5–1.8 mm long, 0.7–0.9 mm wide, membranous, keeled, 1 -veined, 0–3 -veined, one-veined. Lemma apex truncate or obtuse. Palea 1.3–1.7 mm long, 2 -veined. Palea keels approximate.

**Flower and Fruit.** Lodicules 2. Anthers 3, 0.6–0.7 mm long. Caryopsis with free soft pericarp, obovoid, quadrangular, 0.9 mm long.

**Distribution (TDWG). Continent.** Australasia.

**Country /Province /State.** Australia. Western Australia, Northern Territory, South Australia, Queensland, New South Wales.

**TDWG4.** Kimberley, Ereman. Central Australia. NW & Lake Eyre. Inland. Western Plains.

**Sporobolus bogotensis** Swallen & Garc.-Barr. *Caldasia*, ii. 301 (1943).

**Accepted by:** R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

**TYPE** from Colombia. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *J. Cuatrecasas 5680*, 28 Jun 1939, Colombia: Cundinamarca (US-1795919; IT: COL).

**Illustrations (Books):** G.Harling & C.Persson, *Flora of Ecuador* (2006) (68: 63, Fig. 8 (2001)).

**Derivation** (Clifford & Bostock 2007): L. -ensis, denoting origin. From Bogota, Colombia.

**Classification.** Subfamily Chloridoideae. Tribe: Zoysieae.

**Habit, Vegetative Morphology.** Perennial. Culms erect, 30–45 cm long. Leaf-sheaths longer than adjacent culm internode, without keel, glabrous on surface, outer margin hairy. Ligule a fringe of hairs, 0.3 mm long. Leaf-blades 4–8 cm long, 2–2.5 mm wide. Leaf-blade venation prominent. Leaf-blade surface scabrous, pilose, moderately hairy, hairy abaxially.

**Inflorescence.** Inflorescence a panicle. Panicle open, lanceolate, 6–7 cm long, 2–3 cm wide. Primary panicle branches spreading, 1 -nate, 1–2 cm long. Panicle branches stiff. Spikelets appressed, solitary. Fertile spikelets pedicelled. Pedicels present, 0.5–1 mm long.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets elliptic, subterete, 2.8–3.2 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes deciduous, reaching apex of florets. Lower glume elliptic, 1.5–2 mm long, 0.5–0.6 length of upper glume, membranous, without keels. Lower glume lateral veins absent. Lower glume apex acute. Upper glume elliptic, 1 length of adjacent fertile lemma, membranous, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume apex acute.

**Florets.** Fertile lemma elliptic, 2.8–3.2 mm long, membranous, grey, without keel, 1 -veined, 0–3 -veined, one-veined. Lemma apex acute. Palea 2 -veined. Palea keels approximate, winged.

**Flower and Fruit.** Caryopsis with free soft pericarp.

**Distribution (TDWG). Continent.** South America.

**Country /Province /State.** Western South America. Colombia, Ecuador.

**TDWG4.**

**Sporobolus bosseri** A. Camus. *Bull. Soc. Bot. France*, 102: 533 (1956).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online.

**TYPE** from Madagascar. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Madagascar, Tananarive, Ankazobe: Bosser 2385.

**Illustrations (Books):** No illustration found (BKS).

**Classification.** Subfamily Chloridoideae. Tribe: Zoysieae.

**Habit, Vegetative Morphology.** Annual. Culms erect, 10–12 cm long. Culm-internodes smooth, distally glabrous. Culm-nodes glabrous. Lateral branches lacking. Leaf-sheaths striately veined, glabrous on surface. Ligule a fringe of hairs. Leaf-blades filiform, convolute, 4–9 cm long, 1 mm wide.

**Inflorescence.** Inflorescence a panicle. Panicle spiciform, linear, 2–3.5 cm long, bearing few spikelets. Panicle axis glabrous. 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, 2.2–2.5 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes deciduous, similar, exceeding apex of florets. Lower glume lanceolate, 0.5–0.6 mm long, 0.2–0.25 length of upper glume, hyaline, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume apex acute. Upper glume lanceolate, 2.2–2.5 mm long, 1.1–1.2 length of adjacent fertile lemma, membranous, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume apex acuminate.

**Florets.** Fertile lemma lanceolate, 2 mm long, membranous, without keel, 1 -veined, 0–3 -veined, one-veined. Lemma apex acute. Palea 2 -veined. Palea keels approximate.

**Flower and Fruit.** Caryopsis with free soft pericarp, ellipsoid or oblong.

**Distribution (TDWG). Continent.** Africa.

**Country /Province /State.** Western Indian ocean. Madagascar.

**Sporobolus brockmanii** Stapf. *Kew Bull.* 1907, 220. (1907).

**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: Africa: British Somaliland, *Drake-Brockman 11*.

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): in honor of Ralph Evelyn Drake-Brockman (1875-) British Army medical officer who collected in Africa.

**Classification.** Subfamily Chloridoideae. Tribe: Zoysieae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Rhizomes short. Butt sheaths papery. Culms 30–85 cm long, 1–1.25 mm diam. Leaves mostly basal. Ligule a fringe of hairs. Leaf-blades 5–20 cm long, 2–4 mm wide. Leaf-blade midrib indistinct.

**Inflorescence.** Inflorescence a panicle. Panicle spiciform, linear, 10–21 cm long. Primary panicle branches appressed, 1–4 cm long. Panicle branches glabrous in axils. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 1.7–2.1 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes deciduous, similar, shorter than spikelet, similar to fertile lemma in texture. Lower glume lanceolate, 0.8–1.3 mm long, 0.5–0.6 length of upper glume, membranous, without keels, 0 -veined. Lower glume lateral veins absent. Lower glume apex acute. Upper glume lanceolate, 0.66–0.75 length of adjacent fertile lemma, hyaline, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume apex acute.

**Florets.** Fertile lemma ovate, 1.7–2.2 mm long, membranous, without keel, 1 -veined, 0–3 -veined, one-veined. Lemma apex acute. Palea 2 -veined. Palea keels approximate.

**Flower and Fruit.** Anthers 3, 1–1.4 mm long. Caryopsis with free soft pericarp.

**Distribution (TDWG). Continent.** Africa.

**Country /Province /State.** Northeast tropical Africa. Somalia.

**Sporobolus buckleyi** Vasey. *Contrib. U. S. Nat. Herb.* iii.I. 63. (1883).

**Accepted by:** R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online.

**TYPE** from USA. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: IT: *D.B. Buckley s.n.*, 1883, USA: Texas (US-556873).

**Illustrations (Books):** M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 25 *Poaceae*, part 2 (2003) (127).

**Derivation** (Clifford & Bostock 2007): in honor of Samuel Botsford Buckley (1809–1884) United States botanist.

**Classification.** Subfamily Chloridoideae. Tribe: Zoysieae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Culms erect, slender, 40–100 cm long, 0.7–2 mm diam. Culm-internodes elliptical in section. Lateral branches lacking. Leaf-sheaths keeled, striately veined, outer margin hairy. Ligule a fringe of hairs, 0.2–0.4 mm long. Collar pubescent. Leaf-blades flat or conduplicate, 12–30 cm long, 4–12 mm wide. Leaf-blade surface glabrous.

**Inflorescence.** Inflorescence a panicle. Panicle open, elliptic, 15–40 cm long, 7–17 cm wide. Primary panicle branches spreading, 5–15 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, 1.3–2 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes deciduous, reaching apex of florets. Lower glume lanceolate, 0.6–1 mm long, 0.5 length of upper glume, membranous, purple, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume apex acute. Upper glume ovate, 1.3–2 mm long, 1 length of adjacent fertile lemma, membranous, purple, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume apex acute.

**Florets.** Fertile lemma ovate, 1.3–2 mm long, membranous, without keel, 1 -veined, 0–3 -veined, one-veined. Lemma apex acute. Palea readily splitting down midline, 1 length of lemma, 2 -veined. Palea keels approximate.

**Flower and Fruit.** Caryopsis with free soft pericarp, laterally compressed, 1 mm long.

**Distribution (TDWG). Continent.** North America, South America.

**Country /Province /State.** South-central USA, Mexico. Texas. Northeast Mexico, Southeast Mexico. Mesoamerica. Belize.

Neuvo Leon, San Luis Potosi, Tamaulipas. Veracruz. Campeche, Quintana Roo, Yucatan.

**Sporobolus caespitosus** Kunth. *Rev. Gram.* ii. 423. t. 125. (1831).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

**TYPE** from Ascension Is. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: Ascension Is.: Coll?.

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): *L. caespes*, grass that has been cut; -osa, abundance. Habit tufted.

**Classification.** Subfamily Chloridoideae. Tribe: Zoysieae.

**Habit, Vegetative Morphology.** Perennial, caespitose, clumped densely. Culms erect, 3–6 cm long. Ligule a fringe of hairs. Leaf-blades filiform, convolute, 3–6 cm long, 0.5 mm wide. Leaf-blade apex filiform.

**Inflorescence.** Inflorescence a panicle, shorter than basal leaves. Panicle open, linear, 1–2 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, 3 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes deciduous, similar, reaching apex of florets. Lower glume linear, 1.5–2 mm long, 0.5–0.75 length of upper glume, membranous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume apex acute. Upper glume lanceolate, 2.5 mm long, 0.8 length of adjacent fertile lemma, membranous, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume apex acute.

**Florets.** Fertile lemma ovate, 3 mm long, membranous, without keel, 1 -veined, 0–3 -veined, one-veined. Lemma apex acute. Palea 1 length of lemma, 2 -veined. Palea keels approximate.

**Flower and Fruit.** Caryopsis with free soft pericarp.

**Distribution (TDWG). Continent.** Africa.

**Country /Province /State.** Middle Atlantic ocean. Ascension.

**Sporobolus camporum** Swallen. *Sellowia*, No. 7, 10 (1956).

**Accepted by:** R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

**TYPE** from Brazil. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: HT: *R. Reitz 3431*, 21–29 Jan 1950, Brazil: Santa Catarina (US-2042484).

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): *L. campus*, plain. Growing on the plains.

**Classification.** Subfamily Chloridoideae. Tribe: Zoysieae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Culms erect, 50–100 cm long. Leaf-sheaths smooth, glabrous on surface. Ligule a fringe of hairs. Leaf-blades involute, 10–30 cm long, 2–4 mm wide. Leaf-blade surface glabrous. Leaf-blade margins scabrous, ciliate, hairy at base.

**Inflorescence.** Inflorescence a panicle. Panicle open, lanceolate, 20–26 cm long, contracted about primary branches. Primary panicle branches ascending, whorled at most nodes, 3–7 cm long. Panicle branches capillary. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, 0.5–1 mm long.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets elliptic, subterete, 2.5–4 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes deciduous, reaching apex of florets. Lower glume elliptic, 0.33–0.5 length of upper glume, membranous, purple, without keels. Lower glume apex acute. Upper glume oblong, 2.5–4 mm long, 1 length of adjacent fertile lemma, membranous, purple, without keels. Upper glume apex acuminate.

**Florets.** Fertile lemma elliptic, 2.5–4 mm long, membranous, purple, without keel, 1 -veined, 0–3 -veined, one-veined. Lemma apex acute. Palea 2 -veined. Palea keels approximate.

**Flower and Fruit.** Anthers 2, 2 mm long. Caryopsis with free soft pericarp, 2 mm long.

**Distribution (TDWG). Continent.** South America.

**Country /Province /State.** Brazil, Southern South America. Brazil Southeast, Brazil South. Uruguay.

**TDWG4.** Corrientes.

**Sporobolus capillaris** Miq. *Anal. Bot. Ind.* ii. 25 (1851).

**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: "Habitat in Peninsula Indiae orientalis.", *R. Wight s.n.* (HT: Glasgow 3309).

**Illustrations (Books):** No illustration found (BKS).

**Classification.** Subfamily Chloridoideae. Tribe: Zoysieae.

**Habit, Vegetative Morphology.** Annual, caespitose. Culms erect or geniculately ascending, 25–40 cm long. Culm-nodes glabrous. Leaf-sheaths 3–4.5 cm long, glabrous on surface. Ligule a fringe of hairs. Leaf-blades linear or lanceolate, 2.5–12 cm long, 5–9 mm wide. Leaf-blade surface hispid. Leaf-blade margins ciliate. Leaf-blade apex abruptly acute.

**Inflorescence.** Inflorescence a panicle. Panicle open, oblong or pyramidal, effuse, 8–18 cm long, 3–8 cm wide. Primary panicle branches whorled at most nodes. Panicle branches capillary, scabrous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 1.7–1.9 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes deciduous, reaching apex of florets. Lower glume lanceolate or oblong, 1–1.2 mm long, 0.66 length of upper glume, membranous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume apex acute. Upper glume oblong, 1.7–1.9 mm long, 1 length of adjacent fertile lemma, membranous, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume apex acuminate.

**Florets.** Fertile lemma ovate, 1.6–1.8 mm long, membranous, without keel, 1 -veined, 0–3 -veined, one-veined. Lemma apex acute. Palea 2 -veined. Palea keels approximate, scaberulous.

**Flower and Fruit.** Anthers 3, 0.2–0.3 mm long. Caryopsis with free soft pericarp, orbicular, laterally compressed, 0.7–0.8 mm long.

**Distribution (TDWG). Continent.** Tropical Asia.

**Country /Province /State.** Indian Subcontinent, Indo-China. India.

**TDWG4.** Madhya Pradesh, Maharashtra, Tamilnadu.

### **Sporobolus caroli** Mez. Fedde, *Repert.* xvii. 299 (1921).

**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: *ANONYMOUS*, Australia: New South Wales: Liverpool Plains (B (photo, BRI); ILT: BRI, NSW). LT designated by Simon & Jacobs, *Austral. Syst. Bot.* 12: 388 (1999).

**Illustrations (Books):** J.P.Jessop, G.R.M. Dashorst & F.M.James, *Grasses of South Australia* (2006) (398, Fig. 331), N.Walsh & T.Entwistle, *Flora of Victoria* Vol 2 (1994) (573, Fig. 115), S.W.L.Jacobs, R.D.B.Whalley & D.J.B.Wheeler, *Grasses of New South Wales*, 4th edn (2008) (376), T.D.Stanley & E.Ross, *Flora of South East Queensland, Gramineae* (1989) (183, Fig. 28), 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 Jean Martin Francois Carolus (1808–63) Belgian botanist.

**Classification.** Subfamily Chloridoideae. Tribe: Zoysieae.

**Habit, Vegetative Morphology.** Perennial, short-lived. Culms erect, slender, 30–75 cm long, 3–5 -noded. Culm-nodes glabrous. Lateral branches lacking or sparse. Leaf-sheaths keeled, outer margin glabrous. Ligule a fringe of hairs. Leaf-blades lanceolate, 10–20 cm long, 3–5 mm wide. Leaf-blade surface scaberulous, glabrous or pilose, with tubercle-based hairs. Leaf-blade margins cartilaginous, scabrous.

**Inflorescence.** Inflorescence a panicle. Panicle open, pyramidal, effuse, 8–12 cm long. Primary panicle branches spreading, whorled at lower nodes. Panicle branches capillary. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 1–1.5 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes deciduous, reaching apex of florets. Lower glume ovate, 0.5–0.75 mm long, 0.5 length of upper glume, membranous, much thinner on margins, without keels, 0 -veined. Lower glume lateral veins absent. Lower glume apex acuminate. Upper glume ovate, 1–1.5 mm long, 1 length of adjacent fertile lemma, membranous, with hyaline margins, 1-keeled, 1 -veined. Upper glume lateral veins absent. Upper glume apex acute.

**Florets.** Fertile lemma ovate, 1–1.5 mm long, membranous, keeled, 1 -veined, 0–3 -veined, one-veined. Lemma apex acute. Palea readily splitting down midline, 0.9 length of lemma, 2 -veined. Palea keels approximate.

**Flower and Fruit.** Caryopsis with free soft pericarp, obovoid, laterally compressed, quadrangular, 0.5 mm long, truncate.

**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, Victoria.

**TDWG4.** Eremean, 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.

### **Sporobolus centrifugus** (Trin.) Nees. *Fl. Afr. Austr.* 158. (1841).

**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:** *Vilfa centrifuga* Trin., *Mem. Acad. Petersb. Ser. VI. Sc. Nat. v. II.* 57 (1840). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: South Africa, Windvogel Mt. to Zwart Kei R.: Drege (B syn, K.

**Illustrations (Books):** G.E.Gibbs Russell et al, *Grasses of Southern Africa* (1990) (307, Fig 198), J.Bosser, *Graminees des Paturage et des Cultures a Madagascar* (1969) (123, Fig 38).

**Images:** F.van Oudtshoorn, *Guide to Grasses of Southern Africa* (1999).

**Derivation** (Clifford & Bostock 2007): L. centrum, centre of a circle; fugo, drive away. Plants caespitose but dying away in the centre of the tussock.

**Classification.** Subfamily Chloridoideae. Tribe: Zoysieae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Butt sheaths indurate, yellow, glossy. Culms erect, 20–80 cm long. Ligule a fringe of hairs. Leaf-blades filiform, involute, 6–30 cm long, 1–1.5 mm wide.

**Inflorescence.** Inflorescence a panicle. Panicle open or contracted, pyramidal or ovate, (4–)8–18 cm long, with spikelets clustered towards branch tips. Primary panicle branches whorled at most nodes (4–8 whorls). Panicle branches glabrous in axils. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 2.5–4.2 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes deciduous, similar, exceeding apex of florets. Lower glume oblong, 2.2–3.5 mm long, 0.75–1 length of upper glume, membranous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume apex acuminate. Upper glume oblong, 2.5–4.2 mm long, 1.1 length of adjacent fertile lemma, membranous, dark green, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume apex acute.

**Florets.** Fertile lemma lanceolate, 2–4 mm long, membranous, dark green, without keel, 1 -veined, 0–3 -veined, one-veined. Lemma apex acuminate. Palea 2 -veined. Palea keels approximate.

**Flower and Fruit.** Anthers 3, 1.7–2 mm long. Caryopsis with free soft pericarp, ellipsoid, 1.7–2 mm long.

**Distribution (TDWG), Continent.** Africa.

**Country /Province /State.** **Northeast tropical Africa, East tropical Africa, South tropical Africa, Southern Africa, Western Indian ocean.** Sudan. Kenya, Tanzania. Malawi, Zambia, Zimbabwe. Limpopo, Gauteng, Mpumalanga, Swaziland, Free State, Kwazulu-Natal, Lesotho, Eastern Cape. Madagascar.

### **Sporobolus clandestinus** (Bieler) Hitchcock. *Contrib. U. S. Nat. Herb.* xii. 150 (1908).

**Accepted by:** R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online.

**TYPE** from USA. **Basionym or Replaced Name:** *Agrostis clandestina* Biehler, *Pl. Nov. Herb. Spreng.* 8 (1807). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *Ex Herb. Muhlenberg 115*, no date, USA: Pennsylvania (PH; IT: US-1535795 (fragm. ex PH)).

**Illustrations (Books):** M.E.Barkworth et al, *Flora of North America north of Mexico Vol 25 Poaceae*, part 2 (2003) (123).

**Derivation** (Clifford & Bostock 2007): L. hidden. The inflorescence is enclosed or partially enclosed in the upper leaf-sheath.

**Classification.** Subfamily Chloridoideae. Tribe: Zoysieae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Butt sheaths glabrous or pilose. Culms erect or geniculately ascending, 50–100 cm long, 1–2 mm diam. Leaf-sheaths without keel. Leaf-sheath oral hairs



lacking or ciliate. Ligule a fringe of hairs, 0.2–0.3 mm long. Leaf-blades flat or involute, 15–25 cm long, 1–3 mm wide. Leaf-blade apex attenuate.

**Inflorescence.** Inflorescence a panicle, terminal and axillary, subtended by an inflated leaf-sheath, embraced at base by subtending leaf or enclosed. Panicle spiciform, linear, 5–10 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, 5–7 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes deciduous, shorter than spikelet. Lower glume lanceolate, 2–3.5 mm long, 0.66 length of upper glume, membranous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume surface asperulous. Lower glume apex acute. Upper glume ovate, 3–4.2 mm long, 0.66 length of adjacent fertile lemma, membranous, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume surface asperulous. Upper glume apex acute.

**Florets.** Fertile lemma ovate, 4–5 mm long, membranous, mid-green or purple, mottled with last colour, without keel, 1 -veined, 0–3 -veined, one-veined. Lemma surface pubescent. Lemma apex acute or acuminate. Palea 1.2–2 length of lemma, 2 -veined. Palea keels approximate. Palea surface pubescent, hairy on back or on flanks.

**Flower and Fruit.** Anthers 2.5–2.8 mm long, orange. Caryopsis with free soft pericarp, 2–3 mm long, dark brown. Embryo 0.5 length of caryopsis.

**Distribution (TDWG). Continent.** North America.

**Country /Province /State.** North-central USA, Northeast USA, South-central USA, Southeastern USA. Iowa, Kansas, Missouri, Nebraska, Oklahoma, South Dakota. Ohio, New Jersey, New York. Texas. Alabama, Arkansas, Delaware, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, North Carolina, South Carolina, Tennessee, Virginia, District of Columbia.

### **Sporobolus coahuilensis** J.Valdes. *Phytologia*, 41(2): 81 (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 Mexico. T:<Type of Basionym>; *vide* TROPICOS and Kew Synonymy Database: Mexico: Coahuila, *Hendrickson 15363* (LL).

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): L. *-ensis*, denoting origin. From Coahuila, Mexico.

**Classification.** Subfamily Chloridoideae. Tribe: Zoysieae.

**Habit, Vegetative Morphology.** Annual. Culms geniculately ascending, 15–60 cm long. Culm-internodes distally glabrous. Leaf-sheaths mostly shorter than adjacent culm internode, glabrous on surface. Ligule a fringe of hairs, 0.5–1 mm long. Leaf-blades spreading, 4–12 cm long, 1.5–6 mm wide. Leaf-blade surface pilose, sparsely hairy, hairy adaxially, with tubercle-based hairs.

**Inflorescence.** Inflorescence a panicle. Panicle open or contracted, ovate, 6–22 cm long, 5–13 cm wide. Primary panicle branches whorled at most nodes. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, filiform, 2–8 mm long.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets elliptic, subterete, 1–1.5 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes deciduous, reaching apex of florets. Lower glume lanceolate, 0.5 mm long, 0.33 length of upper glume, hyaline, without keels. Lower glume lateral veins absent. Lower glume apex acute. Upper glume lanceolate, 1.4–1.5 mm long, 1 length of adjacent fertile lemma, membranous, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume apex acute.

**Florets.** Fertile lemma lanceolate, 1.3–1.4 mm long, membranous, without keel, 1 -veined, 0–3 -veined, one-veined. Lemma apex acute. Palea readily splitting down midline, 1–1.3 mm long, 2 -veined. Palea keels approximate.

**Flower and Fruit.** Caryopsis with free soft pericarp, ellipsoid, 0.6–0.9 mm long, light brown. Embryo 0.33 length of caryopsis.

**Distribution (TDWG). Continent.** North America.

**Country /Province /State.** Mexico. Northeast Mexico.

**TDWG4.** Coahuila.

**Sporobolus collettii** (Hook. f.) Bor. *Kew Bull.* 1954, 502 (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:** *Sporobolus coromandelianus* var. *collettii* Hook. f., *Fl. Brit. India* 7(22): 253 (1897) [1896]. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: India: "Shan Hills, Collett.",.

**Illustrations (Books):** N.L.Bor, *The grasses of Burma, Ceylon, India and Pakistan* (1960) (628, Fig 75).

**Derivation** (Clifford & Bostock 2007): in honor of Henry Collett (1836–1901) English-born soldier who collected in Myanmar.

**Classification.** Subfamily Chloridoideae. Tribe: Zoysieae.

**Habit, Vegetative Morphology.** Annual. Culms erect, slender, 20–40 cm long. Ligule a ciliate membrane, 1 mm long. Leaf-blades linear or lanceolate, 2–5 cm long, 2–5 mm wide. Leaf-blade surface glabrous. Leaf-blade margins scabrous, tuberculate-ciliate.

**Inflorescence.** Inflorescence a panicle. Panicle open, pyramidal, 3–8 cm long. Primary panicle branches spreading, whorled at most nodes, sparsely divided, rebranched below middle, 1 cm long. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, 0.5 mm long.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 1.5 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes deciduous, dissimilar, reaching apex of florets, gaping. Lower glume lanceolate, 0.8–1 mm long, 0.66 length of upper glume, hyaline, without keels, 0 -veined. Lower glume lateral veins absent. Lower glume apex acuminate. Upper glume ovate, 1.25–1.5 mm long, 1 length of adjacent fertile lemma, membranous, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume apex acute.

**Florets.** Fertile lemma elliptic, 1.25–1.5 mm long, membranous, without keel, 1 -veined, 0–3 -veined, one-veined. Lemma apex acute. Palea 2 -veined. Palea keels approximate.

**Flower and Fruit.** Anthers 3. Caryopsis with free soft pericarp, orbicular, quadrangular, 0.75 mm long.

**Distribution (TDWG). Continent.** Tropical Asia.

**Country /Province /State.** Indo-China. Myanmar.

**Sporobolus compactus** Clayton. *Kew Bull.*, 25(2): 248 (1971).

**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, Erigavo: McKinnon S89 (K holo).

**Illustrations (Books):** No illustration found (BKS).

**Classification.** Subfamily Chloridoideae. Tribe: Zoysieae.

**Habit, Vegetative Morphology.** Perennial, cushion forming. Stolons present. Culms prostrate, 12–30 cm long. Ligule a fringe of hairs. Leaf-blades involute, 1–5 cm long, 1–1.5 mm wide, stiff, glaucous.

**Inflorescence.** Inflorescence a panicle. Panicle open, ovate, effuse, 4–10 cm long. Panicle branches glabrous in axils. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 1.2–1.7 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes deciduous, similar, reaching apex of florets. Lower glume orbicular, 0.3–0.5 mm long, 0.25–0.3 length of upper glume, membranous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume apex obtuse. Upper glume oblong, 1.2–1.7 mm long, 1 length of adjacent fertile lemma, membranous, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume apex obtuse.

**Florets.** Fertile lemma oblong, 1.2–1.7 mm long, membranous, without keel, 1 -veined, 0–3 -veined, one-veined. Lemma apex obtuse. Palea 2 -veined. Palea keels approximate.

**Flower and Fruit.** Anthers 3, 1–1.3 mm long. Caryopsis with free soft pericarp.

**Distribution (TDWG). Continent.** Africa.

**Country /Province /State.** Northeast tropical Africa. Somalia.

**Sporobolus compositus** (Poir.) Merrill. *U. S. Dept. Agric. Circ. Agrost.* v. 6 (1901).

Regarded by K as a synonym (*S. asper*).

**Accepted by:** R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

**TYPE** from USA. **Basionym or Replaced Name:** *Agrostis composita* Poir., *Encycl.* 1: 254 (1810). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: USA: Carolina, *M. Bosc s.n.*

**Illustrations (Books):** M.E.Barkworth et al, *Flora of North America north of Mexico Vol 25 Poaceae*, part 2 (2003) (123 as var. *compositus* & *drummondii* & *macer*).

**Derivation** (Clifford & Bostock 2007): L. *compono*, bring together. Inflorescence with many short branches.

**Classification.** Subfamily Chloridoideae. Tribe: Zoysieae.

**Distribution (TDWG). Continent.** North America.

**Country /Province /State.** **Western Canada, Eastern Canada, Northwest USA, North-central USA, Northeast USA, Southwestern USA, South-central USA, Southeastern USA, Mexico.** British Columbia. New Brunswick, Nova Scotia, Prince Edward I. Idaho. Connecticut, Indiana, Massachusetts, Michigan, Ohio, New Jersey, New York, Pennsylvania, Rhode Island, Vermont, West Virginia. Arizona, Utah. New Mexico, Texas. Alabama, Arkansas, Delaware, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, North Carolina, South Carolina, Tennessee, Virginia, District of Columbia. Northeast Mexico.

Coahuila.

**Sporobolus confinis** (Steud.) Chiov. *Annuar. Ist. Bot. Roma*, viii. 341 (1908).

**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:** *Vilfa confinis* Steud., *Syn. Pl. Glumac.* 1: 160 (1855) [1854]. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Abyssinia: "Crescit in provincia Chire", *Quartin Dillon s.n.*

**Illustrations (Books):** No illustration found (BKS).

**Classification.** Subfamily Chloridoideae. Tribe: Zoysieae.

**Habit, Vegetative Morphology.** Perennial, caespitose, clumped densely. Rhizomes elongated. Butt sheaths herbaceous, withering. Culms geniculately ascending or decumbent, 30–60 cm long. Ligule a fringe of hairs. Leaf-blades 5–15 cm long, 2–6 mm wide. Leaf-blade apex filiform.

**Inflorescence.** Inflorescence a panicle. Panicle open, ovate, 8–15 cm long, with spikelets clustered towards branch tips. Panicle branches glabrous in axils. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 1.6–2.1 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes deciduous, similar, shorter than spikelet. Lower glume lanceolate or oblong, 0.7–1.2 mm long, 0.6 length of upper glume, membranous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume apex acute. Upper glume ovate, 1.2–1.9 mm long, 0.75–0.8 length of adjacent fertile lemma, membranous, dark green, without keels, 1 -veined. Upper glume surface smooth or asperulous. Upper glume apex acute.

**Florets.** Fertile lemma ovate, 1.6–2.1 mm long, membranous, dark green, without keel, 1 -veined, 0–3 -veined, one-veined. Lemma surface smooth or scaberulous. Lemma apex acute. Palea 2 -veined. Palea keels approximate.

**Flower and Fruit.** Anthers 3, 0.9–1.1 mm long. Caryopsis with free soft pericarp, ellipsoid, 0.7–0.8 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.** Yemen.

**Sporobolus congoensis** Franch. *Bull. Soc. Hist. Nat. Autun*, viii. 369 (1895).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

**TYPE** from Congo Rep. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Africa: Congo Francais: Brazzaville: "Les sables des berges du Congo.", *J. de Brazza & Thollon 594*.

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): L. *-ense*, denoting origin. From the former French and Belgian Congo now Gabon and Zaire.

**Classification.** Subfamily Chloridoideae. Tribe: Zoysieae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Butt sheaths papery. Basal innovations flabellate. Culms erect, 60–80 cm long. Ligule a fringe of hairs. Leaf-blades 6–22 cm long, 3–10 mm wide. Leaf-blade margins ciliate.

**Inflorescence.** Inflorescence a panicle. Panicle open, pyramidal, 10–20 cm long, contracted about primary branches. Primary panicle branches whorled at most nodes (7–9 whorls), naked below. Panicle branches glabrous in axils. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 3–4.5 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes deciduous, similar, exceeding apex of florets. Lower glume oblong, 1.7–4 mm long, 0.5–0.75 length of upper glume, membranous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume apex acute to acuminate. Upper glume oblong, 3–4.5 mm long, 1.1 length of adjacent fertile lemma, membranous, dark green, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume apex acute.

**Florets.** Fertile lemma lanceolate, 2.4–4 mm long, membranous, dark green, without keel, 1 -veined, 0–3 -veined, one-veined. Lemma apex acute. Palea 2 -veined. Palea keels approximate.

**Flower and Fruit.** Anthers 3, 1.6–1.7 mm long. Caryopsis with free soft pericarp, ellipsoid, 1.3–2 mm long.

*N* = 10 (1 ref TROPICOS).

**Distribution (TDWG). Continent.** Africa.

**Country /Province /State.** West-central tropical Africa, East tropical Africa, South tropical Africa, Southern Africa. Congo, Gabon, DRC. Kenya, Tanzania. Angola, Malawi, Mozambique, Zambia, Zimbabwe. North-West, Mpumalanga.

**Sporobolus conrathii** Chiov. *Ann. Bot., Roma*, xiii, 49 (1914).

Regarded by K as a synonym (*S. welwitschii*).

**TYPE** from South Africa. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: South Africa, Moddersfontein: Conrath.

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): in honor of Paul Conrath (1861–1931) Czech chemist and naturalist.

**Classification.** Subfamily Chloridoideae. Tribe: Zoysieae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Butt sheaths persistent and investing base of culm, with fibrous dead sheaths. Culms 20–48 cm long. Ligule a fringe of hairs. Leaf-blades 10–18 cm long, 1–1.5 mm wide.

**Inflorescence.** Inflorescence a panicle. Panicle open, ovate, effuse, 5–10 cm long. Primary panicle branches branching dichotomously. Panicle branches capillary, bearded in axils. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 1.5–1.9 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes deciduous, similar, shorter than spikelet, similar to fertile lemma in texture. Lower glume lanceolate, 0.33–0.5 length of upper glume, membranous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume apex acute. Upper glume lanceolate, 0.33–0.5 length of adjacent fertile lemma, hyaline, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume apex acute.

**Florets.** Fertile lemma ovate, 1.5–1.9 mm long, membranous, without keel, 1 -veined, 0–3 -veined, one-veined. Lemma apex acute. Palea 2 -veined. Palea keels approximate.

**Flower and Fruit.** Anthers 3. Caryopsis with free soft pericarp.

**Distribution (TDWG). Continent.** Africa.

**Country /Province /State.** Southern Africa. Namibia, Limpopo, North-West, Gauteng, Mpumalanga, Free State.

**Sporobolus consimilis** Fresen. *Mus. Senckenb.* ii, 140. (1837).

**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: Abyssinia (Ethiopia): Gegend von Massaua, *Rueppell s.n.* (HT: FR).

**Illustrations (Books):** S.Phillips, *Poaceae* (Gramineae) in I.Hedberg & S.Edwards, *Flora of Ethiopia and Eritrea* (1995) (152, Fig 62).

**Images:** F.van Oudtshoorn, *Guide to Grasses of Southern Africa* (1999).

**Derivation** (Clifford & Bostock 2007): L. alike in all respects. Readily confused with another species.

**Classification.** Subfamily Chloridoideae. Tribe: Zoysieae.

**Habit, Vegetative Morphology.** Perennial, caespitose, clumped densely. Rhizomes short. Stolons absent or present. Culms erect, 6–300 cm long, 2–8 mm diam. Ligule a fringe of hairs. Leaf-blades flat or convolute, 10–60 cm long, 2–8 mm wide. Leaf-blade margins scabrous. Leaf-blade apex filiform.

**Inflorescence.** Inflorescence a panicle. Panicle open or contracted, linear or lanceolate, 10–35 cm long, 1–4 cm wide, contracted about primary branches. Primary panicle branches 2–10 cm long, bearing spikelets almost to the base. Panicle branches glabrous in axils. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 1.5–2.3 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes deciduous, similar, reaching apex of florets. Lower glume lanceolate, 1.2–2.3 mm long, 0.8–1 length of upper glume, membranous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume apex acute. Upper glume ovate, 1.5–2.3 mm long, 1 length of adjacent fertile lemma, membranous, mid-green, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume apex acute.

**Florets.** Fertile lemma ovate, 1.5–2.3 mm long, membranous, mid-green, without keel, 1 -veined, 0–3 -veined, one-veined. Lemma apex acute. Palea 2 -veined. Palea keels approximate.

**Flower and Fruit.** Anthers 3, 1–1.3 mm long. Caryopsis with free soft pericarp, oblong, quadrangular, 0.7–1 mm long.

**Distribution (TDWG). Continent.** Africa, Temperate Asia.

**Country /Province /State.** Northern Africa, Macaronesia, West tropical Africa, West-central tropical Africa, Northeast tropical Africa, East tropical Africa, South tropical Africa, Southern Africa. DRC. Chad, Eritrea, Ethiopia (inc. Eritrea), Somalia, Sudan. Kenya, Tanzania, Uganda. Angola, Malawi, Mozambique, Zambia, Zimbabwe. Namibia, Botswana, Limpopo, Mpumalanga, Kwazulu-Natal. **Arabian Peninsula.** Oman, Saudi Arabia.

**Sporobolus contiguus** S. T. Blake. *Univ. Queensl. Papers, Dept. Biol.*, i. No. 18, 6 (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).

**TYPE** from Australia. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *S.T. Blake 10577*, 28 Feb 1936, Australia: Queensland, Maranoa Dist.: Noondo (BRI; IT: BRI, CANB, L, MEL, US-1819270).

**Illustrations (Books):** S.W.L.Jacobs, R.D.B.Whalley & D.J.B.Wheeler., *Grasses of New South Wales*, 4th edn (2008) (377), T.D.Stanley & E.Ross, *Flora of South East Queensland, Gramineae* (1989) (183, Fig. 28), K.O.Mallett (ed.), *Flora of Australia*, Vol 44B. *Poaceae* (2004) (331, Fig 58), D.Sharp & B.K.Simon, *AusGrass*. Grasses of Australia. CD-Rom Version 1.0. (2002).

**Illustrations (Journals):** *Austr. Syst. Bot.* (12: 419, Fig 8 (1999)).

**Derivation** (Clifford & Bostock 2007): L. neighbouring. Closely related to another species.

**Classification.** Subfamily Chloridoideae. Tribe: Zoysieae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Glands elongated. Culms erect or geniculately ascending, 30–70 cm long, 2–4 -noded. Culm-internodes channelled, smooth. Lateral branches lacking. Leaf-sheaths keeled, scaberulous, glabrous on surface, outer margin glabrous. Leaf-sheath oral hairs lacking. Ligule a fringe of hairs, 0.7 mm long. Leaf-blades flexuous, 8–17 cm long, 2–4 mm wide. Leaf-blade surface papillose, rough adaxially or on both sides, glabrous or pilose, sparsely hairy, with tubercle-based hairs. Leaf-blade margins cartilaginous, spinulose. Leaf-blade apex attenuate.

**Inflorescence.** Inflorescence a panicle. Panicle open, ovate, 10–22 cm long, contracted about secondary branches. Primary panicle branches spreading, 2–3 -nate, whorled at lower nodes, 7–14 cm long. Panicle axis glandular, smooth. Panicle branches stiff, smooth. Spikelets appressed, solitary. Fertile spikelets sessile or 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 or oblong, subterete, 1.5–1.7 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes deciduous, reaching apex of florets. Lower glume lanceolate, 0.7 mm long, 0.33–0.5 length of upper glume, hyaline, without keels, 0 -veined. Lower glume lateral veins absent. Lower glume

surface puberulous. Lower glume apex acute. Upper glume lanceolate, 1.4–1.6 mm long, 1 length of adjacent fertile lemma, hyaline, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume surface puberulous. Upper glume apex obtuse or acute.

**Florets.** Fertile lemma oblong, 1.5–1.7 mm long, hyaline, without keel, 1 -veined, 0–3 -veined, one-veined. Lemma midvein scaberulous. Lemma surface puberulous. Lemma apex obtuse. Palea readily splitting down midline, 1.3–1.4 mm long, 2 -veined. Palea keels approximate. Palea surface scabrous.

**Flower and Fruit.** Anthers 3, 0.35–0.4 mm long. Caryopsis with free soft pericarp, ellipsoid or obovoid, laterally compressed, 0.65–0.9 mm long, obtuse.

**Distribution (TDWG). Continent.** Australasia.

**Country /Province /State.** Australia. Queensland, New South Wales.

**TDWG4.** North, Central, South East, Inland. Western Plains.

### **Sporobolus contractus** Hitchcock. *Amer. Journ. Bot.* ii. 303 (1915).

**Accepted by:** R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

**TYPE** from USA. **Basionym or Replaced Name:** *Sporobolus cryptandrus* var. *strictus* Scribn., *Bull. Torrey Bot. Club* 9: 103 (1882). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: IT: *C.G. Pringle s.n.*, 15 Jun 1881, USA: Arizona (US-825284).

**Illustrations (Books):** M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 25 *Poaceae*, part 2 (2003) (130), F.W.Gould, *The Grasses of Texas* (1975) (297, Fig. 157).

**Derivation** (Clifford & Bostock 2007): L. contracted. Inflorescence a narrow panicle.

**Classification.** Subfamily Chloridoideae. Tribe: Zoysieae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Culms erect, of moderate stature, 40–110 cm long, 2–3.5 mm diam. Culm-internodes eglandular or glandular. Culm-nodes constricted, glabrous. Leaf-sheaths without keel, glabrous on surface, outer margin glabrous or hairy. Ligule a fringe of hairs, 0.5–1 mm long. Collar pilose. Leaf-blades flat or involute, 4–35 cm long, 3–8 mm wide. Leaf-blade apex attenuate.

**Inflorescence.** Inflorescence a panicle, embraced at base by subtending leaf. Panicle spiciform, linear, 15–50 cm long, 0.5–0.7 cm wide. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 2.5–3.2 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes deciduous, shorter than spikelet. Lower glume lanceolate, 1–2 mm long, 0.75 length of upper glume, membranous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume apex acute. Upper glume ovate, 2–2.7 mm long, 0.75–1 length of adjacent fertile lemma, membranous, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume apex acute.

**Florets.** Fertile lemma ovate, 2.4–3.2 mm long, membranous, without keel, 1 -veined, 0–3 -veined, one-veined. Lemma apex acute. Palea 0.9 length of lemma, 2 -veined. Palea keels approximate.

**Flower and Fruit.** Caryopsis with free soft pericarp, 1 mm long, light brown. Embryo 0.5 length of caryopsis.

*N* = 18 (1 ref TROPICOS).

**Distribution (TDWG). Continent.** North America.

**Country /Province /State.** Northwest USA, Southwestern USA, South-central USA, Mexico. Colorado. Arizona, California, Nevada, Utah. New Mexico, Texas. Northeast Mexico, Northwest Mexico, Southwest Mexico.

Coahuila, Chihuahua, San Luis Potosi. Baja California, Baja California Sur, Sonora. Jalisco.

### **Sporobolus copei** F. Verloove. *Nordic J. Bot.* 28: 465–468 (2010).

**Illustrations (Books):** No illustration found (BKS).

**Classification.** Subfamily Chloridoideae. Tribe: Zoysieae.

**Distribution (TDWG). Continent.** Africa.

**Country /Province /State.** Macaronesia. Canary Is.

### **Sporobolus cordofanus** (Hochst. ex Steud.) Herincq ex Coss. *Bull. Soc. Bot. France*, vi. 253 (1889).

**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:** *Triachyrum cordofanum* Hochst., *Flora* 25(1): Beibl 134 9 (1842). T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: IT: *T. Kotschy Hrbr.un.it.nubic* 30, 1839, Ethiopia (L).

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): L. -anus, indicating location. From Cordofan Province, Sudan.

**Classification.** Subfamily Chloridoideae. Tribe: Zoysieae.

**Habit, Vegetative Morphology.** Annual, caespitose. Culms erect, 8–60 cm long. Ligule a fringe of hairs. Leaf-blades 4–12 cm long, 3–6 mm wide. Leaf-blade surface glabrous or pilose, hairy on both sides. Leaf-blade margins glabrous or ciliate, hairy at base.

**Inflorescence.** Inflorescence a panicle. Panicle open, ovate, 2–10 cm long. Primary panicle branches whorled at most nodes. 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, 1.6–2 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes deciduous, dissimilar, reaching apex of florets. Lower glume ovate, 0.2–0.6 mm long, 0.2–0.3 length of upper glume, hyaline, without keels, 0 -veined. Lower glume lateral veins absent. Lower glume apex obtuse. Upper glume elliptic, 1.6–2 mm long, 1 length of adjacent fertile lemma, membranous, dark green or grey, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume surface smooth or asperulous. Upper glume apex acute.

**Florets.** Fertile lemma elliptic, 1.6–2 mm long, membranous, dark green or grey, without keel, 1 -veined, 0–3 -veined, one-veined. Lemma surface smooth or scaberulous. Lemma apex acute. Palea 2 -veined. Palea keels approximate.

**Flower and Fruit.** Anthers 3, 0.7–1.1 mm long. Caryopsis with free soft pericarp, ellipsoid, 0.6–0.8 mm long.

**Distribution (TDWG). Continent.** Africa.

**Country /Province /State.** West tropical Africa, Northeast tropical Africa, East tropical Africa, South tropical Africa, Southern Africa. Nigeria, Senegal, Niger. Chad, Eritrea, Ethiopia (inc. Eritrea), Sudan. Kenya, Tanzania, Uganda. Malawi, Mozambique, Zambia, Zimbabwe. Botswana.

### **Sporobolus coromandelianus** (Retz) Kunth. *Hort. Berol.* i. 89, *in nota*; *Rev. Gram.* i. 68. (1824).

**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).

**TYPE** from India. **Basionym or Replaced Name:** *Agrostis coromandeliana* Retz., *Observ. Bot.* 4: 19 (1786). T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: India: Malabar: Naguhr, propre Sammelliota (?), 1782, *C.D.E. Koenig s.n.* (HT: LD; IT: BM, BRI, K).

**Recent Synonyms:** *Sporobolus javensis* Ohwi, *Bull. Tokyo Sci. Mus.*, No. 18, 12 (1947).

**Illustrations (Books):** J.Bosser, *Graminees des Paturage et des Cultures a Madagascar* (1969) (119, Fig 37), K.M.Mathew, *Further Illustrations on the Flora of Tamilnadu Carnatic* (1988) (pl.825), T.A.Cope, *Flora of Pakistan* 143: *Poaceae* (1982), K.O.Mallett (ed.), *Flora of Australia*, Vol 44B. *Poaceae* (2004) (331, Fig 58), 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. 685).

**Illustrations (Journals):** *Austr. Syst. Bot.* (12: 419, Fig 8 (1999)).

**Derivation** (Clifford & Bostock 2007): L. -ana, indicating location. From the Coromandel, that is south-eastern India.

**Classification.** Subfamily Chloridoideae. Tribe: Zoysieae.

**Habit, Vegetative Morphology.** Annual, caespitose. Culms erect or geniculately ascending, 7–20 cm long. Ligule a fringe of hairs. Leaf-blades 2–10 cm long, 2–4 mm wide. Leaf-blade margins glabrous or ciliate, hairy at base.

**Inflorescence.** Inflorescence a panicle. Panicle open, ovate, 2–8 cm long. Primary panicle branches spreading, whorled at most nodes. 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, 1–1.4 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes deciduous, dissimilar, reaching apex of florets. Lower glume ovate, 0.1–0.5 mm long, 0.1–0.3 length of upper glume, hyaline, without keels, 0 -veined. Lower glume lateral veins absent. Lower

glume apex obtuse. Upper glume oblong, 1–1.4 mm long, 1 length of adjacent fertile lemma, membranous, grey, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume surface smooth or asperulous. Upper glume apex acute.

**Florets.** Fertile lemma oblong, 1–1.4 mm long, membranous, grey, without keel, 1 -veined, 0–3 -veined, one-veined. Lemma surface smooth or scaberulous. Lemma apex acute. Palea 2 -veined. Palea keels approximate.

**Flower and Fruit.** Anthers 3, 0.2–0.3 mm long. Caryopsis with free soft pericarp, obovoid, 0.7–0.8 mm long.

*N* = 18 (5 refs TROPICOS).

**Distribution (TDWG). Continent.** Africa, Temperate Asia, Tropical Asia, Australasia (\*).

**Country /Province /State.** West tropical Africa, Northeast tropical Africa, East tropical Africa, South tropical Africa, Southern Africa, Western Indian ocean. Ethiopia (inc. Eritrea), Somalia, Sudan. Kenya. Angola. Namibia, Botswana, Free State, Northern Cape, Eastern Cape. Mauritius, Madagascar. **Western Asia, Arabian Peninsula, China.** Afghanistan. Oman. China South Central. **Indian Subcontinent, Indo-China, Malesia, Papuaasia.** India, Pakistan, Sri Lanka. Myanmar, Thailand. Java. New Guinea. **Australia.** Western Australia, Northern Territory, Queensland.

**TDWG4.** Yunnan. Andhra Pradesh, Karnataka. Madhya Pradesh, Punjab, Rajasthan, Tamilnadu, Uttah Pradesh. Eremean. Darwin & Gulf. North, Central, South East, Inland.

### **Sporobolus creber** DeNardi. *Contrib. New S. Wales Nation. Herb.* 4(7): 406 (1973).

**Accepted by:** R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), D.Sharp, D. & B.K.Simon, *AusGrass* (2002).

**TYPE** from Australia. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *W.J.F. McDonald NSW-121997*, 20 May 1971, Australia: New South Wales: Warrumbungle Range, c. 30 mi E of Gulargambone (NSW-121997; IT: BRI, K, L, NSW, US-2884167, US-2892244).

**Illustrations (Books):** S.W.L.Jacobs, R.D.B.Whalley & D.J.B.Wheeler., *Grasses of New South Wales*, 4th edn (2008) (377), 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) (125), N.Walsh & T.Entwistle, *Flora of Victoria Vol 2* (1994) (573, Fig 115).

**Images:** D.Sharp & B.K.Simon, *AusGrass*. Grasses of Australia. CD-Rom Version 1.0. (2002); (*Aust.Syst.Bot.* 12: 420, Fig.9 (1999)).

**Classification.** Subfamily Chloridoideae. Tribe: Zoysieae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Rhizomes short. Basal innovations intravaginal. Culms erect, 40–140 cm long, 2–3 -noded. Culm-nodes glabrous. Lateral branches lacking or sparse, arising from lower culm. Leaf-sheaths glabrous on surface, outer margin hairy. Ligule a fringe of hairs, 0.2–0.5 mm long. Leaf-blades flat or conduplicate, 15–30 cm long, 2–3 mm wide. Leaf-blade surface scabrous, rough adaxially, glabrous. Leaf-blade margins scabrous.

**Inflorescence.** Inflorescence a panicle. Panicle contracted, linear, interrupted, 20–60 cm long, contracted about primary branches. Primary panicle branches appressed, 2–6 cm long, bearing spikelets almost to the base. Panicle axis glabrous. 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, 1.25–1.75 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes deciduous, shorter than spikelet, gaping. Lower glume oblong or ovate, 0.4–1 mm long, 0.66–0.75 length of upper glume, hyaline, without keels, 0 -veined. Lower glume lateral veins absent. Lower glume apex obtuse. Upper glume ovate, 0.6–1.2 mm long, 0.5–0.66 length of adjacent fertile lemma, hyaline, without keels, 0 -veined. Upper glume primary vein absent. Upper glume lateral veins absent. Upper glume apex acute.

**Florets.** Fertile lemma ovate, 1.2–1.75 mm long, membranous, dark green or grey, shiny, without keel, 1 -veined, 0–3 -veined, one-veined. Lemma apex acute. Palea 1.1–1.6 mm long, 2 -veined. Palea keels approximate.

**Flower and Fruit.** Anthers 2, 0.05 mm long. Caryopsis with free soft pericarp, oblong or obovoid, exposed between gaping lemma and palea at maturity, 0.5–0.85 mm long, truncate.

**Distribution (TDWG). Continent.** Europe (\*), Tropical Asia, Australasia, Pacific, North America.

**Region.** Northern Europe (\*).



**Country /Province /State.** : GB Aliens (Ryves et al). **Macaronesia.** Canary Is. **Papuasia.** New Guinea PNG. New Guinea. **Australia.** Western Australia, South Australia, Queensland, New South Wales, Victoria. **Southwestern Pacific.** Fiji, New Caledonia. **Southwestern USA.** California.

**TDWG4.** South-West. Southern. North, Central, South East, Inland. Coast, Tablelands, Western Slopes, Western Plains.

**Sporobolus cruceus** S.A. Renvoize. *Gramineas de Bolivia*: 334 (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 Bolivia. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Bolivia: Santa Cruz: Chávez, Concepción hacia Lomerio, *Seidel 3097* (HT: LPB).

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): L. -ensis, denoting origin. From Santa Cruz, Bolivia.

**Classification.** Subfamily Chloridoideae. Tribe: Zoysieae.

**Habit, Vegetative Morphology.** Annual. Culms erect, slender, 30–45 cm long. Lateral branches lacking. Leaf-sheaths striately veined. Leaf-sheath oral hairs ciliate. Ligule a fringe of hairs. Leaf-blades lanceolate, 4–6 cm long, 3–6 mm wide, glaucous. Leaf-blade surface glabrous. Leaf-blade margins ciliate. Leaf-blade apex acuminate.

**Inflorescence.** Inflorescence a panicle. Panicle open, oblong, effuse, 18–26 cm long, 5–10 cm wide. Primary panicle branches ascending or spreading, 1–3 -nate. Panicle branches capillary. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets elliptic, subterete, 1.5 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes deciduous, shorter than spikelet. Lower glume ovate, 0.5 mm long, 0.66 length of upper glume, membranous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume apex acute. Upper glume ovate, 0.8 mm long, 0.5 length of adjacent fertile lemma, membranous, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume apex acute.

**Florets.** Fertile lemma ovate, 1.5 mm long, membranous, without keel, 1 -veined, 0–3 -veined, one-veined. Lemma apex acute. Palea 2 -veined. Palea keels approximate.

**Flower and Fruit.** Anthers 3, 1 mm long. Caryopsis with free soft pericarp, oblong, quadrangular, 0.8 mm long.

**Distribution (TDWG). Continent.** South America.

**Country /Province /State.** Western South America. Bolivia.

**Sporobolus cryptandrus** (Torr.) A.Gray. *Man. Bot. N. U. St.* ed. I. 576. (1848).

**Accepted by:** R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

**TYPE** from USA. **Basionym or Replaced Name:** *Agrostis cryptandra* Torr., *Ann. Lyceum Nat. Hist. New York* 1(1): 151 ( 1824). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: T: *E. James s.n.*, no date, USA: Texas or Oklahoma, Canadian River (NY-128298; IT: US-76269 (fragm. & photostat ex NY)).

**Illustrations (Books):** K.F.Best, et al, *Prairie Grasses* (1971) (223), M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 25 *Poaceae*, part 2 (2003) (130), F.W.Gould, *The Grasses of Texas* (1975) (296, Fig. 156), M.N.Corréa, *Flora Patagonica* Parte III, Gramineae (1978) (Fl. Pat. 3: 473, Fig. 315 (1978)).

**Derivation** (Clifford & Bostock 2007): Gk. kryptos, hidden; aner, man. The panicles sometimes remain enclosed.

**Classification.** Subfamily Chloridoideae. Tribe: Zoysieae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Culms erect, 35–120 cm long, 1–3.5 mm diam. Leaf-sheaths without keel, outer margin glabrous or hairy. Leaf-sheath oral hairs bearded, 2–4 mm long. Ligule a fringe of hairs, 0.5–1 mm long. Leaf-blades flat or conduplicate, 8–25 cm long, 2–5 mm wide. Leaf-blade margins smooth or scaberulous.

**Inflorescence.** Inflorescence a panicle, embraced at base by subtending leaf. Panicle open, elliptic, 15–30 cm long, 2–12 cm wide, contracted about secondary branches. Primary panicle branches ascending or spreading, 1 -nate, bearing spikelets almost to the base. Spikelets appressed, solitary. Fertile spikelets sessile or pedicelled. Pedicels absent or 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, 1.5–2.3 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes deciduous, reaching apex of florets. Lower glume ovate, 0.5–1.1 mm long, 0.5 length of upper glume, membranous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume apex acute. Upper glume ovate, 1.5–2.3 mm long, 0.9–1 length of adjacent fertile lemma, membranous, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume apex acute.

**Florets.** Fertile lemma ovate, 1.5–2.3 mm long, membranous, without keel, 1 -veined, 0–3 -veined, one-veined. Lemma apex acute. Palea 2 -veined. Palea keels approximate.

**Flower and Fruit.** Anthers 3. Caryopsis with free soft pericarp, oblong, laterally compressed, 1 mm long, red.

$N = 19$  (2 refs TROPICOS).  $2n = 36$  (1 ref TROPICOS), or 38 (1 ref TROPICOS).

**Distribution (TDWG).** Continent. Europe (\*), North America, South America.

**Region.** Northern Europe (\*).

**Country /Province /State.** : GB Aliens (Ryves et al). **Western Canada, Eastern Canada, Northwest USA, North-central USA, Northeast USA, Southwestern USA, South-central USA, Southeastern USA, Mexico.** Alberta, British Columbia, Manitoba, Saskatchewan. Ontario, Quebec. Colorado, Idaho, Montana, Oregon, Washington, Wyoming. Illinois, Iowa, Kansas, Minnesota, Missouri, North Dakota, Nebraska, Oklahoma, South Dakota, Wisconsin. Connecticut, Indiana, Maine, Massachusetts, Michigan, Ohio, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, Vermont, West Virginia. Arizona, California, Nevada, Utah. New Mexico, Texas. Alabama, Arkansas, Delaware, Georgia, Louisiana, Maryland, Mississippi, South Carolina, Tennessee, District of Columbia. Northeast Mexico, Northwest Mexico. **Southern South America.** Argentina Northeast, Argentina South.

**TDWG4.** Mendoza, San Luis. Buenos Aires, Cordoba, La Pampa. Río Negro. Coahuila, Chihuahua, Neuvo Leon, Tamaulipas, Zacatecas. Baja California, Baja California Sur, Sonora.

**Sporobolus cubensis** Hitchcock. *Contrib. U. S. Nat. Herb.* xii. 237 (1909).

**Accepted by:** R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

**TYPE** from Cuba. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *A.H. Curtiss* 392, 6 Mar 1904, Cuba: La Habana (US-522010).

**Illustrations (Books):** J.A.Steyermark et al, *Flora of the Venezuelan Guayana* Vol. 8 (2004) (275, Fig. 222), W.Burger, *Flora Costaricensis* 15, Gramineae: *Fieldiana Botany New Series* 4 (1980) (543, Fig 203), E.Judziwicz, *Flora of the Guianas*, 187. *Poaceae* (1990) (609, Fig 105).

**Derivation** (Clifford & Bostock 2007): L. -ense, denoting origin. From Cuba.

**Classification.** Subfamily Chloridoideae. Tribe: Zoysiaceae.

**Habit, Vegetative Morphology.** Perennial, caespitose, clumped densely. Culms erect, 50–70 cm long. Leaves mostly basal. Leaf-sheaths outer margin hairy. Ligule a fringe of hairs. Leaf-blades conduplicate or involute, 30–60 cm long, 3–4 mm wide. Leaf-blade surface ribbed, glabrous. Leaf-blade margins ciliate, hairy at base.

**Inflorescence.** Inflorescence a panicle. Panicle open, lanceolate or elliptic, 8–15 cm long, 2–4 cm wide. Primary panicle branches spreading, whorled at lower nodes or whorled at most nodes. 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, subterete, 3.1–4 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes deciduous, reaching apex of florets. Lower glume ovate, 1.6–2.2 mm long, 0.5 length of upper glume, membranous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume apex acute. Upper glume ovate, 3.2–3.9 mm long, 1 length of adjacent fertile lemma, membranous, purple, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume apex acute.

**Florets.** Fertile lemma ovate, 2.8–4 mm long, membranous, purple, without keel, 1 -veined, 0–3 -veined, one-veined. Lemma apex acute. Palea gaping or readily splitting down midline, 1 length of lemma, 2 -veined. Palea keels approximate.

**Flower and Fruit.** Anthers 3, 2–2.4 mm long. Caryopsis with free soft pericarp, obovoid.

**Distribution (TDWG).** Continent. North America, South America.

**Country /Province /State.** **Mexico.** Gulf (Mexico), Southwest Mexico, Southeast Mexico. **Mesoamerica, Caribbean, Northern South America, Western South America, Brazil.** Belize, Costa Rica, Honduras,

Nicaragua, Panama. Cuba, Dominican Republic, Haiti, Puerto Rico. French Guiana, Guyana, Surinam, Venezuela. Bolivia, Colombia, Ecuador, Peru. Brazil West Central, Brazil Northeast, Brazil North, Brazil Southeast, Brazil South.

**TDWG4.** Roraima, Mato Grosso, Goias, Minas Gerais, Rio de Janeiro, Espirito Santo, Sao Paulo Parana. Veracruz. Oaxaca. Chiapas, Tabasco.

**Sporobolus curtissii** Small ex Kearney. *Bull. Div. Agrost. USDA* 1:24 (1895).

**Accepted by:** R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

**TYPE** from USA. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *A.H. Curtiss s.n.*, 1883, USA: Florida: Swamps (US-556876; IT: MSC). *Sporobolus floridanus* var. *Curtissii* in Vasey's hand. PT: *A.H. Curtiss 5181*, 13 Nov 1894, USA: Florida: Moist pine barrens near Jacksonville (US-221904, US-221903). PT: *A.H. Curtiss 4053*, 21 Aug 1893, USA: Florida (US-221755).

**Illustrations (Books):** M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 25 *Poaceae*, part 2 (2003) (136).

**Derivation** (Clifford & Bostock 2007): in honor of Allen Hiram Curtiss (1845–1907) United States botanist.

**Classification.** Subfamily Chloridoideae. Tribe: Zoysieae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Culms erect, 30–70 cm long. Leaf-sheaths keeled, glabrous on surface. Ligule a fringe of hairs. Leaf-blades flexuous, flat or involute, 15–30 cm long, 0.5–1 mm wide, stiff. Leaf-blade surface glabrous, hairless except near base.

**Inflorescence.** Inflorescence a panicle. Panicle open, pyramidal, 7–20 cm long, contracted about primary branches. Primary panicle branches ascending, 1–2 -nate, 4–7 cm long. Panicle axis smooth or scaberulous. Panicle branches bearded in axils. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 4.5 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes deciduous, reaching apex of florets. Lower glume lanceolate, 1 length of upper glume, membranous, purple, without keels. Lower glume apex acuminate. Upper glume elliptic, 1 length of adjacent fertile lemma, membranous, purple, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume apex acuminate.

**Florets.** Fertile lemma ovate, 4.5 mm long, membranous, without keel, 1 -veined, 0–3 -veined, one-veined. Lemma apex acute. Palea 1 length of lemma, 2 -veined. Palea keels approximate.

**Flower and Fruit.** Caryopsis with free soft pericarp.

**Distribution (TDWG).** Continent. North America.

**Country /Province /State.** **Southeastern USA.** Alabama, Florida, Georgia, South Carolina.

**Sporobolus diandrus** (Retz.) Beauv. *Agrost.* 26. (1812).

**Accepted by:** R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), E.Edgar, & H.Connor, *Flora of New Zealand Gramineae* 5 (2000), S-L Chen et al, *Flora of China* 22 (Poaceae) (2006), N.L.Bor, *Grasses of Burma, Ceylon, India and Pakistan* (1960) (as *S. diander*), T.Koyama, *Grasses of Japan and its neighboring regions* (1987) (as *S. diander*), W.D.Clayton & N.Snow, *Key to Pacific Grasses* (2010).

**TYPE** from India. **Basionym or Replaced Name:** *Agrostis diandra* Retz., *Observ. Bot.* 5: 19 (1789) [1788]. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: India:, *Koenig s.n.* (HT: LD; IT: BM, C, K, L, NSW).

**Recent Synonyms:** *Sporobolus indicus* var. *flaccidus* (R. & S.) J.F. Veldkamp, *Blumea* 35 (2): 433 (1991).

**Illustrations (Books):** C-C Hsu, *Flora of Taiwan*, Vol 5 (1978) (440), C-C Hsu, *Taiwan Grasses* (1975) (502, Pl. 1410 as *S. diander*), H.B.Gilliland, *Grasses of Malaya* (1971) (107, Fig. 18 as *S. diander*), M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 25 *Poaceae*, part 2 (2003) (127), H.J.Noltie, *The Grasses of Bhutan* (2000) (669, Fig. 35 as *S. diander*), K.M.Matthew, *Further Illustrations on the Flora of Tamilnadu Carnatic* (1988) (Pl. 826 as *S. diander*), S.W.L.Jacobs, R.D.B.Whalley & D.J.B.Wheeler., *Grasses of New South Wales*, 4th edn (2008) (377), S-L Chen et al, *Flora of China*, *Illustrations*, Poaceae (2007) (Fig. 687).

**Illustrations (Journals):** *Austr. Syst. Bot.* (12: 421, Fig 10 (1999)).

**Images:** H.B.Gilliland et al., *Flora of Malaya Vol. 3 Grasses* (1971); (as *S. diander*) (*Aust.Syst.Bot.* 12: 422, Fig.11 (1999)).

**Derivation** (Clifford & Bostock 2007): Gk. dis, twice; aner, man. Florets with two stamens.

**Classification.** Subfamily Chloridoideae. Tribe: Zoysieae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Butt sheaths herbaceous. Culms erect, 30–90 cm long. Ligule a fringe of hairs. Leaf-blades flat or convolute, 10–25 cm long, 2–4 mm wide. Leaf-blade apex attenuate.

**Inflorescence.** Inflorescence a panicle. Panicle open, lanceolate, 10–15 cm long, 2–4 cm wide, contracted about primary branches. Primary panicle branches spreading, bearing spikelets almost to the base. Panicle branches glabrous in axils. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, linear.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 1.2–1.6 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes deciduous, similar, shorter than spikelet, thinner than fertile lemma. Lower glume oblong, 0.5–0.6 length of upper glume, without keels, 0 -veined. Lower glume lateral veins absent. Lower glume apex obtuse. Upper glume oblong, 0.5–0.66 length of adjacent fertile lemma, hyaline, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume apex obtuse or acute.

**Florets.** Fertile lemma ovate, 1.5–1.8 mm long, membranous, without keel, 1 -veined, 0–3 -veined, one-veined. Lemma apex acute. Palea 1 length of lemma, 2 -veined. Palea keels approximate.

**Flower and Fruit.** Anthers 2, 0.4 mm long. Caryopsis with free soft pericarp, oblong or obovoid, 0.8–1 mm long.

$N = 12$  (1 ref TROPICOS), or 18 (3 refs TROPICOS).

**Distribution (TDWG). Continent.** Africa, Temperate Asia, Tropical Asia, Pacific, North America, South America.

**Country /Province /State.** **Macaronesia, Northeast tropical Africa, Western Indian ocean.** Canary Is. Socotra. Mauritius, Madagascar, Seychelles. **Arabian Peninsula, China, Eastern Asia.** Oman. China South Central, China Southeast. Nansei-Shoto, Ogosawara-shoto, Taiwan. **Indian Subcontinent, Indo-China, Malesia, Papuaia.** Bangladesh, Eastern Himalaya, India, Nepal, Pakistan, Sri Lanka. Andaman Is, Laos, Myanmar, Thailand, Vietnam. Java, Lesser Sunda Is, Malaya, Singapore, Moluccas, Philippines, Sulawesi, Sumatra. New Guinea, Solomon Is. **Southwestern Pacific, South-central Pacific, Northwestern Pacific, North-central Pacific.** Fiji, Gilbert Is, New Caledonia, Samoa, Tonga, Vanuatu. Marquesas, Society Is, Tuamotu Is, Tubuai Is. Caroline Is, Marianas, Marshall Is. Hawaii (\*). **South-central USA, Southeastern USA.** Texas. Florida, Mississippi. **Mesoamerica.** Belize.

**TDWG4.** Fujian, Guangdong, Guangxi. Guizhou, Sichuan, Yunnan. Darjeeling, Bhutan, Sikkim. Assam, Nagaland, Tripura. Bihar, Goa, Gujarat, Karnataka, Kerala. Maharashtra, Orissa, Tamilnadu, Uttah Pradesh, West Bengal. Himachal Pradesh.

### **Sporobolus diffusus** Clayton. *Kew Bull.*, 25(2): 247 (1971).

Regarded by K as a synonym (*S. macranthelus*).

**TYPE** from Tanzania. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Tanzania, Ruaha National Park: Renvoize 2047 (K holo).

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): L. widely spreading. Inflorescence an open panicle.

**Classification.** Subfamily Chloridoideae. Tribe: Zoysieae.

**Habit, Vegetative Morphology.** Annual. Culms erect, 40–150 cm long. Ligule a fringe of hairs. Leaf-blades 15–30 cm long, 3–7 mm wide, flaccid.

**Inflorescence.** Inflorescence a panicle. Panicle open, elliptic, effuse, 20–50 cm long. Panicle branches capillary, glabrous in axils. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, filiform.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 1.5–1.7 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes deciduous, similar, shorter than spikelet. Lower glume lanceolate, 0.7–0.9 mm long, 0.7–0.8 length of upper glume, membranous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume apex acute. Upper glume ovate, 1–1.2 mm long, 0.6–0.7 length of adjacent fertile lemma, membranous, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume apex acute.

**Florets.** Fertile lemma ovate, 1.5–1.7 mm long, membranous, without keel, 1 -veined, 0–3 -veined, one-veined. Lemma apex acute. Palea 2 -veined. Palea keels approximate.

**Flower and Fruit.** Anthers 3, 1 mm long. Caryopsis with free soft pericarp, oblong (square), laterally compressed, 0.5–0.6 mm long.

**Distribution (TDWG). Continent.** Africa.

**Country /Province /State.** West tropical Africa, East tropical Africa. Senegal. Kenya, Tanzania.

**Sporobolus dinklagei** Mez. Fedde, *Repert.* xvii. 298 (1921).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

**TYPE** from Liberia. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Westafrica: Liberia: bei Grand Bassa, *Dinklage* [2881].

**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 Chloridoideae. Tribe: Zoysieae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Culms erect, 60–120 cm long. Ligule a fringe of hairs. Leaf-blades 15–25 cm long, 3–7 mm wide.

**Inflorescence.** Inflorescence a panicle. Panicle open, linear, 20–40 cm long, contracted about primary branches. Primary panicle branches ascending (incurved), distant (their own length apart), whorled at most nodes (10–20 whorls), 1–2 cm long, bearing spikelets almost to the base. Panicle branches glabrous in axils. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, oblong, 0.3–0.5 mm long.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 2–2.2 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes deciduous, similar, reaching apex of florets. Lower glume elliptic, 1 mm long, 0.5 length of upper glume, membranous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume apex obtuse. Upper glume lanceolate, 2–2.2 mm long, 1 length of adjacent fertile lemma, membranous, red, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume apex obtuse.

**Florets.** Fertile lemma ovate, 2–2.2 mm long, membranous, red, without keel, 1 -veined, 0–3 -veined, one-veined. Lemma apex obtuse. Palea 2 -veined. Palea keels approximate.

**Flower and Fruit.** Anthers 2, 0.8 mm long. Caryopsis with free soft pericarp, ellipsoid, laterally compressed, 1 mm long.

**Distribution (TDWG). Continent.** Africa.

**Country /Province /State.** West tropical Africa. Ivory Coast, Liberia, Sierre Leone.

**Sporobolus discosporus** Nees. *Fl. Afr. Austr.* 158 (1841).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

**TYPE** from South Africa. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: South Africa: "Ad flumen Krairivier in montium cacumine plano saxoso.", *Drege s.n.*.

**Recent Synonyms:** *Sporobolus ciliatus* J.Presl, *Rel. Haenk.* 1:242 (1830).

**Illustrations (Books):** L.K.A. Chippindall, *Grasses and Pastures of South Africa* (1955) (219, Fig 194), G.E.Gibbs Russell et al, *Grasses of Southern Africa* (1990) (308, Fig 199), S.Phillips, *Poaceae* (Gramineae) in I.Hedberg & S.Edwards, *Flora of Ethiopia and Eritrea* (1995) (146, Fig 60), W.Burger, *Flora Costaricensis* 15, Gramineae: *Fieldiana Botany New Series* 4 (1980) (543, Fig 203 as *S. ciliatus*), E.Judziewicz, *Flora of the Guianas*, 187. *Poaceae* (1990) (609, Fig 105 as *S. ciliatus*).

**Images:** F.van Oudtshoorn, *Guide to Grasses of Southern Africa* (1999).

**Derivation** (Clifford & Bostock 2007): L. discus, disc; sporus, seed. Fruits disc-shaped.

**Classification.** Subfamily Chloridoideae. Tribe: Zoysieae.

**Habit, Vegetative Morphology.** Annual, caespitose. Culms erect, 5–20(–40) cm long. Ligule a fringe of hairs. Leaf-blades lanceolate, 1–3 cm long, 2–5 mm wide. Leaf-blade margins ciliate.

**Inflorescence.** Inflorescence a panicle. Panicle open, elliptic or oblong, 1.5–8 cm long. Primary panicle branches spreading, whorled at most nodes, simple. 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, 1.5–1.7 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes deciduous, similar, shorter than spikelet. Lower glume lanceolate, 0.5–1 mm long, 0.4–0.7 length of upper glume, membranous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume

apex acute. Upper glume ovate, 1.3–1.5 mm long, 0.8–0.9 length of adjacent fertile lemma, membranous, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume apex acute.

**Florets.** Fertile lemma ovate, 1.5–1.7 mm long, membranous, without keel, 1 -veined, 0–3 -veined, one-veined. Lemma apex acute. Palea 2 -veined. Palea keels approximate.

**Flower and Fruit.** Anthers 3, 0.3 mm long. Caryopsis with free soft pericarp, orbicular, flattened (discoid), exposed between gaping lemma and palea at maturity, 1.1–1.4 mm long.

**Distribution (TDWG). Continent.** Africa, South America.

**Country /Province /State.** Northeast tropical Africa, East tropical Africa, Southern Africa. Eritrea, Ethiopia (inc. Eritrea). Kenya, Tanzania. North-West, Gauteng, Mpumalanga, Free State, Lesotho, Northern Cape, Eastern Cape. **Brazil.** Brazil West Central, Brazil Northeast, Brazil Southeast, Brazil South.

**TDWG4.**

### **Sporobolus disjunctus** B.K.Simon. *Austrobaileya*, 4(1): 59 (1993).

**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: South Kennedy Distr.: 9 mi [14.4 km] N of Avon Downs Station, 13 Jul 1964, *L. Adams 1060* (HT: CANB-143738; IT: BRI-288512).

**Illustrations (Books):** S.W.L.Jacobs, R.D.B.Whalley & D.J.B.Wheeler., *Grasses of New South Wales*, 4th edn (2008) (378), K.O.Mallett (ed.), *Flora of Australia*, Vol 44B. *Poaceae* (2004) (340, Fig 61), D.Sharp & B.K.Simon, *AusGrass*. Grasses of Australia. CD-Rom Version 1.0. (2002).

**Illustrations (Journals):** *Austrobaileya* (4:60, Fig.2(1993)).

**Derivation** (Clifford & Bostock 2007): *L. disjunco*, separate. Panicle interrupted.

**Classification.** Subfamily Chloridoideae. Tribe: Zoysiaceae.

**Habit, Vegetative Morphology.** Perennial. Basal innovations intravaginal. Culms erect, 40–80 cm long, 2–5 -noded. Lateral branches sparse. Leaf-sheaths glabrous on surface. Ligule a fringe of hairs, 0.7 mm long. Leaf-blades flat or involute, 10–25 cm long, 4–8 mm wide. Leaf-blade surface scaberulous, pubescent.

**Inflorescence.** Inflorescence a panicle. Panicle contracted or spiciform, linear, interrupted, 10–25 cm long, 0.4–0.8 cm wide. Primary panicle branches appressed, 1–2 cm long, bearing spikelets almost to the base. Spikelets solitary. Fertile spikelets sessile or pedicelled. Pedicels present, 0–2 mm long.

**Fertile Spikelets.** Spikelets comprising 1(–2) fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets, or of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 1–1.3 mm long, 0.6–0.7 mm wide, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes deciduous, shorter than spikelet. Lower glume ovate, 0.8–1 mm long, 0.5 length of upper glume, membranous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume surface smooth or asperulous. Lower glume apex acute. Upper glume ovate, 1.8–2 mm long, 0.9 length of adjacent fertile lemma, membranous, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume surface smooth or asperulous. Upper glume apex acute.

**Florets.** Fertile lemma ovate, 2–2.3 mm long, 0.6–0.7 mm wide, membranous, keeled, 1 -veined, 0–3 -veined, one-veined. Lemma surface smooth or scaberulous. Lemma apex acute. Palea 1.9–2 mm long, 2 -veined. Palea keels approximate. Palea surface smooth or scaberulous. Palea apex obtuse.

**Flower and Fruit.** Lodicules 2. Anthers 2–3, 0.3–0.6 mm long. Caryopsis with free soft pericarp, ovoid, laterally compressed, 0.9 mm long.

**Distribution (TDWG). Continent.** Australasia.

**Country /Province /State.** Australia. Queensland.

**TDWG4.** Central, South East.

### **Sporobolus distichivaginat** R.W. Pohl. *Novon*, 2(4): 325 (1992).

**Accepted by:** R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

**TYPE** from Guatemala. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Guatemala: Petén: Dolores, en orillando Río Machaquilla, lado sur este de caserío, fruto amarillo, en foresta alta, 18 Feb 1971, *R. Tun Ortiz 1610* (HT: ISC; IT: F, US-2799120).

**Illustrations (Journals):** *Novon* (2: 326, Fig. 2 (1992)).

**Derivation** (Clifford & Bostock 2007): Gk. *distichos*, in two rows; *L. vagina*, sheath; -ata, possessing. Leaf-sheaths conspicuously distichous.

**Classification.** Subfamily Chloridoideae. Tribe: Zoysiaceae.

**Habit, Vegetative Morphology.** Annual, caespitose. Basal innovations flabellate. Culms erect, 35–50 cm long. Culm-internodes solid. Lateral branches lacking. Leaves mostly basal. Leaf-sheaths keeled. Ligule a fringe of hairs, 0.1–0.2 mm long. Leaf-blades 5–10 cm long, 2–3.5 mm wide. Leaf-blade apex abruptly acute.

**Inflorescence.** Inflorescence a panicle. Panicle open, pyramidal, 5–7 cm long, 2–3 cm wide. Primary panicle branches ascending, whorled at most nodes, 0.5–1.5 cm long. Spikelets appressed, solitary. Fertile spikelets pedicelled. Pedicels present, 0.2–0.6 mm long.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 2.8–3.4 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes deciduous, exceeding apex of florets. Lower glume lanceolate, 1.2–1.8 mm long, 0.4–0.5 length of upper glume, membranous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume apex acuminate. Upper glume lanceolate, 2.8–3.4 mm long, 1.1–1.3 length of adjacent fertile lemma, membranous, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume apex acute.

**Florets.** Fertile lemma lanceolate, 2.5–2.7 mm long, membranous, without keel, 1 -veined, 0–3 -veined, one-veined. Lemma apex acute. Palea readily splitting down midline, 1 length of lemma, 2 -veined. Palea keels approximate.

**Flower and Fruit.** Anthers 3, 1–1.2 mm long. Caryopsis with free soft pericarp, oblong, 1.5–1.6 mm long. Embryo 0.4 length of caryopsis.

**Distribution (TDWG). Continent.** South America.

**Country /Province /State.** Mesoamerica. Guatemala.

### **Sporobolus domingensis** (Trin.) Kunth. *Enum. Pl.* i. 214. (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 Santo Domingo. **Basionym or Replaced Name:** *Vilfa domingensis* Trin., *Neue Entdeck. Pflanzensk* 2: 59 (1821). T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: HT: *Cl. Poiteau*, In S. Domingo (LE-TRIN-1694.01 (& fig.); IT: US-91124). T: *Anon.*, Santo Domingo (LE).

**Illustrations (Books):** M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 25 *Poaceae*, part 2 (2003) (128), A.S.Hitchcock, *Manual of the Grasses of the West Indies* (1936) (85, Fig. 49).

**Derivation** (Clifford & Bostock 2007): L. -ense, denoting origin. From Dominican Republic.

**Classification.** Subfamily Chloridoideae. Tribe: Zoysieae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Culms erect, 50–100 cm long, 3–5 -noded. Culm-internodes smooth. Leaf-sheaths without keel, glabrous on surface. Leaf-sheath oral hairs ciliate. Ligule a fringe of hairs, 1–1.5 mm long. Collar glabrous. Leaf-blades flat, 3–6 mm wide. Leaf-blade surface scabrous, rough adaxially. Leaf-blade margins scabrous. Leaf-blade apex attenuate.

**Inflorescence.** Inflorescence a panicle. Panicle contracted, lanceolate, 10–15 cm long, contracted about secondary branches. Primary panicle branches appressed or ascending, not whorled or whorled at lower nodes. 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, 2 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes deciduous, reaching apex of florets. Lower glume lanceolate, 0.5 length of upper glume, membranous, without keels. Lower glume apex acute. Upper glume elliptic, 1 length of adjacent fertile lemma, membranous, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume apex acute.

**Florets.** Fertile lemma ovate, 2 mm long, membranous, without keel, 1 -veined, 0–3 -veined, one-veined. Lemma apex acute. Palea 1 length of lemma, 2 -veined. Palea keels approximate.

**Flower and Fruit.** Caryopsis with free soft pericarp.

**Distribution (TDWG). Continent.** North America, South America.

**Country /Province /State.** South-central USA, Southeastern USA, Mexico. Texas. Florida, Georgia. Southeast Mexico. Mesoamerica, Caribbean, Northern South America. Bahamas, Cayman Is, Cuba, Dominican Republic, Haiti, Jamaica, Puerto Rico. Venezuela.

Quintana Roo, Yucatan.

### **Sporobolus durus** Brongn. *Duperr. Voy. Coq. Bot.* 18. t. 4. (1829).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

**TYPE** from Ascension Is. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Africa: Ascension Isl.: "L'île de l'Ascension.",.

**Illustrations (Books):** No illustration found (BKS).

**Classification.** Subfamily Chloridoideae. Tribe: Zoysieae.

**Habit, Vegetative Morphology.** Perennial, caespitose, clumped densely. Culms erect, 30 cm long. Ligule a fringe of hairs. Leaf-blades filiform to linear, convolute, 30 cm long, 1–2 mm wide. Leaf-blade apex filiform.

**Inflorescence.** Inflorescence a panicle, shorter than basal leaves. Panicle open, linear, 5–9 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, 3 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes deciduous, similar, shorter than spikelet. Lower glume lanceolate, 2 mm long, 0.66 length of upper glume, membranous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume apex acute. Upper glume lanceolate, 3 mm long, 1 length of adjacent fertile lemma, membranous, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume apex acute.

**Florets.** Fertile lemma ovate, 3 mm long, membranous, without keel, 1 -veined, 0–3 -veined, one-veined. Lemma apex acute. Palea 1 length of lemma, 2 -veined. Palea keels approximate.

**Flower and Fruit.** Anthers 3, 1 mm long. Caryopsis with free soft pericarp.

**Distribution (TDWG). Continent.** Africa.

**Country /Province /State.** Middle Atlantic ocean. Ascension.

### **Sporobolus elatior** Bosser. *Adansonia*, n. s., ix. 339 (1969).

**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: Bords des lacs et des étangs, Marovoay (Boina), *Perrier de la Bathie 17869* (HT: P).

**Illustrations (Books):** J.Bosser, *Graminees des Paturage et des Cultures a Madagascar* (1969).

**Derivation** (Clifford & Bostock 2007): L. taller. Culms taller than those of related species.

**Classification.** Subfamily Chloridoideae. Tribe: Zoysieae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Culms erect, robust, 150–250 cm long, 4–6 mm diam. Culm-internodes smooth, distally glabrous. Ligule a fringe of hairs. Leaf-blades 30–50 cm long, 7–10 mm wide. Leaf-blade surface glabrous. Leaf-blade margins scabrous.

**Inflorescence.** Inflorescence a panicle. Panicle open, lanceolate or elliptic, 30–50 cm long, 10–20 cm wide, contracted about primary branches. Primary panicle branches 1 -nate, bearing spikelets almost to the base. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 1.7–2 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes deciduous, shorter than spikelet. Lower glume ovate, 0.75 mm long, 0.75 length of upper glume, membranous, without keels, 0 -veined. Lower glume lateral veins absent. Lower glume apex acute. Upper glume ovate, 0.66–0.75 length of adjacent fertile lemma, membranous, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume apex acute.

**Florets.** Fertile lemma ovate, 1.7–2 mm long, membranous, without keel, 1 -veined, 0–3 -veined, one-veined. Lemma apex acute. Palea 2 -veined. Palea keels approximate.

**Flower and Fruit.** Caryopsis with free soft pericarp.

**Distribution (TDWG). Continent.** Africa.

**Country /Province /State.** Western Indian ocean. Madagascar.

### **Sporobolus elongatus** R. Br. *Prod.* 170 (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), E.Edgar, & H.Connor, *Flora of New Zealand Gramineae* 5 (2000), W.D.Clayton & N.Snow, *Key to Pacific Grasses* (2010).

**TYPE** from Australia. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: LT: *Brown 6207*, 8 Jan 1803, Australia: New South Wales: Port Jackson (BM (photo, BRI); ILT: K, US (fragm.)). LT designated by Baaijens & Veldkamp, *Blumea* 35: 451 (1991).



**Illustrations (Books):** J.P.Jessop, G.R.M. Dashorst & F.M.James, *Grasses of South Australia* (2006) (399, Fig. 332), S.W.L.Jacobs, R.D.B.Whalley & D.J.B.Wheeler,, *Grasses of New South Wales*, 4th edn (2008) (378), J.C.Tothill,& J.B.Hacker. *The grasses of southern Queensland* (1983) (386), T.D.Stanley & E.Ross, *Flora of South East Queensland, Gramineae* (1989) (183, Fig. 28), 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); (*Aust.Syst.Bot.* 12: 423 Fig.12 (1999)).

**Derivation** (Clifford & Bostock 2007): L. elongated. Inflorescence elongated.

**Classification.** Subfamily Chloridoideae. Tribe: Zoysieae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Butt sheaths herbaceous. Culms erect, 50–100 cm long, 3–4 -noded. Culm-nodes glabrous. Lateral branches lacking. Leaves mostly basal. Leaf-sheaths glabrous on surface. Ligule a fringe of hairs. Leaf-blades flat or convolute, 20–50 cm long, 1–3 mm wide.

**Inflorescence.** Inflorescence a panicle. Panicle contracted, linear, 10–25 cm long, contracted about primary branches. Primary panicle branches appressed, distant, 0.5–1 cm long, bearing spikelets almost to the base. Panicle branches glabrous in axils. Spikelets solitary. Fertile spikelets pedicelled.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 1.5–2 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes deciduous, similar, shorter than spikelet, thinner than fertile lemma. Lower glume oblong, 0.5–0.7 mm long, 0.5 length of upper glume, hyaline, without keels, 0 -veined. Lower glume lateral veins absent. Lower glume apex obtuse. Upper glume oblong, 1–1.3 mm long, 0.5–0.66 length of adjacent fertile lemma, hyaline, without keels, 0 -veined. Upper glume primary vein absent. Upper glume lateral veins absent. Upper glume apex obtuse.

**Florets.** Fertile lemma oblong, 1.3–2 mm long, membranous, without keel, 1 -veined, 0–3 -veined, one-veined. Lemma apex acute. Palea 1.5 mm long, 0.75 length of lemma, 2 -veined. Palea keels approximate.

**Flower and Fruit.** Anthers 2, 0.5 mm long. Caryopsis with free soft pericarp.

**Distribution (TDWG). Continent.** Europe (\*), Tropical Asia, Australasia, Pacific.

**Region. Northern Europe** (\*).

**Country /Province /State.** : GB Aliens (Ryves et al). **Malesia, Papuaia.** New Guinea, Solomon Is. **Australia, New Zealand.** Western Australia, South Australia, Queensland, New South Wales, A.C.T. New Zealand North I. **Southwestern Pacific.** Fiji, New Caledonia. Pitcairn Is. Marianas. Hawaii (\*).

**TDWG4.** South-West. NW & Lake Eyre, Southern. North, Central, South East, Inland. Coast, Tablelands, Western Slopes, Western Plains.

### **Sporobolus engleri** Pilger. *Engl. Jahrb.* li. 413 (1914).

**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: ST: A. *Engler 6591*, Apr 1913, Namibia: Gross-Namaland, Haribis, 40 km im SW von Mariental, auf slaziger Buschsteppe, 1220 m

ST: *Dinter 2070*, Mar 1911, Namibia: Kamelboom, verwitterter Sandstein.

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): in honor of Heinrich Gustav Adolph Engler (1844–1930) German botanist.

**Classification.** Subfamily Chloridoideae. Tribe: Zoysieae.

**Habit, Vegetative Morphology.** Annual, caespitose. Culms 12–60 cm long, 1–2 mm diam. Ligule a fringe of hairs. Leaf-blades flat, 4–15 cm long, 2–5 mm wide.

**Inflorescence.** Inflorescence a panicle. Panicle open, ovate, effuse, 6–18 cm long. Primary panicle branches spreading, branching dichotomously. Panicle branches capillary, glabrous in axils. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 1–1.5 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes deciduous, similar, shorter than spikelet, similar to fertile lemma in texture. Lower glume oblong, 0.2–0.33 length of upper glume, membranous, without keels, 0 -veined. Lower glume lateral veins absent. Lower glume apex obtuse. Upper glume oblong, 0.5–0.75 length of adjacent fertile lemma, hyaline, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume apex obtuse.

**Florets.** Fertile lemma oblong, 1–1.5 mm long, membranous, without keel, 1 -veined, 0–3 -veined, one-veined. Lemma apex obtuse. Palea 2 -veined. Palea keels approximate.

**Flower and Fruit.** Anthers 3. Caryopsis with free soft pericarp, orbicular, laterally compressed, 1.2 mm long.

**Distribution (TDWG). Continent.** Africa.

**Country /Province /State. Southern Africa.** Namibia, Northern Cape.

### **Sporobolus erectus** Hitchcock. *Contrib. U. S. Nat. Herb.* xvii. 313 (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: A.S. Hitchcock 6616 [=Amer. Gr. Natl. Herb. 1285], 2 Sep 1910, Mexico: Veracruz: Jalapa, clay cut (US-691231; IT: MO-1649620, US-3010935).

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): L. held upright. Spikelets or inflorescence branches held erect.

**Classification.** Subfamily Chloridoideae. Tribe: Zoysieae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Butt sheaths withering. Basal innovations subterete. Culms erect, 55–58 cm long. Culm-internodes thin-walled, distally glabrous. Lateral branches lacking. Leaves mostly basal. Leaf-sheaths eglandular or glandular (on keel), keeled, glabrous on surface. Leaf-sheath oral hairs ciliate. Ligule a fringe of hairs, 0.4–0.5 mm long. Leaf-blades 9–15 cm long, 2–5 mm wide. Leaf-blade margins tuberculate-ciliate.

**Inflorescence.** Inflorescence a panicle. Panicle open, pyramidal, 13–17 cm long, 5–7 cm wide. Primary panicle branches spreading, whorled at most nodes. Panicle branches flexuous. 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, subterete, 3–3.5 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes deciduous, reaching apex of florets. Lower glume linear, 1.5–2 mm long, 0.5–0.66 length of upper glume, membranous, without keels, 0 -veined. Lower glume lateral veins absent. Lower glume apex acute. Upper glume lanceolate, 2.8–3.5 mm long, 1 length of adjacent fertile lemma, membranous, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume apex acute.

**Florets.** Fertile lemma lanceolate, 2.8–3.3 mm long, membranous, without keel, 1 -veined, 0–3 -veined, one-veined. Lemma apex acute. Palea 1 length of lemma, 2 -veined. Palea keels approximate.

**Flower and Fruit.** Anthers 3, 1.5–2 mm long. Caryopsis with free soft pericarp, 1.7–2.1 mm long, obtuse.

**Distribution (TDWG). Continent.** North America, South America.

**Country /Province /State. Mexico.** Gulf (Mexico), Southeast Mexico. **Mesoamerica.** Honduras. Veracruz. Chiapas.

### **Sporobolus exilis** (Trin.) B.Balansa. *L. Morot, Journal de Botanique*, 4: 164: (1890).

Regarded by K as a synonym (*S. indicus*).

**Accepted by:** U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

**TYPE** from Mexico. **Basionym or Replaced Name:** *Vilfa exilis* Trin., *Mem. Acad. Imp. Sci. Saint-Petersbourg, Ser. 6, Sci. Math., Seconde Pt. Sci. Nat.* 6,4(1–2): 89 (1840). T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: HT: C.J.W. Schiede s.n., Aug 28, Mexico: Jalapa (LE-TRIN-1699.03 (& fig.)).

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): L. slender. Culms slender.

**Classification.** Subfamily Chloridoideae. Tribe: Zoysieae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Culms erect, 26–60 cm long. Ligule a fringe of hairs. Leaf-blades filiform, 8–25 cm long, 1 mm wide. Leaf-blade surface glabrous or pilose.

**Inflorescence.** Inflorescence a panicle. Panicle open, ovate, effuse, 4–10 cm long, 4–5 cm wide. Primary panicle branches spreading, whorled at most nodes. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 3–3.5(–4) mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes deciduous, reaching apex of florets. Lower glume ovate, 0.5 length of upper glume, hyaline, without keels, 0–1 -veined. Lower glume lateral veins absent. Lower glume apex erose, acute or acuminate. Upper glume elliptic, 3–3.5(–4) mm long, 1 length of adjacent fertile lemma, membranous, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume apex acute.

**Florets.** Fertile lemma ovate, 3–3.5(–4) mm long, membranous, without keel, 1 -veined, 0–3 -veined, one-veined. Lemma apex acute. Palea 1 length of lemma, 2 -veined. Palea keels approximate.

**Flower and Fruit.** Anthers 3, 1.5–1.7 mm long. Caryopsis with free soft pericarp, oblong, 1.5 mm long.

**Distribution (TDWG). Continent.** South America.

**Country /Province /State. Brazil.** Brazil South.

**TDWG4.**

### **Sporobolus eximius** (Trin.) Ekman. *Arkiv Bot. Stockh.* xiii. No. 10, 41 (1913).

**Accepted by:** R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

**TYPE** from Brazil. **Basionym or Replaced Name:** *Vilfa eximia* Nees ex Trin., *Mem. Acad. Imp. Sci. Saint-Petersbourg, Ser. 6, Sci. Math., Seconde Pt. Sci. Nat.* 6,4(1–2): 77 (1840). T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: V: *Riedel* 266, Mar 1826, Brasilia: St. Paulo (LE-TRIN-1700.02 (2 sheets)). Trinius ( *Vilfa elatior* Nees ). ST: *Sello s.n.*, Brazil: Sa Paulo (LE-TRIN-1700.01; IST: B, BAA-3469 (fragm.)).

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): L. exceptional. Readily distinguished from related species.

**Classification.** Subfamily Chloridoideae. Tribe: Zoysieae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Butt sheaths persistent and investing base of culm, with fibrous dead sheaths. Culms 50–60 cm long, 3–4 -noded. Culm-nodes glabrous. Leaf-sheaths longer than adjacent culm internode, glabrous on surface, outer margin hairy. Ligule a fringe of hairs. Leaf-blades 10–20 cm long, 3.5–5.5 mm wide. Leaf-blade surface hirsute, densely hairy, hairy adaxially. Leaf-blade apex acuminate.

**Inflorescence.** Inflorescence a panicle. Panicle open, pyramidal, 10–15 cm long. Primary panicle branches 7–8 -nate, whorled at most nodes, 4–6 cm long. Panicle branches capillary. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets elliptic, subterete, 4–4.5 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes deciduous, exceeding apex of florets. Lower glume elliptic, 0.5 length of upper glume, hyaline, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume apex acute. Upper glume elliptic, 1.05 length of adjacent fertile lemma, hyaline, without keels, 1 -veined. Upper glume primary vein scabrous. Upper glume lateral veins absent. Upper glume apex acute.

**Florets.** Fertile lemma elliptic, 3.8–4 mm long, membranous, light brown, without keel, 1 -veined, 0–3 -veined, one-veined. Lemma surface asperulous, rough above. Lemma apex acute. Palea 2 -veined. Palea keels approximate.

**Flower and Fruit.** Anthers 3, 2 mm long. Caryopsis with free soft pericarp.

**Distribution (TDWG). Continent.** South America.

**Country /Province /State. Western South America, Brazil, Southern South America.** Bolivia. Brazil West Central, Brazil Southeast, Brazil South. Paraguay.

**TDWG4.** Mato Grosso, Goias, Sao Paulo Parana. Misiones.

### **Sporobolus farinosus** Hosokawa. *Journ. Soc. Trop. Agric., Taiwan*, vii. 321. (1935).

**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 Mariana Islands. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: Mariana Isls. "Ladrone Isls.": Rota: on coastal grassy coral reef near Moutyon: 18 Jul 1934, *T. Hosokawa 7681* (T: Herb. Taihoku Imp. Univ.).

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): L. *farina*, flour; *-osa*, abundance. Surface of culms very waxy.

**Classification.** Subfamily Chloridoideae. Tribe: Zoysieae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Culms erect, 30–60 cm long. Lateral branches lacking. Leaf-sheaths 3–5.5 cm long, longer than adjacent culm internode, glabrous on surface. Leaf-sheath oral

hairs bearded. Ligule a fringe of hairs. Leaf-blades 10–25 cm long, 3–4 mm wide, coriaceous, stiff. Leaf-blade surface puberulous (farinose), hairy adaxially.

**Inflorescence.** Inflorescence a panicle, exerted or embraced at base by subtending leaf. Peduncle 7–15 cm long. Panicle spiciform, linear, 3–5 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, 1.5 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes deciduous, reaching apex of florets. Lower glume lanceolate or ovate, 1.5 mm long, 1 length of upper glume, membranous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume apex acuminate. Upper glume lanceolate or ovate, 1.5 mm long, 1 length of adjacent fertile lemma, membranous, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume apex acuminate.

**Florets.** Fertile lemma ovate, 1.5 mm long, membranous, without keel, 1 -veined, 0–3 -veined, one-veined. Lemma apex acute. Palea 1 length of lemma, 2 -veined. Palea keels approximate.

**Flower and Fruit.** Anthers 3. Caryopsis with free soft pericarp.

**Distribution (TDWG).** Continent. Pacific.

**Country /Province /State.** Northwestern Pacific. Caroline Is, Marianas.

### **Sporobolus fertilis** (Steud.) Clayton. *Kew Bull.* xix. 291 (1965).

**Accepted by:** R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), D.Sharp, D. & B.K.Simon, *AusGrass* (2002), S-L Chen et al, *Flora of China* 22 (Poaceae) (2006), N.Tsvelev, *Grasses of the Soviet Union* (1983), W.D.Clayton & N.Snow, *Key to Pacific Grasses* (2010).

**TYPE** from Japan. **Basionym or Replaced Name:** *Agrostis fertilis* Steud., *Syn. Pl. Glumac.* 1: 170 (1854). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: LT: *Burger s.n.*, Japan (L-908.97–171; ILT: K, P, L). LT designated by Baaijens & Veldkamp, *Blumea* 35: 437 (1991).

**Recent Synonyms:** *Sporobolus indicus* var. *major* (Buse) G.J. Baaijens, *Blumea* 35(2): 437 (1991).

**Illustrations (Books):** C-C Hsu, *Flora of Taiwan*, Vol 5 (1978) (442), C-C Hsu, *Taiwan Grasses* (1975) (503, Pl. 1411), K.M.Matthew, *Flora Palni Hills* (1996) (872, Pl. 872), H.J.Noltie, *The Grasses of Bhutan* (2000) (669, Fig. 35), S.W.L.Jacobs, R.D.B.Whalley & D.J.B.Wheeler, *Grasses of New South Wales*, 4th edn (2008) (378), *Flora of Australia Oceanic Islands Poaceae* 50(1993) & 49(1994) (50:473 Fig.90 (1993)), D.Sharp & B.K.Simon, *AusGrass*. *Grasses of Australia*. CD-Rom Version 1.0. (2002).

**Illustrations (Journals):** *Austr. Syst. Bot.* (*Aust.Syst.Bot.* 12: 424, Fig.13 (1999)).

**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*; H.B.Gilliland et al., *Flora of Malaya Vol. 3 Grasses* (1971);

**Derivation** (Clifford & Bostock 2007): L. fruitful. Producing abundant grain.

**Classification.** Subfamily Chloridoideae. Tribe: Zoysieae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Butt sheaths scarious. Culms erect, 90–160 cm long, 2–5 mm diam. Ligule a fringe of hairs. Leaf-blades flat or convolute, 25–50 cm long, 3–5 mm wide. Leaf-blade apex attenuate.

**Inflorescence.** Inflorescence a panicle. Panicle open, linear, 15–35 cm long, 1–2 cm wide, contracted about primary branches. Primary panicle branches appressed or ascending, 2–4 cm long, bearing spikelets almost to the base. Panicle branches stiff, glabrous in axils. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, linear.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 1.7–2 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes deciduous, similar, shorter than spikelet, thinner than fertile lemma. Lower glume oblong, 0.4 mm long, 0.5 length of upper glume, without keels, 0 -veined. Lower glume lateral veins absent. Lower glume apex truncate. Upper glume oblong, 1 mm long, 0.5 length of adjacent fertile lemma, hyaline, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume apex obtuse or acute.

**Florets.** Fertile lemma ovate, 1.7–2 mm long, membranous, without keel, 1 -veined, 0–3 -veined, one-veined. Lemma apex acute. Palea 1 length of lemma, 2 -veined. Palea keels approximate.

**Flower and Fruit.** Anthers 3, 0.7 mm long. Caryopsis with free soft pericarp, obovoid, exposed between gaping lemma and palea at maturity, 0.8–1 mm long, truncate.

$2n = 36$  (1 ref TROPICOS).

**Distribution (TDWG).** Continent. Temperate Asia, Tropical Asia, Australasia (\*), Pacific.

**Country /Province /State. Caucasus, China, Eastern Asia.** China South Central, Hainan, China North-Central, China Southeast, Tibet. Nansei-Shoto, Taiwan. **Indian Subcontinent, Indo-China, Malesia.** Bangladesh, Eastern Himalaya, India, Nepal, Sri Lanka. Andaman Is, Cambodia, Laos, Myanmar, Thailand, Vietnam. Cocos (Keeling) Is, Java, Lesser Sunda Is, Malaya, Singapore, Philippines, Christmas I. New Guinea West Papua (Irian Jaya). New Guinea. **Australia.** Queensland (\*), New South Wales (\*). **Southwestern Pacific, South-central Pacific, Northwestern Pacific, North-central Pacific.** Niue, New Caledonia, Tonga. Cook Is, Marquesas, Society Is, Tuamotu Is, Tubuai Is. Caroline Is, Marianas. Hawaii.

**TDWG4.** Gansu, Shaanxi, Shandong. Anhui, Fujian, Guangdong, Henan, Hunan, Jiangsu, Jiangxi, Zhejiang. Guizhou, Hubei, Sichuan, Yunnan. Darjeeling, Bhutan, Sikkim. Assam, Meghalaya, Tripura. Andhra Pradesh, Bihar, Karnataka, Kerala. Madhya Pradesh, Maharashtra, Rajasthan, Tamilnadu, Uttah Pradesh, West Bengal. Himachal Pradesh. North, Central, South East. Coast, Western Slopes.

**Sporobolus festivus** Hochst. ex A. Rich. *Tent. Fl. Abyss.* ii. 398. (1850).

**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: ST: *G.H.W. Schimper, pl. Schimp. Abyss, sect. III, 1692, 31 Jul 1840, Ethiopia: prope Tchelatcheranne* (P; IST: BM, K, L, P, TUB, US-1720128, US-3298798). ST: *Quartin Dillon s.n., Ethiopia: in campis prope Avar Semmaka in provincia Chire*, (P).

**Illustrations (Books):** G.V.Pope et al., *Flora Zambesiaca* 10 (2(1999):193 t. 53), J.Bosser, *Graminees des Paturage et des Cultures a Madagascar* (1969) (125, Fig 39), S.Phillips, *Poaceae* (Gramineae) in I.Hedberg & S.Edwards, *Flora of Ethiopia and Eritrea* (1995) (154, Fig 63).

**Images:** F.van Oudtshoorn, *Guide to Grasses of Southern Africa* (1999).

**Derivation** (Clifford & Bostock 2007): L. pretty. Plant of attractive appearance.

**Classification.** Subfamily Chloridoideae. Tribe: Zoysieae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Butt sheaths glabrous, persistent and investing base of culm, with fibrous dead sheaths. Culms erect, 10–60 cm long. Leaf-sheaths outer margin glabrous or hairy (ciliate). Ligule a fringe of hairs. Leaf-blades convolute, 2–7 cm long, 1–2 mm wide.

**Inflorescence.** Inflorescence a panicle. Panicle open, ovate, effuse, 3–22 cm long. Panicle branches capillary (red), glabrous in axils. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 1–1.5 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes deciduous, similar, shorter than spikelet. Lower glume oblong or ovate, 0.4–0.6 mm long, 0.66 length of upper glume, membranous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume apex acute. Upper glume ovate, 0.6–1 mm long, 0.5–0.66 length of adjacent fertile lemma, membranous, grey or purple, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume apex acute, muticous.

**Florets.** Fertile lemma ovate, 1–1.5 mm long, membranous, grey or purple, without keel, 1 -veined, 0–3 -veined, one-veined. Lemma apex acute. Palea 2 -veined. Palea keels approximate.

**Flower and Fruit.** Anthers 3, 0.6–0.8 mm long. Caryopsis with free soft pericarp, ellipsoid or obovoid, 0.4–0.7 mm long.

*N* = 10 (1 ref TROPICOS).

**Distribution (TDWG). Continent.** Africa, Temperate Asia.

**Country /Province /State. West tropical Africa, West-central tropical Africa, Northeast tropical Africa, East tropical Africa, South tropical Africa, Southern Africa, Western Indian ocean.** Burkina, Gambia, Ghana, Guinea, Ivory Coast, Mali, Mauritania, Nigeria. Burundi, Central African Republic, Cameroon, Rwanda, DRC. Chad, Eritrea, Ethiopia (inc. Eritrea), Somalia, Sudan. Kenya, Tanzania, Uganda. Angola, Malawi, Mozambique, Zambia, Zimbabwe. Namibia, Botswana, Limpopo, North-West, Gauteng, Mpumalanga, Free State (?), Kwazulu-Natal (?). Madagascar. **Arabian Peninsula.** Saudi Arabia, Yemen.

**Sporobolus fibrosus** Cope. *Kew Bull.* 53:171 (1998).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

**TYPE** from Zambia. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Zambia: Kawambwa Distr.:Chishinga Ranch, 1430 m, 9 Sep 1965, *Astle 3309* (HT: SRGH).

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): *L. fibra*, fibre; *-osa*, abundance. Leaf-sheaths disintegrating at length into copious fibres.

**Classification.** Subfamily Chloridoideae. Tribe: Zoysieae.

**Habit, Vegetative Morphology.** Perennial, caespitose, clumped densely. Butt sheaths distinctly ribbed, persistent and investing base of culm, with fibrous dead sheaths. Culms erect, 15–35 cm long. Lateral branches lacking. Ligule a fringe of hairs. Leaf-blades filiform, involute, 2.5–16 cm long, 0.5–2 mm wide. Leaf-blade surface glabrous. Leaf-blade margins smooth, glabrous. Leaf-blade apex obtuse.

**Inflorescence.** Inflorescence a panicle. Panicle open, ovate, 3–4.5 cm long. Primary panicle branches not whorled. Panicle branches tangled, eglandular, smooth, glabrous in axils, with prominent pulvini. 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 lanceolate, subterete, 1.7–2.4 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes deciduous, similar, shorter than spikelet. Lower glume ovate, 1 length of upper glume, membranous, purple, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume apex obtuse or acute. Upper glume ovate, 0.5 length of adjacent fertile lemma, membranous, purple, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume apex obtuse or acute.

**Florets.** Fertile lemma ovate, 1.7–2.4 mm long, membranous, without keel, 3 -veined, 0–3 -veined. Lemma lateral veins distinct. Lemma apex acute. Palea 2 -veined. Palea keels approximate. Rhachilla extension 0.4–0.6 length of fertile floret, glabrous.

**Flower and Fruit.** Anthers 3, 1.1–1.4 mm long. Caryopsis with free soft pericarp.

**Distribution (TDWG). Continent.** Africa.

**Country /Province /State.** South tropical Africa. Zambia.

### **Sporobolus fimbriatus** (Trin.) Nees. *Fl. Afr. Austr.* 156. (1841).

**Accepted by:** R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, N.L.Bor, *Grasses of Burma, Ceylon, India and Pakistan* (1960).

**TYPE** from South Africa. **Basionym or Replaced Name:** *Vilfa fimbriata* Trin., *Mem. Acad. Imp. Sci. Saint-Petersbourg, Ser. 6, Sci. Math., Seconde Pt. Sci. Nat.* 6,4(1–2): 69 (1840). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: South Africa, Zwartkops R.: Ecklon ; South Africa, Slengerfontein: Drege (K isosyn).

**Illustrations (Books):** L.K.A. Chippindall, *Grasses and Pastures of South Africa* (1955) (223, Fig 197), M.A.N.Muller, *Grasses of South West Africa/Namibia* (1984), M.E.Barkworth et al, *Flora of North America north of Mexico Vol 25 Poaceae*, part 2 (2003) (127).

**Images:** F.van Oudtshoorn, *Guide to Grasses of Southern Africa* (1999).

**Derivation** (Clifford & Bostock 2007): *L. fimbriata*, fringe; *-ata*, possessing. With fringed glumes or lemmas.

**Classification.** Subfamily Chloridoideae. Tribe: Zoysieae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Rhizomes short. Culms geniculately ascending, 50–100(–150) cm long, 2–3 mm diam. Ligule a fringe of hairs. Leaf-blades flat or convolute, 10–30 cm long, 2–5 mm wide, firm. Leaf-blade midrib evident or widened. Leaf-blade venation indistinct. Leaf-blade surface smooth or scaberulous, rough abaxially, glabrous or pilose, hairy abaxially. Leaf-blade apex filiform.

**Inflorescence.** Inflorescence a panicle. Panicle open, linear or lanceolate, 15–50 cm long, contracted about primary branches or contracted about secondary branches. Primary panicle branches 2–9(–15) cm long, naked below or bearing spikelets almost to the base. Panicle branches glabrous in axils. 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, subterete, 1.4–2.2 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes deciduous, similar, exceeding apex of florets or reaching apex of florets or shorter than spikelet. Lower glume lanceolate or oblong, 0.6–1.4 mm long, 0.25–0.75 length of upper glume, membranous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume apex acute. Upper glume ovate, 1.3–2 mm long, 0.66–1.1 length of adjacent fertile lemma, membranous, dark green, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume apex acute.

**Florets.** Fertile lemma ovate, 1.4–2.2 mm long, membranous, dark green, without keel, 1 -veined, 0–3 -veined, one-veined. Lemma apex acute. Palea 2 -veined. Palea keels approximate.

**Flower and Fruit.** Anthers 3, 0.9–1.2 mm long. Caryopsis with free soft pericarp, obovoid, quadrangular, 0.6 mm long.

*N* = 27 (1 ref TROPICOS).

**Distribution (TDWG). Continent.** Africa, North America.

**Country /Province /State.** West-central tropical Africa, Northeast tropical Africa, East tropical Africa, South tropical Africa, Southern Africa. DRC. Ethiopia (inc. Eritrea), Somalia, Sudan. Kenya, Tanzania, Uganda. Angola, Malawi, Mozambique, Zambia, Zimbabwe. Namibia, Botswana, Limpopo, North-West, Gauteng, Mpumalanga, Free State, Kwazulu-Natal, Lesotho, Northern Cape, Western Cape, Eastern Cape. **Southeastern USA.** South Carolina.

**Sporobolus flexuosus** (Vasey) Rydb. *Bull. Torr. Bot. Club*, 1905, 601. (1905).

**Accepted by:** R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

**TYPE** from USA. **Basionym or Replaced Name:** *Vilfa cryptandra* var. *flexuosa* Thurb. ex Vasey, *Rep. U.S. Geogr. Surv., Wheeler* 6: 282 (1878). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: IT: *G.M. Wheeler s.n.*, 1872, USA: Nevada (US-556875).

**Illustrations (Books):** M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 25 *Poaceae*, part 2 (2003) (132), F.W.Gould, *The Grasses of Texas* (1975) (299, Fig. 158).

**Derivation** (Clifford & Bostock 2007): *L. flecto*, bend; -osa, abundance. Inflorescence branches lax and drooping or bent in a zigzag fashion.

**Classification.** Subfamily Chloridoideae. Tribe: Zoysieae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Culms erect, 35–120 cm long. Leaf-sheaths without keel. Leaf-sheath oral hairs ciliate, 1–1.5 mm long. Ligule a fringe of hairs. Leaf-blades 8–25 cm long, 2–5 mm wide.

**Inflorescence.** Inflorescence a panicle. Panicle open, oblong, effuse, nodding, 10–30 cm long, 4–9 cm wide. Primary panicle branches spreading or reflexed, branching divaricately. Panicle branches flexuous, pubescent in axils. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 1.9–2.5 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes deciduous, reaching apex of florets. Lower glume ovate, 1–1.3 mm long, 0.5 length of upper glume, membranous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume apex acute. Upper glume ovate, 1.9–2.5 mm long, 1 length of adjacent fertile lemma, membranous, grey, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume apex acute.

**Florets.** Fertile lemma ovate, 1.9–2.5 mm long, membranous, without keel, 1 -veined, 0–3 -veined, one-veined. Lemma apex acute. Palea 2 -veined. Palea keels approximate.

**Flower and Fruit.** Anthers 3. Caryopsis with free soft pericarp, 1 mm long.

**Distribution (TDWG). Continent.** North America.

**Country /Province /State.** Northwest USA, North-central USA, Southwestern USA, South-central USA, Mexico. Colorado. Oklahoma. Arizona, California, Nevada, Utah. New Mexico, Texas. Northeast Mexico, Northwest Mexico.

Coahuila, Chihuahua. Sinaloa, Sonora.

**Sporobolus floridanus** Chapm. *Fl. S. U. St.* 550. (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. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: LT: *Chapman s.n.*, USA: Florida: Franklin Co.: Apalachicola (NY-127474; ILT: NY-127472, NY-127471, NY-127473, US-998263). LT designated by Weakley & Peterson, *Sida* 18(1): 256 (1998).

**Illustrations (Books):** M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 25 *Poaceae*, part 2 (2003) (138).

**Derivation** (Clifford & Bostock 2007): *L.-ana*, indicating location. From Florida State, USA.

**Classification.** Subfamily Chloridoideae. Tribe: Zoysieae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Butt sheaths indurate, glossy. Culms erect, 75–100 cm long. Leaves without demarcation between sheath and blade. Leaf-sheaths keeled, glabrous on surface. Ligule a fringe of hairs. Leaf-blades flat or conduplicate, 1–5 mm wide. Leaf-blade margins scaberulous. Leaf-blade apex abruptly acute.

**Inflorescence.** Inflorescence a panicle. Panicle open, lanceolate, 15–35 cm long. Primary panicle branches ascending, 7–15 cm long. Panicle axis angular, scaberulous. Panicle branches scabrous, pubescent in axils or bearded in axils. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 4–5 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes deciduous, reaching apex of florets. Lower glume lanceolate, 1 length of upper glume, membranous, without keels. Lower glume apex acute. Upper glume elliptic, 1 length of adjacent fertile lemma, membranous, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume apex acute.

**Florets.** Fertile lemma ovate, 4–5 mm long, membranous, without keel, 1 -veined, 0–3 -veined, one-veined. Lemma apex acute. Palea 1 length of lemma, 2 -veined. Palea keels approximate.

**Flower and Fruit.** Caryopsis with free soft pericarp.

**Distribution (TDWG). Continent.** North America.

**Country /Province /State. Southeastern USA.** Florida, Georgia, South Carolina.

### **Sporobolus fourcadei** Stent. *Bothalia*, ii. 269, 272 (1927).

**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, Humansdorp: Foucade 1986 (PRE holo).

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): in honor of Georges Henri Fourcade (1866–1948) French-born South African forester and plant collector.

**Classification.** Subfamily Chloridoideae. Tribe: Zoysieae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Rhizomes short. Culms 25–40 cm long. Ligule a fringe of hairs. Leaf-blades 8–35 cm long, 4–7 mm wide. Leaf-blade apex acuminate.

**Inflorescence.** Inflorescence a panicle. Panicle open, lanceolate, 10–40 cm long, contracted about primary branches. Primary panicle branches spreading, bearing spikelets almost to the base. Panicle branches glabrous in axils. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 2–2.6 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes deciduous, similar, shorter than spikelet, similar to fertile lemma in texture. Lower glume lanceolate, 0.33 length of upper glume, membranous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume apex obtuse. Upper glume lanceolate, 0.66 length of adjacent fertile lemma, hyaline, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume apex acute.

**Florets.** Fertile lemma ovate, 2–2.6 mm long, membranous, without keel, 1 -veined, 0–3 -veined, one-veined. Lemma apex acute. Palea 2 -veined. Palea keels approximate.

**Flower and Fruit.** Anthers 3. Caryopsis with free soft pericarp, 1 mm long.

**Distribution (TDWG). Continent.** Africa.

**Country /Province /State. Southern Africa.** Kwazulu-Natal, Western Cape, Eastern Cape.

### **Sporobolus geminatus** Clayton. *Kew Bull.*, 25(2): 247 (1971).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

**TYPE** from Kenya. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Kenya, Galana R.: Greenway & Kanuri 13073 (K holo).

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): *L. gemini*, twins; *-ata*, possessing. Spikelets paired.

**Classification.** Subfamily Chloridoideae. Tribe: Zoysieae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Culms erect, 90–200 cm long. Ligule a fringe of hairs. Leaf-blades 60–120 cm long, coriaceous, stiff.

**Inflorescence.** Inflorescence a panicle. Panicle open, linear or lanceolate, effuse, 30–40 cm long, 3–5 cm wide. Panicle branches capillary, glabrous in axils. Spikelets solitary (lateral) or in pairs (distal). Fertile spikelets pedicelled, 2 in the cluster. 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, subterete, 1.5–1.9 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes deciduous, similar, shorter than spikelet. Lower glume ovate, 0.7–1.1 mm long, 0.7–0.9 length of upper glume, hyaline, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume apex acute. Upper glume ovate, 1–1.2 mm long, 0.5–0.66 length of adjacent fertile lemma, hyaline, dark green, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume apex acute.

**Florets.** Fertile lemma ovate, 1.5–1.9 mm long, membranous, dark green, without keel, 1 -veined, 0–3 -veined, one-veined. Lemma apex acute. Palea 2 -veined. Palea keels approximate.

**Flower and Fruit.** Anthers 3, 0.7–0.8 mm long. Caryopsis with free soft pericarp, ellipsoid, 0.8 mm long.

**Distribution (TDWG). Continent.** Africa.

**Country /Province /State.** East tropical Africa. Kenya, Tanzania.

**Sporobolus giganteus** Nash. *Bull. Torr. Bot. Club*, 1898, 88. (1898).

**Accepted by:** R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

**TYPE** from USA. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *E.O. Wootton 394*, 26 Aug 1897, USA: New Mexico: Otero Co. (NY-128297; IT: US-330618).

**Illustrations (Books):** M.E.Barkworth et al, *Flora of North America north of Mexico Vol 25 Poaceae*, part 2 (2003) (132).

**Derivation** (Clifford & Bostock 2007): L. very large. Culms tall compared with those of related species.

**Classification.** Subfamily Chloridoideae. Tribe: Zoysieae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Culms erect, robust, 100–200 cm long, 3–6 mm diam. Leaf-sheaths without keel, striately veined, outer margin glabrous or hairy. Ligule a fringe of hairs, 1–1.5 mm long. Leaf-blades conduplicate or involute, 20–50 cm long, 3–8 mm wide. Leaf-blade apex attenuate.

**Inflorescence.** Inflorescence a panicle, exserted or embraced at base by subtending leaf. Panicle spiciform, linear, 25–70 cm long, 0.8–2.5 cm wide. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 2.6–3.2 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes deciduous, reaching apex of florets. Lower glume lanceolate, 1–2 mm long, 0.33–0.66 length of upper glume, membranous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume apex acute. Upper glume ovate, 2.6–3.2 mm long, 1 length of adjacent fertile lemma, membranous, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume apex acute.

**Florets.** Fertile lemma ovate, 2.5–3.1 mm long, membranous, without keel, 1 -veined, 0–3 -veined, one-veined. Lemma apex acute. Palea 1 length of lemma, 2 -veined. Palea keels approximate.

**Flower and Fruit.** Caryopsis with free soft pericarp.

*N* = 18 (1 ref TROPICOS).

**Distribution (TDWG). Continent.** North America.

**Country /Province /State.** Northwest USA, North-central USA, Southwestern USA, South-central USA, Mexico. Colorado. Kansas, Oklahoma. Arizona, Utah. New Mexico, Texas. Northeast Mexico. Coahuila, Chihuahua.

**Sporobolus gloeoclados** T.A. Cope. *Kew Bull.*, 47(4): 656 (1992).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online.

**TYPE** from Oman. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Oman: Jebel Qara, 2 Oct 1943, *Vesey FitzGerald 1246/22* (HT: K; IT: BM).

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): Gk. glois, sticky; klados, branch. Panicle branches possess sticky glandular patches.

**Classification.** Subfamily Chloridoideae. Tribe: Zoysieae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Cataphylls evident. Culms decumbent or prostrate, 9–25 cm long. Ligule a fringe of hairs. Leaf-blades flat, 2–5 cm long, 1–3 mm wide, stiff. Leaf-blade surface hirsute, with tubercle-based hairs. Leaf-blade apex pungent.

**Inflorescence.** Inflorescence a panicle. Panicle open, pyramidal, 3–5.5 cm long, contracted about primary branches. Primary panicle branches whorled at lower nodes. Panicle branches glandular, viscid. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets elliptic, subterete, 1.5–1.9 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes deciduous, dissimilar, shorter than spikelet. Lower glume oblong or ovate, 0.3–0.6 mm long, 0.5 length of upper glume, membranous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume apex obtuse or acute. Upper glume ovate, 0.7–1.3 mm long, 0.5–0.66 length of adjacent fertile lemma, membranous, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume apex acute.

**Florets.** Fertile lemma lanceolate or elliptic, 1.5–1.9 mm long, membranous, without keel, 1 -veined, 0–3 -veined, one-veined. Lemma apex acute. Palea 2 -veined. Palea keels approximate.

**Flower and Fruit.** Anthers 3, 0.9–1.2 mm long. Caryopsis with free soft pericarp.

**Distribution (TDWG). Continent.** Temperate Asia.

**Country /Province /State.** Arabian Peninsula. Oman.

### **Sporobolus hajrae** P. Umamaheswari & P. Daniel. *Nordic J. Bot.*, 18(5): 577 (1998).

**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, Tuticorin: Daniel & Umamaheshwari 103594 (CAL holo, MH).

**Illustrations (Books):** No illustration found (BKS).

**Classification.** Subfamily Chloridoideae. Tribe: Zoysieae.

**Habit, Vegetative Morphology.** Annual, caespitose. Culms 30 cm long. Leaf-sheaths 3.5–6 cm long, glabrous on surface. Ligule a fringe of hairs. Leaf-blades 1.5–7 cm long, 5 mm wide. Leaf-blade margins ciliate, hairy at base.

**Inflorescence.** Inflorescence a panicle. Panicle contracted, linear, 10–15 cm long. Primary panicle branches appressed (but lowest whorl spreading), 7 -nate, whorled at most nodes. Panicle axis with lower internodes 0.5–1 cm long. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, 1 mm long.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 1.8–2 mm long, 0.3–0.4 mm wide, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes deciduous, dissimilar, shorter than spikelet. Lower glume oblong or ovate, 0.5–0.8 mm long, 0.4–0.5 length of upper glume, hyaline, without keels, 0 -veined. Lower glume lateral veins absent. Lower glume apex obtuse. Upper glume oblong or ovate, 1.3–1.5 mm long, 0.9 length of adjacent fertile lemma, membranous, without keels, 1 -veined. Upper glume primary vein scaberulous. Upper glume lateral veins absent. Upper glume apex acute.

**Florets.** Fertile lemma ovate, 1.5–1.8 mm long, 0.5–0.7 mm wide, membranous, without keel, 1 -veined, 0–3 -veined, one-veined. Lemma apex acute. Palea oblong or ovate, 1.5 mm long. Palea apex emarginate.

**Flower and Fruit.** Anthers 2, 0.5 mm long. Caryopsis with free soft pericarp, obovoid, 0.7–0.8 mm long, light brown.

**Distribution (TDWG). Continent.** Tropical Asia.

**Country /Province /State.** Indian Subcontinent. India, West Himalaya. Tamilnadu.

### **Sporobolus halophilus** Bosser. *Adansonia*, n. s., ix. 340 (1969).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online.

**TYPE** from Madagascar. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: Madagascar, Tular: Bosser 15704 (P holo).

**Illustrations (Books):** J.Bosser, *Graminees des Paturage et des Cultures a Madagascar* (1969) (127, Fig 40).

**Derivation** (Clifford & Bostock 2007): Gk. halos, salt; phileo, love. Growing on saline soils.

**Classification.** Subfamily Chloridoideae. Tribe: Zoysieae.

**Habit, Vegetative Morphology.** Perennial, caespitose, clumped densely. Rhizomes short. Culms erect or geniculately ascending, 30–80 cm long. Culm-internodes distally glabrous. Leaves mostly basal. Leaf-sheaths

smooth, glabrous on surface. Ligule a fringe of hairs, 0.5–1 mm long. Leaf-blades flat or involute, 5–20 cm long, 3–8 mm wide. Leaf-blade surface glabrous.

**Inflorescence.** Inflorescence a panicle. Panicle contracted, linear or lanceolate, 6–15 cm long, 0.7–1.5 cm wide. Primary panicle branches appressed, not whorled or whorled at lower nodes, 3–4 cm long. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 2–2.5 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes deciduous, shorter than spikelet. Lower glume lanceolate, 0.5–1 mm long, 0.5–0.75 length of upper glume, membranous, without keels, 0 -veined. Lower glume lateral veins absent. Lower glume apex acute. Upper glume ovate, 0.66–0.75 length of adjacent fertile lemma, membranous, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume apex acute.

**Florets.** Fertile lemma ovate, 2–2.5 mm long, membranous, without keel, 1 -veined, 0–3 -veined, one-veined. Lemma apex acute. Palea 2 -veined. Palea keels approximate.

**Flower and Fruit.** Caryopsis with free soft pericarp.

**Distribution (TDWG). Continent.** Africa.

**Country /Province /State.** Western Indian ocean. Madagascar.

### **Sporobolus hancei** Rendle. *Journ. Linn. Soc.* vi. 387. (1904).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), S-L Chen et al, *Flora of China* 22 (Poaceae) (2006), T.Koyama, *Grasses of Japan and its neighboring regions* (1987).

**TYPE** from China. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: China: Fujian: Amoy, grassy hillsides, *Sampson s.n.* (T: BM; K) also Hance 13055 "in part" listed.

**Illustrations (Books):** C-C Hsu, *Flora of Taiwan*, Vol 5 (1978) (444), C-C Hsu, *Taiwan Grasses* (1975), S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 686).

**Derivation** (Clifford & Bostock 2007): in honor of Henry Fletcher Hance (1827–1886) English botanist.

**Classification.** Subfamily Chloridoideae. Tribe: Zoysieae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Culms erect, 20–50 cm long, 0.8–1 mm diam., 3–4 -noded, with 0.5–0.66 of their length below uppermost node. Lateral branches lacking. Leaves mostly basal. Leaf-sheaths glabrous on surface, outer margin hairy. Ligule a fringe of hairs. Leaf-blades involute, 3–8 cm long, 0.5–2 mm wide. Leaf-blade surface pilose, sparsely hairy, hairy adaxially. Leaf-blade apex acuminate.

**Inflorescence.** Inflorescence a panicle. Panicle open, elliptic or oblong, 5–12 cm long, 0.7–1.5 cm wide. Primary panicle branches ascending or spreading, 2–4 -nate, 0.7–1.7 cm long, bearing spikelets almost to the base. Panicle branches capillary. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets obovate, subterete, 2–2.5 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes deciduous, reaching apex of florets. Lower glume lanceolate, 1.2–1.5 mm long, 0.5–0.66 length of upper glume, membranous, without keels, 0 -veined. Lower glume lateral veins absent. Lower glume apex acute. Upper glume lanceolate, 2–2.5 mm long, 1 length of adjacent fertile lemma, membranous, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume apex acute.

**Florets.** Fertile lemma elliptic, 2–2.5 mm long, membranous, grey or purple, suffused with last colour, without keel, 1 -veined, 0–3 -veined, one-veined. Lemma apex acute. Palea 1 length of lemma, 2 -veined. Palea keels approximate.

**Flower and Fruit.** Anthers 3, 0.8–1 mm long. Caryopsis with free soft pericarp, ellipsoid, 1.5 mm long, red.

**Distribution (TDWG). Continent.** Temperate Asia, Tropical Asia.

**Country /Province /State.** China, Eastern Asia. Hainan, China Southeast. Nansei-Shoto, Taiwan. Malesia. Philippines.

**TDWG4.** Fujian, Guangdong, Guangxi, Jiangsu.

### **Sporobolus harmandii** Henrard. Fedde, *Repert.* xxi. 235 (1925).

**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 South Vietnam. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *Godefroy 823*, 28 Sep 1875, South Vietnam: Phu Quoc Island, beach of Ham Ninh(Huen-ninh) (L; IT: K, P).

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): in honor of Jules Harmand (1845–1921) French naval physician who collected in Thailand, Cambodia and Laos.

**Classification.** Subfamily Chloridoideae. Tribe: Zoysieae.

**Habit, Vegetative Morphology.** Annual, caespitose. Culms erect, 25–50 cm long. Culm-nodes glabrous. Leaf-sheaths glabrous on surface. Ligule a fringe of hairs. Leaf-blades flat, 5–10 cm long, 5–6 mm wide, flaccid. Leaf-blade margins tuberculate-ciliate. Leaf-blade apex acuminate.

**Inflorescence.** Inflorescence a panicle. Panicle open, lanceolate, 7–14 cm long, 1–2.7 cm wide. Primary panicle branches whorled at most nodes, 1–2 cm long. Panicle branches capillary. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 1.5 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes deciduous, similar, reaching apex of florets, shiny. Lower glume lanceolate, 0.8 mm long, 0.5 length of upper glume, hyaline, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume apex acute. Upper glume lanceolate, 1.4 mm long, 1 length of adjacent fertile lemma, hyaline, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume apex acute.

**Florets.** Fertile lemma lanceolate, 1.4 mm long, membranous, without keel, 1 -veined, 0–3 -veined, one-veined. Lemma apex acute. Palea 1 mm long, 2 -veined. Palea keels approximate. Palea apex truncate.

**Flower and Fruit.** Anthers 2, 0.5 mm long, yellow. Caryopsis with free soft pericarp, ovoid, laterally compressed, 1 mm long, red.

**Distribution (TDWG). Continent.** Tropical Asia.

**Country /Province /State.** Indo-China, Malesia. Laos, Myanmar, Thailand, Vietnam. Sumatra.

### **Sporobolus helvolus** (Trin.) Th. Dur. & Schinz. *Consp. Fl. Afr.* v. 820 (1895).

**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 Arabia. **Basionym or Replaced Name:** *Vilfa helvola* Trin., *Mem. Acad. Imp. Sci. Saint-Petersbourg, Ser. 6, Sci. Math., Seconde Pt. Sci. Nat.* 2: 52 (1840). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: ST: *Ehrenberg s.n.*, Saudia Arabia: Wadi Diara, Habessin (LE). ST: *Leprieur s.n.*, Senegal (LE). ST: *Lelievre s.n.*, Senegal (LE).

**Illustrations (Books):** S.Phillips, *Poaceae* (Gramineae) in I.Hedberg & S.Edwards, *Flora of Ethiopia and Eritrea* (1995) (152, Fig 62).

**Derivation** (Clifford & Bostock 2007): *L. helvolus*, yellow-green. Bristles subtending spikelets yellow-green.

**Classification.** Subfamily Chloridoideae. Tribe: Zoysieae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Rhizomes elongated. Culms erect, 15–60 cm long, 1 mm diam., wiry. Ligule a fringe of hairs. Leaf-blades 2–15 cm long, 2–4 mm wide, glaucous. Leaf-blade apex filiform.

**Inflorescence.** Inflorescence a panicle. Panicle open or contracted, linear or lanceolate, 4–12 cm long, 0.5–2 cm wide, contracted about primary branches. Primary panicle branches ascending, 0.5–2 cm long, bearing spikelets almost to the base. Panicle branches glabrous in axils. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 1.4–2 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes deciduous, similar, reaching apex of florets. Lower glume lanceolate, 1.4–2 mm long, 1 length of upper glume, membranous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume surface smooth or asperulous. Lower glume apex acuminate. Upper glume lanceolate, 1.4–2 mm long, 1 length of adjacent fertile lemma, membranous, mid-green or dark brown, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume surface smooth or asperulous. Upper glume apex acuminate.

**Florets.** Fertile lemma ovate, 1.4–2 mm long, membranous, mid-green or dark brown, without keel, 1 -veined, 0–3 -veined, one-veined. Lemma apex acute. Palea 2 -veined. Palea keels approximate.

**Flower and Fruit.** Anthers 3, 0.6–0.8 mm long. Caryopsis with free soft pericarp, ellipsoid, 0.5 mm long.

*N* = 8 (1 ref TROPICOS), or 18 (2 refs TROPICOS).

**Distribution (TDWG). Continent.** Africa, Temperate Asia, Tropical Asia.

**Country /Province /State.** Northern Africa, West tropical Africa, West-central tropical Africa, Northeast tropical Africa, East tropical Africa. Libya. Mali, Mauritania, Nigeria, Senegal. Chad, Eritrea, Ethiopia (inc. Eritrea), Somalia, Sudan. Kenya, Tanzania, Uganda. **Arabian Peninsula.** Saudi Arabia, Yemen. **Indian Subcontinent, Indo-China.** Pakistan. Myanmar.

**TDWG4.** Gujarat. Rajasthan.

### **Sporobolus heterolepis** (Gray) A.Gray. *Man. Bot. N. U. St.* ed. I. 576. (1848).

**Accepted by:** R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

**TYPE** from USA, Canada. **Basionym or Replaced Name:** *Vilfa heterolepis* A. Gray, *Ann. Lyceum Nat. Hist. New York* 3: 233 (1835). T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: HT: *Dr. Crawe*, USA: New York, Watertown (NY). right hand plant on sheet of 3 collections. PT: *J.D. Dana*, USA: Connecticut, New Haven (NY). PT: *Dr. A. Holms*, Canada: Quebec, Montreal (NY).

**Illustrations (Books):** K.F.Best, et al, *Prairie Grasses* (1971) (225), M.E.Barkworth et al, *Flora of North America north of Mexico Vol 25 Poaceae*, part 2 (2003) (136), F.W.Gould, *The Grasses of Texas* (1975) (310, Fig. 163).

**Images:** R.Darke, *Ornamental Grasses* (2004);, R.Darke, *The Encyclopaedia of Grasses for Liveable Landscapes* (2007);.

**Derivation** (Clifford & Bostock 2007): Gk. heteros, different; lepis, scale. The subtending glumes differ markedly in length.

**Classification.** Subfamily Chloridoideae. Tribe: Zoysieae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Culms erect, slender, 30–70 cm long. Culm-internodes distally glabrous. Lateral branches lacking. Leaf-sheaths without keel, smooth or antrorsely scabrous. Leaf-sheath oral hairs lacking to ciliate. Ligule a fringe of hairs, 0.1–0.3 mm long. Leaf-blades filiform, conduplicate or involute, 12–30 cm long, 1–2 mm wide.

**Inflorescence.** Inflorescence a panicle. Panicle open, elliptic or pyramidal, 5–20 cm long, 2–4 cm wide. Primary panicle branches ascending or spreading, 1–3 -nate. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 4–6 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes deciduous, exceeding apex of florets, shiny. Lower glume linear, 0.66–0.75 length of upper glume, membranous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume apex acuminate. Upper glume ovate, 3.5–5 mm long, 1.1 length of adjacent fertile lemma, membranous, grey, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume apex acuminate to setaceously acuminate.

**Florets.** Fertile lemma ovate, 3.2–4.8 mm long, membranous, grey, without keel, 1 -veined, 0–3 -veined, one-veined. Lemma apex acute. Palea 1.1 length of lemma, 2 -veined. Palea keels approximate.

**Flower and Fruit.** Caryopsis with free brittle pericarp, orbicular, isodiametric (globose), 1.5–1.8 mm long.  $2n = 72$  (1 ref TROPICOS).

**Distribution (TDWG). Continent.** North America.

**Country /Province /State.** Western Canada, Eastern Canada, Northwest USA, North-central USA, Northeast USA, South-central USA, Southeastern USA. Manitoba, Saskatchewan. Ontario, Quebec. Colorado, Wyoming. Illinois, Iowa, Kansas, Minnesota, Missouri, North Dakota, Nebraska, Oklahoma, South Dakota, Wisconsin. Indiana, Massachusetts, Michigan, Ohio, New York. New Mexico, Texas. Arkansas, Louisiana, Virginia.

### **Sporobolus hians** Van Schaack. *Ann. Missouri Bot. Gard.* vii. 397 (1950).

**Accepted by:** R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

**TYPE** from Brazil. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: HT: *A. Macedo* 2045, 20 Dec 1949, Brazil: Minas Gerais: Ituiutaba Mun. (MO-2097004; IT: US-2010752).

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): *L. hio*, gape. Glumes spreading at anthesis or when antheridium mature.

**Classification.** Subfamily Chloridoideae. Tribe: Zoysieae.

**Habit, Vegetative Morphology.** Perennial, caespitose, clumped loosely. Culms erect, 25–50 cm long, 5–6-noded. Leaf-sheaths striately veined, glabrous on surface, outer margin hairy. Leaf-sheath oral hairs bearded. Ligule a fringe of hairs, 0.5 mm long. Leaf-blades 4–7 cm long, 2–3 mm wide. Leaf-blade surface scaberulous, rough adaxially. Leaf-blade margins scaberulous. Leaf-blade apex attenuate.

**Inflorescence.** Inflorescence a panicle. Panicle open, pyramidal, 10–20 cm long, 10 cm wide. Primary panicle branches spreading. Panicle axis smooth or scaberulous. Panicle branches capillary, flexuous, smooth or scaberulous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, 1–3 mm long.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets elliptic, subterete, 1.6–1.8 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes deciduous, shorter than spikelet, gaping. Lower glume lanceolate, 0.8 mm long, 1 length of upper glume, hyaline, without keels, 0-veined. Lower glume lateral veins absent. Lower glume apex erose, obtuse. Upper glume ovate, 0.9–1 mm long, 0.5 length of adjacent fertile lemma, membranous, without keels, 0–1-veined. Upper glume primary vein absent or obscure. Upper glume lateral veins absent. Upper glume apex erose, truncate.

**Florets.** Fertile lemma lanceolate or ovate, 1.5–1.7 mm long, membranous, without keel, 1-veined, 0–3-veined, one-veined. Lemma apex acute. Palea readily splitting down midline, 1 length of lemma, 2-veined. Palea keels approximate.

**Flower and Fruit.** Anthers 1 mm long. Caryopsis with free soft pericarp.

**Distribution (TDWG). Continent.** South America.

**Country /Province /State.** Brazil, Southern South America. Brazil Southeast.

### **Sporobolus hildebrandtii** Mez. Fedde, *Repert.* xvii. 297 (1921).

Regarded by K as a synonym (*S. centrifugus*).

**Accepted by:** U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

**TYPE** from Madagascar. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: Madagascar, ankaratra-Gebirge, *Hildebrandt*.

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): in honor of Johann Maria Hildebrandt (1847–1881) German-born traveller and plant collector.

**Classification.** Subfamily Chloridoideae. Tribe: Zoysieae.

**Habit, Vegetative Morphology.** Perennial. Culms 50–90 cm long. Leaf-sheaths without keel, glabrous on surface, outer margin hairy. Ligule a fringe of hairs. Leaf-blades convolute, 6–30 cm long, 1–4 mm wide, stiff. Leaf-blade surface glabrous. Leaf-blade margins scabrous.

**Inflorescence.** Inflorescence a panicle. Panicle open, lanceolate or elliptic, 10–20 cm long, contracted about primary branches. Primary panicle branches whorled at most nodes, 2–4 cm long. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 3.3 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes deciduous, reaching apex of florets. Lower glume ovate, 0.75 length of upper glume, membranous, without keels, 0-veined. Lower glume lateral veins absent. Lower glume surface asperulous. Lower glume apex acute. Upper glume ovate, 1 length of adjacent fertile lemma, membranous, without keels, 0-veined. Upper glume primary vein absent. Upper glume lateral veins absent. Upper glume surface asperulous. Upper glume apex obtuse, mucronate.

**Florets.** Fertile lemma ovate, 3.3 mm long, membranous, without keel, 1-veined, 0–3-veined, one-veined. Lemma apex obtuse. Palea 2-veined. Palea keels approximate.

**Flower and Fruit.** Anthers 3, 1.5 mm long. Caryopsis with free soft pericarp.

**Distribution (TDWG). Continent.** Africa.

**Country /Province /State.** Western Indian ocean. Madagascar.

### **Sporobolus hintonii** Hartley. *Kew Bull.* 1941, 23 (1941).

**Accepted by:** R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

**TYPE** from Mexico. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *G. B. Hinton 2610*, 16 Nov 1932, Mexico: Mexico, Temascaltepec, Vigas (K; IT: NY-277646, US-1867701, US-2240742).

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): in honor of George Bode Hinton (1882–1943) United States botanist.

**Classification.** Subfamily Chloridoideae. Tribe: Zoysieae.

**Habit, Vegetative Morphology.** Annual. Glands capitate (on leaf margins), or raised crateriform (elsewhere). Culms erect, 50–100 cm long, 4–6 -noded. Culm-internodes glandular (below nodes). Lateral branches sparse. Leaf-sheaths glandular (on keel), keeled, outer margin hairy. Ligule a fringe of hairs. Leaf-blades 6–12 cm long, 4–8 mm wide. Leaf-blade surface glabrous. Leaf-blade margins glandular, serrulate, ciliate (capitate glandular), hairy at base.

**Inflorescence.** Inflorescence a panicle. Panicle open, oblong, 20–30 cm long, 10–15 cm wide. Primary panicle branches 1 -nate, 4–8 cm long. Panicle axis tuberculate (glandular), pilose. Panicle branches capillary, glandular, tuberculate, pilose. 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, 2.6–3 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes deciduous, reaching apex of florets. Lower glume elliptic, 1.5 mm long, 0.5–0.6 length of upper glume, membranous, without keels. Lower glume apex obtuse. Upper glume elliptic, 2.4–2.8 mm long, 0.7 length of adjacent fertile lemma, membranous, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume apex acute.

**Florets.** Fertile lemma elliptic, 2.6–3 mm long, membranous, without keel, 1 -veined, 0–3 -veined, one-veined. Lemma apex acute. Palea 1 length of lemma, 2 -veined. Palea keels approximate.

**Flower and Fruit.** Anthers 2. Caryopsis with free soft pericarp, oblong, 1.5 mm long.

**Distribution (TDWG). Continent.** North America.

**Country /Province /State.** Mexico. Central Mexico.

**TDWG4.** Mexico State.

### **Sporobolus humifusus** (HBK) Kunth. *Rev. Gram.* i. 67. (1829).

Regarded by K as a synonym (*S. pyramidatus*).

**Accepted by:** U. Quattrocchi, *CRC World Dictionary of Grasses* (2006).

**TYPE** from Venezuela. **Basionym or Replaced Name:** *Vilfa humifusa* Kunth, *Nov. Gen. Sp. (quarto ed.)* 1: 137 (1815 [1816]). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *Humboldt & Bonpland s.n.*, Sep, Venezuela: Sucre: Cumaná (P; IT: B, BAA-3473 (fragm.)).

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): *L. procumbent*. Culms prostrate.

**Classification.** Subfamily Chloridoideae. Tribe: Zoysieae.

**Distribution (TDWG). Continent.** South America.

**Country /Province /State.** Northern South America. Venezuela.

### **Sporobolus humilis** J. Presl. *Rel. Haenk.* i. 241. (1830).

**Accepted by:** W.D. Clayton & K. Harman, *GrassBase* (2008) and online, J.F. Veldkamp, *Poaceae ms (Flora Malesiana)*.

**TYPE** from The Philippines. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *Haenke s.n.*, Philippines: Luzon (PR; IT: MO, US (fragm.)).

**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: Zoysieae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Culms geniculately ascending, 5–30 cm long. Culm-internodes distally glabrous. Leaves mostly basal. Leaf-sheaths striately veined, glabrous on surface. Ligule a fringe of hairs. Leaf-blades 2–3 cm long, 1–2 mm wide. Leaf-blade surface pilose.

**Inflorescence.** Inflorescence a panicle. Panicle spiciform, linear, 3–6 cm long, 0.4–0.7 cm wide. Primary panicle branches appressed, 0.8–1.2 cm long. Panicle axis glabrous. 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, subterete, 1–1.2 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes similar, shorter than spikelet. Lower glume lanceolate, 0.4–0.5 mm long, 0.5 length of upper glume, membranous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume apex acute. Upper glume ovate, 0.8–0.9 mm long, 0.75 length of adjacent fertile lemma, membranous, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume apex acute.

**Florets.** Fertile lemma lanceolate, 1–1.2 mm long, membranous, without keel, 1 -veined, 0–3 -veined, one-veined. Lemma apex acute. Palea 0.9–1 mm long, 2 -veined. Palea keels approximate.

**Flower and Fruit.** Caryopsis with free soft pericarp, ovoid, 0.7–0.8 mm long, yellow.

**Distribution (TDWG). Continent.** Temperate Asia, Tropical Asia.

**Country /Province /State.** Eastern Asia. Taiwan. Indo-China, Malesia. Cambodia, Myanmar, Thailand, Vietnam. Java, Philippines, Sulawesi.

### **Sporobolus indicus** (L.) R. Br. *Prod.* 170. (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), 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), T.Koyama, *Grasses of Japan and its neighboring regions* (1987), W.D.Clayton & N.Snow, *Key to Pacific Grasses* (2010).

**TYPE** from USA. **Basionym or Replaced Name:** *Sporobolus berterianus*, *Agrostis indica* L., *Sp. Pl.* 1: 63 (1753). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: LT: Clayton 460B, USA: Virginia (LINN-84.36; ILT: SI (fragm.)). LT designated by Hubbard, *Agron. Lusit.* 28: 67 (1966); see also Baaijens & Veldkamp, *Blumea* 35: 422 (1991).

**Illustrations (Books):** N.Feinbrun-Dothan, *Flora Palaestina* 4 (1986) (Pl. 391), T.Koyama, *Grasses of Japan and its neighbouring regions* (1987) (276, Fig. 105 as ssp. *pallidior*), N.L.Bor, *The grasses of Burma, Ceylon, India and Pakistan* (1960) (631, Fig. 76), H.Duistermaat, *Field Guide to the Grasses of Singapore* (2005) (129, Fig. 134 & Fig. 136 as var. *indicus* & var. *pyramidalis*), N.Walsh & T.Entwistle, *Flora of Victoria* Vol 2 (1994) (573, Fig. 115 as var. *capensis*), W.L.Wagner et al., *Manual of the Flowering Plants of Hawai'i*, Vol. 2 (1990) (1595, Pl. 236), M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 25 *Poaceae*, part 2 (2003) (125), F.W.Gould, *The Grasses of Texas* (1975) (294, Fig. 155), S.A.Renouze, *Gramineas de Bolivia* (1998) (333, Fig. 70 as var. *indicus*), S.A.Renouze, *The Grasses of Bahia*, 1984 (60, Fig. 21), L.B. Smith, D.C. Wasshausen, R.M. Klein *Flora Illustrada Catarinensis Gramineas* (1981–1982) (379 & 381, Fig. 87 & 88 as var. *indicus*), A.Burkat, *Flora Illustrada de Entre Rios (Argentina)*, Pt II, *Gramineas* (1969) (227, Fig. 86), W.Burger, *Flora Costaricensis* 15, *Gramineae: Fieldiana Botany New Series* 4 (1980) (545, Fig. 204), A.L.Cabrera, *Flora de la Provincia de Buenos Aires, IV Pt 2 Gramineae* (1970) (379, Fig. 97), M.N.Correa, *Flora Patagonica* Parte III, *Gramineae* (1978) (469, Fig. 313), B.Rosengurt, *Gramineas Uruguayas I* (1970) (268, Fig. 110), G.Harling & C.Persson, *Flora of Ecuador* (2006) (68: 63, Fig. 8 (2001)), E.Hafliger & E.Schultz, *Grass Weeds*, CIBA-GEIGY (2:127(1980)).

**Illustrations (Journals):** *Ruizia* (13:252, Fig 29j-1 (1993)).

**Images:** H.Duistermaat, *Field Guide to the Grasses of Singapore* (2005); (as var. *flaccidus*) (*Aust.Syst.Bot.* 12: 425, Fig.14 (1999)).

**Derivation** (Clifford & Bostock 2007): L. -ica, belonging to. From India.

**Classification.** Subfamily Chloridoideae. Tribe: Zoysieae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Butt sheaths herbaceous. Culms erect, 30–100 cm long. Lateral branches lacking. Leaves basal and cauline. Ligule a fringe of hairs, 0.2–0.5 mm long. Leaf-blades flat or conduplicate or involute, 10–30 cm long, 1–5 mm wide. Leaf-blade apex attenuate, filiform.

**Inflorescence.** Inflorescence a panicle. Panicle contracted or spiciform, linear, 10–30 cm long, 0.6–1 cm wide. Primary panicle branches 1–2 cm long, bearing spikelets almost to the base. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 1.8–2 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes deciduous, shorter than spikelet, parallel to lemmas. Lower glume ovate, 0.6–1 mm long, 0.75 length of upper glume, membranous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume apex acute. Upper glume ovate, 0.9–1.3 mm long, 0.5–0.66 length of adjacent fertile lemma, membranous, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume apex acute.



**Florets.** Fertile lemma ovate, 1.4–2 mm long, membranous, without keel, 1 -veined, 0–3 -veined, one-veined. Lemma apex acute. Palea 2 -veined. Palea keels approximate.

**Flower and Fruit.** Anthers 3, 0.5 mm long. Caryopsis with free soft pericarp, oblong, 1–1.3 mm long, obtuse.

$N = 18$  (3 refs TROPICOS).  $2n = 36$  (3 refs TROPICOS).

**Distribution (TDWG). Continent.** Europe, Africa, Temperate Asia, Tropical Asia, Pacific, North America, South America, Antarctica.

**Region.** Northern Europe (\*), Southwestern Europe, Southeastern Europe.

**Country /Province /State.** : Great Britain (\*). : France, Portugal, Spain, Azores. : Bulgaria, Italy. **Macaronesia, Western Indian ocean.** Azores, Canary Is. Mauritius, Madagascar. **Eastern Asia.** Japan, Nansei-Shoto, Taiwan. **Indo-China, Malesia, Papuasia.** Thailand. Java, Cocos (Keeling) Is, Lesser Sunda Is, Moluccas, Sumatra, Sulawesi, Malaya, Philippines. New Guinea. **Southwestern Pacific, North-central Pacific.** Fiji (\*), New Caledonia (\*). Cook Is (\*). Hawaii (\*). **Northwest USA, North-central USA, Southwestern USA, South-central USA, Southeastern USA, Mexico.** Oregon. Oklahoma. California. 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.** Belize, Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua, Panama. Bahamas, Bermuda, Cuba, Dominican Republic, Haiti, Jamaica, Leeward Is, Windward Islands, Puerto Rico, Trinidad-Tobago. Venezuela. Bolivia, Colombia, Ecuador, Galapagos, Peru. Brazil West Central, Brazil Northeast, Brazil Southeast, Brazil North, Brazil South. Argentina Northeast, Argentina Northwest, Chile Central, Chile South, Paraguay, Uruguay. **Subantarctic islands.** Tristan de Cunha.

**TDWG4.** Goias, Bahia, Ceara, Rio Grande do Norte, Paraiba, Pernambuco, Alagoas, Sergipe, Minas Gerais, Rio de Janeiro, Espirito Santo, Sao Paulo Parana, Catarina, Rio Grande do Sul. Catamarca, Jujuy, Salta, San Luis, Tucuman. Buenos Aires, Chaco, Cordoba, Corrientes, Distrito Federal, Entre Rios, Formosa, La Pampa, Misiones, Santa Fe. Rest of Chile- Biobio, La Auracania, Maule, O'Higgins, Santado, Valpariso. Tarapaca. Valparaiso, Santiago, O'Higgins, Maule, Biobio, La Araucania. Los Lagos. Distrito Federal, Mexico State, Morelos, Puebla, Tlaxcala. Aguascalientes, Coahuila, Chihuahua, Durango, Guanajuato, Hidalgo, Neuvo Leon, Queretaro, San Luis Potosi, Tamaulipas, Zacatecas. Veracruz. Sinaloa, Sonora. Colima, Guerrero, Jalisco, Michoacan, Nayarit, Oaxaca. Chiapas, Quintana Roo.

**Sporobolus infirmus** Mez. Fedde, *Repert.* xvii. 294 (1921).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

**TYPE** from Nigeria. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Westafrika, Nigerien, *Barter*.

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): L. lax, weak. Culms decumbent.

**Classification.** Subfamily Chloridoideae. Tribe: Zoysieae.

**Habit, Vegetative Morphology.** Annual, caespitose. Culms erect, 10–30 cm long. Ligule a fringe of hairs. Leaf-blades 1–5 cm long, 1–2 mm wide.

**Inflorescence.** Inflorescence a panicle. Panicle open, elliptic, effuse, 2–12 cm long. Panicle branches capillary, glabrous in axils. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, filiform.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, (0.8–)1.3–1.7(–2) mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes deciduous, similar, shorter than spikelet. Lower glume oblong, 0.2–0.5 mm long, 0.5 length of upper glume, membranous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume apex obtuse. Upper glume ovate, 0.5–1 mm long, 0.5 length of adjacent fertile lemma, membranous, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume apex acute, muticous.

**Florets.** Fertile lemma elliptic, (0.8–)1.3–1.7(–2) mm long, membranous, without keel, 1 -veined, 0–3 -veined, one-veined. Lemma apex acute. Palea 2 -veined. Palea keels approximate.

**Flower and Fruit.** Anthers 3, 0.5–0.7 mm long. Caryopsis with free soft pericarp, ellipsoid, laterally compressed, 0.5–0.7 mm long.

**Distribution (TDWG). Continent.** Africa.

**Country /Province /State.** **West tropical Africa, West-central tropical Africa.** Ghana, Guinea, Ivory Coast, Nigeria, Sierre Leone. Central African Republic, Cameroon, DRC.

**Sporobolus interruptus** Vasey. *Bull. Torrey Bot. Club*, xv. 8 (1888).

**Accepted by:** R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

**TYPE** from USA. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: ST: *H.H. Rusby 885 [15]*, 9 Aug 1883, USA: Arizona: San Francisco Forest (US-556885, US-746621). Rusby 885 cited as "15" in the protologue, but probably identical number as sent to Vasey. ST: *Coues & Palmer 66*, 1866, USA: Arizona (US).

**Illustrations (Books):** M.E.Barkworth et al, *Flora of North America north of Mexico Vol 25 Poaceae*, part 2 (2003) (134).

**Derivation** (Clifford & Bostock 2007): L. not continuous. Spikelets or inflorescence branches clustered at intervals along an axis.

**Classification.** Subfamily Chloridoideae. Tribe: Zoysieae.

**Habit, Vegetative Morphology.** Perennial, caespitose, clumped densely. Culms erect, 30–60 cm long. Culm-internodes smooth. Lateral branches lacking. Leaves mostly basal. Leaf-sheaths glabrous on surface or pilose. Leaf-sheath oral hairs ciliate. Ligule a fringe of hairs. Leaf-blades erect, flat or conduplicate, 10–15 cm long, 1–2 mm wide. Leaf-blade surface glabrous or pilose, sparsely hairy.

**Inflorescence.** Inflorescence a panicle. Panicle open, elliptic, 10–20 cm long. Primary panicle branches ascending or spreading, distant, 1 -nate. Panicle axis smooth. 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, 6 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes deciduous, reaching apex of florets. Lower glume lanceolate, 2–3 mm long, 0.5 length of upper glume, membranous, without keels. Lower glume apex acute. Upper glume elliptic, 1 length of adjacent fertile lemma, membranous, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume apex acute.

**Florets.** Fertile lemma ovate, 6 mm long, membranous, without keel, 1 -veined, 0–3 -veined, one-veined. Lemma apex acute. Palea 1 length of lemma, 2 -veined. Palea keels approximate.

**Flower and Fruit.** Caryopsis with free soft pericarp.

$2n = 30$ .

**Distribution (TDWG). Continent.** North America.

**Country /Province /State.** Southwestern USA. Arizona.

**Sporobolus ioclados** (Trin) Nees. *Fl. Afr. Austr.* 161. (1841).

**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:** *Sporobolus kentrophyllus*, *S. arabicus*, *S. kentrophyllus*, *S. marginatus*, *Vilfa ioclados* Nees ex Trin., *Mem. Acad. Imp. Sci. Saint-Petersbourg, Ser. 6, Sci. Math., Seconde Pt. Sci. Nat.* 4(1–2): 65 (1840). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: South Africa: Cape, *Drége & Wonderhuivel s.n.* (HT: LE; IT: K, L).

**Illustrations (Books):** L.K.A. Chippindall, *Grasses and Pastures of South Africa* (1955) (as *S. smutsii*), M.A.N.Muller, *Grasses of South West Africa/Namibia* (1984), S.Phillips, *Poaceae* (Gramineae) in I.Hedberg & S.Edwards, *Flora of Ethiopia and Eritrea* (1995) (146, Fig 60), T.A.Cope, *Flora of Pakistan* 143: *Poaceae* (1982).

**Images:** F.van Oudtshoorn, *Guide to Grasses of Southern Africa* (1999).

**Derivation** (Clifford & Bostock 2007): Gk. ion, the violet; klados, branch. Panicle branches violet.

**Classification.** Subfamily Chloridoideae. Tribe: Zoysieae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Stolons absent or present. Butt sheaths herbaceous. Basal innovations subterete or flabellate. Culms erect, 15–80 cm long. Ligule a fringe of hairs. Leaf-blades flat, 2–30 cm long, 2–5 mm wide. Leaf-blade margins cartilaginous, glabrous or ciliate.

**Inflorescence.** Inflorescence a panicle. Panicle open or contracted, pyramidal, 3–20 cm long. Primary panicle branches spreading, whorled at most nodes (4–8 whorls), 3–15 cm long. Panicle branches glabrous in axils. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 1.5–3 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes deciduous, similar, reaching apex of florets or shorter than spikelet. Lower glume oblong, 0.2–1 mm long, 0.25–0.33 length of upper glume, membranous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume apex obtuse. Upper glume oblong, 1.5–2.6 mm long, 0.66–1 length of adjacent fertile lemma, membranous, pallid or grey, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume surface smooth or asperulous. Upper glume apex acute.

**Florets.** Fertile lemma oblong, 1.5–3 mm long, membranous, pallid or grey, without keel, 1 -veined, 0–3 -veined, one-veined. Lemma surface smooth or scaberulous. Lemma apex acute. Palea 2 -veined. Palea keels approximate.

**Flower and Fruit.** Anthers 3, 0.7–1 mm long. Caryopsis with free soft pericarp, ellipsoid, 0.6–1 mm long.

**Distribution (TDWG). Continent.** Europe (\*), Africa, Temperate Asia, Tropical Asia.

**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.** Egypt, Tunisia. Mali, Mauritania, Niger. Rwanda, DRC. Chad, 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. **Western Asia, Arabian Peninsula.** Iran. Gulf States, Oman, Saudi Arabia. **Indian Subcontinent.** India, Sri Lanka.

**TDWG4.** Gujarat. Madhya Pradesh, Rajasthan, Uttah Pradesh.

### **Sporobolus jacquemontii** Kunth. *Rev. Gram.* ii. 427. t. 127. (1831).

Regarded by K as a synonym (*S. pyramidalis*).

**Accepted by:** R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), D.Sharp, D. & B.K.Simon, *AusGrass* (2002).

**TYPE** from Santo Domingo. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *V. Jacquemont*, 1827, Santo Domingo (P; IT: L, LE-TRIN-1712.01).

**Illustrations (Books):** J.C.Tothill, & J.B.Hacker. *The grasses of southern Queensland* (1983) (388(5)), 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) (125).

**Images:** D.Sharp & B.K.Simon, *AusGrass*. Grasses of Australia. CD-Rom Version 1.0. (2002); (*Aust.Syst.Bot.* 12: 426, Fig.15 (1999)).

**Derivation** (Clifford & Bostock 2007): in honor of Victor Jacquemont (1801–1832), French naturalist and traveller.

**Classification.** Subfamily Chloridoideae. Tribe: Zoysieae.

**Flower and Fruit.**  $2n = 24$  (1 ref TROPICOS).

**Distribution (TDWG). Continent.** Africa, Australasia (\*), North America, South America.

**Country /Province /State.** **West tropical Africa, West-central tropical Africa.** Ghana, Liberia, Nigeria, Sierre Leone. Cameroon. **Australia.** Northern Territory (\*), Queensland (\*). New Caledonia. **Southeastern USA, Mexico.** Florida. Central Mexico, Northeast Mexico, Gulf (Mexico), Northwest Mexico, Southwest Mexico, Southeast Mexico. **Mesoamerica, Caribbean, Northern South America, Western South America, Brazil.** Belize, Costa Rica, Guatemala, Honduras, Nicaragua, Panama. Bahamas, Cayman Is, Cuba, Dominican Republic, Haiti, Jamaica, Leeward Is, Windward Islands, Puerto Rico, Trinidad-Tobago. French Guiana, Guyana, Surinam. Bolivia, Colombia, Ecuador, Peru. Brazil West Central, Brazil Northeast, Brazil North, Brazil Southeast, Brazil South.

**TDWG4.** Darwin & Gulf. North, Central, South East. Amazonas, Acre, Rondonia, Minas Gerais, Rio de Janeiro, Espirito Santo, Sao Paulo Parana, Catarina, Rio Grande do Sul. Distrito Federal, Mexico State, Puebla. Durango, Guanajuato, Hidalgo, Neuvo Leon, Queretaro, San Luis Potosi, Tamaulipas. Veracruz. Sinaloa, Sonora. Colima, Guerrero, Jalisco, Michoacan, Oaxaca. Campeche, Chiapas, Quintana Roo, Yucatan.

### **Sporobolus junceus** (Beauv.) Kunth. *Rev. Gram.* i. 68. (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 USA. **Basionym or Replaced Name:** *Agrostis juncea* Michx., *Fl. Bor.-Amer.* 1: 52 (1803). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *Michaux s.n.*, USA: in aridis Carolinae (P).

**Illustrations (Books):** M.E.Barkworth et al, *Flora of North America north of Mexico Vol 25 Poaceae*, part 2 (2003) (134), A.S.Hitchcock, *Manual of the Grasses of the West Indies* (1936) (83, Fig. 47 as *S. poiretii*).

**Derivation** (Clifford & Bostock 2007): *L. juncea*, rush-like. Leaf-blades convolute resembling those of certain *Juncus* species.

**Classification.** Subfamily Chloridoideae. Tribe: Zoysieae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Culms erect, slender, 50–100 cm long. Lateral branches lacking. Leaf-sheaths glabrous on surface, outer margin glabrous or hairy. Ligule a fringe of hairs, 0.2 mm long. Leaf-blades flat or involute, 13–30 cm long, 1–2 mm wide. Leaf-blade surface glabrous or hispid, sparsely hairy.

**Inflorescence.** Inflorescence a panicle. Panicle open, lanceolate, 10–25 cm long, 3–6 cm wide. Primary panicle branches spreading, whorled at most nodes, simple, 2–3.5 cm long. Spikelets appressed, solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 3–3.8 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes deciduous, exceeding apex of florets. Lower glume lanceolate, 1.2–3 mm long, 0.4–0.75 length of upper glume, membranous, light brown, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume apex acute or acuminate. Upper glume ovate, 3–3.8 mm long, 1.1 length of adjacent fertile lemma, membranous, light brown, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume apex acute or acuminate.

**Florets.** Fertile lemma ovate, 2.8–3.6 mm long, membranous, without keel, 1 -veined, 0–3 -veined, one-veined. Lemma apex acute. Palea 1 length of lemma, 2 -veined. Palea keels approximate.

**Flower and Fruit.** Anthers 1.5–2 mm long. Caryopsis with free soft pericarp, oblong, 1.5 mm long, light brown, rugose. Embryo 0.66–0.75 length of caryopsis.

**Distribution (TDWG). Continent.** North America, South America.

**Country /Province /State.** **Southwestern USA, South-central USA, Southeastern USA, Mexico.** Arizona. Texas. Arkansas, Florida, Georgia, Louisiana, Mississippi, North Carolina, South Carolina, Tennessee, Virginia. Gulf (Mexico), Southeast Mexico. **Caribbean, Western South America.** Cayman Is, Cuba, Dominican Republic, Haiti, Jamaica, Leeward Is, Windward Islands, Puerto Rico, Trinidad-Tobago. Colombia. Veracruz. Chiapas.

### **Sporobolus kerrii** Bor. *Kew Bull.* 1949, 252 (1949).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online.

**TYPE** from Thailand. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: Thailand, Kao Kinading; Kerr 20069 (K holo).

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): in honor of Arthur Francis George Kerr, (1877–1942), Irish-born medical officer and government botanist, Thailand.

**Classification.** Subfamily Chloridoideae. Tribe: Zoysieae.

**Habit, Vegetative Morphology.** Annual. Culms 30–60 cm long. Leaf-sheaths outer margin hairy. Ligule an eciliate membrane. Leaf-blades flat or conduplicate, 10–25 cm long, 3–7 mm wide. Leaf-blade surface glabrous. Leaf-blade apex acute.

**Inflorescence.** Inflorescence a panicle. Panicle open, elliptic, 10–20 cm long, 6–7 cm wide. Primary panicle branches spreading, whorled at most nodes. Panicle branches glandular, smooth or scaberulous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 3.5–4.5 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes deciduous, dissimilar, reaching apex of florets or exceeding apex of florets, gaping. Lower glume lanceolate, 2–2.5 mm long, 0.5–0.75 length of upper glume, hyaline, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume apex acute. Upper glume elliptic, 3.5–4.5 mm long, 1–1.1 length of adjacent fertile lemma, membranous, red, without keels, 3 -veined. Upper glume apex acute.

**Florets.** Fertile lemma elliptic, 3–4 mm long, membranous, red, without keel, 3 -veined, 0–3 -veined. Lemma surface scaberulous, rough above. Lemma apex acute. Palea 2.5–3.5 mm long, 2 -veined. Palea keels approximate.

**Flower and Fruit.** Anthers 3. Caryopsis with free soft pericarp, obovoid, biconvex, 1.5 mm long. Embryo 0.5 length of caryopsis.

**Distribution (TDWG). Continent.** Tropical Asia.

**Country /Province /State.** **Indo-China.** Thailand.

**Sporobolus lanuginellus** Maire. *Bull. Soc. Hist. Nat. Afr. Nord*, i. 6, 46. (1940).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

**TYPE** from Morocco. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Morocco, Draa: Ollivier.

**Illustrations (Books):** No illustration found (BKS).

**Classification.** Subfamily Chloridoideae. Tribe: Zoysieae.

**Habit, Vegetative Morphology.** Perennial. Rhizomes short. Culms 6–15 cm long. Leaf-sheaths without keel, glabrous on surface, outer margin hairy. Leaf-sheath oral hairs woolly. Ligule a fringe of hairs. Leaf-blades convolute, 2–5 cm long, 0.5–1.5 mm wide, glaucous. Leaf-blade surface scabrous, rough adaxially, glabrous. Leaf-blade margins scabrous. Leaf-blade apex attenuate.

**Inflorescence.** Inflorescence a panicle. Panicle open, ovate, effuse, 3–4 cm long. Primary panicle branches spreading, 1–2 -nate. Panicle branches capillary. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 1.5–1.7 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes deciduous, shorter than spikelet. Lower glume ovate, 0.6–0.7 mm long, 0.66 length of upper glume, membranous, without keels, 0 -veined. Lower glume lateral veins absent. Lower glume surface asperulous. Lower glume apex erose, obtuse. Upper glume ovate, 0.7–0.8 mm long, 0.5 length of adjacent fertile lemma, membranous, without keels, 0 -veined. Upper glume primary vein absent. Upper glume lateral veins absent. Upper glume surface asperulous. Upper glume apex acute.

**Florets.** Fertile lemma oblong, 1.5–1.7 mm long, membranous, without keel, 3 -veined, 0–3 -veined. Lemma surface asperulous. Lemma apex erose, obtuse. Palea 1 length of lemma, 2 -veined. Palea keels approximate.

**Flower and Fruit.** Lodicules 2, 1.5 mm long. Anthers 3, 1 mm long. Caryopsis with free soft pericarp, oblong, 1 mm long, dark brown. Embryo 0.4 length of caryopsis. Hilum punctiform.

**Distribution (TDWG). Continent.** Africa.

**Country /Province /State.** Northern Africa. Morocco.

**Sporobolus lasiophyllus** Pilger. *Engl. Jahrb.* vii. 504 (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 Peru. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: ST: *Weberbauer 2467*, 12 Feb 1903, Peru: Junín: Tarma: in montibus ad orientem a Palca versus, in campis aridis, graminibus numerosis sed parvis, fruticibus intermixtis, 2700–3000 m (B; IST: BAA-2904 (fragm. ex B), US-82017).

ST: *Weberbauer 2381*, Feb 1903, Peru: Junin: in montibus ad oppidum Tarma, in eadem formatione, 3600 m (B).

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): Gk. lasios, shaggy; phyllon, leaf. Leaf-blades or sheaths hairy.

**Classification.** Subfamily Chloridoideae. Tribe: Zoysieae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Culms 15–35 cm long. Leaves mostly basal. Leaf-sheaths woolly. Ligule a fringe of hairs. Leaf-blades involute, 2–4.5 cm long, 1–2 mm wide. Leaf-blade surface glabrous.

**Inflorescence.** Inflorescence a panicle. Panicle open, pyramidal, 8–12 cm long, with spikelets clustered towards branch tips. Primary panicle branches spreading, whorled at most nodes. Panicle branches capillary. Spikelets solitary. Fertile spikelets sessile or pedicelled. Pedicels absent or present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets elliptic, subterete, 3.2–4 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes deciduous, reaching apex of florets. Lower glume elliptic, 0.8–0.9 length of upper glume, membranous, purple, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume apex acute. Upper glume elliptic, 1 length of adjacent fertile lemma, membranous, purple, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume apex acute.

**Florets.** Fertile lemma elliptic, 3.2–4 mm long, membranous, without keel, 1 -veined, 0–3 -veined, one-veined. Lemma apex obtuse. Palea 2 -veined. Palea keels approximate.

**Flower and Fruit.** Caryopsis with free soft pericarp.

**Distribution (TDWG). Continent.** South America.

**Country /Province /State.** Northern South America, Western South America. Venezuela. Colombia, Ecuador, Peru.

**Sporobolus latzii** B.K.Simon. *Austral. Syst. Bot.*, 12(3): 399 (1999).

**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: Soudan, Wakaya Desert, 18 May 1993, P.K. Latz 13144 (HT: BRI; IT: CANB, DNA, NT).

**Illustrations (Books):** No illustration found (BKS).

**Images:** *Aust.Syst.Bot.* 12: 427, Fig.16 (1999).

**Derivation** (Clifford & Bostock 2007): In honor of Peter Kenneth Latz (1941-) Australian plant ecologist.

**Classification.** Subfamily Chloridoideae. Tribe: Zoysieae.

**Habit, Vegetative Morphology.** Perennial, caespitose, clumped densely. Rhizomes short. Culms erect, 45–95 cm long. Culm-internodes striate. Lateral branches lacking. Leaf-sheaths loose, without keel, smooth, outer margin glabrous. Ligule a fringe of hairs, 0.1–0.2 mm long on basal shoots. Leaf-blades linear, flat, 8–16 cm long, 3–5 mm wide. Leaf-blade surface scaberulous, glabrous.

**Inflorescence.** Inflorescence a panicle. Peduncle terete. Panicle open or contracted, pyramidal, 11–13 cm long, 1–2 cm wide, contracted about primary branches. Primary panicle branches ascending, 1-nate, bearing spikelets almost to the base. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, flexuous, 0.3–1.5 mm long.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets elliptic, subterete, 2–2.3 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes deciduous, similar, reaching apex of florets. Lower glume lanceolate, 1–1.2 mm long, 0-veined. Lower glume lateral veins absent. Lower glume apex acute. Upper glume lanceolate, 1.4–1.8 mm long, 0.8 length of spikelet, 1-veined. Upper glume surface smooth, glabrous. Upper glume apex entire, acute.

**Florets.** Fertile lemma lanceolate, 1.2–2.3 mm long, without keel, 1-veined, 0–3-veined, one-veined. Lemma apex entire. Palea readily splitting down midline, 0.8 length of lemma, 2-veined. Palea apex entire, obtuse.

**Flower and Fruit.** Anthers 3, 0.5–1 mm long. Caryopsis with free soft pericarp.

**Distribution (TDWG). Continent.** Australasia.

**Country /Province /State.** Australia. Northern Territory.

**TDWG4.** Victoria R & Barkly Tableland, Central Australia.

**Sporobolus laxus** B.K.Simon. *Austrobaileya*, 1(5): 459 (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>: *vide* TROPICOS and Kew Synonymy Database: Australia: Queensland: near Eagle Heights, 9 Mar 1976, Simon, Sharpe & Standley 2927 (HT: BRI-228827; IT: CANB, K).

**Illustrations (Books):** S.W.L.Jacobs, R.D.B.Whalley & D.J.B.Wheeler., *Grasses of New South Wales*, 4th edn (2008) (378), T.D.Stanley & E.Ross, *Flora of South East Queensland, Gramineae* (1989) (183, Fig. 28), K.O.Mallett (ed.), *Flora of Australia*, Vol 44B. *Poaceae* (2004) (302, Fig 52), 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. loose. Inflorescence much branched either as a single panicle or from branching of the culms.

**Classification.** Subfamily Chloridoideae. Tribe: Zoysieae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Culms erect, 60–120 cm long, 2–3-noded. Culm-nodes glabrous. Lateral branches lacking. Leaf-sheaths puberulous. Ligule a fringe of hairs. Leaf-blades flat or involute, 20–40 cm long, 2–3 mm wide. Leaf-blade margins scaberulous.

**Inflorescence.** Inflorescence a panicle. Panicle open, elliptic, 15–30 cm long, 4–6 cm wide. Primary panicle branches ascending or spreading, naked below. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, 0.5–1 mm long.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile

or the upper sterile. Spikelets lanceolate, subterete, 2 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes deciduous, shorter than spikelet. Lower glume ovate, 0.75 mm long, 0.75 length of upper glume, hyaline, without keels, 0 -veined. Lower glume lateral veins absent. Lower glume apex erose, acute. Upper glume ovate, 1 mm long, 0.5 length of adjacent fertile lemma, hyaline, without keels, 0 -veined. Upper glume primary vein absent. Upper glume lateral veins absent. Upper glume apex acute.

**Florets.** Fertile lemma ovate, 2 mm long, membranous, grey, without keel, 1 -veined, 0–3 -veined, one-veined. Lemma apex acute. Palea 2 -veined. Palea keels approximate.

**Flower and Fruit.** Anthers 3, 0.6 mm long. Caryopsis with free soft pericarp, 1 mm long, truncate.

**Distribution (TDWG). Continent.** Australasia.

**Country /Province /State.** Australia. Queensland, New South Wales.

**TDWG4.** North, Central, South East. Coast.

### **Sporobolus lenticularis** S. T. Blake. *Univ. Queensl. Papers, Dept. Biol.*, i. No. 18, 3 (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).

**TYPE** from Australia. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *S.T. Blake 13384*, 25 Mar 1938, Australia: Queensland, Cook Dist.: near Mareeba (BRI; IT: BRI, DNA, MEL, US-1819364).

**Illustrations (Books):** K.O.Mallett (ed.), *Flora of Australia*, Vol 44B. *Poaceae* (2004) (329, Fig 57), D.Sharp & B.K.Simon, *AusGrass*. Grasses of Australia. CD-Rom Version 1.0. (2002).

**Illustrations (Journals):** *Austr. Syst. Bot.* (12: 428, Fig 17(1999)).

**Derivation** (Clifford & Bostock 2007): *L. lens*, lentil; -ulus, diminutive; -aris, pertaining to. Grains lenticular.

**Classification.** Subfamily Chloridoideae. Tribe: Zoysieae.

**Habit, Vegetative Morphology.** Annual. Culms erect or geniculately ascending, 20–45 cm long, 3–7 -noded. Lateral branches lacking or sparse. Leaves mostly basal. Ligule a fringe of hairs. Leaf-blades linear or lanceolate, flat or involute, 5–13 cm long, 2–3 mm wide. Leaf-blade margins tuberculate-ciliate.

**Inflorescence.** Inflorescence a panicle. Panicle open, oblong, 6–12 cm long, 3–4 cm wide. Primary panicle branches whorled at most nodes, simple or sparsely divided. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets elliptic, subterete, 1.5–1.7 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes deciduous, dissimilar, reaching apex of florets. Lower glume ovate, 0.8–1.1 mm long, 0.5–0.66 length of upper glume, membranous, without keels, 0 -veined. Lower glume lateral veins absent. Lower glume apex acute. Upper glume ovate, 1.5–1.7 mm long, 1 length of adjacent fertile lemma, membranous, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume apex acute.

**Florets.** Fertile lemma oblong, 1.5–1.7 mm long, membranous, without keel, 1 -veined, 0–3 -veined, one-veined. Lemma apex obtuse. Palea 2 -veined. Palea keels approximate.

**Flower and Fruit.** Anthers 3, 0.25–0.3 mm long. Caryopsis with free soft pericarp, ellipsoid or orbicular, flattened (discoid), exposed between gaping lemma and palea at maturity, 1.5 mm long. Embryo 0.5 length of caryopsis.

**Distribution (TDWG). Continent.** Tropical Asia, Australasia.

**Country /Province /State.** Malesia, Papuasias. Sumatra. New Guinea. Australia. Northern Territory, Queensland.

**TDWG4.** Darwin & Gulf. North.

### **Sporobolus linearifolius** E.G.Nicora. *Hickenia*, 2(19): 90 (1993).

**Accepted by:** R.J.Soreng et al., *Catalogue of New World 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:** *Sporobolus exilis* Renvoize, *Kew Bull.* 42(4): 923 (1987). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Brazil: Parana: Mun. Palmeira, *Dombrowski 6520* (HT: PKDC; IT: K).

**Illustrations (Books):** No illustration found (BKS).

**Illustrations (Journals):** *Taxon* (59: 1775, Fig.6 (2010)).

**Derivation** (Clifford & Bostock 2007): *L. linea*, linen thread; *-aris*, pertaining to; *folium*, leaf. Leaf-blades long and thin.

**Classification.** Subfamily Chloridoideae. Tribe: Zoysieae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Culms erect, 26–60 cm long. Ligule a fringe of hairs. Leaf-blades filiform, 8–25 cm long, 1 mm wide. Leaf-blade surface glabrous or pilose.

**Inflorescence.** Inflorescence a panicle. Panicle open, ovate, effuse, 4–10 cm long, 4–5 cm wide. Primary panicle branches spreading, whorled at most nodes. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 3–3.5(–4) mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes deciduous, reaching apex of florets. Lower glume ovate, 0.5 length of upper glume, hyaline, without keels, 0–1 -veined. Lower glume lateral veins absent. Lower glume apex erose, acute or acuminate. Upper glume elliptic, 3–3.5(–4) mm long, 1 length of adjacent fertile lemma, membranous, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume apex acute.

**Florets.** Fertile lemma ovate, 3–3.5(–4) mm long, membranous, without keel, 1 -veined, 0–3 -veined, one-veined. Lemma apex acute. Palea 1 length of lemma, 2 -veined. Palea keels approximate.

**Flower and Fruit.** Anthers 3, 1.5–1.7 mm long. Caryopsis with free soft pericarp, oblong, 1.5 mm long.

**Distribution (TDWG). Continent.** South America.

**Country /Province /State.** Brazil, Southern South America. Brazil South.

### **Sporobolus linearis** Mez. Fedde, *Repert.* 17: 295 (1921).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

**TYPE** from Mauritius. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Mauritius: Herb. Kunth (B holo).

**Illustrations (Books):** No illustration found (BKS).

**Classification.** Subfamily Chloridoideae. Tribe: Zoysieae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Culms erect or geniculately ascending, slender, 16–55 cm long. Leaves mostly basal. Leaf-sheath oral hairs ciliate. Ligule a ciliolate membrane. Leaf-blade base with a brief petiole-like connection to sheath, petiole 0.5 cm long. Leaf-blades flexuous, filiform, 10–23 cm long, 0.5–1 mm wide. Leaf-blade surface scabrous, rough adaxially, glabrous. Leaf-blade apex attenuate.

**Inflorescence.** Inflorescence a panicle. Panicle linear, interrupted, 8–18 cm long, 0.2–0.4 cm wide. Primary panicle branches appressed, distant, simple, 1–1.5 cm long. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, linear, 0.5–2.5 mm long.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 2.5–3 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes deciduous, similar, shorter than spikelet. Lower glume oblong, 0.33 length of spikelet, hyaline or membranous, without keels, 0 -veined. Lower glume lateral veins absent. Lower glume apex truncate or obtuse. Upper glume ovate, 0.5 length of spikelet, membranous, without keels, 0 -veined. Upper glume lateral veins absent. Upper glume apex acute or attenuate.

**Florets.** Fertile lemma ovate, membranous, without keel, 0 -veined, 0–3 -veined, without veins. Lemma apex acute. Palea 2 -veined. Palea keels approximate. Palea apex entire.

**Flower and Fruit.** Lodicules 2. Caryopsis oblong, 1.5 mm long.

**Distribution (TDWG). Continent.** Africa.

**Country /Province /State.** Western Indian ocean. Mauritius.

### **Sporobolus ludwigii** Hochst. *Flora*, 29: 118 (1846).

**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: Krause.

**Illustrations (Books):** L.K.A. Chippindall, *Grasses and Pastures of South Africa* (1955) (217, Fig 192).

**Images:** F.van Oudtshoorn, *Guide to Grasses of Southern Africa* (1999).



**Derivation** (Clifford & Bostock 2007): in honor of Carl Ferdinand Heinrich Ludwig (1784–1847). German-born South African pharmacist and merchant.

**Classification.** Subfamily Chloridoideae. Tribe: Zoysieae.

**Habit, Vegetative Morphology.** Perennial, mat forming. Rhizomes elongated. Culms 10–45 cm long. Ligule a fringe of hairs. Leaf-blades 1–3 cm long, 2–3 mm wide, stiff. Leaf-blade margins glabrous.

**Inflorescence.** Inflorescence a panicle. Panicle open, pyramidal, 3–9 cm long. Primary panicle branches whorled at most nodes. Panicle branches glabrous in axils. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 1.5–2 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes deciduous, similar, reaching apex of florets, similar to fertile lemma in texture. Lower glume lanceolate, 0.33 length of upper glume, membranous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume apex acute. Upper glume lanceolate, 1 length of adjacent fertile lemma, hyaline, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume apex acute.

**Florets.** Fertile lemma ovate, 1.5–2 mm long, membranous, without keel, 1 -veined, 0–3 -veined, one-veined. Lemma apex acute. Palea 2 -veined. Palea keels approximate.

**Flower and Fruit.** Anthers 3. Caryopsis with free soft pericarp.

**Distribution (TDWG). Continent.** Africa.

**Country /Province /State. Southern Africa.** Botswana, North-West, Free State, Northern Cape, Western Cape, Eastern Cape.

### **Sporobolus macer** (Trin.) Hitchcock. *Amer. Journ. Bot.* ii. 303 (1915).

**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:** *Vilfa macra* Trin., *Mem. Acad. Imp. Sci. Saint-Petersbourg, Ser. 6, Sci. Math., Seconde Pt. Sci. Nat.* 6,4(1–2): 79 (1840). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: T: USA: Louisiana (IT: US-556863 (fragm.)).

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): L. thin. Leaf-blades narrow.

**Classification.** Subfamily Chloridoideae. Tribe: Zoysieae.

**Habit, Vegetative Morphology.** Perennial, culms solitary. Rhizomes short, scaly. Culms erect, 50–70 cm long. Leaf-sheaths glabrous on surface. Leaf-sheath oral hairs ciliate. Ligule a fringe of hairs. Leaf-blades flat or involute, 10–20 cm long, 1–3 mm wide. Leaf-blade surface glabrous, hairless except near base.

**Inflorescence.** Inflorescence a panicle, embraced at base by subtending leaf. Panicle open, linear, 5–15 cm long. Primary panicle branches appressed. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 4–5 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes deciduous, shorter than spikelet. Lower glume lanceolate, 2.6–3.3 mm long, 0.8 length of upper glume, membranous, 1-keeled. Lower glume apex acute. Upper glume elliptic, 2.8–3.5 mm long, 0.66–0.75 length of adjacent fertile lemma, membranous, 1-keeled, 1 -veined. Upper glume lateral veins absent. Upper glume apex acute.

**Florets.** Fertile lemma ovate, 4–5 mm long, membranous, without keel, 1 -veined, 0–3 -veined, one-veined. Lemma apex acute, cucullate. Palea 1 length of lemma, 2 -veined. Palea keels approximate.

**Flower and Fruit.** Caryopsis with free soft pericarp.

**Distribution (TDWG). Continent.** North America.

**Country /Province /State. North-central USA, South-central USA, Southeastern USA.** Oklahoma. Texas. Louisiana, Mississippi.

### **Sporobolus macranthelus** Chiov. *Fl. Somalia*, II. 452 (1932).

**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, Kolbio: Senni 276 (FT holotype).

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): Gk. makros, large; anthele, plume. Inflorescence large.

**Classification.** Subfamily Chloridoideae. Tribe: Zoysieae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Culms erect, 110–200 cm long, 3–6 mm diam. Ligule a fringe of hairs. Leaf-blades flat or conduplicate, 25–45 cm long, 4–7 mm wide, stiff, glaucous. Leaf-blade midrib widened. Leaf-blade surface scaberulous, rough on both sides, glabrous or pilose, hairy on both sides. Leaf-blade margins scabrous.

**Inflorescence.** Inflorescence a panicle. Panicle open, linear or lanceolate or ovate, 35–75 cm long, contracted about primary branches or contracted about secondary branches. Primary panicle branches profusely divided, naked below. Panicle branches glabrous in axils. Spikelets spreading or 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, subterete, 1.6–2.4 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes deciduous, similar, shorter than spikelet. Lower glume ovate, 0.8–1.2 mm long, 0.6–0.7 length of upper glume, membranous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume apex acute. Upper glume ovate, 1.2–1.7 mm long, 0.75–0.8 length of adjacent fertile lemma, membranous, dark green, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume apex acute.

**Florets.** Fertile lemma ovate, 1.6–2.4 mm long, membranous, dark green, without keel, 1 -veined, 0–3 -veined, one-veined. Lemma apex acute. Palea 2 -veined. Palea keels approximate.

**Flower and Fruit.** Anthers 3, 1 mm long. Caryopsis with free soft pericarp, ellipsoid, quadrangular, 0.6 mm long.

**Distribution (TDWG). Continent.** Africa.

**Country /Province /State.** Northeast tropical Africa, East tropical Africa, South tropical Africa, Southern Africa. Ethiopia (inc. Eritrea), Somalia, Sudan. Kenya, Tanzania, Uganda. Zambia. Namibia, Botswana.

**Sporobolus macrospermus** Scribn. ex Beal. *Grasses N. Amer.* ii. 302 (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 2447, 29 Oct 1889, Mexico: Jalisco: north of Atemajac (MSC; IT: CM, L, LL, MO, NY-19975, NY-19977, NY-19976, US-81955, US-746695, US-746696, US-825364).

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): Gk. makros, large; sperma, seed. Grains large.

**Classification.** Subfamily Chloridoideae. Tribe: Zoysieae.

**Habit, Vegetative Morphology.** Annual, caespitose. Culms erect, 15–35 cm long. Culm-internodes solid, distally glabrous. Lateral branches sparse, arising from lower culm. Leaves mostly basal. Leaf-sheaths without keel, glabrous on surface, outer margin glabrous or hairy. Ligule a fringe of hairs, 0.1–0.2 mm long. Leaf-blades 5–10 cm long, 2–4 mm wide. Leaf-blade margins tuberculate-ciliate.

**Inflorescence.** Inflorescence a panicle. Panicle open, oblong, 9–11 cm long, 2–5 cm wide. Primary panicle branches spreading, whorled at most nodes. Panicle branches eglandular or glandular (glands less than 0.5 mm diam), smooth or scaberulous. 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, subterete, (1.5–)1.7–2(–2.4) mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes deciduous, shorter than spikelet or reaching apex of florets or exceeding apex of florets. Lower glume linear, 0.7 mm long, 0.33–0.5 length of upper glume, membranous, without keels, 0 -veined. Lower glume lateral veins absent. Lower glume apex acute. Upper glume lanceolate, 1.5–2.4 mm long, 0.9–1.2 length of adjacent fertile lemma, membranous, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume apex acute.

**Florets.** Fertile lemma lanceolate, 1.7–2 mm long, membranous, without keel, 1 -veined, 0–3 -veined, one-veined. Lemma apex acute. Palea 1 length of lemma, 2 -veined. Palea keels approximate.

**Flower and Fruit.** Anthers 3, 0.3–0.6 mm long. Caryopsis with free soft pericarp, 1.6–1.8 mm long, obtuse.

**Distribution (TDWG). Continent.** North America, South America.

**Country /Province /State.** Mexico. Northeast Mexico, Northwest Mexico, Southwest Mexico, Southeast Mexico. Mesoamerica. Guatemala, Honduras.

**TDWG4.** Zacatecas. Sinaloa. Guerrero, Jalisco, Michoacan, Nayarit, Oaxaca. Chiapas.

**Sporobolus maderaspatanus** Bor. *Kew Bull.* 1957, 234 (1957).

**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, Guntur district: Barber 4720 (K holotype).

**Illustrations (Books):** K.M.Mathew, *Illustrations on the Flora of Tamilnadu Carnatic* (1982) (Pl. 941 & 942).

**Derivation** (Clifford & Bostock 2007): L. -ana, indicating location. From Maderaspata, that is Madras, India.

**Classification.** Subfamily Chloridoideae. Tribe: Zoysieae.

**Habit, Vegetative Morphology.** Perennial. Stolons present. Culms decumbent, 20–45 cm long. Lateral branches lacking. Ligule an eciliate membrane. Leaf-blades lanceolate, flat or involute, 15–35 cm long, 3–5 mm wide. Leaf-blade surface glabrous, hairless except near base. Leaf-blade margins scabrous. Leaf-blade apex attenuate.

**Inflorescence.** Inflorescence a panicle. Panicle contracted, lanceolate, 5–10 cm long. Primary panicle branches ascending, whorled at lower nodes, 1–2 cm long. Panicle branches smooth. 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, 2.25–2.5 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes deciduous, dissimilar, shorter than spikelet or reaching apex of florets. Lower glume elliptic, 0.5–0.75 mm long, 0.33 length of upper glume, hyaline, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume apex obtuse. Upper glume elliptic, 1.5–2 mm long, 0.9–1 length of adjacent fertile lemma, hyaline, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume apex acute.

**Florets.** Fertile lemma elliptic, 2–2.25 mm long, membranous, without keel, 1 -veined, 0–3 -veined, one-veined. Lemma apex acute. Palea 2 -veined. Palea keels approximate.

**Flower and Fruit.** Anthers 3, 1–1.25 mm long. Caryopsis with free soft pericarp, obovoid, biconvex, 0.9 mm long.

*N* = 6 (1 ref TROPICOS).

**Distribution (TDWG). Continent.** Tropical Asia.

**Country /Province /State. Indian Subcontinent.** India, Sri Lanka.

**TDWG4.** Diu. Tamilnadu.

**Sporobolus mauritianus** (Steud.) Th. Dur. & Schinz. *Consp. Fl. Afr.* v. 822 (1895).

Regarded by K as a synonym (*S. rigidifolius*).

**Accepted by:** U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

**TYPE** from Mauritius. **Basionym or Replaced Name:** *Vilfa mauritiana* Steud., *Syn. Pl. Glumac.* 1: 157 (1854). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *D'Urville s.n.*, Mauritius (P).

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): L. -ana, indicating location. From Mauritius.

**Classification.** Subfamily Chloridoideae. Tribe: Zoysieae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Butt sheaths papery. Culms erect, 20–80 cm long. Ligule a fringe of hairs. Leaf-blades filiform, involute, 5–25 cm long, 1–2.5 mm wide.

**Inflorescence.** Inflorescence a panicle. Panicle open, pyramidal or ovate, 4–16 cm long. Primary panicle branches whorled at most nodes (4–8 whorls), naked below. Panicle branches glabrous in axils. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 2.5–3.8 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes deciduous, similar, exceeding apex of florets. Lower glume lanceolate or ovate, 1.1–2.8 mm long, 0.5–0.75 length of upper glume, membranous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume apex obtuse or acute. Upper glume lanceolate, 2.5–3.8 mm long, 1.1 length of adjacent fertile lemma, membranous, purple, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume apex acute.

**Florets.** Fertile lemma lanceolate, 2–3.5 mm long, membranous, purple, without keel, 1 -veined, 0–3 -veined, one-veined. Lemma apex acute. Palea 2 -veined. Palea keels approximate.

**Flower and Fruit.** Anthers 3, 1.8–2.5 mm long. Caryopsis with free soft pericarp, ellipsoid, 1.8–2 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, Southern Africa, Western Indian ocean. Ghana, Guinea, Sierra Leone. Cameroon. Ethiopia (inc. Eritrea). Kenya, Tanzania. Angola, Malawi, Mozambique, Zambia, Zimbabwe. Mpumalanga, Kwazulu-Natal, Lesotho. Mauritius, Madagascar.

**Sporobolus maximus** Hauman. *Physis*, v. 52 (1921).

**Accepted by:** R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

**TYPE** from Argentina. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: IT: *Hauman 191*, Nov 1919, Argentina: Salta: Cafayate: abundant en terrains un peu sales, sur les rives inondables du Rio San Carlos, pres de El Corralito (BAA-2906 (fragm.)).

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): L. greatest. Culms very tall.

**Classification.** Subfamily Chloridoideae. Tribe: Zoysieae.

**Habit, Vegetative Morphology.** Perennial, caespitose, clumped densely. Culms 300 cm long, 6–7 mm diam. Culm-nodes flush with internodes, glabrous. Leaf-sheaths tight, 35 cm long, wider than blade at the collar, striately veined, glabrous on surface. Ligule a fringe of hairs. Leaf-blades 100–150 cm long, 5 mm wide, stiff. Leaf-blade surface glabrous or hirsute, hairy adaxially.

**Inflorescence.** Inflorescence a panicle. Panicle open, lanceolate, dense, 40–70 cm long, 4–5 cm wide. Primary panicle branches appressed, 4–6 cm long. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets elliptic, subterete, 2–2.5 mm long, 0.75 mm wide, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes deciduous, shorter than spikelet. Lower glume elliptic, 0.5 length of upper glume, membranous, without keels, 1 -veined. Lower glume primary vein scaberulous. Lower glume lateral veins absent. Lower glume apex acute. Upper glume elliptic, 0.66 length of adjacent fertile lemma, membranous, without keels, 1 -veined. Upper glume primary vein scaberulous. Upper glume lateral veins absent. Upper glume apex acute.

**Florets.** Fertile lemma elliptic, 2–2.5 mm long, membranous, without keel, 1 -veined, 0–3 -veined, one-veined. Lemma apex acute. Palea 2 -veined. Palea keels approximate.

**Flower and Fruit.** Anthers 3, 1 mm long. Caryopsis with free soft pericarp, orbicular, 1.3 mm long. Embryo 0.5 length of caryopsis.

**Distribution (TDWG). Continent.** South America.

**Country /Province /State.** Southern South America. Argentina Northwest.

**TDWG4.** Catamarca, La Rioja, Salta, Tucuman.

**Sporobolus mendocinus** E.Mendez. *Bol. Soc. Argent. Bot.*, 30:13 (1994).

**Accepted by:** R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

**TYPE** from Argentina. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: IT: (BAA-2908 (fragm.)).

**Illustrations (Books):** No illustration found (BKS).

**Classification.** Subfamily Chloridoideae. Tribe: Zoysieae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Rhizomes short. Culms erect, robust, 50–180 cm long, 2.4–3 mm diam., 3–5 -noded. Culm-internodes distally glabrous. Leaf-sheaths 11–15 cm long, longer than adjacent culm internode, striately veined, glabrous on surface, outer margin hairy. Ligule a fringe of hairs, 1–2.5 mm long. Leaf-blades flexuous, conduplicate, 60–85 cm long, 2–2.3 mm wide. Leaf-blade margins scabrous. Leaf-blade apex acute.

**Inflorescence.** Inflorescence a panicle. Panicle spiciform, linear, 18–25 cm long, 0.5–1 cm wide. Primary panicle branches 1–2.5 cm long. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, 1–1.3 mm long, scabrous.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile

or the upper sterile. Spikelets elliptic, subterete, 2.5–3.5 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes deciduous, reaching apex of florets. Lower glume lanceolate, 1.5–2 mm long, 0.66 length of upper glume, hyaline, without keels, 0–1 -veined. Lower glume lateral veins absent. Lower glume surface asperulous. Lower glume apex acute. Upper glume lanceolate, 2.5–3 mm long, 1 length of adjacent fertile lemma, membranous, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume surface asperulous. Upper glume apex acute.

**Florets.** Fertile lemma lanceolate, 2.5–3 mm long, membranous, without keel, 3 -veined, 0–3 -veined, several-veined. Lemma surface asperulous. Lemma apex acute. Palea readily splitting down midline, 2.4–2.6 mm long, 2 -veined. Palea keels approximate. Palea surface asperulous.

**Flower and Fruit.** Lodicules 2, 0.3–0.4 mm long. Anthers 3, 1–2 mm long, yellow. Caryopsis with free soft pericarp, ellipsoid, laterally compressed, 1.5–1.8 mm long, light brown or dark brown. Embryo 0.33–0.5 length of caryopsis.

**Distribution (TDWG). Continent.** South America.

**Country /Province /State. Southern South America.** Argentina Northwest.

**TDWG4.** Mendoza. Neuquén.

**Sporobolus metallicola** H.M. Longhi-Wagner & S.C. Boechat. *Acta Bot. Brasil.*, 7(2): 150 (1993).

**Accepted by:** R.J.Soreng et al., *Catalogue of New World 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: IT: *Irwin, H.S., R.M. Harley & E. Onishi 28813*, 22 Jan 1971, Brazil: Minas Gerais (US-2869348).

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): *L. metallicus*, belonging to metal; -colus, dweller. Growing in places where iron is mined.

**Classification.** Subfamily Chloridoideae. Tribe: Zoysieae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Basal innovations intravaginal. Culms erect, 15–40 cm long, 2–3(–4) -noded. Leaf-sheaths mostly shorter than adjacent culm internode, glabrous on surface. Ligule a fringe of hairs, 0.3–0.5 mm long. Leaf-blades convolute, 2.5–11 cm long, 1.5–3.2 mm wide. Leaf-blade surface scabrous, glabrous or pilose, sparsely hairy, hairy adaxially. Leaf-blade margins glabrous or ciliate.

**Inflorescence.** Inflorescence a panicle, terminal. Panicle spiciform, linear, 5.5–8 cm long. Primary panicle branches appressed, 0.8–1.5 cm long. Panicle axis glandular. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, glandular.

**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, 2–2.6 mm long, 0.8–1.3 mm wide, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes deciduous, similar, exceeding apex of florets. Lower glume lanceolate, 0.8–1.5 mm long, 0.33–0.5 length of upper glume, membranous, without keels, 0 -veined. Lower glume lateral veins absent. Lower glume apex obtuse. Upper glume ovate, 2–2.6 mm long, 1.1 length of adjacent fertile lemma, membranous, without keels, 1–3 -veined. Upper glume lateral veins absent or obscure. Upper glume apex acute.

**Florets.** Fertile lemma ovate, 1.8–2.3 mm long, 0.3–0.4 mm wide, membranous, without keel, 1 -veined, 0–3 -veined, one-veined. Lemma apex acute. Palea 1.5–2.2 mm long, 2 -veined. Palea keels approximate. Palea apex cuspidate.

**Flower and Fruit.** Anthers 3, 0.8–1 mm long. Caryopsis with free soft pericarp, oblong, without sulcus, 1–1.3 mm long.

**Distribution (TDWG). Continent.** South America.

**Country /Province /State. Brazil.** Brazil Southeast, Brazil South.

**Sporobolus micranthus** (Steud.) Th. Dur. & Schinz. *Consp. Fl. Afr.* v. 822 (1895).

**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:** *Triachyrum micranthum* Steud., *Syn. Pl. Glumac.* 1: 176 (1855 [1854]). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Ethiopia: Gapdia, *Schimper* (HT:P).

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): Gk. mikros, small; anthos, flower. Spikelets small.

**Classification.** Subfamily Chloridoideae. Tribe: Zoysieae.

**Habit, Vegetative Morphology.** Annual, caespitose, clumped loosely. Glands wart-like (leaf), or elongated (panicle). Culms erect, 30–60 cm long. Lateral branches lacking. Leaf-sheaths pilose, outer margin hairy. Ligule a fringe of hairs. Leaf-blades 1.5–9 cm long, 2–5 mm wide. Leaf-blade surface glabrous. Leaf-blade margins glandular, tuberculate-ciliate. Leaf-blade apex acute.

**Inflorescence.** Inflorescence a panicle. Panicle open, lanceolate or oblong, 5–20 cm long, with spikelets clustered towards branch tips. Primary panicle branches whorled at most nodes. Panicle branches glandular, smooth. 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, 1–2.1 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes deciduous, similar, reaching apex of florets. Lower glume lanceolate, 0.4–0.66 length of upper glume, membranous, without keels, 0 -veined. Lower glume lateral veins absent. Lower glume apex acute or acuminate. Upper glume elliptic, 1.1 length of adjacent fertile lemma, membranous, red, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume apex acute.

**Florets.** Fertile lemma elliptic, 1–2.1 mm long, membranous, without keel, 0–3 -veined. Lemma apex acute. Palea 2 -veined. Palea keels approximate.

**Flower and Fruit.** Anthers 3, 0.25–0.6 mm long. Caryopsis with free soft pericarp, ellipsoid, laterally compressed, 0.7–1.2 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, Western Indian ocean. Burkina, Nigeria. Congo. Eritrea, Ethiopia (inc. Eritrea). Tanzania. Malawi, Mozambique, Zambia, Zimbabwe. Madagascar.

**Sporobolus microprotus** Stapf. *Bull. Soc. Bot. France*, lviii. *Mem.* VIII. 218. (1912).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

**TYPE** from Chad. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: ST: *Chevalier 9605*, Chad (P). ST: *Chevalier 9640*, Chad (K, P).

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): Gk. mikros, small; protos, first. Lower glume minute.

**Classification.** Subfamily Chloridoideae. Tribe: Zoysieae.

**Habit, Vegetative Morphology.** Annual, caespitose. Culms erect or geniculately ascending, 10–50 cm long. Ligule a fringe of hairs. Leaf-blades 2–14 cm long, 3–7 mm wide. Leaf-blade margins ciliate, hairy at base.

**Inflorescence.** Inflorescence a panicle. Panicle open, ovate, 3–12 cm long. Primary panicle branches spreading, whorled at most nodes. 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, 1–1.2 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes one the lower absent or obscure or two, deciduous, dissimilar, reaching apex of florets. Lower glume ovate, 0–0.2 mm long, 0–0.4 length of upper glume, hyaline, without keels, 0 -veined. Lower glume lateral veins absent. Lower glume apex obtuse. Upper glume oblong, 1–1.2 mm long, 1 length of adjacent fertile lemma, membranous, grey, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume surface smooth or asperulous. Upper glume apex acute.

**Florets.** Fertile lemma oblong, 1–1.2 mm long, membranous, grey, without keel, 1 -veined, 0–3 -veined, one-veined. Lemma surface smooth or scaberulous. Lemma apex acute. Palea 2 -veined. Palea keels approximate.

**Flower and Fruit.** Anthers 2, 0.3–0.6 mm long. Caryopsis with free soft pericarp, obovoid, 0.7–0.8 mm long.

**Distribution (TDWG). Continent.** Africa.

**Country /Province /State.** West tropical Africa, West-central tropical Africa, Northeast tropical Africa, East tropical Africa. Burkina, Ghana, Ivory Coast, Mali, Nigeria, Senegal, Niger. Central African Republic, DRC. Chad, Ethiopia (inc. Eritrea), Sudan. Kenya, Uganda.

**Sporobolus mildbraedii** Pilger. *Engl. Jahrb.* xliii. 92 (1909).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

**TYPE** from Ruanda. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: Deutsch-Ostafrika: Ruanda, Rukarara-Gebiet, Kivumbwe-Berg, in der Bergsteppe bei 1800 m, Aug 19087, *J. Mildbraed* 712.

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): in honor of Gottfried Wilhelm Johannes Mildbraed (1879–1954) German botanist.

**Classification.** Subfamily Chloridoideae. Tribe: Zoysieae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Butt sheaths herbaceous. Culms erect, 30–60 cm long. Ligule a fringe of hairs. Leaf-blades involute, 5–10 cm long, 1–2 mm wide.

**Inflorescence.** Inflorescence a panicle. Panicle open, linear or lanceolate, 6–17 cm long. Primary panicle branches moderately spaced (overlapping), whorled at most nodes (6–15 whorls), 1–2 cm long, naked below. Panicle branches glabrous in axils. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 2.5–3 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes deciduous, similar, reaching apex of florets. Lower glume oblong, 1–1.7 mm long, 0.4–0.5 length of upper glume, membranous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume apex acute. Upper glume oblong, 1.5–3 mm long, 1 length of adjacent fertile lemma, membranous, dark green, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume apex acute.

**Florets.** Fertile lemma lanceolate, 2.5–3 mm long, membranous, dark green, without keel, 1 -veined, 0–3 -veined, one-veined. Lemma apex acute. Palea 2 -veined. Palea keels approximate.

**Flower and Fruit.** Anthers 3, 1.5–1.7 mm long. Caryopsis with free soft pericarp.

**Distribution (TDWG). Continent.** Africa.

**Country /Province /State.** West-central tropical Africa, East tropical Africa. Rwanda. Kenya, Tanzania, Uganda.

**Sporobolus minarum** S.C. Boechat & H.M. Longhi-Wagner. *Iheringia, Bot.*, 44: 34 (1994).

**Accepted by:** R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

**TYPE** from Brazil. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: Brasil: Minas Gerais: Lavras, 11 Mar 1981, *H.F. Leitão Filho et al.* 1191 (HT: ESAL).

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): from Minas Gerais Province, Brazil.

**Classification.** Subfamily Chloridoideae. Tribe: Zoysieae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Basal innovations intravaginal. Culms erect, 36 cm long, 2 -noded. Leaf-sheaths subequal to internodes, glabrous on surface. Ligule a fringe of hairs, 0.2–0.4 mm long. Leaf-blades involute or convolute, 7–17 cm long, 2.5–4 mm wide. Leaf-blade margins ciliate.

**Inflorescence.** Inflorescence a panicle. Peduncle 13–16 cm long. Panicle open, lanceolate, 12–17 cm long, 3.5–6 cm wide. Primary panicle branches ascending, whorled at most nodes, 1–4.5 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 elliptic, subterete, 4.6–5.4 mm long, 1.1–1.5 mm wide, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes deciduous, reaching apex of florets. Lower glume lanceolate, 1.8–3.1 mm long, 0.5 length of upper glume, hyaline, without keels, 0–1 -veined. Lower glume lateral veins absent. Lower glume apex acute. Upper glume lanceolate, 4.6–5.4 mm long, 1 length of adjacent fertile lemma, membranous, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume apex acute.

**Florets.** Fertile lemma lanceolate, 3.9–5 mm long, 0.6–0.7 mm wide, membranous, without keel, 1 -veined, 0–3 -veined, one-veined. Lemma apex acute. Palea readily splitting down midline, 3.8–5 mm long, 2 -veined. Palea keels approximate.

**Flower and Fruit.** Anthers 3, 2–2.8 mm long, purple. Caryopsis with free soft pericarp, 2.6–2.8 mm long, dark brown, striate. Embryo 0.33 length of caryopsis.

**Distribution (TDWG). Continent.** South America.

**Country /Province /State.** Brazil. Brazil Southeast.

**Sporobolus minimus** T.A. Cope. *Kew Bull.*, 47(4): 657 (1992).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

**TYPE** from Oman. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: Oman, Argat: McLeish 145 (E holotype).

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): L. least. Smallest of the known species.

**Classification.** Subfamily Chloridoideae. Tribe: Zoysieae.

**Habit, Vegetative Morphology.** Annual. Culms 3–6.5 cm long. Ligule a fringe of hairs. Leaf-blades flat, 1.5–2 mm wide, stiff.

**Inflorescence.** Inflorescence a panicle. Panicle open, oblong, 1.5–2 cm long. Primary panicle branches whorled at most nodes. 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, 0.7 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes persistent, similar, reaching apex of florets. Lower glume elliptic, 0.7 mm long, 1.1 length of upper glume, membranous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume apex acute. Upper glume elliptic, 0.65 mm long, 0.9 length of adjacent fertile lemma, membranous, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume apex acute.

**Florets.** Fertile lemma elliptic, 0.7 mm long, membranous, without keel, 1 -veined, 0–3 -veined, one-veined. Lemma apex acute. Palea 2 -veined. Palea keels approximate.

**Flower and Fruit.** Anthers 3, 0.1 mm long. Caryopsis with free soft pericarp, orbicular, isodiametric (globose), 0.3 mm long.

**Distribution (TDWG). Continent.** Africa, Temperate Asia.

**Country /Province /State.** Northeast tropical Africa. Somalia. Arabian Peninsula. Oman.

**Sporobolus minor** Kunth, nom nov. *Enum. Pl.* i. 212 (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. **Basionym or Replaced Name:** *Vilfa rupestris* Trin., *Gram. Panic.* 22 (1826). T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: HT: *Langsdorff*, mensu Febr., In rupium fissus pr. Itamaratim Brasiliae (LE-TRIN-1746.01 (fig.)).

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): L. smaller, lesser. Plants small in comparison with related species.

**Classification.** Subfamily Chloridoideae. Tribe: Zoysieae.

**Habit, Vegetative Morphology.** Perennial. Culms erect, 25–60(–80) cm long. Lateral branches lacking. Leaves mostly basal. Ligule a fringe of hairs. Leaf-blades flexuous, filiform, conduplicate or involute, 6–20 cm long, 1–2 mm wide. Leaf-blade apex acuminate.

**Inflorescence.** Inflorescence a panicle. Panicle spiciform, linear, 5–25 cm long, 0.2–0.6 cm wide. Primary panicle branches appressed. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 1.5–1.9 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes deciduous, shorter than spikelet. Lower glume ovate, 0.6–1 mm long, 0.75 length of upper glume, membranous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume apex acute. Upper glume ovate, 0.9–1.3 mm long, 0.5–0.66 length of adjacent fertile lemma, membranous, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume apex acute.

**Florets.** Fertile lemma ovate, 1.5–1.9 mm long, membranous, without keel, 1 -veined, 0–3 -veined, one-veined. Lemma apex acute. Palea 2 -veined. Palea keels approximate.

**Flower and Fruit.** Anthers 3, 0.5 mm long. Caryopsis with free soft pericarp, ellipsoid or obovoid, 1 mm long, truncate.

**Distribution (TDWG). Continent.** South America.

**Country /Province /State.** Western South America, Brazil, Southern South America. Bolivia. Brazil South. Paraguay.

**TDWG4.** Minas Gerais, Rio de Janeiro, Espirito Santo, Sao Paulo Parana, Catarina, Rio Grande do Sul. Rest of Chile- Biobio, La Auracania, Maule, O'Higgins, Santado, Valpariso.



**Sporobolus minutus** Link. *Hort. Berol.* i. 88 (1827).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

**TYPE** from Eritrean seed. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: T: *Ehrenberg s.n.*, Cultivated in Berlin from seed collected in Dhalak (B?; IT:L).

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): L. very small. Smaller than usual in some respect.

**Classification.** Subfamily Chloridoideae. Tribe: Zoysieae.

**Habit, Vegetative Morphology.** Annual. Culms 4–16 cm long. Ligule a fringe of hairs. Leaf-blades 1–4 cm long, 0.5–0.8(–1.3) mm wide.

**Inflorescence.** Inflorescence a panicle. Panicle open, elliptic, 2–4 cm long. Primary panicle branches whorled at most nodes. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets elliptic, subterete, 0.95–1.4 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes persistent, dissimilar, exceeding apex of florets. Lower glume elliptic or ovate, 0.3–0.5 mm long, 0.3 length of upper glume, membranous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume apex acute. Upper glume ovate, 0.95–1.4 mm long, 1.2 length of adjacent fertile lemma, membranous, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume apex acute.

**Florets.** Fertile lemma ovate, 0.8–1.2 mm long, membranous, without keel, 1 -veined, 0–3 -veined, one-veined. Lemma apex acute. Palea 2 -veined. Palea keels approximate.

**Flower and Fruit.** Anthers 2, 0.2 mm long. Caryopsis with free soft pericarp, obovoid, 0.5–0.6 mm long.

**Distribution (TDWG). Continent.** Africa, Temperate Asia.

**Country /Province /State.** Northeast tropical Africa. Eritrea, Ethiopia (inc. Eritrea), Socotra, Somalia. Arabian Peninsula. Saudi Arabia.

**Sporobolus mirabilis** Pilger. *Engl. Jahrb.* lvi. *Beibl.* 123, 27 (1920).

**Accepted by:** R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

**TYPE** from Peru. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: A. *Weberbauer 6186*, 25 Apr 1912, Peru: Cajamarca: zwischen Shumba und Jaën (B; IT: BAA-2910 (fragm. ex B), US-81956).

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): L. unusual. Leaf-blades wide for the genus.

**Classification.** Subfamily Chloridoideae. Tribe: Zoysieae.

**Habit, Vegetative Morphology.** Perennial. Rootstock evident. Butt sheaths persistent and investing base of culm, with fibrous dead sheaths. Culms robust, 100 cm long. Ligule a fringe of hairs. Leaf-blades 25–50 cm long, 7–14 mm wide. Leaf-blade surface glabrous. Leaf-blade apex attenuate, filiform.

**Inflorescence.** Inflorescence a panicle. Panicle open, lanceolate, 30–35 cm long. Primary panicle branches appressed or ascending, bearing spikelets almost to the base. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets elliptic, subterete, 2–2.5 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes deciduous, shorter than spikelet. Lower glume elliptic, 0.5 length of upper glume, membranous, without keels. Lower glume lateral veins absent. Lower glume apex acuminate. Upper glume elliptic, 0.75 length of adjacent fertile lemma, membranous, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume apex acuminate.

**Florets.** Fertile lemma elliptic, 2.2 mm long, membranous, without keel, 1 -veined, 0–3 -veined, one-veined. Lemma surface scabrous. Lemma apex acute. Palea 2 -veined. Palea keels approximate.

**Flower and Fruit.** Caryopsis with free soft pericarp.

**Distribution (TDWG). Continent.** South America.

**Country /Province /State.** Western South America. Peru.

**Sporobolus mitchellii** (Trin.) C.E.Hubb. *Kew Bull.* 1941, 26 (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).

**TYPE** from Australia. **Basionym or Replaced Name:** *Vilfa mitchellii* Trin., *Mem. Acad. Imp. Sci. Saint-Petersbourg, Ser. 6, Sci. Math., Seconde Pt. Sci. Nat.* 6,4(1-2): 53 (1840). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *Mitchell s.n.*, Australia: interior of New Holland (LE-TRIN-1719.01 (photo, BRI, L)).

**Illustrations (Books):** J.P.Jessop, G.R.M. Dashorst & F.M.James, *Grasses of South Australia* (2006) (400, Fig. 333), C.A.Gardner, *Flora of Western Australia*, Vol 1, Part 1, *Gramineae* (1952) (161, Pl. 48 as *S. benthamii*), J.R.Wheeler et al, *Flora of the Kimberley Region* (1992) (1224, Fig. 346), N.Walsh & T.Entwistle, *Flora of Victoria* Vol 2 (1994) (573, Fig. 115), S.W.L.Jacobs, R.D.B.Whalley & D.J.B.Wheeler., *Grasses of New South Wales*, 4th edn (2008) (379), D.Sharp & B.K.Simon, *AusGrass*. Grasses of Australia. CD-Rom Version 1.0. (2002).

**Derivation** (Clifford & Bostock 2007): in honor of Thomas Livingstone Mitchell (1792–1855) Scots- born Australian surveyor and explorer.

**Classification.** Subfamily Chloridoideae. Tribe: Zoysieae.

**Habit, Vegetative Morphology.** Perennial. Cataphylls evident. Rhizomes elongated. Culms decumbent, 22–45 cm long, wiry, 4–10 -noded. Lateral branches lacking. Leaf-sheaths glabrous on surface, outer margin glabrous or hairy. Leaf-sheath oral hairs ciliate. Ligule a fringe of hairs. Leaf-blade base broadly rounded. Leaf-blades 2.5–10 cm long, 2–3 mm wide. Leaf-blade surface scaberulous, rough adaxially. Leaf-blade margins cartilaginous.

**Inflorescence.** Inflorescence a panicle. Panicle spiciform, linear, continuous or interrupted, 6–12.5 cm long, 0.4–0.7 cm wide. Primary panicle branches appressed, 1–3 -nate, 0.5 cm long. Panicle branches scabrous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, 0.5 mm long.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 1.75–2 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes deciduous, shorter than spikelet. Lower glume ovate, 1.25 mm long, 1 length of upper glume, membranous, without keels, 1 -veined. Lower glume primary vein scaberulous. Lower glume lateral veins absent. Lower glume apex acuminate. Upper glume ovate, 1.25 mm long, 0.66–0.75 length of adjacent fertile lemma, membranous, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume apex acute.

**Florets.** Fertile lemma lanceolate, 1.75–2 mm long, membranous, without keel, 1 -veined, 0–3 -veined, one-veined. Lemma apex acute. Palea readily splitting down midline, 1 length of lemma, 2 -veined. Palea keels approximate.

**Flower and Fruit.** Caryopsis with free soft pericarp, ellipsoid or oblong, laterally compressed, 1 mm long.

**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, Victoria.

**TDWG4.** Kimberley, Eremaean, South-West. Darwin & Gulf, Victoria R & Barkly Tableland, Central Australia. NW & Lake Eyre, Southern. North, Central, South East, Inland. Coast, Western Slopes, Western Plains.

**Sporobolus molleri** Hack. *Bolet. Soc. Brot.* v. 213, t. g, fig. b. (1887).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

**TYPE** from Sao Tome. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *Moller 153*, Sao Tome (?; IT: K).

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): in honor of Peter Mvller (fl. 1887) who collected in Chile.

**Classification.** Subfamily Chloridoideae. Tribe: Zoysieae.

**Habit, Vegetative Morphology.** Annual, caespitose. Culms erect, 6–60 cm long. Ligule a fringe of hairs. Leaf-blades flat or convolute, 2–25 cm long, 1–5 mm wide.

**Inflorescence.** Inflorescence a panicle. Panicle open, linear, 4–30 cm long, contracted about primary branches. Primary panicle branches ascending, 5–25 cm long. Panicle branches glabrous in axils. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, acuminate, 1.7–2 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes deciduous, dissimilar, shorter than spikelet. Lower glume oblong, 0.2–0.3 mm long, 0.5 length of upper glume, hyaline, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume apex obtuse. Upper glume oblong, 0.5–0.7 mm long, 0.5 length of adjacent fertile lemma, membranous, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume apex acuminate, mucronate or awned, 1 -awned, awn 0.2–0.5 mm long.

**Florets.** Fertile lemma lanceolate, 1.7–2 mm long, membranous, yellow, without keel, 1 -veined, 0–3 -veined, one-veined. Lemma surface smooth or scaberrulous. Lemma apex apiculate. Palea 0.5–0.66 length of lemma, 2 -veined. Palea keels approximate.

**Flower and Fruit.** Anthers 3, 0.2 mm long. Caryopsis with free soft pericarp, obovoid, 0.5 mm long.

*N* = 6 (1 ref TROPICOS).

**Distribution (TDWG). Continent.** Africa.

**Country /Province /State.** West tropical Africa, West-central tropical Africa, Northeast tropical Africa, East tropical Africa, South tropical Africa, Southern Africa. Nigeria. Central African Republic, Cameroon, Congo, Gabon, Annobon, Principe & Sao Tome, Bioko, Rwanda, DRC. Chad. Tanzania, Uganda. Angola, Malawi, Mozambique, Zambia, Zimbabwe. Limpopo.

**Sporobolus monandrus** Roseng., Arrill. de Maffei & Izag.de Artucio. *Bol. Univ. Republ. Fac. Agron. Montevideo*, No. 103, 12 (1968).

**Accepted by:** R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

**TYPE** from Uruguay. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *B. Rosengurt B-6200*, 10 Jun 1952, Uruguay: Dep. Artigas: camino a Tres Cruces, aprox. Km 6–8, en quebrada pedregosa (MVFA; IT: BAA-2911, US-2946506).

**Illustrations (Books):** L.B. Smith, D.C. Wasshausen, R.M. Klein *Flora Illustrada Catarinensis Gramineas* (1981–1982) (379, Fig. 87), A.Burkat, *Flora Illustrada de Entre Rios (Argentina)*, Pt II, Gramineas (1969) (229, Fig. 87), B.Rosengurt, *Gramineas Uruguayas I* (1970) (271, Fig. 111).

**Derivation** (Clifford & Bostock 2007): Gk. monos, one; aner, man. Florets with one stamen.

**Classification.** Subfamily Chloridoideae. Tribe: Zoysieae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Culms erect, 10–36 cm long, 1–2 -noded. Ligule a fringe of hairs. Leaf-blades 3–6 cm long, 1–3 mm wide.

**Inflorescence.** Inflorescence a panicle. Panicle open, elliptic, 5–15 cm long, 1–6 cm wide. Primary panicle branches whorled at most nodes. Panicle branches capillary, glandular (in axils). Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 0.8–1 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes deciduous, similar, shorter than spikelet. Lower glume ovate, 0.3 mm long, 0.33 length of upper glume, membranous, without keels, 0 -veined. Lower glume lateral veins absent. Lower glume apex truncate or obtuse. Upper glume ovate, 0.5–0.7 mm long, 0.5–0.7 length of adjacent fertile lemma, membranous, without keels, 0 -veined. Upper glume primary vein absent. Upper glume lateral veins absent. Upper glume apex truncate or obtuse.

**Florets.** Fertile lemma oblong, 0.8–1 mm long, membranous, without keel, 1 -veined, 0–3 -veined, one-veined. Lemma apex obtuse. Palea 2 -veined. Palea keels approximate.

**Flower and Fruit.** Anthers 1, 0.5 mm long. Caryopsis with free soft pericarp, obovoid, 0.6–0.8 mm long.

**Distribution (TDWG). Continent.** South America.

**Country /Province /State.** Western South America, Brazil, Southern South America. Bolivia. Brazil West Central, Brazil Northeast, Brazil South. Argentina Northwest, Argentina Northeast, Paraguay, Uruguay.

**TDWG4.** Mato Grosso, Bahia, Catarina, Rio Grande do Sul. Salta. Chaco, Corrientes, Entre Rios, Formosa, Misiones, Santa Fe.

**Sporobolus montanus** Engl. *Abh. Preuss. Akad. Wiss.* ii. 127 (1892).

**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:** *Vilfa montana* Hook. f., *J. Linn. Soc., Bot.* 7: 228 (1864). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *Mann 2088*, Cameroon (K).

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): *L. mons*, mountain; -ana, indicating location. Growing on mountains.

**Classification.** Subfamily Chloridoideae. Tribe: Zoysieae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Butt sheaths persistent and investing base of culm, with fibrous dead sheaths. Culms erect, 15–30 cm long. Ligule a fringe of hairs. Leaf-blades involute, 2–10 cm long, 1–2 mm wide.

**Inflorescence.** Inflorescence a panicle. Panicle open, pyramidal, 4–8 cm long, with spikelets clustered towards branch tips. Primary panicle branches spreading, whorled at most nodes. Panicle branches glabrous in axils. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 3.8–4 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes deciduous, similar, exceeding apex of florets. Lower glume lanceolate, 3.5 mm long, 0.8–0.9 length of upper glume, membranous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume apex acute. Upper glume ovate, 3.8–4 mm long, 1.1–1.2 length of adjacent fertile lemma, membranous, purple or black, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume apex acute.

**Florets.** Fertile lemma ovate, 3–3.5 mm long, membranous, purple or black, without keel, 1 -veined, 0–3 -veined, one-veined. Lemma apex acute. Palea 2 -veined. Palea keels approximate.

**Flower and Fruit.** Anthers 1.7 mm long, purple. Caryopsis with free soft pericarp, ellipsoid, laterally compressed, 1.5 mm long.

$2n = 18$  (1 ref TROPICOS).

**Distribution (TDWG). Continent.** Africa.

**Country /Province /State.** West-central tropical Africa. Cameroon.

### **Sporobolus mopane** Cope. *Kew Bull.* 53:168 (1998).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online.

**TYPE** from Zimbabwe. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Zimbabwe: Urungwe [Hurungwe] Distr., ca. 13 km ESE of Chirundu Bridge, to N of main road, 3 Feb 1958, *Drummond 5460* (HT: SRGH).

**Illustrations (Journals):** *Kew Bulletin* (169, fig.1 (1998)).

**Derivation** (Clifford & Bostock 2007): Growing in mopane, a type of woodland in Zimbabwe.

**Classification.** Subfamily Chloridoideae. Tribe: Zoysieae.

**Habit, Vegetative Morphology.** Annual, caespitose, clumped loosely. Culms erect, 20–40 cm long. Lateral branches lacking. Leaf-sheaths keeled, pilose, with tubercle-based hairs. Ligule a fringe of hairs. Leaf-blades 1.5–5 cm long, 2–4.5 mm wide. Leaf-blade surface pilose, sparsely hairy, with tubercle-based hairs. Leaf-blade margins tuberculate-ciliate. Leaf-blade apex acute.

**Inflorescence.** Inflorescence a panicle. Panicle open, lanceolate, 4.5–10 cm long. Primary panicle branches whorled at most nodes. Panicle branches eglandular, smooth. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, 1–2 mm long.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 2.8–3.3 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes deciduous, similar, reaching apex of florets. Lower glume ovate, 0.25–0.33 length of upper glume, membranous, without keels, 0 -veined. Lower glume lateral veins absent. Lower glume apex obtuse. Upper glume elliptic or ovate, 1.1 length of adjacent fertile lemma, membranous, red, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume apex acute.

**Florets.** Fertile lemma elliptic, 2.8–3.3 mm long, membranous, without keel, 0–3 -veined. Lemma apex acute. Palea 2 -veined. Palea keels approximate.

**Flower and Fruit.** Anthers 3, 1.3 mm long. Caryopsis with free soft pericarp, obovoid, flattened, 1.5 mm long.

**Distribution (TDWG). Continent.** Africa.

**Country /Province /State.** South tropical Africa. Zimbabwe.

**Sporobolus multinodis** Hack. Fedde, *Repert. Nov. Sp.* vii. 316 (1909).

**Accepted by:** R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

**TYPE** from Brazil. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: IT: *C. Jurgens G153*, Dec 1905, Brazil: Rio Grande do Sul: Rio Pardo Mun. (BAA-2912, US-1127181, US-81957).

**Illustrations (Books):** B.Rosengurtt, *Gramineas Uruguayas I* (1970) (272, Fig. 112).

**Illustrations (Journals):** *Taxon* (59: 1775, Fig.7 (2010)).

**Derivation** (Clifford & Bostock 2007): *L. multus*, many; nodus, knot. Culms many-noded.

**Classification.** Subfamily Chloridoideae. Tribe: Zoysieae.

**Habit, Vegetative Morphology.** Perennial. Butt sheaths persistent and investing base of culm, with compacted dead sheaths. Basal innovations extravaginal. Culms 80–140 cm long, 8–13 -noded. Leaf-sheaths glabrous on surface. Leaf-sheath oral hairs ciliate. Ligule a fringe of hairs. Leaf-blades filiform, convolute, 20–30 cm long, 0.5–1.2 mm wide. Leaf-blade surface glabrous. Leaf-blade margins scabrous. Leaf-blade apex acuminate.

**Inflorescence.** Inflorescence a panicle. Panicle open, lanceolate, 30 cm long, 3 cm wide. Primary panicle branches whorled at most nodes, 3–6 cm long. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets elliptic, subterete, 4.5–5 mm long, 0.8 mm wide, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes deciduous, exceeding apex of florets. Lower glume elliptic, 0.33 length of upper glume, membranous, without keels, 0 -veined. Lower glume lateral veins absent. Lower glume apex acute. Upper glume elliptic, 4.5–5 mm long, 1.2 length of adjacent fertile lemma, membranous, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume apex acuminate.

**Florets.** Fertile lemma elliptic, 3.5–4 mm long, membranous, without keel, 1 -veined, 0–3 -veined, one-veined. Lemma apex acute. Palea 2 -veined. Palea keels approximate.

**Flower and Fruit.** Anthers 2, 2 mm long. Caryopsis with free soft pericarp.

**Distribution (TDWG).** Continent. South America.

**Country /Province /State.** Brazil, Southern South America. Brazil South. Uruguay. Catarina, Rio Grande do Sul.

**Sporobolus multiramosus** H.M. Longhi-Wagner & S.C. Boechat. *Acta Bot. Brasil.*, 7(2): 152 (1993).

**Accepted by:** R.J.Soreng et al., *Catalogue of New World 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: Para Maraba, 19 Apr 1985, *Rosa & Silva 4680* (HT: SP).

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): *L. multus*, amny; *ramus*, branch; *-osa*, abundance. Culms much branched.

**Classification.** Subfamily Chloridoideae. Tribe: Zoysieae.

**Habit, Vegetative Morphology.** Annual, caespitose. Basal innovations intravaginal. Culms geniculately ascending, slender, 18–50 cm long, 0.5 mm diam., 6–7 -noded. Lateral branches ample. Leaf-sheaths mostly shorter than adjacent culm internode, glabrous on surface. Leaf-sheath oral hairs ciliate, 1–1.2 mm long. Ligule a fringe of hairs, 0.3–4 mm long. Leaf-blades flat or conduplicate or involute or convolute, 2–13 cm long, 1–1.8 mm wide. Leaf-blade margins glabrous or ciliate.

**Inflorescence.** Inflorescence a panicle, terminal and axillary. Panicle spiciform, linear, 3–7 cm long, 0.2–0.3 cm wide. Primary panicle branches appressed, 0.4–1.3 cm long. Panicle axis glandular. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, glandular.

**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, 2–2.4 mm long, 0.8–1 mm wide, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes deciduous, similar, exceeding apex of florets. Lower glume oblong, 2–2.4 mm long, 0.5 length of upper glume, membranous, without keels, 0 -veined. Lower glume lateral veins absent. Lower glume apex obtuse. Upper glume ovate, 2–2.4 mm long, 1.1 length of adjacent fertile lemma, membranous, without keels, 1–3 -veined. Upper glume lateral veins absent or obscure. Upper glume apex acute.

**Florets.** Fertile lemma ovate, 2–2.2 mm long, 0.3–0.5 mm wide, membranous, without keel, 1 -veined, 0–3 -veined, one-veined. Lemma apex acute. Palea 1.8–2.2 mm long, 2 -veined. Palea keels approximate. Palea apex cuspidate.

**Flower and Fruit.** Anthers 3, 0.5–0.8 mm long. Caryopsis with free soft pericarp, oblong, without sulcus, 1.7–2 mm long, dark brown.

**Distribution (TDWG). Continent.** South America.

**Country /Province /State. Brazil.** Brazil North.

### **Sporobolus myrianthus** Benth. *Hook. Niger Fl.* 565. (1849).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

**TYPE** from Nigeria. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *Vogel 190*, Nigeria (K).

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): Gk. myrios, countless; anthos, flower. Inflorescence many spikelets.

**Classification.** Subfamily Chloridoideae. Tribe: Zoysieae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Butt sheaths papery, yellow, glabrous, persistent and investing base of culm, with fibrous dead sheaths. Culms erect, 15–120 cm long. Ligule a fringe of hairs. Leaf-blades convolute, 3–20 cm long, 1–5 mm wide. Leaf-blade apex filiform.

**Inflorescence.** Inflorescence a panicle. Panicle open, lanceolate or ovate, effuse, 5–30 cm long. Panicle branches capillary, glabrous in axils. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, filiform.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 1.6–2.6 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes deciduous, dissimilar, shorter than spikelet. Lower glume oblong, 0.5–0.8 mm long, 0.7–0.8 length of upper glume, membranous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume apex acute. Upper glume ovate, 0.6–1.1 mm long, 0.33–0.5 length of adjacent fertile lemma, membranous, dark green or grey, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume apex obtuse or cuspidate, mucronate.

**Florets.** Fertile lemma ovate, 1.6–2.6 mm long, membranous, dark green or grey, without keel, 1 -veined, 0–3 -veined, one-veined. Lemma apex acute. Palea 2 -veined. Palea keels approximate.

**Flower and Fruit.** Anthers 3, 1 mm long. Caryopsis with free soft pericarp, obovoid, quadrangular, 0.6 mm long.

**Distribution (TDWG). Continent.** Africa.

**Country /Province /State. West tropical Africa, West-central tropical Africa, East tropical Africa, South tropical Africa.** Nigeria. DRC. Kenya, Tanzania, Uganda. Angola, Malawi, Mozambique, Zambia, Zimbabwe.

### **Sporobolus natalensis** (Steud.) Th. Dur. & Schinz. *Consp. Fl. Afr.* v. 822 (1895).

**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:** *Vilfa natalensis* Steud., *Syn. Pl. Glumac.* 1: 154 (1854). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *Drhge s.n.*, South Africa: Natal: Umzinkulu to Umlomass rivers (P; IT: K).

**Illustrations (Books):** S.W.L.Jacobs, R.D.B.Whalley & D.J.B.Wheeler., *Grasses of New South Wales*, 4th edn (2008) (379), 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); (*Aust.Syst.Bot.* 12: 429, Fig.18 (1999)).

**Derivation** (Clifford & Bostock 2007): L. -ense, denoting origin. From Natal, South Africa.

**Classification.** Subfamily Chloridoideae. Tribe: Zoysieae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Butt sheaths papery. Culms erect, 60–120 cm long. Ligule a fringe of hairs. Leaf-blades flat or convolute, 25–50 cm long, 2–4 mm wide. Leaf-blade apex filiform.

**Inflorescence.** Inflorescence a panicle. Panicle open, pyramidal, 20–30 cm long, contracted about primary branches. Primary panicle branches ascending or spreading, 3–7 cm long, bearing spikelets almost to the base. Panicle branches glabrous in axils. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 1.6–2.3 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes deciduous, dissimilar, shorter than spikelet. Lower glume oblong, 0.5–0.8 mm long, 0.6 length of upper glume, hyaline, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume apex obtuse. Upper glume ovate, 0.8–1.3 mm long, 0.5 length of adjacent fertile lemma, membranous, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume apex acute.

**Florets.** Fertile lemma ovate, 1.6–2.3 mm long, membranous, without keel, 1 -veined, 0–3 -veined, one-veined. Lemma apex acute. Palea 2 -veined. Palea keels approximate.

**Flower and Fruit.** Anthers 3, 0.8–1 mm long. Caryopsis with free soft pericarp, obovoid, 0.7–0.8 mm long.

**Distribution (TDWG). Continent.** Africa, Temperate Asia, Australasia (\*).

**Country /Province /State.** Northern Africa, West tropical Africa, West-central tropical Africa, Northeast tropical Africa, East tropical Africa, South tropical Africa, Southern Africa, Middle Atlantic ocean. Egypt. Cameroon, DRC. Eritrea, Ethiopia (inc. Eritrea). Kenya, Tanzania, Uganda. Angola, Zambia. Namibia, Botswana, Limpopo, North-West, Gauteng, Mpumalanga, Kwazulu-Natal, Western Cape, Eastern Cape. St Helena. **Arabian Peninsula.** Saudi Arabia. **Australia.** Northern Territory (\*), Queensland (\*), New South Wales (\*).

**TDWG4.** Darwin & Gulf. Central, South East. Coast, Tablelands, Western Slopes.

**Sporobolus nealleyi** Vasey. *Contrib. U. S. Nat. Herb.* i.: 57 (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).

**TYPE** from USA. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *G.C. Nealley* 752, 1887, USA: Texas: Brazos Co. (US-556888).

**Illustrations (Books):** M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 25 *Poaceae*, part 2 (2003) (132).

**Derivation** (Clifford & Bostock 2007): in honor of Greenleaf Cilley Nealley (1846–96) United States plant collector.

**Classification.** Subfamily Chloridoideae. Tribe: Zoysieae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Rootstock evident. Culms erect, slender, 10–40 cm long, 0.8–1 mm diam. Leaf-sheaths outer margin hairy. Ligule a fringe of hairs. Leaf-blades spreading, involute, 2–5 cm long, 1–1.5 mm wide, stiff.

**Inflorescence.** Inflorescence a panicle, embraced at base by subtending leaf or enclosed. Panicle open, ovate, 3–10 cm long, bearing few spikelets. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 1.6–2.2 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes deciduous, shorter than spikelet or reaching apex of florets. Lower glume lanceolate, 0.33–0.5 length of upper glume, membranous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume apex acute. Upper glume ovate, 1.5–2.2 mm long, 0.9–1 length of adjacent fertile lemma, membranous, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume apex acute.

**Florets.** Fertile lemma ovate, 1.5–2.1 mm long, membranous, without keel, 1 -veined, 0–3 -veined, one-veined. Lemma apex acute. Palea 1 length of lemma, 2 -veined. Palea keels approximate.

**Flower and Fruit.** Caryopsis with free soft pericarp, 0.7–1 mm long, light brown.

**Distribution (TDWG). Continent.** North America.

**Country /Province /State.** Northwest USA, Southwestern USA, South-central USA, Mexico. Colorado. Arizona, California. New Mexico, Texas. Northeast Mexico.

Chihuahua, Neuvo Leon, San Luis Potosi.

**Sporobolus nebulosus** Hack. *Bot. Jahrb.* xi. 402. (1889).

**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: T: *Marloth* 1208, Hykamchab.

**Illustrations (Books):** L.K.A. Chippindall, *Grasses and Pastures of South Africa* (1955) (213, Fig 188).

**Derivation** (Clifford & Bostock 2007): *L. nebula*, mist; -osa, abundance. Growing on high mountains.

**Classification.** Subfamily Chloridoideae. Tribe: Zoysieae.

**Habit, Vegetative Morphology.** Perennial, cushion forming or caespitose. Rhizomes short. Butt sheaths persistent and investing base of culm, with compacted dead sheaths. Culms 7–30 cm long. Leaves mostly basal. Ligule a fringe of hairs. Leaf-blades filiform, conduplicate, 1.5–5 cm long, 0.3–1 mm wide, stiff, glaucous.

**Inflorescence.** Inflorescence a panicle. Panicle open, ovate, effuse, 7–15 cm long. Primary panicle branches spreading, branching dichotomously. Panicle branches capillary, glabrous in axils. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 0.6–1.4 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes deciduous, similar, shorter than spikelet, similar to fertile lemma in texture. Lower glume oblong, 0.66 length of upper glume, membranous, without keels, 0 -veined. Lower glume lateral veins absent. Lower glume apex obtuse. Upper glume oblong, 0.66 length of adjacent fertile lemma, hyaline, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume apex obtuse.

**Florets.** Fertile lemma oblong, 0.6–1.4 mm long, membranous, without keel, 1 -veined, 0–3 -veined, one-veined. Lemma apex obtuse. Palea 2 -veined. Palea keels approximate.

**Flower and Fruit.** Anthers 3, 2 mm long. Caryopsis with free soft pericarp.

**Distribution (TDWG). Continent.** Africa.

**Country /Province /State.** Southern Africa. Namibia, Northern Cape.

**Sporobolus neglectus** Nash. *Bull. Torrey Bot. Club*, xxii. 464. (1895).

**Accepted by:** R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online.

**TYPE** from USA. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: IT: *N.L. Britton*, 17 Sep 1887, USA: New Jersey, Sussex O.; Woodruff Gap (US-91125(fragm.)).

**Illustrations (Books):** M.E.Barkworth et al, *Flora of North America north of Mexico Vol 25 Poaceae*, part 2 (2003) (120), E.Hafliger & E.Schultz, *Grass Weeds*, CIBA-GEIGY (2:128(1980)).

**Derivation** (Clifford & Bostock 2007): *L. negligo*, disregard. Often a segregate from another species with which confusion is likely.

**Classification.** Subfamily Chloridoideae. Tribe: Zoysieae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Culms erect or geniculately ascending, 10–40 cm long. Leaf-sheaths inflated, glabrous on surface. Ligule a fringe of hairs. Leaf-blades 3–12 cm long, 2 mm wide. Leaf-blade surface glabrous or pilose, sparsely hairy. Leaf-blade apex attenuate.

**Inflorescence.** Inflorescence a panicle, terminal and axillary, subtended by an inflated leaf-sheath, embraced at base by subtending leaf. Axillary inflorescences enclosed. Panicle contracted, linear, 2–5 cm long. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 1.6–2.8 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes deciduous, shorter than spikelet. Lower glume ovate, 1 length of upper glume, membranous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume apex acute. Upper glume ovate, 0.7–0.8 length of adjacent fertile lemma, membranous, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume apex acute.

**Florets.** Fertile lemma ovate, 1.6–2.8 mm long, membranous, without keel, 1 -veined, 0–3 -veined, one-veined. Lemma apex acute. Palea readily splitting down midline, 1 length of lemma, 2 -veined. Palea keels approximate.

**Flower and Fruit.** Caryopsis with free soft pericarp, 1.5 mm long, dark brown. Embryo 0.75 length of caryopsis.

$2n = 36$  (1 ref TROPICOS).

**Distribution (TDWG). Continent.** North America.

**Country /Province /State.** Western Canada, Eastern Canada, Northwest USA, North-central USA, Northeast USA, Southwestern USA, South-central USA, Southeastern USA. Alberta, Manitoba, Saskatchewan. Ontario, Quebec. Colorado, 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. New Mexico, Texas. Alabama, Arkansas, Louisiana.

**Sporobolus nervosus** Hochst. *Flora*, viii. 202. (1855).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), N.L.Bor, *Grasses of Burma, Ceylon, India and Pakistan* (1960) (as *S. stocksii*).



**TYPE** from Ethiopia. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Africa: Ethiopia.; *Schimper in herb. Buchinger 1309* (HT: P).

**Illustrations (Books):** R.M.Phill, F.T.E.A., *Gramineae* (2(1974):381, Fig.102), L.K.A. Chippindall, *Grasses and Pastures of South Africa* (1955) (215, Fig 190 as *S. lampranthus*), S.Phillips, *Poaceae* (Gramineae) in I.Hedberg & S.Edwards, *Flora of Ethiopia and Eritrea* (1995) (154, Fig 63), T.A.Cope, in M.Thulin, *Poaceae* (Gramineae). *Flora of Somalia* (1995) (197, Fig 106).

**Derivation** (Clifford & Bostock 2007): *L. nervus*, nerve; -osa, abundance. With conspicuous nerves in the glumes or lemmas.

**Classification.** Subfamily Chloridoideae. Tribe: Zoysieae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Rhizomes absent or short. Butt sheaths papery, yellow, withering or persistent and investing base of culm, with fibrous dead sheaths. Culms erect, 15–20 cm long. Ligule a fringe of hairs. Leaf-blades flat or convolute, 4–10 cm long, 1–3 mm wide. Leaf-blade apex filiform.

**Inflorescence.** Inflorescence a panicle. Panicle open, ovate, 7–20 cm long, with spikelets clustered towards branch tips. Panicle branches glabrous in axils. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, (1.5–)1.7–2.1 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes deciduous, similar, shorter than spikelet. Lower glume lanceolate, 0.8–1 mm long, 0.5–0.6 length of upper glume, membranous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume apex acute. Upper glume ovate, (0.9–)1.3–1.9 mm long, 0.5–0.6 length of adjacent fertile lemma, membranous, dark green or grey, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume surface smooth or asperulous. Upper glume apex acute.

**Florets.** Fertile lemma ovate, (1.5–)1.7–2.1 mm long, membranous, dark green or grey, without keel, 1 -veined, 0–3 -veined, one-veined. Lemma surface smooth or scaberulous. Lemma apex acute. Palea 2 -veined. Palea keels approximate.

**Flower and Fruit.** Anthers 3, 0.8–1 mm long. Caryopsis with free soft pericarp, ellipsoid, 0.6 mm long.

*N* = 18 (1 ref TROPICOS).

**Distribution (TDWG). Continent.** Africa, Temperate Asia, Tropical Asia.

**Country /Province /State.** West tropical Africa, Northeast tropical Africa, East tropical Africa, Southern Africa. Mauritania. Ethiopia (inc. Eritrea), Somalia. Kenya, Tanzania. Namibia, Free State, Northern Cape. Arabian Peninsula. Oman. Indian Subcontinent. Pakistan.

### **Sporobolus nitens** Stent. *Bothalia*, i. 281 (1924).

**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: ST: *Schlechter 3679*, South Africa: Transvaal: in the plain at the foot of the Magaliesberg Mountains (PRE). ST: *Pole Evans 691*, South Africa: Transvaal: between Warmbaths and Nylstroom (PRE). ST: *Fouché s.n.*, South Africa: Transvaal: Gezina, Pretoria (PRE). ST: *Pole Evans 667*, South Africa: Transvaal: Rooikop, Buschveld, Pretoria District (PRE). ST: *S.M. Stent s.n.*, 16 Jan 1923, South Africa: Transvaal: Gezina, Pretoria (PRE-21445, US-1256510).

**Illustrations (Books):** L.K.A. Chippindall, *Grasses and Pastures of South Africa* (1955) (218, Fig 193), G.E.Gibbs Russell et al, *Grasses of Southern Africa* (1990) (311, Fig 200).

**Images:** F.van Oudtshoorn, *Guide to Grasses of Southern Africa* (1999).

**Derivation** (Clifford & Bostock 2007): *L. niteo*, shine. Spikelets or lemmas glossy at maturity.

**Classification.** Subfamily Chloridoideae. Tribe: Zoysieae.

**Habit, Vegetative Morphology.** Perennial. Rhizomes short. Stolons present. Culms 19–52 cm long. Ligule a fringe of hairs. Leaf-blades 3.5–9 cm long, 4–8 mm wide. Leaf-blade margins cartilaginous, undulate, scabrous, glabrous or ciliate.

**Inflorescence.** Inflorescence a panicle. Panicle open, pyramidal, 6–14 cm long, contracted about primary branches or with spikelets clustered towards branch tips. Primary panicle branches whorled at lower nodes. Panicle branches glabrous in axils. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 1.2–1.5 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes deciduous, similar, reaching apex of florets, similar to fertile lemma in texture, shiny. Lower glume lanceolate, 0.33 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume lateral veins absent. Lower glume apex acuminate. Upper glume lanceolate, 1 length of adjacent fertile lemma, hyaline, 1-keeled, 1 -veined. Upper glume primary vein conspicuous, scabrous. Upper glume lateral veins absent. Upper glume apex acuminate.

**Florets.** Fertile lemma ovate, 1.2–1.5 mm long, membranous, shiny, without keel, 1 -veined, 0–3 -veined, one-veined. Lemma apex acute. Palea 2 -veined. Palea keels approximate.

**Flower and Fruit.** Anthers 3. Caryopsis with free soft pericarp.

**Distribution (TDWG). Continent.** Africa.

**Country /Province /State.** West tropical Africa, East tropical Africa, South tropical Africa, Southern Africa. Nigeria. Kenya. Mozambique, Zambia, Zimbabwe. Botswana, Limpopo, North-West, Gauteng, Mpumalanga, Swaziland, Free State, Kwazulu-Natal, Eastern Cape.

### **Sporobolus novoguineensis** G.J. Baaijens. *Blumea*, 35(2): 440 (1991).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online, S-L Chen et al, *Flora of China* 22 (Poaceae) (2006).

**TYPE** from PNG. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Papua New Guinea: Morobe Prov.: Finschhafen, Dedua, 26 Mar 1954, *Barrie* 29 (HT: LAE(fragm., L)).

**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 Chloridoideae. Tribe: Zoysieae.

**Habit, Vegetative Morphology.** Annual, caespitose. Basal innovations intravaginal. Culms erect, 25–55 cm long. Culm-internodes smooth, distally glabrous. Lateral branches sparse. Leaf-sheaths smooth, glabrous on surface, outer margin hairy. Leaf-sheath oral hairs scanty or lacking. Ligule a fringe of hairs, 0.15 mm long. Leaf-blades linear or lanceolate, 3–7 cm long, 1–4 mm wide, stiff. Leaf-blade surface scaberulous, rough adaxially, glabrous. Leaf-blade margins tuberculate-ciliate, hairy at base. Leaf-blade apex obtuse.

**Inflorescence.** Inflorescence a panicle. Panicle contracted, linear, interrupted, 14 cm long, 1.5 cm wide. Primary panicle branches ascending, 10–12 -nate, whorled at most nodes, 0.6–2 cm long. Panicle axis 6–21 noded. Panicle branches capillary, eglandular or glandular. 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, 1.8–2.1 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes deciduous, similar, reaching apex of florets. Lower glume lanceolate, 0.85–1.25 mm long, 0.5–0.66 length of upper glume, hyaline, without keels, 0 -veined. Lower glume lateral veins absent. Lower glume surface smooth or asperulous, rough above. Lower glume apex obtuse or acute. Upper glume ovate, 1.8–2.1 mm long, 1 length of adjacent fertile lemma, hyaline, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume surface smooth or asperulous, rough above. Upper glume apex acute or acuminate.

**Florets.** Fertile lemma ovate, 1.8–2.1 mm long, membranous, without keel, 1 -veined, 0–3 -veined, one-veined. Lemma apex acute. Palea readily splitting down midline, ovate, 2 -veined. Palea keels approximate. Palea apex obtuse.

**Flower and Fruit.** Lodicules 2, 0.25 mm long. Anthers 3, 0.35–0.5 mm long. Caryopsis with free soft pericarp, ellipsoid, laterally compressed, 1.1–1.2 mm long. Embryo 0.5 length of caryopsis.

**Distribution (TDWG). Continent.** Tropical Asia.

**Country /Province /State. Papuasia.** New Guinea PNG, or West Papua (Irian Jaya). New Guinea.

### **Sporobolus nudiramus** S.C. Boechat & H.M. Longhi-Wagner. *Iheringia, Bot.*, 44: 36 (1994).

**Accepted by:** R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

**TYPE** from Brazil. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *G. Davidse, T.P. Ramamoorthy & D.M. Vital 11354*, 15 Mar 1976, Brazil: Paraná: ca. 25 km W of Ponta Grossa, just west of the intersection of Highway BR-373 and Rio Tibagi, elev. 740 m, *Trachypogon* dominated grassland on deep, sany loam (SP; IT: MO-3113919). Erroneously cited as Davidse & D'Arcy 11354 in the protologue.

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): *L. nudus*, bare; ramus, branch. Lower branches of the inflorescence lack spikelets.

**Classification.** Subfamily Chloridoideae. Tribe: Zoysieae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Basal innovations intravaginal. Culms erect, 56–100 cm long, 2-noded. Leaf-sheaths longer than adjacent culm internode, pilose, outer margin hairy. Leaf-sheath oral hairs ciliate. Ligule a fringe of hairs, 0.2 mm long. Leaf-blades 8.5–25.5 cm long, 4–7 mm wide. Leaf-blade surface pilose, densely hairy, hairy adaxially. Leaf-blade margins ciliate.

**Inflorescence.** Inflorescence a panicle. Peduncle 50 cm long. Panicle open, lanceolate, 41 cm long, 12 cm wide. Primary panicle branches whorled at most nodes, 1.5–10 cm long. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets elliptic, subterete, 2.3–2.8 mm long, 0.6–1.2 mm wide, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes deciduous, reaching apex of florets. Lower glume lanceolate, 0.9–1.6 mm long, 0.5 length of upper glume, hyaline, without keels, 0-veined. Lower glume lateral veins absent. Lower glume apex acute. Upper glume lanceolate, 2.4–2.6 mm long, 1 length of adjacent fertile lemma, membranous, without keels, 1-veined. Upper glume lateral veins absent. Upper glume apex acute.

**Florets.** Fertile lemma lanceolate, 2–2.5 mm long, 0.4–0.5 mm wide, membranous, without keel, 1-veined, 0–3-veined, one-veined. Lemma apex acute. Palea readily splitting down midline, 2–2.5 mm long, 2-veined. Palea keels approximate.

**Flower and Fruit.** Caryopsis with free soft pericarp, ovoid, laterally compressed, 1.8–2.2 mm long, dark brown, striate. Embryo 0.4–0.5 length of caryopsis.

**Distribution (TDWG). Continent.** South America.

**Country /Province /State. Brazil.** Brazil South.

**Sporobolus olivaceus** Napper. *Kirkia*, iii. 117 (1963).

**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: Tanzania, Mwakaleli: *Stolz 2621* (EA holo, K).

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): *L. oliva*, olive; *-acea*, indicating resemblance. Spikelets or foliage olive-green.

**Classification.** Subfamily Chloridoideae. Tribe: Zoysieae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Butt sheaths indurate, glossy, persistent and investing base of culm, with compacted dead sheaths or fibrous dead sheaths. Culms erect, 10–90 cm long. Ligule a fringe of hairs. Leaf-blades convolute, 15–30 cm long, 1–2 mm wide. Leaf-blade apex filiform.

**Inflorescence.** Inflorescence a panicle. Panicle spiciform, linear, 3–20 cm long. Primary panicle branches appressed, 0.5–1.5 cm long. Panicle branches glabrous in axils. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 2.6–4 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes deciduous, dissimilar, shorter than spikelet. Lower glume oblong or ovate, 1.2–1.5 mm long, 0.6–0.75 length of upper glume, hyaline, without keels, 1-veined. Lower glume lateral veins absent. Lower glume apex obtuse or acute. Upper glume ovate, 1.6–2.4 mm long, 0.5 length of adjacent fertile lemma, membranous, dark green or black, without keels, 1-veined. Upper glume lateral veins absent. Upper glume apex acute.

**Florets.** Fertile lemma ovate, 2.6–4 mm long, membranous, dark green or black, without keel, 1-veined, 0–3-veined, one-veined. Lemma apex acute. Palea 2-veined. Palea keels approximate.

**Flower and Fruit.** Anthers 3, 1.2–1.7 mm long. Caryopsis with free soft pericarp, obovoid, 1.1–1.2 mm long.

**Distribution (TDWG). Continent.** Africa.

**Country /Province /State. Northeast tropical Africa, East tropical Africa, South tropical Africa.** Ethiopia (inc. Eritrea). Kenya, Tanzania, Uganda. Zambia.

## **Sporobolus oxyphyllus** Fish. *Bothalia* 36 (1): 71 (2006).

**TYPE** from South Africa. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: South Africa, Transvaal, Berberspan: Ellis 3628 (PRE holotype).

**Illustrations (Journals):** *Bothalia* (36: 72, Fig.7 (2006)).

**Classification.** Subfamily Chloridoideae. Tribe: Zoysieae.

**Habit, Vegetative Morphology.** Perennial, mat forming. Rhizomes elongated. Culms erect, 25–50 cm long. Culm-nodes pallid or purple or black, glabrous. Leaf-sheaths longer than adjacent culm internode, ribbed, glabrous on surface. Leaf-sheath oral hairs ciliate, 1–1.5 mm long. Ligule a fringe of hairs, 0.2 mm long. Leaf-blades convolute, 2–9(–11.5) cm long, 1.5–4.5 mm wide, stiff. Leaf-blade midrib indistinct. Leaf-blade surface scaberulous and papillose, rough adaxially. Leaf-blade margins smooth or scaberulous. Leaf-blade apex pungent.

**Inflorescence.** Inflorescence a panicle. Panicle open, ovate, 3–10 cm long, 1–3 cm wide. Primary panicle branches ascending. Panicle branches smooth or with occasional prickles, with prominent pulvini. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile floret, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 1.8–2.4 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes deciduous, similar, reaching apex of florets. Lower glume lanceolate, 1–1.6 mm long, 0.5–0.66 length of upper glume, membranous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume surface scabrous, rough above. Lower glume apex acute. Upper glume elliptic, 1.8–2.4 mm long, 1 length of adjacent fertile lemma, membranous, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume surface scabrous, rough above. Upper glume apex acute.

**Florets.** Fertile lemma elliptic or ovate, 1.8–2.4 mm long, membranous, without keel, 1 -veined, 0–3 -veined, one-veined. Lemma apex acute. Palea 1 length of lemma, 2 -veined. Palea keels approximate.

**Flower and Fruit.** Anthers 3, 1.2–1.4 mm long, pallid or yellow or green. Caryopsis with free soft pericarp, ellipsoid, laterally compressed, 1.1 mm long.

**Distribution (TDWG). Continent.** Africa.

**Country /Province /State.** Southern Africa. North-West.

## **Sporobolus ozarkanus** Fernald. *Rhodora*, v. 109. (1933).

Regarded by K as a synonym (*S. neglectus*).

**TYPE** from USA. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: HT: *E.J. Palmer 3133*, 8 Sep 1910, USA: Missouri (GH; IT: US-671791, US-671790).

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): L. -anus, indicating location. From the Ozark Mountains, USA.

**Classification.** Subfamily Chloridoideae. Tribe: Zoysieae.

**Habit, Vegetative Morphology.** Perennial, caespitose, clumped loosely. Culms erect or geniculately ascending, 4–50 cm long, 0.5–0.7 mm diam. Leaf-sheaths inflated, pilose, with tubercle-based hairs, outer margin glabrous or hairy. Leaf-sheath oral hairs ciliate. Ligule a fringe of hairs. Leaf-blades flat or involute, 8–26 cm long, 1–1.5 mm wide. Leaf-blade surface pilose, sparsely hairy, hairy adaxially, with tubercle-based hairs. Leaf-blade apex attenuate.

**Inflorescence.** Inflorescence a panicle, subtended by an inflated leaf-sheath, embraced at base by subtending leaf or enclosed. Panicle contracted, linear, 3–5 cm long. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile floret, 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, 2.3–3.8 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes deciduous, reaching apex of florets. Lower glume ovate, 2.3–3.8 mm long, 1 length of upper glume, membranous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume surface asperulous. Lower glume apex acute. Upper glume ovate, 2.2–3.8 mm long, 1–1.1 length of adjacent fertile lemma, membranous, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume surface asperulous. Upper glume apex acute.

**Florets.** Fertile lemma ovate, 2–3.5 mm long, membranous, yellow or purple, mottled with last colour, without keel, 3 -veined, 0–3 -veined. Lemma surface glabrous or pubescent. Lemma apex acute. Palea 1 length of lemma, 2 -veined. Palea keels approximate.

**Flower and Fruit.** Anthers 2–2.8 mm long. Caryopsis with free soft pericarp.

**Distribution (TDWG). Continent.** North America.

**Country /Province /State.** North-central USA, Southeastern USA. Illinois, Iowa, Oklahoma. Alabama, Arkansas, Delaware, Kentucky, Louisiana, Maryland, Mississippi, North Carolina, South Carolina, Tennessee, Virginia, District of Columbia.

**Sporobolus palmeri** Scribn. *U.S. Dept. Agric., Div. Agrost. Bull* 11:48 (1898).

**Accepted by:** R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

**TYPE** from Mexico. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: IT: *E. Palmer* 180, Jun 1896, Mexico: Durango (MO, NY-19974, US-998310).

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): in honor of Edward Palmer (1831–1911) United States botanist.

**Classification.** Subfamily Chloridoideae. Tribe: Zoysieae.

**Habit, Vegetative Morphology.** Perennial. Culms erect, 30–50 cm long, 1 -noded. Culm-internodes smooth. Lateral branches lacking. Leaf-sheaths glabrous on surface. Leaf-sheath oral hairs ciliate. Ligule a fringe of hairs, 0.5–1 mm long. Leaf-blades involute, 5–12 cm long, 1–2 mm wide, stiff, glaucous.

**Inflorescence.** Inflorescence a panicle. Panicle open, ovate, effuse, 20–30 cm long. Primary panicle branches spreading, 1 -nate, 7–15 cm long. Panicle branches stiff, glabrous in axils. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, filiform, flexuous.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 3–3.5 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes deciduous, shorter than spikelet. Lower glume lanceolate, 1.5 mm long, 0.6–0.75 length of upper glume, membranous, without keels. Lower glume apex obtuse. Upper glume elliptic, 2–2.5 mm long, 0.66 length of adjacent fertile lemma, membranous, grey, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume apex obtuse.

**Florets.** Fertile lemma ovate, 3–3.5 mm long, membranous, grey, without keel, 1 -veined, 0–3 -veined, one-veined. Lemma apex obtuse. Palea 1.1 length of lemma, 2 -veined. Palea keels approximate.

**Flower and Fruit.** Caryopsis with free soft pericarp, 2 mm long.

**Distribution (TDWG). Continent.** North America.

**Country /Province /State.** Mexico. Northeast Mexico.

**TDWG4.** Coahuila, Durango, Neuvo Leon, San Luis Potosi.

**Sporobolus pamela**e B.K.Simon. *Austrobaileya*, 4(1): 61 (1993).

**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: *E.J. Thompson & B.K. Simon GAL-001*, 1 Apr 1992, Australia: Queensland: South Kennedy Distr.: Cattle Creek moundspring, 3 km S of Doongmabulla Station, 22:05'39"S, 146:14'23"E (BRI; IT: AD, B, BRI, CANB, K, L, MEL, MO-4616122, NSW, PRE).

**Illustrations (Books):** K.O.Mallett (ed.), *Flora of Australia*, Vol 44B. *Poaceae* (2004) (332, Fig 59), D.Sharp & B.K.Simon, *AusGrass*. Grasses of Australia. CD-Rom Version 1.0. (2002).

**Illustrations (Journals):** *Austrobaileya* (4:62, Fig.3 (1993)).

**Images:** D.Sharp & B.K.Simon, *AusGrass*. Grasses of Australia. CD-Rom Version 1.0. (2002);.

**Derivation** (Clifford & Bostock 2007): in honor of Pamela Nan Simon (1946-) South African born, Australian radiographer.

**Classification.** Subfamily Chloridoideae. Tribe: Zoysieae.

**Habit, Vegetative Morphology.** Perennial. Butt sheaths coriaceous. Culms erect, 80–120 cm long, 2–4 -noded. Culm-internodes distally glabrous. Culm-nodes glabrous. Lateral branches lacking. Leaf-sheaths mostly shorter than adjacent culm internode, without keel. Ligule a fringe of hairs, 0.5 mm long. Leaf-blades filiform, involute, 14–35 cm long, 1–1.5 mm wide. Leaf-blade apex filiform.

**Inflorescence.** Inflorescence a panicle. Panicle open, oblong, 25–40 cm long, 3–12 cm wide. Primary panicle branches ascending or spreading, whorled at lower nodes, 7–15 cm long. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, flexuous, 4–12 mm long, scaberulous.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 2.5–3 mm long, 0.6–1 mm wide, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes deciduous, reaching apex of florets. Lower glume ovate, 1.5 mm long, 0.5 length of upper glume, membranous, without keels, 0 -veined. Lower glume lateral veins absent. Lower glume apex obtuse. Upper glume oblong, 1.5–3 mm long, 1 length of adjacent fertile lemma, membranous, without keels, 1 -veined. Upper glume lateral veins obscure. Upper glume apex obtuse.

**Florets.** Fertile lemma lanceolate, 2.5–3 mm long, 1 mm wide, membranous, without keel, 3 -veined, 0–3 -veined. Lemma lateral veins obscure. Lemma apex truncate. Palea 3–3.2 mm long, 2 -veined. Palea keels approximate. Palea apex obtuse.

**Flower and Fruit.** Lodicules 2, 0.4 mm long. Anthers 3, 2 mm long. Caryopsis with free soft pericarp.

**Distribution (TDWG). Continent.** Australasia.

**Country /Province /State.** Australia. Queensland.

**TDWG4.** Central.

### **Sporobolus panicoides** A.Rich. *Tent. Fl. Abyss.* ii. 399. (1850).

**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: IT: *G.H.W. Schimper 1181*, no date, Ethiopia (L, US-1126544). ST: *R.Q. Dillon s.n.*, 1844, Ethiopia (L).

**Illustrations (Books):** R.M.Phillips, F.T.E.A., *Gramineae* (2(1974):360, Fig.100), L.K.A. Chippindall, *Grasses and Pastures of South Africa* (1955) (222, Fig 196), M.A.N.Muller, *Grasses of South West Africa/Namibia* (1984), S.Phillips, *Poaceae* (Gramineae) in I.Hedberg & S.Edwards, *Flora of Ethiopia and Eritrea* (1995) (146, Fig 60), T.A.Cope, in M.Thulin, *Poaceae* (Gramineae). *Flora of Somalia* (1995) (191, Fig 104).

**Images:** F.van Oudtshoorn, *Guide to Grasses of Southern Africa* (1999).

**Derivation** (Clifford & Bostock 2007): Gk. -oides, resembling. Resembling *Panicum*, usually with respect to form of the inflorescence or spikelet.

**Classification.** Subfamily Chloridoideae. Tribe: Zoysieae.

**Habit, Vegetative Morphology.** Annual, caespitose. Culms erect, 15–100 cm long. Ligule a fringe of hairs. Leaf-blades 5–30 cm long, 2–6 mm wide. Leaf-blade surface pilose, sparsely hairy. Leaf-blade margins glabrous.

**Inflorescence.** Inflorescence a panicle. Panicle open, elliptic, 4–18 cm long. Primary panicle branches whorled at most nodes, bearing 1–4 fertile spikelets on each lower branch, sterile at lowest node (or bearing only 1–2 spikelets). Panicle branches capillary. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 2–2.7 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes deciduous, similar, exceeding apex of florets. Lower glume ovate, 0.8–1.7 mm long, 0.4–0.6 length of upper glume, membranous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume apex acute. Upper glume ovate, 2–2.7 mm long, 2 length of adjacent fertile lemma, membranous, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume apex acute.

**Florets.** Fertile lemma ovate, 1–1.2 mm long, membranous, without keel, 1 -veined, 0–3 -veined, one-veined. Lemma apex acute. Palea 2 -veined. Palea keels approximate.

**Flower and Fruit.** Anthers 3, 1.2 mm long. Caryopsis with free soft pericarp, orbicular, isodiametric, 1.2–1.5 mm long.

**Distribution (TDWG). Continent.** Africa, Temperate Asia.

**Country /Province /State.** Northeast tropical Africa, East tropical Africa, South tropical Africa, Southern Africa. Eritrea, Ethiopia (inc. Eritrea), Somalia, Sudan. Kenya, Tanzania, Uganda. Angola, Malawi, Mozambique, Zambia, Zimbabwe. Namibia, Botswana, Limpopo, Gauteng, Mpumalanga. Arabian Peninsula. Yemen.

### **Sporobolus paniculatus** (Trin.) Th. Dur. & Schinz. *Consp. Fl. Afr.* v. 823 (1895).

**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:** *Vilfa paniculata* Trin., *Mem. Acad. Petersb. Ser. VI. Sc. Nat.* v. II. 67 (1840). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Sierra Leone: Acquired from Lindley (LE holo).

**Recent Synonyms:** *Sporobolus regularis* Mez, *Fedde, Repert.* 17: 299 (1921).

**Illustrations (Books):** H.Jacques-Felix, *Les Graminees d'Afrique tropicale* (1962) (223, Fig. 147 as *S. patuls*), J.Bosser, *Graminees des Paturage et des Cultures a Madagascar* (1969) (123, Fig. 38 as *S. regularis*).

**Derivation** (Clifford & Bostock 2007): *L. panus*, thread; -ula, diminutive; -ata, possessing. Inflorescence open with thread-like pedicels.

**Classification.** Subfamily Chloridoideae. Tribe: Zoysieae.

**Habit, Vegetative Morphology.** Annual, culms solitary or caespitose. Culms erect or geniculately ascending, 10–60 cm long. Ligule a fringe of hairs. Leaf-blades 2–16 cm long, 1–4 mm wide. Leaf-blade margins ciliate. Leaf-blade apex acuminate or attenuate.

**Inflorescence.** Inflorescence a panicle. Panicle open, lanceolate, 3–15 cm long. Primary panicle branches whorled at most nodes, bearing 4–12 fertile spikelets on each lower branch. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 1–2.2 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes deciduous, similar, exceeding apex of florets. Lower glume lanceolate, 0.4–1.3 mm long, 0.5 length of upper glume, membranous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume apex acute or acuminate. Upper glume ovate, 1–2.2 mm long, 1.1 length of adjacent fertile lemma, membranous, red, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume surface smooth or asperulous. Upper glume apex acute or acuminate.

**Florets.** Fertile lemma ovate, 0.9–2 mm long, membranous, red, without keel, 1 -veined, 0–3 -veined, one-veined. Lemma surface smooth or scaberulous. Lemma apex acute. Palea 2 -veined. Palea keels approximate.

**Flower and Fruit.** Anthers 3, 0.2–0.8(–1) mm long. Caryopsis with free soft pericarp, ellipsoid, laterally compressed, 0.8–1.4 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, Southern Africa, Western Indian ocean. Ghana, Guinea, Liberia, Nigeria, Senegal, Sierre Leone. Burundi, Central African Republic, Cameroon, Congo, DRC. Chad. Kenya, Tanzania, Uganda. Malawi, Zambia. Madagascar.

**Sporobolus partimpatens** B.K.Simon. *Austrobaileya*, 4(1): 64 (1993).

**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: Queensland: South Kennedy Distr.: sandy flat adjacent to Cattle Creek, 3 km S of Doongmabulla Station, 22.05.39S 146.14.23E, 1 Apr 1992, *E.J. Thompson & B.K. Simon GAL-002* (HR: BRI; IT: AD, BRI, CANB, K, L, NSW).

**Illustrations (Books):** K.O.Mallett (ed.), *Flora of Australia*, Vol 44B. *Poaceae* (2004) (332, Fig 59), D.Sharp & B.K.Simon, *AusGrass*. Grasses of Australia. CD-Rom Version 1.0. (2002).

**Illustrations (Journals):** *Austrobaileya* (4:63, Fig.4 (1993)).

**Derivation** (Clifford & Bostock 2007): *L. partim*, in part; pateo, lie open. Basal branches of the inflorescence divaricate.

**Classification.** Subfamily Chloridoideae. Tribe: Zoysieae.

**Habit, Vegetative Morphology.** Perennial. Culms erect, 30–60 cm long. Culm-internodes distally glabrous. Culm-nodes glabrous. Lateral branches lacking. Leaf-sheaths mostly shorter than adjacent culm internode, glabrous on surface, outer margin glabrous. Ligule a fringe of hairs, 0.7–0.9 mm long. Leaf-blades 1.5–12 cm long, 4 mm wide. Leaf-blade surface glabrous or pilose, sparsely hairy.

**Inflorescence.** Inflorescence a panicle. Panicle contracted or spiciform, linear. Primary panicle branches appressed, whorled at lower nodes, 2.5 cm long. Panicle axis angular. Spikelets solitary. Fertile spikelets sessile or pedicelled. Pedicels present, 0–2 mm long.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 2–2.5 mm long, 0.7–0.9 mm wide, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes deciduous, reaching apex of florets. Lower glume ovate, 0.8–1 mm long, 0.4 length of upper glume, membranous, without keels. Upper glume ovate, 2–2.5 mm long, 1 length of adjacent fertile lemma, membranous, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume apex acute.

**Florets.** Fertile lemma ovate, 2–2.5 mm long, 0.7–0.9 mm wide, membranous, without keel, 1 -veined, 0–3 -veined, one-veined. Lemma surface puberulous, hairy above. Lemma apex acute. Palea 2 -veined. Palea keels approximate.

**Flower and Fruit.** Lodicules 2. Anthers 3, 0.5–0.9 mm long. Caryopsis with free soft pericarp, ovoid, laterally compressed, 1.1 mm long.

**Distribution (TDWG), Continent.** Australasia.

**Country /Province /State.** Australia. Queensland.

**TDWG4.** Central.

### **Sporobolus pauciflorus** A.Cheval. *Bull. Mus. Hist. Nat. Paris, Ser. 2*, xx. 470 (1948).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online.

**TYPE** from Guinea. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Guinea, Nimba: *Schnell 3437* (K iso).

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): *L. paucus*, few; flos, flower. Florets few per spikelet.

**Classification.** Subfamily Chloridoideae. Tribe: Zoysieae.

**Habit, Vegetative Morphology.** Annual. Culms erect, 5–12 cm long. Culm-internodes distally glabrous. Lateral branches lacking. Ligule absent. Leaf-blades erect, filiform, convolute, 0.5–1 mm wide.

**Inflorescence.** Inflorescence a panicle, comprising 10–20 fertile spikelets. Panicle open, linear, 1–2 cm long. Primary panicle branches indistinct the panicle almost racemose. 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, 2.3 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes deciduous, similar, shorter than spikelet. Lower glume oblong, 1.1 mm long, 1 length of upper glume, membranous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume apex truncate or obtuse. Upper glume lanceolate, 1.1 mm long, 0.5 length of adjacent fertile lemma, membranous, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume apex truncate or obtuse.

**Florets.** Fertile lemma elliptic, 2.3 mm long, membranous, without keel, 1 -veined, 0–3 -veined, one-veined. Lemma apex acute. Palea 1 length of lemma, 2 -veined. Palea keels approximate.

**Flower and Fruit.** Caryopsis with free soft pericarp, ellipsoid or ovoid.

**Distribution (TDWG), Continent.** Africa.

**Country /Province /State.** West tropical Africa. Guinea.

### **Sporobolus paucifolius** S.C. Boechat & H.M. Longhi-Wagner. *Iheringia, Bot.*, 44: 37 (1994).

**Accepted by:** R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online.

**TYPE** from Brazil. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Brasil: Goiás: Alto Paraíso-Teresina, 10 Oct 1979, *E.P. Heringer et al. 2382* (HT: IBGE).

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): *L. paucus*, few; folium, leaf. Culms bearing few leaves.

**Classification.** Subfamily Chloridoideae. Tribe: Zoysieae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Basal innovations extravaginal. Culms erect, 58 cm long. Leaf-sheaths glabrous on surface. Ligule a fringe of hairs, 0.5–0.8 mm long. Leaf-blades 1.5–3.7 cm long, 2–2.5 mm wide. Leaf-blade margins ciliate.

**Inflorescence.** Inflorescence a panicle. Panicle open or contracted, lanceolate, 11–13 cm long, 1 cm wide. Primary panicle branches appressed or ascending, whorled at most nodes, 0.6–3.4 cm long. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 4.5 mm long, 0.8–1 mm wide, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes similar, shorter than spikelet. Lower glume lanceolate, 1.4–2 mm long, 0.5 length of upper glume, membranous, without keels, 0–1 -veined. Lower glume lateral veins absent. Lower glume apex acute. Upper glume ovate, 3–3.5 mm long, 0.9 length of adjacent fertile lemma, membranous, without keels, 1 -veined. Upper glume primary vein absent or distinct. Upper glume lateral veins absent. Upper glume apex acute.



**Florets.** Fertile lemma ovate, 3.5–4 mm long, 0.7 mm wide, membranous, without keel, 2 -veined, 0–3 -veined. Lemma apex acute. Palea 4.1 mm long, 2 -veined.

**Flower and Fruit.** Anthers 3, 2–2.5 mm long. Caryopsis with free soft pericarp, ellipsoid, 1.4 mm long.

**Distribution (TDWG). Continent.** South America.

**Country /Province /State. Brazil.** Brazil West Central.

### **Sporobolus pectinatus** Hack. *Oesterr. Bot. Zeitschr.* liii. 198. (1903).

**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: *P. Conrath s.n.*, 1895, South Africa: Transvaal (W(fragm., US-87230)).

**Illustrations (Books):** L.K.A. Chippindall, *Grasses and Pastures of South Africa* (1955) (221, Fig 195).

**Images:** F.van Oudtshoorn, *Guide to Grasses of Southern Africa* (1999).

**Classification.** Subfamily Chloridoideae. Tribe: Zoysieae.

**Habit, Vegetative Morphology.** Perennial, caespitose, clumped densely. Rhizomes elongated. Butt sheaths papery, persistent and investing base of culm, with compacted dead sheaths. Basal innovations flabellate. Culms erect, 30–60 cm long. Lateral branches lacking. Leaf-sheaths glabrous on surface. Ligule a fringe of hairs. Leaf-blades flat or conduplicate, 15–30 cm long, 4–7 mm wide, mid-green or glaucous. Leaf-blade surface glabrous. Leaf-blade margins tuberculate-ciliate.

**Inflorescence.** Inflorescence a panicle. Panicle open, ovate, 7–20 cm long, contracted about secondary branches or with spikelets clustered towards branch tips (as a spiciform clump). Primary panicle branches spreading, whorled at most nodes. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 3 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes deciduous, reaching apex of florets. Lower glume ovate, 0.5 length of upper glume, membranous, without keels. Lower glume apex obtuse or acute. Upper glume elliptic, 1 length of adjacent fertile lemma, membranous, grey or purple, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume apex acute.

**Florets.** Fertile lemma ovate, 3 mm long, membranous, grey or purple, without keel, 1 -veined, 0–3 -veined, one-veined. Lemma apex acute. Palea 1 length of lemma, 2 -veined. Palea keels approximate.

**Flower and Fruit.** Caryopsis with free soft pericarp.

*N* = 20 (1 ref TROPICOS).

**Distribution (TDWG). Continent.** Africa.

**Country /Province /State. Southern Africa.** Limpopo, North-West, Gauteng, Mpumalanga, Kwazulu-Natal, Western Cape.

### **Sporobolus pectinellus** Mez. Fedde, *Repert.* xvii. 295 (1921).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

**TYPE** from Nigeria. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *McGregor 140*, Nigeria (B?; IT: K, P).

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): *L. pecten*, comb; -ella, diminutive. The lemma bears a row of stiff hairs.

**Classification.** Subfamily Chloridoideae. Tribe: Zoysieae.

**Habit, Vegetative Morphology.** Annual, caespitose. Culms erect, 10–45 cm long. Ligule a fringe of hairs. Leaf-blades flat or convolute, 1–8 cm long, 1–3 mm wide, stiff.

**Inflorescence.** Inflorescence a panicle. Panicle open, ovate, effuse, 3–18 cm long. Panicle branches capillary, glabrous in axils. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, filiform.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 0.8–1.2(–2) mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes deciduous, similar, shorter than spikelet. Lower glume oblong, 0.1–0.6 mm long, 0.25–0.75 length of upper glume, membranous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume apex truncate. Upper glume oblong or ovate, 0.4–0.8 mm long, 0.5–0.7 length of adjacent fertile lemma,

membranous, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume apex cuspidate, mucronate.

**Florets.** Fertile lemma ovate, 0.8–1.2(–2) mm long, membranous, without keel, 1 -veined, 0–3 -veined, one-veined. Lemma apex acute. Palea 2 -veined. Palea keels approximate.

**Flower and Fruit.** Anthers 3, 0.5–0.6 mm long. Caryopsis with free soft pericarp, ellipsoid, 0.6 mm long.

**Distribution (TDWG), Continent.** Africa.

**Country /Province /State.** West tropical Africa, West-central tropical Africa, Northeast tropical Africa, East tropical Africa. Ghana, Guinea-Bissau, Ivory Coast, Mali, Nigeria, Senegal, Sierre Leone, Togo. Central African Republic, Congo, DRC. Chad, Ethiopia (inc. Eritrea), Sudan. Tanzania, Uganda.

### **Sporobolus pellucidus** Hochst. *Flora*, viii. 201. (1855).

**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: *Schimper in Buchinger 1174* (P iso).

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): L. translucent but not hyaline. Glumes transparent.

**Classification.** Subfamily Chloridoideae. Tribe: Zoysieae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Butt sheaths persistent and investing base of culm, with fibrous dead sheaths. Culms erect, 20–75 cm long. Ligule a fringe of hairs. Leaf-blades convolute, 4–15 cm long, 1–2 mm wide. Leaf-blade apex filiform.

**Inflorescence.** Inflorescence a panicle. Panicle open, lanceolate, 6–20 cm long. Primary panicle branches ascending or spreading, 1–2 cm long, bearing spikelets almost to the base. Panicle branches glabrous in axils. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 1.7–2(–2.2) mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes deciduous, dissimilar, shorter than spikelet. Lower glume oblong or ovate, 0.7–0.8 mm long, 0.5–0.7 length of upper glume, hyaline, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume apex obtuse or acute. Upper glume ovate, 1–1.5 mm long, (0.5–)0.66–0.75 length of adjacent fertile lemma, membranous, dark green or grey, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume apex acute.

**Florets.** Fertile lemma ovate, 1.7–2(–2.2) mm long, membranous, dark green or grey, without keel, 1 -veined, 0–3 -veined. Lemma apex acute. Palea 2 -veined. Palea keels approximate.

**Flower and Fruit.** Anthers 3, 0.8–0.9 mm long. Caryopsis with free soft pericarp, ellipsoid or obovoid, 0.6–0.8 mm long.

**Distribution (TDWG), Continent.** Africa, Temperate Asia.

**Country /Province /State.** West tropical Africa, Northeast tropical Africa, East tropical Africa, Southern Africa. Eritrea, Ethiopia (inc. Eritrea), Socotra, Somalia. Kenya, Tanzania, Uganda. Namibia. Arabian Peninsula. Oman, Yemen.

### **Sporobolus perrieri** A.Camus. *Bull. Soc. Bot. France*, lxxiii. 436. (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, Onilaky valley: Humbert 2627 (P syn); Madagascar, Antsirabe: Perrier 10717 (P syn).

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): in honor of Joseph Marie Henri Alfred Perrier de la Bbthie (1872–1958) French botanist.

**Classification.** Subfamily Chloridoideae. Tribe: Zoysieae.

**Habit, Vegetative Morphology.** Perennial, caespitose, clumped densely. Culms erect, 8–14 cm long. Lateral branches lacking. Leaves mostly basal. Leaf-sheaths glabrous on surface, outer margin glabrous or hairy. Ligule a fringe of hairs. Leaf-blades convolute, 1–2 cm long, 1 mm wide, stiff. Leaf-blade surface glabrous. Leaf-blade apex obtuse.

**Inflorescence.** Inflorescence a panicle. Panicle contracted or spiciform, oblong, 2–3 cm long. Primary panicle branches appressed or ascending, whorled at lower nodes, 0.6–1 cm long. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, 0.2–1 mm long.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 1.9–2 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes deciduous, shorter than spikelet. Lower glume oblong, 0.6–0.8 mm long, 0.5 length of upper glume, membranous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume surface asperulous. Lower glume apex acute. Upper glume ovate, 1.3–1.4 mm long, 0.75 length of adjacent fertile lemma, membranous, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume apex acute.

**Florets.** Fertile lemma oblong, 1.9–2 mm long, membranous, without keel, 1 -veined, 0–3 -veined, one-veined. Lemma apex acute. Palea 1.5 mm long, 2 -veined. Palea keels approximate.

**Flower and Fruit.** Caryopsis with free soft pericarp, ovoid, 0.8–0.9 mm long.

**Distribution (TDWG). Continent.** Africa.

**Country /Province /State.** Western Indian ocean. Madagascar.

**Sporobolus phleoides** Hackel apud Stuckert. *Anal. Mus. Buenos Aires, Ser. III. vi. 468* (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.

**TYPE** from Argentina. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: IT: *T.J.V. Stuckert 2323, 1897, Argentina: Córdoba* (US-72698 (fragm.)).

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): Gk. -oides, like. Inflorescence a spike-like panicle as for *Phleum*.

**Classification.** Subfamily Chloridoideae. Tribe: Zoysieae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Basal innovations intravaginal. Culms erect, 50–100 cm long, 3–4 -noded. Culm-nodes glabrous. Lateral branches lacking or sparse. Leaf-sheaths glabrous on surface, outer margin hairy. Leaf-sheath oral hairs ciliate. Ligule a fringe of hairs. Leaf-blades convolute, 10–20 cm long, 3–4 mm wide. Leaf-blade surface glabrous. Leaf-blade apex acuminate.

**Inflorescence.** Inflorescence a panicle. Panicle spiciform, linear, continuous, truncate or rounded at the ends or tapering above, 8–25 cm long, 0.3–0.5 cm wide. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets elliptic, subterete, 2 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes deciduous, shorter than spikelet. Lower glume elliptic, 1 mm long, 0.5 length of upper glume, membranous, without keels, 0 -veined. Lower glume lateral veins absent. Lower glume apex acute. Upper glume elliptic, 1.6–1.8 mm long, 0.8–0.9 length of adjacent fertile lemma, membranous, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume apex acute.

**Florets.** Fertile lemma elliptic, 2 mm long, membranous, without keel, 1 -veined, 0–3 -veined, one-veined. Lemma apex acute or acuminate, mucous or mucronate. Palea readily splitting down midline, 2 -veined. Palea keels approximate.

**Flower and Fruit.** Anthers 0.4–0.6 mm long. Caryopsis with free soft pericarp, ellipsoid, 1.5 mm long, light brown.

**Distribution (TDWG). Continent.** South America.

**Country /Province /State.** Southern South America. Argentina Northwest.

**TDWG4.** Catamarca, Jujuy, La Rioja, Mendoza, Salta, Santiago del Estero, San Juan, San Luis, Tucuman. Cordoba, La Pampa, Santa Fe.

**Sporobolus piliferus** (Trin.) Kunth. *Enum. Pl. i. 211.* (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), 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) (as *S. japonicus*), W.D.Clayton & N.Snow, Key to Pacific Grasses (2010).

**TYPE** from Nepal. **Basionym or Replaced Name:** *Vilfa pilifera* Trin., *Gram. Unifl.* 157 (1824). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Nepal: Coll? (LE holo, K).

**Recent Synonyms:** *Sporobolus rupestris* (Trin.) Kunth, *Enum. Pl.* 1: 211. (1833). *Sporobolus japonicus* (Steud.) Maxim. ex Rendle, *Journ. Linn. Soc.* 36: 388 (1904).

**Illustrations (Books):** S. Phillips, *Poaceae* (Gramineae) in I. Hedberg & S. Edwards, *Flora of Ethiopia and Eritrea* (1995) (146, Fig. 60), T. Koyama, *Grasses of Japan and its neighbouring regions* (1987) (278, Fig. 106 as *S. japonicus*), K. M. Matthew, *Further Illustrations on the Flora of Tamilnadu Carnatic* (1988) (Pl. 827), H. J. Noltie, *The Grasses of Bhutan* (2000) (669, Fig. 35), S.-L. Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 686).

**Derivation** (Clifford & Bostock 2007): *L. pilus*, a hair; fero, bear. Hairy in some respect.

**Classification.** Subfamily Chloridoideae. Tribe: Zoysieae.

**Habit, Vegetative Morphology.** Annual, caespitose. Culms erect, 5–40 cm long. Ligule a fringe of hairs. Leaf-blades flat or convolute, 2–15 cm long, 1–2 mm wide. Leaf-blade surface pilose.

**Inflorescence.** Inflorescence a panicle. Panicle spiciform, linear, 1–14 cm long, 0.3–0.6 cm wide. Primary panicle branches appressed, whorled at most nodes. 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, 1.8–2.5 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes deciduous, similar, exceeding apex of florets. Lower glume lanceolate, 1.2–1.5 mm long, 0.66 length of upper glume, membranous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume apex acute. Upper glume ovate, 1.8–2.5 mm long, 1.1 length of adjacent fertile lemma, membranous, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume apex acute.

**Florets.** Fertile lemma ovate, 1.5–2.2 mm long, membranous, without keel, 1 -veined, 0–3 -veined, one-veined. Lemma apex acute. Palea 2 -veined. Palea keels approximate.

**Flower and Fruit.** Anthers 3, 0.4 mm long. Caryopsis with free soft pericarp, ellipsoid, laterally compressed, 1–1.4 mm long.

$N = 10$  (1 ref TROPICOS), or 20 (1 ref TROPICOS).

**Distribution (TDWG). Continent.** Africa, Temperate Asia, Tropical Asia, Pacific, South America.

**Country /Province /State.** West tropical Africa, West-central tropical Africa, Northeast tropical Africa, East tropical Africa, South tropical Africa, Western Indian ocean. Guinea, Nigeria. Central African Republic, Rwanda, DRC. Chad, Ethiopia (inc. Eritrea). Kenya, Tanzania, Uganda. Angola, Malawi, Mozambique, Zambia, Zimbabwe. Madagascar. **China, Eastern Asia.** China Southeast. Japan, Korea. Japan Honshu, or Shikoku, or Kyushu. **Indian Subcontinent, Indo-China, Malesia.** Eastern Himalaya, India, Nepal, Sri Lanka. Thailand. Malaya, Philippines. **North-central Pacific.** Hawaii (\*). **Mesoamerica, Northern South America, Brazil.** Costa Rica, Nicaragua, Panama. French Guiana, Guyana, Venezuela. Brazil Southeast, Brazil North.

**TDWG4.** Anhui, Jiangxi, Zhejiang. Darjeeling, Bhutan, Sikkim. Meghalaya. Karnataka, Kerala. Tamilnadu, Uttar Pradesh, West Bengal. Himachal Pradesh. Minas Gerais, Rio de Janeiro, Espirito Santo.

**Sporobolus pinetorum** A.S. Weakley & P.M. Peterson. *Sida*, 18(1): 258 (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 USA. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: S.N. Weakley, 31 Aug 1993, USA: North Carolina: Cumberland Co.: Fort Bragg Army Base, Macridge Zone (US-3295350).

**Illustrations (Books):** M.E. Barkworth et al, *Flora of North America north of Mexico Vol 25 Poaceae*, part 2 (2003) (138).

**Derivation** (Clifford & Bostock 2007): *L.* of the pines. Growing in pine woods.

**Classification.** Subfamily Chloridoideae. Tribe: Zoysieae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Butt sheaths indurate, glossy. Culms erect, 30–80 cm long, 1–3 mm diam. Culm-internodes elliptical in section, distally glabrous. Leaf-sheaths glabrous on surface to pubescent. Leaf-sheath oral hairs ciliate, 2–4 mm long. Ligule a fringe of hairs, 2–4 mm long. Leaf-blades flat or conduplicate or involute, 40–50 cm long, 1.5–2(–3) mm wide, dark green. Leaf-blade surface glabrous, hairless throughout or except near base. Leaf-blade margins scaberulous.

**Inflorescence.** Inflorescence a panicle. Panicle open or contracted, ovate or pyramidal, 15–30 cm long, 2–6 cm wide. Primary panicle branches ascending or spreading, 2–8 cm long. Panicle axis scaberulous. Panicle branches glabrous in axils or pubescent in axils. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, 2–22 mm long.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile

or the upper sterile. Spikelets lanceolate, subterete, 3.5–6.5 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes deciduous, reaching apex of florets. Lower glume lanceolate, 2.4–4.5 mm long, 0.6–0.8 length of upper glume, membranous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume apex acuminate. Upper glume lanceolate, 3.5–6.5 mm long, 1–1.5 length of adjacent fertile lemma, membranous, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume apex acute or acuminate.

**Florets.** Fertile lemma lanceolate or ovate, 3.4–4.3 mm long, membranous, without keel, 1 -veined, 0–3 -veined, one-veined. Lemma surface glabrous. Lemma apex acute. Palea ovate, 3.4–4.4 mm long, 1 length of lemma, 2 -veined. Palea keels approximate. Palea surface glabrous. Palea apex entire or dentate, 2 -fid, truncate or obtuse.

**Flower and Fruit.** Anthers 3, 2.5–3.4 mm long, purple. Caryopsis with free soft pericarp, fusiform, 1.8–2.2 mm long.

**Distribution (TDWG). Continent.** North America.

**Country /Province /State.** Southeastern USA. Georgia, North Carolina, South Carolina.

### **Sporobolus platensis** Parodi. *Rev. Fac. Agron. & Vet., Buenos Aires*, vi. 133 (1928).

**Accepted by:** R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

**TYPE** from Argentina. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *L.R. Parodi 8120*, 14 Apr 1927, Argentina: Buenos Aires (BAA-2913; IT: US-1388644).

**Illustrations (Books):** A.Burkat, *Flora Ilustrada de Entre Rios (Argentina)*, Pt II, Gramineas (1969) (227, Fig. 86), A.L.Cabrera, *Flora de la Provincia de Buenos Aires, IV Pt 2 Gramineas* (1970), B.Rosengurtt, *Gramineas Uruguayas I* (1970) (268, Fig. 110).

**Derivation** (Clifford & Bostock 2007): L. -ense, denoting origin. From La Plata Province, Argentina, or Platte River between Uruguay and Argentina.

**Classification.** Subfamily Chloridoideae. Tribe: Zoysieae.

**Habit, Vegetative Morphology.** Perennial. Basal innovations extravaginal. Culms 30–100 cm long, 5–6 -noded. Leaf-sheaths mostly shorter than adjacent culm internode, glabrous on surface. Ligule a fringe of hairs. Leaf-blades flat or convolute, 20–30 cm long, 3–4 mm wide. Leaf-blade surface pilose, sparsely hairy, hairy adaxially.

**Inflorescence.** Inflorescence a panicle, exerted or embraced at base by subtending leaf. Panicle contracted, lanceolate, 10–25 cm long. Primary panicle branches appressed, 4–5 cm long. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, angular, scaberulous.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets elliptic, laterally compressed, 6–7 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes deciduous, shorter than spikelet. Lower glume elliptic, 4 mm long, 0.8 length of upper glume, membranous, without keels, 1 -veined. Lower glume primary vein scaberulous. Lower glume lateral veins absent. Lower glume apex acute. Upper glume elliptic, 4.5–5 mm long, 0.66 length of adjacent fertile lemma, membranous, without keels, 1 -veined. Upper glume primary vein scaberulous. Upper glume lateral veins absent. Upper glume apex acuminate.

**Florets.** Fertile lemma elliptic, 6–7 mm long, membranous, without keel, 1 -veined, 0–3 -veined, one-veined. Lemma midvein scaberulous. Lemma apex acuminate. Palea readily splitting down midline, 2 -veined. Palea keels approximate.

**Flower and Fruit.** Anthers 3, 2 mm long, purple. Caryopsis with free soft pericarp, ellipsoid, 3–3.5 mm long, dark brown. Embryo 0.33 length of caryopsis.

**Distribution (TDWG). Continent.** South America.

**Country /Province /State.** Brazil, Southern South America. Brazil South. Argentina Northeast, Uruguay.

**TDWG4.** Buenos Aires, Entre Rios.

### **Sporobolus potosiensis** J.K. Wipff & S.D. Jones. *Sida*, 16(1): 165 (1994).

**Accepted by:** R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

**TYPE** from Mexico. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Mexico: San Luis Potosí, 9 km al E de Río Verde, sobre la carretera a Rayón, alt. 1000 m, terrenos aluviales planos con vegetación de zacatal halófilo con *Prosopis*, graminea dominate, 16 Sep 1967, *J. Rzedowski 24790* (HT: MICH. IT: LL, MICH, TAES, WIS).

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): *L. -ensis*, denoting origin. From San Luis Potosi, Mexico.

**Classification.** Subfamily Chloridoideae. Tribe: Zoysieae.

**Habit, Vegetative Morphology.** Perennial. Rhizomes elongated. Culms erect, 18–51 cm long. Leaf-sheaths glabrous on surface, outer margin hairy. Leaf-sheath oral hairs ciliate. Ligule a fringe of hairs, 0.1–0.3 mm long. Collar glabrous. Leaf-blades flat or conduplicate or involute, 6.2–24 cm long, 0.6–2.5 mm wide. Leaf-blade surface scaberulous and papillose, rough adaxially. Leaf-blade margins scaberulous.

**Inflorescence.** Inflorescence a panicle. Panicle open, elliptic, 12–18 cm long, 4–9 cm wide. Primary panicle branches 3–8 cm long. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, 0.2–2.2 mm long.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets elliptic, subterete, 1.6–2.5 mm long, 0.5–1.1 mm wide, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes deciduous, reaching apex of florets. Lower glume lanceolate, 1–1.5 mm long, 0.75 length of upper glume, hyaline, without keels, 0 -veined. Lower glume lateral veins absent. Lower glume apex acute. Upper glume lanceolate, 1.3–2.1 mm long, 1 length of adjacent fertile lemma, membranous, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume apex acute.

**Florets.** Fertile lemma lanceolate, 1.5–2.3 mm long, membranous, without keel, 1 -veined, 0–3 -veined, one-veined. Lemma apex acute. Palea readily splitting down midline, 1.6–2.2 mm long, 2 -veined. Palea keels approximate.

**Flower and Fruit.** Anthers 3, 1.2–1.4 mm long, yellow. Caryopsis with free soft pericarp, 0.9–1 mm long.

**Distribution (TDWG). Continent.** North America.

**Country /Province /State.** Mexico. Northeast Mexico.

**TDWG4.** San Luis Potosi.

**Sporobolus pseudairoides** Parodi. *Rev. Fac. Agron. & Vet., Buenos Aires*, vi. 144 (1928).

**Accepted by:** R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

**TYPE** from Argentina. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *L.R. Parodi 4316*, Feb 1922, Argentina: Misiones (BAA-2920; IT: US-1448002).

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): *Gk pseudos*, false. Resembling *Sporobolus airoides*.

**Classification.** Subfamily Chloridoideae. Tribe: Zoysieae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Basal innovations extravaginal, flabellate. Culms 90 cm long, 3.5 mm diam., 3–4 -noded. Culm-nodes glabrous. Leaf-sheaths keeled, glabrous on surface. Ligule a fringe of hairs. Leaf-blades convolute, 20–30 cm long, 1–5 mm wide. Leaf-blade surface glabrous. Leaf-blade apex attenuate.

**Inflorescence.** Inflorescence a panicle. Panicle open, pyramidal, effuse, 35–40 cm long, contracted about primary branches. Primary panicle branches 7–8 cm long. Panicle branches capillary, flexuous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets elliptic, laterally compressed, 2 mm long, 0.75 mm wide, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes deciduous, shorter than spikelet. Lower glume oblong, 0.75 mm long, 0.5 length of upper glume, membranous, without keels, 0 -veined. Lower glume lateral veins absent. Lower glume apex obtuse. Upper glume elliptic, 1.2–1.3 mm long, 0.5 length of adjacent fertile lemma, membranous, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume apex acute.

**Florets.** Fertile lemma elliptic, 2 mm long, membranous, dark green or purple, without keel, 1 -veined, 0–3 -veined, one-veined. Lemma apex acute. Palea embraced by lemma, 1.8 mm long, 2 -veined. Palea keels approximate.

**Flower and Fruit.** Anthers 3, 0.25 mm long, green. Caryopsis with free soft pericarp, ovoid, 1.2 mm long, light brown, truncate. Embryo 0.33 length of caryopsis.

**Distribution (TDWG). Continent.** South America.

**Country /Province /State.** Brazil, Southern South America. Brazil West Central, Brazil Northeast, Brazil North, Brazil Southeast, Brazil South. Paraguay.

**TDWG4.** Misiones.

## **Sporobolus pulchellus** R. Br. *Prod.* 170. (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: *Brown 6206*, 1803, Australia: North Coast, Arnhem Bay [Bay 3] (BM (specimen with '3, *Lysispora pulchella* B minor, North Coast' in handwriting of R. Br.); ILT: BRI, NEW (photo, BARI), MEL). LT designated by Baaijens & Veldkamp, *Blumea* 35: 452 (1991).

**Illustrations (Books):** K.O.Mallett (ed.), *Flora of Australia*, Vol 44B. *Poaceae* (2004) (329, Fig 57), D.Sharp & B.K.Simon, *AusGrass*. Grasses of Australia. CD-Rom Version 1.0. (2002).

**Illustrations (Journals):** *Austr. Syst. Bot.* (12: 428, Fig 17(1999)).

**Derivation** (Clifford & Bostock 2007): L. pretty. Attractive in some respect, usually the inflorescence.

**Classification.** Subfamily Chloridoideae. Tribe: Zoysieae.

**Habit, Vegetative Morphology.** Annual. Culms 4–30 cm long. Leaf-sheaths glabrous on surface. Ligule a fringe of hairs. Leaf-blades 1–7 cm long, 0.5–2 mm wide. Leaf-blade surface glabrous.

**Inflorescence.** Inflorescence a panicle. Panicle open, ovate, effuse, 1–8 cm long. Primary panicle branches whorled at most nodes. 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, 0.7–0.8 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes deciduous, reaching apex of florets. Lower glume lanceolate, 0.5 length of upper glume, membranous, without keels, 0 -veined. Lower glume lateral veins absent. Lower glume apex acute. Upper glume elliptic, 1 length of adjacent fertile lemma, membranous, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume apex acute.

**Florets.** Fertile lemma ovate, 0.7–0.8 mm long, membranous, without keel, 1 -veined, 0–3 -veined, one-veined. Lemma apex acute. Palea 2 -veined. Palea keels approximate.

**Flower and Fruit.** Caryopsis with free soft pericarp, obovoid, 0.6 mm long.

**Distribution (TDWG). Continent.** Tropical Asia, Australasia.

**Country /Province /State. Indo-China, Papuasia.** Laos, Vietnam. New Guinea. **Australia.** Western Australia, Northern Territory, Queensland.

**TDWG4.** Kimberley, Darwin & Gulf, Victoria R & Barkly Tableland. North.

## **Sporobolus pungens** (Schreb.) Kunth. *Rev. Gram.* i. 68. (1829).

**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 Algeria. **Basionym or Replaced Name:** *Agrostis pungens* Schreb., *Graes.* ii. 46 (1772). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Algeria: Hebenstreit.

**Illustrations (Books):** N.Feinbrun-Dothan, *Flora Palaestina* 4 (1986) (Pl. 390), L.Boulos, *Flora of Egypt* 4 (2005) (273, Pl. 81).

**Classification.** Subfamily Chloridoideae. Tribe: Zoysieae.

**Habit, Vegetative Morphology.** Perennial, mat forming. Rhizomes elongated. Culms geniculately ascending, 10–30 cm long. Culm-internodes distally glabrous. Leaves distichous. Ligule a fringe of hairs. Leaf-blades involute, 2–8 cm long, 2–5 mm wide, firm. Leaf-blade surface pubescent, hairy adaxially. Leaf-blade apex pungent.

**Inflorescence.** Inflorescence a panicle. Panicle contracted, ovate, 3–6 cm long. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 1.5–2.5 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes deciduous, similar, reaching apex of florets. Lower glume lanceolate, 0.66–0.8 length of upper glume, membranous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume apex acute. Upper glume ovate, 1.5–2.5 mm long, 1 length of adjacent fertile lemma, membranous, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume apex acute.

**Florets.** Fertile lemma ovate, 1.5–2.5 mm long, membranous, without keel, 1 -veined, 0–3 -veined, one-veined. Lemma apex acute. Palea 2 -veined. Palea keels approximate.

**Flower and Fruit.** Anthers 3, 1–1.5 mm long. Caryopsis with free soft pericarp.

**Distribution (TDWG). Continent.** Europe, Africa, Temperate Asia.

**Region.** Southwestern Europe, Southeastern Europe.

**Country /Province /State.** : Baleares, Corsica, France, Portugal, Sardinia, Spain. : Albania, Greece, Italy, Crete, Romania, Sicily, Yugoslavia. **Northern Africa, Macaronesia.** Egypt, Libya, Morocco, Tunisia. Cape Verde. **Western Asia.** Cyprus, Palestine, Israel & Jordan, Turkey.

**Sporobolus purpurascens** (Sw.) Ham. *Prod. Pl. Ind. Occ.* 5. (1825).

**Accepted by:** R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

**TYPE** from Jamaica. **Basionym or Replaced Name:** *Agrostis purpurascens* Sw., *Prodr.* 25 (1788). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: Swartz *s.n.*, Jamaica (S; IT: BM).

**Illustrations (Books):** M.E.Barkworth et al, *Flora of North America north of Mexico Vol 25 Poaceae*, part 2 (2003) (134), A.S.Hitchcock, *Manual of the Grasses of the West Indies* (1936) (86, Fig. 51), G.Harling & C.Persson, *Flora of Ecuador* (2006) (68: 63, Fig. 8 (2001)).

**Illustrations (Journals):** *Ruizia* (13:252, Fig 29h (1993)).

**Derivation** (Clifford & Bostock 2007): *L. purpurascens*, become purple. Inflorescences reddish-purple.

**Classification.** Subfamily Chloridoideae. Tribe: Zoysieae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Culms erect, 11–31 cm long, 1 mm diam. Lateral branches lacking. Leaves mostly basal. Leaf-sheaths glabrous on surface, outer margin hairy. Ligule a fringe of hairs, 0.7–0.8 mm long. Leaf-blades 4–19 cm long, 3–5 mm wide. Leaf-blade surface glabrous or pilose, sparsely hairy, hairy adaxially. Leaf-blade margins tuberculate-ciliate.

**Inflorescence.** Inflorescence a panicle. Panicle spiciform, linear, 6–12 cm long, 0.3–0.5 cm wide. Primary panicle branches appressed, whorled at most nodes, 0.5–1 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, 2.9–3.3 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes deciduous, reaching apex of florets. Lower glume lanceolate, 1–2 mm long, 0.33–0.66 length of upper glume, membranous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume apex acute. Upper glume lanceolate, 2.7–3.3 mm long, 1 length of adjacent fertile lemma, membranous, grey or purple, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume apex acute.

**Florets.** Fertile lemma ovate, 2.7–2.9 mm long, membranous, grey or purple, without keel, 1 -veined, 0–3 -veined, one-veined. Lemma apex acute. Palea readily splitting down midline, 1 length of lemma, 2 -veined. Palea keels approximate.

**Flower and Fruit.** Anthers 3, 1.1–1.4 mm long, pallid or purple. Caryopsis with free soft pericarp, ellipsoid, laterally compressed, 1.6–1.8 mm long.

$2n = 60$  (1 ref TROPICOS).

**Distribution (TDWG). Continent.** North America, South America.

**Country /Province /State.** **South-central USA, Southeastern USA, Mexico.** Texas. Florida. Northeast Mexico, Gulf (Mexico), Southwest Mexico, Southeast Mexico. **Mesoamerica, Caribbean, Western South America, Brazil.** Cuba, Jamaica, Windward Islands. Colombia. Brazil West Central, Brazil North, Brazil Southeast.

**TDWG4.** Tamaulipas. Veracruz. Jalisco, Oaxaca. Chiapas.

**Sporobolus pyramidalis** Beauv. *Fl. Owar.* ii. 36. (1816).

**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), W.D.Clayton & N.Snow, *Key to Pacific Grasses* (2010).

**TYPE** from Nigeria. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *Palisot de Beauvois s.n.*, Nigeria (G (photo, BRI, K); IT: P?).

**Recent Synonyms:** *Sporobolus pulvinatus* Swallen, *Journ. Wash. Acad. Sci.* 1: 351 (1941).

**Illustrations (Books):** R.M.Phillips, F.T.E.A., *Gramineae* (2(1974):379, Fig 101 as *S. fimbriatus*), G.V.Pope et al., *Flora Zambesiaca* 10 (2(1999):185 t. 52), J.Bosser, *Graminees des Paturage et des Cultures a Madagascar* (1969) (127, Fig 40), S.Phillips, *Poaceae* (Gramineae) in I.Hedberg & S.Edwards, *Flora of Ethiopia and Eritrea* (1995) (149, Fig 61), S.W.L.Jacobs, R.D.B.Whalley & D.J.B.Wheeler., *Grasses of New South Wales*, 4th edn (2008) (379), T.D.Stanley & E.Ross, *Flora of South East Queensland, Gramineae* (1989) (183, Fig. 28), D.Sharp & B.K.Simon, *AusGrass*. Grasses of Australia. CD-Rom Version 1.0. (2002), G.Harling & C.Persson, *Flora of Ecuador* (2006) (68: 63, Fig. 8 (2001)), E.Hafliger & E.Schultz, *Grass Weeds*, CIBA-GEIGY (2:129(1980)).



**Illustrations (Journals):** *Austr. Syst. Bot.* (12: 418, Fig 7(1999)).

**Images:** D.Sharp & B.K.Simon, *AusGrass*. Grasses of Australia. CD-Rom Version 1.0. (2002);, F.van Oudtshoorn, *Guide to Grasses of Southern Africa* (1999).

**Derivation** (Clifford & Bostock 2007): *L. pyramis*, pyramid; -ale, pertaining to. Panicle pyramid-shaped.

**Classification.** Subfamily Chloridoideae. Tribe: Zoysieae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Butt sheaths herbaceous. Culms erect, 90–160 cm long, 2–5 mm diam. Ligule a fringe of hairs. Leaf-blades flat or convolute, 20–50 cm long, 3–10 mm wide. Leaf-blade apex attenuate, filiform.

**Inflorescence.** Inflorescence a panicle. Panicle open, pyramidal, 20–45 cm long, contracted about primary branches. Primary panicle branches spreading, 5–10 cm long, bearing spikelets almost to the base. Panicle branches glabrous in axils. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, linear, 0.5–1 mm long.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 1.7–2 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes deciduous, similar, subequal in width, shorter than spikelet, thinner than fertile lemma. Lower glume oblong, 0.2–0.6 mm long, 0.5–0.8 length of upper glume, without keels, 0 -veined. Lower glume lateral veins absent. Lower glume apex obtuse. Upper glume oblong, 0.5–0.8 mm long, 0.3–0.4 length of adjacent fertile lemma, hyaline, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume apex obtuse.

**Florets.** Fertile lemma ovate, 1.7–2 mm long, membranous, without keel, 1 -veined, 0–3 -veined, one-veined. Lemma apex acute. Palea 2 -veined. Palea keels approximate.

**Flower and Fruit.** Anthers 3, 0.6–1.1 mm long. Caryopsis with free soft pericarp, obovoid, 0.8–1 mm long. *N* = 12 (1 ref TROPICOS), or 15 (1 ref TROPICOS).

**Distribution (TDWG). Continent.** Africa, Temperate Asia, Tropical Asia (\*), Australasia (\*), Pacific, 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, Middle Atlantic ocean, Western Indian ocean. Benin, Burkina, Gambia, Ghana, Guinea-Bissau, Guinea, Ivory Coast, Liberia, Mali, Nigeria, Sierra Leone, Togo. Central African Republic, Cameroon, Equatorial Guinea, Gabon, Rwanda, DRC. Chad, Ethiopia (inc. Eritrea), Sudan. Kenya, Tanzania, Uganda. Angola, Malawi, Mozambique, Zambia, Zimbabwe. Namibia, Botswana, Limpopo, Gauteng, Mpumalanga, Swaziland, Kwazulu-Natal, Eastern Cape. Mauritius, Madagascar, Seychelles. **Arabian Peninsula.** Oman. **Papuasias.** Solomon Is. **Australia, New Zealand.** Northern Territory (\*), Queensland (\*), New South Wales (\*). **North-central Pacific.** Marquesas. Caroline Is, Marianas. Hawaii (\*). **Mexico.** Central Mexico, Gulf (Mexico), Southwest Mexico, Southeast Mexico. **Mesoamerica, Caribbean, Northern South America, Western South America, Brazil.** Bahamas, Cayman Is, Cuba, Dominican Republic, Haiti, Jamaica, Leeward Is, Windward Islands, Puerto Rico, Trinidad-Tobago. Bolivia, Colombia. Brazil Southeast, Brazil North.

**TDWG4.** Central Australia. North, Central, South East. Coast.

**Sporobolus pyramidatus** (Lam.) Hitchcock. *U. S. Dept. Agric., Misc. Publ. No.* 243: 84 (1936).

**Accepted by:** R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

**TYPE** from Martinique. **Basionym or Replaced Name:** *Agrostis pyramidata* Lam., *Tabl. Encycl.* 1: 161 (1791). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: T: *Richard. s.n.*, Martinique (LE-TRIN-1645.01 (fragm. & illust.)). HT: *Richard s.n.*, South America (P-LA).

**Recent Synonyms:** *Sporobolus patens* Swallen, *Journ. Wash. Acad. Sci.* 1: 352 (1941).

**Illustrations (Books):** R.M.Polhill, F.T.E.A., *Gramineae* (2:379, Fig.101), M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 25 *Poaceae*, part 2 (2003) (120), F.W.Gould, *The Grasses of Texas* (1975) (291, Fig. 153), A.S.Hitchcock, *Manual of the Grasses of the West Indies* (1936) (54, Fig. 48), S.A.Renvoize, *Gramineas de Bolivia* (1998) (333, Fig. 70), S.A.Renvoize, *The Grasses of Bahia*, 1984 (60, Fig. 21), L.B. Smith, D.C. Wasshausen, R.M. Klein *Flora Illustrada Catarinensis Gramineas* (1981–1982) (379, Fig. 87), A.Burkat, *Flora Illustrada de Entre Rios (Argentina)*, Pt II, *Gramineas* (1969) (229, Fig. 87), B.Rosengurtt, *Gramineas Uruguayas I* (1970) (272, Fig. 112), G.Harling & C.Persson, *Flora of Ecuador* (2006) (68: 69, Fig. 9 (2001)).

**Derivation** (Clifford & Bostock 2007): *L.* like a pyramid. Inflorescence a contracted pyramid-shape panicle.

**Classification.** Subfamily Chloridoideae. Tribe: Zoysieae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Culms geniculately ascending, 15–60 cm long, 1–1.5 mm diam. Culm-internodes distally glabrous. Leaves mostly basal. Leaf-sheaths glabrous on surface, outer margin hairy. Ligule a fringe of hairs, 0.5–0.8 mm long. Leaf-blades 4–19 cm long, 2–4 mm wide. Leaf-blade margins scabrous, tuberculate-ciliate, hairy at base.

**Inflorescence.** Inflorescence a panicle. Panicle open, pyramidal, 3–13 cm long. Primary panicle branches spreading, whorled at most nodes. 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, subterete, 1.6–1.8 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes deciduous, reaching apex of florets. Lower glume linear, 0.6–0.7 mm long, 0.33–0.5 length of upper glume, membranous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume apex acuminate. Upper glume lanceolate, 1.6–1.8 mm long, 1 length of adjacent fertile lemma, membranous, grey, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume apex acute.

**Florets.** Fertile lemma lanceolate, 1.5–1.7 mm long, membranous, grey, without keel, 1 -veined, 0–3 -veined, one-veined. Lemma apex acute. Palea readily splitting down midline, 1 length of lemma, 2 -veined. Palea keels approximate.

**Flower and Fruit.** Anthers 2, 1.2 mm long. Caryopsis with free soft pericarp, ovoid, 1.1–1.2 mm long.

$2n = 24$  (1 ref TROPICOS).

**Distribution (TDWG). Continent.** Europe (\*), Pacific, North America, South America.

**Region. Northern Europe (\*).**

**Country /Province /State.** : GB Aliens (Ryves et al). **North-central Pacific.** Hawaii. **Northwest USA, North-central USA, Southwestern USA, South-central USA, Southeastern USA, Mexico.** Colorado. Kansas, Oklahoma. Arizona, Utah. New Mexico, Texas. Arkansas, Florida, Louisiana. **Mesoamerica, Caribbean, Northern South America, Western South America, Brazil, Southern South America.** Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua, Panama. Aruba, Bahamas, Cuba, Dominican Republic, Haiti, Jamaica, Leeward Is, Windward Islands, Puerto Rico, Venezuelan and Netherlands Antilles. French Guiana, Surinam, Venezuela. Bolivia, Colombia, Ecuador, Peru. Brazil West Central, Brazil Northeast, Brazil North, Brazil Southeast. Argentina Northeast, Argentina Northwest, Chile North, Chile Central, Paraguay, Uruguay.

**TDWG4.** Mato Grosso, Bahia, Ceara, Rio Grande do Norte, Paraiba, Pernambuco, Alagoas, Sergipe, Catarina, Rio Grande do Sul. Catamarca, Jujuy, La Rioja, Mendoza, Salta, Santiago del Estero, San Juan, San Luis, Tucuman. Buenos Aires, Chaco, Cordoba, Entre Rios, Formosa, La Pampa, Santa Fe. Zacatecas.

**Sporobolus quadratus** Clayton. *Kew Bull.* xix. 290 (1965).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

**TYPE** from Kenya. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Kenya, Nakuru District: *McCallum-Webster K88* (K holotype).

**Illustrations (Books):** No illustration found (BKS).

**Classification.** Subfamily Chloridoideae. Tribe: Zoysieae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Butt sheaths papery or coriaceous. Culms erect, 30–90 cm long. Ligule a fringe of hairs. Leaf-blades convolute, 15–30 cm long, 2–3 mm wide.

**Inflorescence.** Inflorescence a panicle. Panicle spiciform, pyramidal, 6–18 cm long, 0.5–0.8 cm wide. Primary panicle branches appressed, 0.5–1.5 cm long. Panicle branches glabrous in axils. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 2.2–2.7 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes deciduous, dissimilar, shorter than spikelet. Lower glume oblong, 0.5–1 mm long, 0.4–0.6 length of upper glume, hyaline, without keels, 0 -veined. Lower glume lateral veins absent. Lower glume apex obtuse. Upper glume ovate, 1.2–1.6 mm long, 0.66 length of adjacent fertile lemma, membranous, grey, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume apex acute.

**Florets.** Fertile lemma ovate, 2.2–2.7 mm long, membranous, grey, without keel, 1 -veined, 0–3 -veined, one-veined. Lemma apex acute (incurved). Palea 2 -veined. Palea keels approximate.

**Flower and Fruit.** Anthers 3, 0.6–0.8 mm long. Caryopsis with free soft pericarp, square, 0.7–0.8 mm long.

**Distribution (TDWG). Continent.** Africa.

**Country /Province /State.** West-central tropical Africa, Northeast tropical Africa, East tropical Africa. Cameroon. Ethiopia (inc. Eritrea). Kenya, Tanzania, Uganda.

**Sporobolus rangei** Pilger. *Engl. Jahrb.* xliii. 385 (1909).

Regarded by K as a synonym (*S. ioclados*).

**Accepted by:** U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

**TYPE** from Namibia. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Namibia, Chammis: *Range 470* (B holo).

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): in honor of Paul Range (1879–1952) German geologist who collected plants in South Africa.

**Classification.** Subfamily Chloridoideae. Tribe: Zoysieae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Butt sheaths coriaceous. Culms erect, 25–70 cm long. Ligule a fringe of hairs. Leaf-blades filiform, involute, 3–14 cm long, 1–3 mm wide.

**Inflorescence.** Inflorescence a panicle. Panicle open, pyramidal, 4–16 cm long, contracted about primary branches. Primary panicle branches whorled at most nodes (4–8 whorls). Panicle branches glabrous in axils. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 1.2–2.7 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes deciduous, similar, exceeding apex of florets. Lower glume lanceolate or oblong, 0.6–1.4 mm long, (0.25–)0.33–0.5(–0.75) length of upper glume, membranous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume apex acute. Upper glume lanceolate or ovate, 1.2–2.7 mm long, 1.1 length of adjacent fertile lemma, membranous, grey, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume apex acute.

**Florets.** Fertile lemma lanceolate, 1–2.5 mm long, membranous, grey, without keel, 1 -veined, 0–3 -veined, one-veined. Lemma apex acute. Palea 2 -veined. Palea keels approximate.

**Flower and Fruit.** Anthers 3, 1.2–1.5 mm long. Caryopsis with free soft pericarp, ellipsoid, 1.2–1.4 mm long.

**Distribution (TDWG). Continent.** Africa.

**Country /Province /State.** West-central tropical Africa, East tropical Africa, Southern Africa. DRC. Kenya, Tanzania, Uganda. Namibia, Botswana, Limpopo, North-West, Free State, Northern Cape.

**Sporobolus recurvatus** S. de Castro Boechat & H.M. Longhi-Wagner. *Bradea*, 6(20): 177 (1993).

**Accepted by:** R.J.Soreng et al., *Catalogue of New World 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: IT: *A. Chase 11887*, 8 Apr 1930, Brazil: Matto Grosso: between Bonito & Rondonopolis (IT: US-1500497).

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): L. reflexed. Spikelets with spreading or reflexed awns.

**Classification.** Subfamily Chloridoideae. Tribe: Zoysieae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Butt sheaths persistent and investing base of culm, with compacted dead sheaths. Basal innovations intravaginal. Culms erect, 71–143 cm long, 3–6 -noded. Leaf-sheaths outer margin hairy. Ligule a fringe of hairs, 0.1–0.2 mm long. Leaf-blades curved, flat or involute, 6.5–26 cm long, 1.8–3.5 mm wide. Leaf-blade margins ciliate.

**Inflorescence.** Inflorescence a panicle. Peduncle 28–64 cm long. Panicle open, lanceolate, 19–49 cm long, 13 cm wide. Primary panicle branches whorled at most nodes, 1–13.5 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 elliptic, subterete, 4–6.2 mm long, 1–1.5 mm wide, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes deciduous, reaching apex of florets. Lower glume lanceolate, 3–5.9 mm long, 0.5 length of upper glume, membranous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume surface scabrous. Lower glume apex acute. Upper glume lanceolate, 3.3–6.5 mm long, 1 length of adjacent fertile lemma, membranous, grey, without keels, 1–3 -veined. Upper glume lateral veins absent or obscure. Upper glume surface scabrous. Upper glume apex acute.

**Florets.** Fertile lemma lanceolate, 3.8–5 mm long, 0.6–0.8 mm wide, membranous, without keel, 1 -veined, 0–3 -veined, one-veined. Lemma apex acute. Palea 3.7–4.8 mm long, 2 -veined. Palea keels approximate.

**Flower and Fruit.** Anthers 3, 2.6–3 mm long. Caryopsis with free soft pericarp, ellipsoid, 2.1–2.6 mm long, dark brown. Embryo 0.5 length of caryopsis.

**Distribution (TDWG).** **Continent.** South America.

**Country /Province /State.** **Brazil.** Brazil West Central.

**Sporobolus reflexus** S.C. Boechat & H.M. Longhi-Wagner. *Iheringia, Bot.*, 44: 38 (1994).

**Accepted by:** R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online.

**TYPE** from Brazil. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Brasil: Distrito Federal: Brasília, 10 Oct 1990, A.L. Brochado & T. Filgueiras 68 (HT: IBGE; IT: ICN).

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): L. bent sharply backwards. Panicle branches reflexed.

**Classification.** Subfamily Chloridoideae. Tribe: Zoysieae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Basal innovations intravaginal. Culms erect, 20–80 cm long, 2–3 -noded. Leaf-sheaths mostly shorter than adjacent culm internode, glabrous on surface. Ligule a fringe of hairs, 0.2–0.5 mm long. Leaf-blades involute, 4.8–30 cm long, 1–4 mm wide. Leaf-blade margins scabrous, glabrous or ciliate.

**Inflorescence.** Inflorescence a panicle. Peduncle 9–43 cm long. Panicle open, pyramidal, 6–16 cm long, 2–6 cm wide. Primary panicle branches reflexed, whorled at most nodes, 0.3–4 cm long. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets elliptic, subterete, 2.5–5 mm long, 0.8–1.8 mm wide, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes deciduous, reaching apex of florets. Lower glume lanceolate, 1.2–1.5 mm long, 0.33–0.5 length of upper glume, hyaline, without keels, 0–1 -veined. Lower glume lateral veins absent. Lower glume apex acute. Upper glume lanceolate, 2.2–3 mm long, 1 length of adjacent fertile lemma, membranous, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume apex acute.

**Florets.** Fertile lemma lanceolate, 2.2–4.5 mm long, 0.5–0.7 mm wide, membranous, without keel, 1 -veined, 0–3 -veined, one-veined. Lemma apex acute. Palea readily splitting down midline, 2.3–4.3 mm long, 2 -veined. Palea keels approximate.

**Flower and Fruit.** Anthers 3, 1.7–2.5 mm long. Caryopsis with free soft pericarp, oblong, 1.8–2.2 mm long, light brown, rugose. Embryo 0.25–0.5 length of caryopsis.

**Distribution (TDWG).** **Continent.** South America.

**Country /Province /State.** **Brazil.** Brazil West Central, Brazil Southeast.

**TDWG4.**

**Sporobolus rigens** (Trin.) E Desv. C. Gay, *Fl. Chil.* vi. 295. (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:** *Vilfa rigens* Trin., *Sp. Gram.* 3(21): , t. 250 (1829–1830)

. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Chile: [Mendoza], [Gillies] HT: (LE-TRIN-1734.02).

**Illustrations (Books):** A.L.Cabrera, *Flora de la Provincia de Buenos Aires, IV Pt 2 Gramineas* (1970) (377, Fig. 96), M.N.Correa, *Flora Patagonica* Parte III, Gramineae (1978) (*Fl. Pat.* 3: 469, Fig. 312 (1978)).

**Derivation** (Clifford & Bostock 2007): L. rigeo, be stiff. Leaf-blades cylindrical or inrolled when dry.

**Classification.** Subfamily Chloridoideae. Tribe: Zoysieae.

**Habit, Vegetative Morphology.** Perennial. Rhizomes elongated. Culms 100–150 cm long. Leaf-sheaths glabrous on surface, outer margin hairy. Ligule a fringe of hairs. Leaf-blades filiform, terete, 60–100 cm long, 2–5 mm wide, stiff.

**Inflorescence.** Inflorescence a panicle. Panicle spiciform, linear, continuous or interrupted, 20–80 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, 5.5–7.5 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes deciduous, reaching apex of florets. Lower glume ovate, 0.66 length of upper glume, membranous, without keels, 0–1 -veined. Lower glume lateral veins absent. Lower glume apex acute. Upper glume ovate, 1 length of adjacent fertile lemma, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume apex acute.

**Florets.** Fertile lemma ovate, 3.5–6.5 mm long, membranous, without keel, 3 -veined, 0–3 -veined. Lemma apex acute. Palea readily splitting down midline, 1 length of lemma, 2 -veined. Palea keels approximate.

**Flower and Fruit.** Anthers 3, 3 mm long. Caryopsis with free soft pericarp, ellipsoid or orbicular, 2–2.5 mm long.

**Distribution (TDWG). Continent.** South America.

**Country /Province /State. Southern South America.** Argentina Northeast, Argentina South, Argentina Northwest, Chile Central, Chile South.

**TDWG4.** Catamarca, Jujuy, La Rioja, Mendoza, Salta, San Juan, San Luis, Tucuman. Buenos Aires, Cordoba, La Pampa, Santa Fe. Chubut, Neuquén, Río Negro. Tarapaca, Antofagasta, Atacama, Coquimbo.

### **Sporobolus rigidifolius** (Trin.) Mez ex J.F. Veldkamp. *Kew Bull.*, 45(3): 582: (1990).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online.

**TYPE** from Mauritius. **Basionym or Replaced Name:** *Vilfa rigidifolia* Trin., *Mem. Acad. Imp. Sci. Saint-Petersbourg, Ser. 6, Sci. Math., Seconde Pt. Sci. Nat.* 6,4(1–2): 80 (1840). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *Petit-Thouars 62*, Mauritius: Mt. du Pouce (B; IT: L, LE, P).

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): *L. rigidus*, stiff; folium, leaf. Leaf-blades rigid.

**Classification.** Subfamily Chloridoideae. Tribe: Zoysieae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Rhizomes short. Culms geniculately ascending, 20–40 cm long, 3 -noded. Culm-internodes distally glabrous. Lateral branches lacking. Leaf-sheaths mostly shorter than adjacent culm internode or subequal to internodes. Ligule a ciliate membrane. Leaf-blades linear, convolute, 3.75–6.5 cm long, 2–4 mm wide, stiff, light green. Leaf-blade surface hirsute, sparsely hairy, hairy adaxially. Leaf-blade margins ciliate, hairy at base. Leaf-blade apex pungent.

**Inflorescence.** Inflorescence a panicle, subtended by an inflated leaf-sheath, embraced at base by subtending leaf. Panicle contracted, linear or lanceolate, 5–10 cm long, 0.4–0.8 cm wide. Primary panicle branches whorled at most nodes, simple, 0.7–1.5 cm long, bearing spikelets almost to the base. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, 0.5–1 mm long.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rachilla extension. Spikelets of 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 or lanceolate, subterete, obtuse, 2–3.75 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes deciduous, similar, exceeding apex of florets. Lower glume ovate, 1–2 mm long, 0.5 length of spikelet, 0 -veined. Lower glume lateral veins absent. Lower glume apex acute. Upper glume ovate, 1 length of spikelet, 1 -veined. Upper glume lateral veins absent. Upper glume apex acute.

**Florets.** Fertile lemma 1 -veined, 0–3 -veined, one-veined. Lemma apex obtuse. Palea keels approximate, winged, narrowly winged.

**Flower and Fruit.** Lodicules 2, obovate, veined. Anthers 3, 1.25–2 mm long, yellow. Caryopsis with free soft pericarp, ellipsoid, 1–2 mm long, dark brown, obtuse.

**Distribution (TDWG). Continent.** Africa.

**Country /Province /State. West-central tropical Africa, Northeast tropical Africa, Western Indian ocean.** Burundi, Congo, Rwanda, DRC. Madagascar.

### **Sporobolus robustus** Kunth. *Rev. Gram.* ii. 425. t. 126. (1832).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

**TYPE** from Senegal. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *Gay s.n.*, Senegal (B?).

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): *L. robust.* Culms tall, or leaf-blades or spikelets large.

**Classification.** Subfamily Chloridoideae. Tribe: Zoysieae.

**Habit, Vegetative Morphology.** Perennial. Stolons present. Culms 60–90 cm long, 2.1–3 mm diam. Ligule a fringe of hairs. Leaf-blades flat or convolute, 10–20 cm long, 2–7 mm wide, stiff. Leaf-blade apex filiform.

**Inflorescence.** Inflorescence a panicle. Panicle open, linear or lanceolate, dense, 8–22 cm long, 1–4 cm wide. Primary panicle branches spreading, 2–5 cm long, bearing spikelets almost to the base. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 1.6–2 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes deciduous, similar, reaching apex of florets. Lower glume lanceolate, 1.2–1.6 mm long, 0.7–0.8 length of upper glume, membranous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume apex acute. Upper glume ovate, 1.6–2 mm long, 1 length of adjacent fertile lemma, membranous, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume apex acute.

**Florets.** Fertile lemma ovate, 1.6–2 mm long, membranous, without keel, 1 -veined, 0–3 -veined, one-veined. Lemma apex acute. Palea 1 length of lemma, 2 -veined. Palea keels approximate.

**Flower and Fruit.** Anthers 3, 1 mm long. Caryopsis with free soft pericarp, ellipsoid, 0.8–1 mm long.

**Distribution (TDWG).** Continent. Africa.

**Country /Province /State.** Northern Africa, Macaronesia, West tropical Africa, West-central tropical Africa, and South tropical Africa. Morocco, Western Sahara. Cape Verde. Gambia, Ghana, Senegal, Togo. Cameroon, Gabon, DRC.

### **Sporobolus ruspolianus** Chiov. *Ann. Bot., Roma*, v. 64 (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, Ueb Karenle: *Riva 1057–383*.

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): L. -anum, indicating connection. In honor of Eugenio Ruspoli (1866–1893) Italian nobleman who travelled in Somalia.

**Classification.** Subfamily Chloridoideae. Tribe: Zoysieae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Stolons present. Culms prostrate, 8–20 cm long, wiry. Ligule a fringe of hairs. Leaf-blades 1–6 cm long, 1–2 mm wide, stiff, glaucous.

**Inflorescence.** Inflorescence a panicle. Panicle contracted, ovate, 1–5 cm long, contracted about primary branches. Panicle branches glabrous in axils. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 1.7–2 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes deciduous, similar, shorter than spikelet. Lower glume ovate, 0.8–1 mm long, 0.66 length of upper glume, membranous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume surface asperulous. Lower glume apex acute. Upper glume ovate, 1.2–1.5 mm long, 0.75 length of adjacent fertile lemma, membranous, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume surface asperulous. Upper glume apex acute.

**Florets.** Fertile lemma ovate, 1.7–2 mm long, membranous, without keel, 1 -veined, 0–3 -veined, one-veined. Lemma midvein simple. Lemma surface smooth or scaberulous. Lemma apex acute. Palea 2 -veined. Palea keels approximate.

**Flower and Fruit.** Anthers 3, 0.7–1 mm long. Caryopsis with free soft pericarp.

**Distribution (TDWG).** Continent. Africa, Temperate Asia.

**Country /Province /State.** Northeast tropical Africa. Ethiopia (inc. Eritrea), Socotra, Somalia. Arabian Peninsula. Oman.

### **Sporobolus salsus** Mez. Fedde, *Repert.* xvii. 296 (1921).

**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: IT: *M.K. Dinter 2294*, no date, Namibia: Onamutoni (US-87227 (fragm.)).

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): L. saline. Growing in salty soils.

**Classification.** Subfamily Chloridoideae. Tribe: Zoysieae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Rhizomes short. Culms 27–70 cm long. Ligule a fringe of hairs. Leaf-blades 4.5–15 cm long, 1–4 mm wide.

**Inflorescence.** Inflorescence a panicle. Panicle open, ovate, effuse, 4–12 cm long. Primary panicle branches spreading, branching dichotomously. Panicle branches capillary, glabrous in axils. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 2–2.9 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes deciduous, similar, shorter than spikelet, similar to fertile lemma in texture. Lower glume lanceolate, 0.33 length of upper glume, membranous, without keels, 0 -veined. Lower glume lateral veins absent. Lower glume apex acute. Upper glume lanceolate, 0.75 length of adjacent fertile lemma, hyaline, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume apex acute.

**Florets.** Fertile lemma ovate, 2–2.9 mm long, membranous, without keel, 1 -veined, 0–3 -veined, one-veined. Lemma apex acute. Palea 2 -veined. Palea keels approximate.

**Flower and Fruit.** Anthers 3. Caryopsis with free soft pericarp, obovoid, 1 mm long.

**Distribution (TDWG). Continent.** Africa.

**Country /Province /State.** Southern Africa. Namibia, Botswana, Limpopo.

### **Sporobolus sanguineus** Rendle. *Cat. Welw. Afr. Pl.* ii. 209. (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, Lopollo: Welwitsch 2660 (K iso).

**Illustrations (Books):** G.V.Pope et al., *Flora Zambesiaca* 10 (2(1999):175 t. 50).

**Derivation** (Clifford & Bostock 2007): *L. sanguineus*, dull-red. Inflorescence dull-red in color.

**Classification.** Subfamily Chloridoideae. Tribe: Zoysieae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Butt sheaths herbaceous. Culms erect, 7–120 cm long. Ligule a fringe of hairs. Leaf-blades flat, 10–40 cm long, 1.5–6 mm wide. Leaf-blade apex attenuate, filiform.

**Inflorescence.** Inflorescence a panicle. Panicle open, linear or lanceolate, 20–35 cm long, contracted about primary branches. Primary panicle branches moderately spaced (overlapping), whorled at most nodes (10–20 whorls), 2–6 cm long, naked below. Panicle branches glabrous in axils. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 2–3.5 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes deciduous, similar, reaching apex of florets. Lower glume oblong, 0.5–1.6 mm long, 0.25–0.5 length of upper glume, membranous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume apex acute. Upper glume oblong, 2–3.5 mm long, 1 length of adjacent fertile lemma, membranous, red, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume apex acute.

**Florets.** Fertile lemma lanceolate, 2–3.5 mm long, membranous, red, without keel, 1 -veined, 0–3 -veined, one-veined. Lemma apex acute. Palea 2 -veined. Palea keels approximate.

**Flower and Fruit.** Anthers 3, 1.2–1.7 mm long. Caryopsis with free soft pericarp, ellipsoid, 1.5–1.6 mm long.

*N* = 10 (1 ref TROPICOS).

**Distribution (TDWG). Continent.** Africa.

**Country /Province /State.** West tropical Africa, West-central tropical Africa, Northeast tropical Africa, East tropical Africa, South tropical Africa, Southern Africa. Ghana, Guinea, Ivory Coast, Nigeria. Central African Republic, DRC. Chad, Sudan. Kenya, Tanzania. Angola, Malawi, Mozambique, Zambia, Zimbabwe. Limpopo, Mpumalanga, Swaziland.

### **Sporobolus scabridus** S. T. Blake. *Univ. Queensl. Papers, Dept. Biol.*, i. No. 18, 5 (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).

**TYPE** from Australia. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *S.T. Blake 5861*, 9 May 1934, Australia: Queensland: Darling Downs Dist.: Palardo (BRI; IT: BRI, CANB, L, US-1819191).

**Illustrations (Books):** K.O.Mallett (ed.), *Flora of Australia*, Vol 44B. *Poaceae* (2004) (329, Fig 57), D.Sharp & B.K.Simon, *AusGrass*. Grasses of Australia. CD-Rom Version 1.0. (2002).

**Illustrations (Journals):** *Austr. Syst. Bot.* (12: 428, Fig 17(1999)).

**Derivation** (Clifford & Bostock 2007): L. rough. Plants in part or totally rough to the touch.

**Classification.** Subfamily Chloridoideae. Tribe: Zoysieae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Basal innovations extravaginal. Culms erect or geniculately ascending, 20–60 cm long, 3–4 -noded. Culm-internodes scaberulous. Lateral branches lacking or sparse. Leaf-sheaths keeled, scaberulous, glabrous on surface, outer margin glabrous or hairy. Leaf-sheath oral hairs bearded. Ligule a fringe of hairs, 0.8 mm long. Collar glabrous. Leaf-blades straight, 6–13.5 cm long, 2–4 mm wide. Leaf-blade surface scaberulous, rough on both sides, glabrous or pilose, sparsely hairy, with tubercle-based hairs. Leaf-blade margins cartilaginous, scabrous.

**Inflorescence.** Inflorescence a panicle. Panicle open, ovate, 4–14 cm long, contracted about secondary branches. Primary panicle branches 2–4 -nate, whorled at lower nodes, 3–7 cm long. Panicle axis eglandular, scabrous. Panicle branches stiff, scaberulous. Spikelets appressed, solitary. Fertile spikelets sessile or pedicelled. Pedicels present, 0–0.8 mm long.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 1.1–1.4 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes deciduous, reaching apex of florets. Lower glume lanceolate, 0.5–0.7 mm long, 0.4–0.5 length of upper glume, hyaline, without keels, 0 -veined. Lower glume lateral veins absent. Lower glume apex obtuse. Upper glume ovate, 1.1–1.4 mm long, 1 length of adjacent fertile lemma, hyaline, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume surface puberulous. Upper glume apex obtuse.

**Florets.** Fertile lemma oblong, 1.1–1.4 mm long, hyaline, without keel, 1 -veined, 0–3 -veined, one-veined. Lemma surface glabrous or puberulous. Lemma apex obtuse. Palea readily splitting down midline, 2 -veined. Palea keels approximate.

**Flower and Fruit.** Anthers 3, 0.3–0.35 mm long. Caryopsis with free soft pericarp, obovoid, laterally compressed, 0.55–0.6 mm long, truncate.

**Distribution (TDWG). Continent.** Australasia.

**Country /Province /State.** Australia. Queensland.

**TDWG4.** North, Central, South East, Inland.

### **Sporobolus sciadocladus** Ohwi. *Bull. Tokyo Sci. Mus.*, No. 18, 12 (1947).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online, J.F.Veldkamp, *Poaceae ms (Flora Malesiana)*.

**TYPE** from Indonesia. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *Buwalda 5459 [5479]*, Apr 1938, Moluccas: Aru Isles (BO; IT: K, L, US).

**Illustrations (Books):** No illustration found (BKS).

**Classification.** Subfamily Chloridoideae. Tribe: Zoysieae.

**Habit, Vegetative Morphology.** Annual, caespitose, clumped loosely. Basal innovations intravaginal. Culms erect or geniculately ascending, 25–50 cm long. Culm-internodes smooth, distally glabrous. Lateral branches sparse. Leaf-sheaths smooth, glabrous on surface, outer margin hairy. Leaf-sheath oral hairs scanty or lacking. Ligule a fringe of hairs, 0.3 mm long. Leaf-blades 10–20 cm long, 3–6 mm wide. Leaf-blade midrib keeled beneath. Leaf-blade surface scaberulous, rough adaxially, glabrous. Leaf-blade margins glabrous or ciliate. Leaf-blade apex acute.

**Inflorescence.** Inflorescence a panicle. Panicle contracted, linear, 5–10 cm long, 0.5–1.5 cm wide. Primary panicle branches appressed, 6–10 -nate, whorled at most nodes, 1–2.7 cm long. Panicle axis 7–9 noded, smooth, glabrous. Panicle branches flexuous, glandular. 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, 2.2–2.5 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes deciduous, similar, reaching apex of florets. Lower glume lanceolate, 1.4–1.7 mm long, 0.5–0.66 length of upper glume, hyaline, without keels, 0 -veined. Lower glume lateral veins absent. Lower glume surface smooth. Lower glume apex acuminate. Upper glume lanceolate, 2.1–2.4 mm long, 1 length of



adjacent fertile lemma, hyaline, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume surface smooth. Upper glume apex acute or acuminate.

**Florets.** Fertile lemma lanceolate, 2–2.3 mm long, membranous, without keel, 1 -veined, 0–3 -veined, one-veined. Lemma apex acute. Palea readily splitting down midline, elliptic, 2–2.1 mm long, 2 -veined. Palea keels approximate. Palea apex emarginate.

**Flower and Fruit.** Lodicules 2, 0.25 mm long. Anthers 3, 0.4–0.5 mm long. Caryopsis with free soft pericarp, ellipsoid, laterally compressed, 1.5–1.8 mm long. Embryo 0.5 length of caryopsis.

**Distribution (TDWG). Continent.** Tropical Asia.

**Country /Province /State.** Malesia. Moluccas.

### **Sporobolus scitulus** Clayton. *Kew Bull.* 25(2): 248 (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, Elgon: *Bodan 4072* (K holo).

**Illustrations (Books):** No illustration found (BKS).

**Classification.** Subfamily Chloridoideae. Tribe: Zoysieae.

**Habit, Vegetative Morphology.** Perennial, cushion forming. Butt sheaths papery. Culms erect, 10–22 cm long. Ligule a fringe of hairs. Leaf-blades 1–5.5 cm long, 1–4 mm wide.

**Inflorescence.** Inflorescence a panicle. Panicle open, ovate, effuse, 3–6 cm long. Panicle branches glabrous in axils. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 2–2.3 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes deciduous, similar, shorter than spikelet. Lower glume oblong, 0.4–0.7 mm long, 0.3–0.5 length of upper glume, membranous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume apex truncate. Upper glume oblong, 1.2–1.3 mm long, 0.5 length of adjacent fertile lemma, membranous, mid-green or purple, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume apex erose, truncate or obtuse.

**Florets.** Fertile lemma ovate, 2–2.3 mm long, membranous, mid-green or purple, without keel, 1 -veined, 0–3 -veined, one-veined. Lemma apex obtuse. Palea 2 -veined. Palea keels approximate.

**Flower and Fruit.** Anthers 3, 1.5 mm long. Caryopsis with free soft pericarp.

**Distribution (TDWG). Continent.** Africa.

**Country /Province /State.** East tropical Africa. Kenya, Uganda.

### **Sporobolus sessilis** B.K.Simon. *Austral. Syst. Bot.*, 12(3): 408 (1999).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), D.Sharp, D. & B.K.Simon, *AusGrass* (2002).

**TYPE** from Indonesia. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: Indonesia: Java: Yogyakarta, 11 Sep 1992, *B.K. Simon 4236* (HT: BRI; IT: BO, L, K).

**Illustrations (Books):** S.W.L.Jacobs, R.D.B.Whalley & D.J.B.Wheeler., *Grasses of New South Wales*, 4th edn (2008) (379), D.Sharp & B.K.Simon, *AusGrass*. Grasses of Australia. CD-Rom Version 1.0. (2002).

**Illustrations (Journals):** *Austr. Syst. Bot.* (12: 421, Fig 10 (1999)).

**Images:** *Aust.Syst.Bot.* 12: 430, Fig.19 (1999).

**Classification.** Subfamily Chloridoideae. Tribe: Zoysieae.

**Habit, Vegetative Morphology.** Perennial. Culms erect, 40–100 cm long. Culm-internodes ridged. Lateral branches lacking. Leaf-sheaths tight, outer margin glabrous. Ligule a fringe of hairs, 0.4 mm long. Leaf-blades filiform or linear, flat or involute, 7–25 cm long, 5–30 mm wide. Leaf-blade surface smooth. Leaf-blade apex attenuate.

**Inflorescence.** Inflorescence a panicle. Panicle open, 14–30 cm long, 0.5–4 cm wide. Primary panicle branches spreading, 1 -nate. Fertile spikelets pedicelled. Pedicels present, linear, straight, 0.2–3 mm long.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets elliptic, subterete, 2 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes deciduous, similar, shorter than spikelet. Lower glume elliptic, 0.3–0.6 length of upper glume, without keels, 0 -veined. Lower glume lateral veins absent. Lower glume apex obtuse. Upper glume

lanceolate, 0.75–1.5 length of adjacent fertile lemma, 0.5–0.6 length of spikelet, membranous, without keels, 1 -veined. Upper glume surface smooth, glabrous. Upper glume apex acute.

**Florets.** Fertile lemma lanceolate, 1–2 mm long, without keel, 1 -veined, 0–3 -veined, one-veined. Lemma midvein scabrous. Lemma apex acute. Palea 1.9–2.1 mm long, 0.8 length of lemma, 2 -veined. Palea apex entire, acute.

**Flower and Fruit.** Anthers 2 (usually) or 3 (exceptionally), 0.5–1 mm long. Caryopsis with free soft pericarp, obovoid, laterally compressed, 0.4–0.8 mm long, light brown, striate or rugose, truncate. Embryo 0.4 length of caryopsis.

**Distribution (TDWG). Continent.** Australasia.

**Country /Province /State.** Australia. Queensland, New South Wales.

**TDWG4.** North, Central, South East. Coast.

### **Sporobolus silveanus** Swallen. *Journ. Wash. Acad. Sci.* i. 350 (1941).

**Accepted by:** R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

**TYPE** from USA. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *W.A. Silveus 6441*, 30 Sep 1940, USA: Texas: Orange Co: 10 mi NE of Orange on US 90 (US-2209343; IT: TEX, US-1867557, US-1817963).

**Illustrations (Books):** M.E.Barkworth et al, *Flora of North America north of Mexico Vol 25 Poaceae*, part 2 (2003) (138).

**Derivation** (Clifford & Bostock 2007): in honor of William Arents Silveus (1875-) United States botanist and attorney.

**Classification.** Subfamily Chloridoideae. Tribe: Zoysieae.

**Habit, Vegetative Morphology.** Perennial, caespitose, clumped densely. Butt sheaths papery, glossy. Culms erect, slender, 90–120 cm long. Culm-internodes antrorsely scabrous. Leaves mostly basal. Leaf-sheaths without keel, glabrous on surface or pubescent. Ligule a fringe of hairs, 0.1–0.8 mm long. Leaf-blades curved or flexuous, conduplicate or involute, 15–30 cm long, 1–2 mm wide.

**Inflorescence.** Inflorescence a panicle. Panicle open, ovate, 30–40 cm long, 10–12 cm wide, bearing few spikelets. Primary panicle branches ascending. Spikelets appressed or ascending, solitary. Fertile spikelets pedicelled. Pedicels present, 5–8 mm long.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 5–6 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes deciduous, reaching apex of florets. Lower glume lanceolate, 3–4.5 mm long, 0.75 length of upper glume, membranous, purple, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume apex acute or acuminate. Upper glume ovate, 4–6 mm long, 1 length of adjacent fertile lemma, membranous, purple, without keels, 3 -veined. Upper glume lateral veins absent. Upper glume apex acute or acuminate.

**Florets.** Fertile lemma ovate, 5–6 mm long, membranous, without keel, 1 -veined, 0–3 -veined, one-veined. Lemma apex acute. Palea 1 length of lemma, 2 -veined. Palea keels approximate.

**Flower and Fruit.** Anthers 3–4 mm long, purple. Caryopsis with free soft pericarp, oblong, 2–2.5 mm long. Embryo 0.33 length of caryopsis.

**Distribution (TDWG). Continent.** North America.

**Country /Province /State.** North-central USA, South-central USA, Southeastern USA. Oklahoma. Texas. Florida, Georgia, Louisiana.

### **Sporobolus somalensis** Chiov. *Ann. Ist. Bot. Roma*, vi. 169. (1896).

**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, Ogaden: Robecchi-Bricchetti.

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): L. -ensis, denoting origin. From Somalia.

**Classification.** Subfamily Chloridoideae. Tribe: Zoysieae.

**Habit, Vegetative Morphology.** Perennial, cushion forming. Stolons present. Culms prostrate, 6–30 cm long. Ligule a fringe of hairs. Leaf-blades 0.5–8 cm long, 1–2 mm wide, stiff, glaucous.

**Inflorescence.** Inflorescence a panicle. Panicle open, ovate, effuse, 2–9 cm long. Panicle branches glabrous in axils. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 1.7–2 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes deciduous, similar, shorter than spikelet. Lower glume oblong, 0.5–1.2 mm long, 0.7 length of upper glume, hyaline, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume apex erose, truncate. Upper glume oblong, 0.7–1.7 mm long, 0.5–0.66 length of adjacent fertile lemma, hyaline, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume apex obtuse.

**Florets.** Fertile lemma ovate, 1.7–2 mm long, hyaline, without keel, 1 -veined, 0–3 -veined, one-veined. Lemma apex erose, truncate. Palea 2 -veined. Palea keels approximate.

**Flower and Fruit.** Anthers 3, 1–1.5 mm long. Caryopsis with free soft pericarp.

**Distribution (TDWG). Continent.** Africa.

**Country /Province /State.** Northeast tropical Africa. Ethiopia (inc. Eritrea), Somalia.

**Sporobolus spicatus** (Vahl) Kunth. *Rev. Gram.* i. 67. (1829).

**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 Egypt. **Basionym or Replaced Name:** *Agrostis spicata* Vahl, *Symb. Bot.* 1: 9 (1790). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *Forsskal s.n.*, Egypt (C).

**Illustrations (Books):** G.V.Pope et al., *Flora Zambesiaca* 10 (2(1999):183 t. 51), L.K.A. Chippindall, *Grasses and Pastures of South Africa* (1955) (212, Fig 199), S.Phillips, *Poaceae* (Gramineae) in I.Hedberg & S.Edwards, *Flora of Ethiopia and Eritrea* (1995) (152, Fig 62), L.Boulos, *Flora of Egypt* 4 (2005) (270, Pl. 80), K.M.Matthew, *Further Illustrations on the Flora of Tamilnadu Carnatic* (1988) (pl.828).

**Derivation** (Clifford & Bostock 2007): *L. spica*, thorn; -ata, possessing; Inflorescence a spike or spicate panicle.

**Classification.** Subfamily Chloridoideae. Tribe: Zoysieae.

**Habit, Vegetative Morphology.** Perennial, mat forming or caespitose. Stolons present, with alternating elongated and bunched internodes. Culms 10–70 cm long, wiry. Ligule a fringe of hairs. Leaf-blades flat or convolute, 2–30 cm long, 1–4 mm wide, stiff. Leaf-blade apex pungent.

**Inflorescence.** Inflorescence a panicle. Panicle spiciform, linear, 1.5–20 cm long, 0.2–0.4 cm wide. Primary panicle branches appressed, 0.1–0.3(–0.5) cm long. Panicle branches glabrous in axils. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 1.4–2.2(–2.8) mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes deciduous, similar, reaching apex of florets or shorter than spikelet. Lower glume lanceolate or ovate, 0.2–1 mm long, 0.25–0.33 length of upper glume, hyaline, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume apex acute. Upper glume ovate, 0.8–2.2 mm long, 0.66–1 length of adjacent fertile lemma, hyaline, pallid, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume apex acute.

**Florets.** Fertile lemma oblong, 1.4–2.2(–2.8) mm long, hyaline, pallid, without keel, 1 -veined, 0–3 -veined, one-veined. Lemma apex acute. Palea 2 -veined. Palea keels approximate.

**Flower and Fruit.** Anthers 3, 1–1.2 mm long. Caryopsis with free soft pericarp, ellipsoid, 0.7–1.1 mm long.

**Distribution (TDWG). Continent.** Africa, Temperate Asia, Tropical Asia.

**Country /Province /State.** Northern Africa, Macaronesia, West tropical Africa, West-central tropical Africa, Northeast tropical Africa, East tropical Africa, South tropical Africa, Southern Africa. Algeria, Egypt, Libya. Cape Verde. Mali, Mauritania, Nigeria, Senegal. Burundi, Rwanda, DRC. Chad, Eritrea, Ethiopia (inc. Eritrea), Socotra, Somalia, Sudan. Kenya, Tanzania, Uganda. Angola, Malawi, Zambia, Zimbabwe. Namibia, Botswana, Limpopo. **Arabian Peninsula.** Gulf States, Oman. **Indian Subcontinent.** India.

Tamilnadu.

**Sporobolus spiciformis** Swallen. *Proc. Biol. Soc. Wash.* lvi. 78 (1943).

**Accepted by:** R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

**TYPE** from Mexico. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *L.H. Harvey 1225*, 18 Jul 1939, Mexico: Coahuila (US-1763006).

**Illustrations (Books):** L.Boulos, *Flora of Egypt* 4 (2005).

**Derivation** (Clifford & Bostock 2007): *L. spica*, thorn; forma, appearance. Inflorescence a condensed spike-like panicle.

**Classification.** Subfamily Chloridoideae. Tribe: Zoysieae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Culms erect, 40–60 cm long. Culm-internodes distally glabrous. Leaf-sheaths longer than adjacent culm internode, without keel, glabrous on surface. Ligule a fringe of hairs, 0.3 mm long. Leaf-blades flexuous, flat or involute, 7–12 cm long, 1–2 mm wide.

**Inflorescence.** Inflorescence a panicle. Panicle spiciform, linear, 9.5–13 cm long, 0.3–0.4 cm wide. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets elliptic, subterete, 1.8–2 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes deciduous, shorter than spikelet. Lower glume lanceolate, 0.8–1.3 mm long, 1 length of upper glume, hyaline, without keels. Lower glume lateral veins absent. Lower glume apex entire or erose, obtuse or acute. Upper glume lanceolate, 0.8–1.3 mm long, 0.5 length of adjacent fertile lemma, membranous, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume apex entire or erose, obtuse or acute.

**Florets.** Fertile lemma lanceolate, 1.8–2 mm long, membranous, without keel, 1 -veined, 0–3 -veined, one-veined. Lemma apex erose, obtuse. Palea readily splitting down midline, 1 length of lemma, 2 -veined. Palea keels approximate.

**Flower and Fruit.** Anthers 1.3 mm long. Caryopsis with free soft pericarp.

**Distribution (TDWG). Continent.** North America.

**Country /Province /State.** Mexico. Northeast Mexico.

**TDWG4.** Coahuila, Chihuahua.

**Sporobolus splendens** Swallen. *Bol. Soc. Bot. Mexico*, No. 23, 35 (1958).

**Accepted by:** R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

**TYPE** from Mexico. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: HT: *J.T. Baldwin 14365*, 7 Jun 1950, Mexico: Oaxaca (US-2014792).

**Illustrations (Books):** No illustration found (BKS).

**Classification.** Subfamily Chloridoideae. Tribe: Zoysieae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Culms erect, robust, 150–200 cm long, 5–10 mm diam. Leaf-sheath oral hairs bearded, 2–6 mm long. Ligule a fringe of hairs, 0.5 mm long. Leaf-blades 30–60 cm long, 5–10 mm wide, coriaceous, stiff. Leaf-blade margins scabrous.

**Inflorescence.** Inflorescence a panicle. Panicle contracted, lanceolate, 40–60 cm long. Primary panicle branches appressed, 5–15 cm long, bearing spikelets almost to the base. Panicle branches bearing congested spikelets. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 1.5–2 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes deciduous, shorter than spikelet. Lower glume lanceolate, 0.5 length of upper glume, membranous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume apex acute. Upper glume ovate, 0.75–0.9 length of adjacent fertile lemma, membranous, purple, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume apex acute.

**Florets.** Fertile lemma ovate, 1.8–2 mm long, membranous, purple, without keel, 1 -veined, 0–3 -veined, one-veined. Lemma apex acute. Palea 1 length of lemma, 2 -veined. Palea keels approximate.

**Flower and Fruit.** Caryopsis with free soft pericarp.

**Distribution (TDWG). Continent.** North America.

**Country /Province /State.** Mexico. Southwest Mexico, Southeast Mexico.

**TDWG4.** Jalisco, Nayarit, Oaxaca. Chiapas.

**Sporobolus stapfianus** Gandoger. *Bull. Soc. Bot. France*, 1919, 302 (1920).

**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: ST: *Schlechter 3595*, South Africa: Transvaal: ad Wonderboompoort (K, LY). ST: *Schlechter 3900*, South Africa: ad Crocodile Rivier (K, LY).

**Illustrations (Books):** L.K.A. Chippindall, *Grasses and Pastures of South Africa* (1955) (212, Fig 187).

**Images:** F.van Oudtshoorn, *Guide to Grasses of Southern Africa* (1999).

**Derivation** (Clifford & Bostock 2007): L. -ana, indicating connection. In honor of Otto Stapf (1857–1933) Austrian-born English botanist.

**Classification.** Subfamily Chloridoideae. Tribe: Zoysieae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Butt sheaths woolly, persistent and investing base of culm, with fibrous dead sheaths. Culms erect, 6–40 cm long. Leaf-sheaths outer margin hairy (tomentose). Ligule a fringe of hairs. Leaf-blades convolute, 3–15 cm long, 1–2 mm wide.

**Inflorescence.** Inflorescence a panicle. Panicle open or contracted, lanceolate or ovate, dense or loose or effuse, 3–15 cm long. Panicle branches capillary (red), glabrous in axils. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 1.4–2.1 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes deciduous, similar, shorter than spikelet. Lower glume ovate, 0.8–1.1 mm long, 0.9–1 length of upper glume, membranous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume apex acute. Upper glume ovate, 0.8–1.5 mm long, 0.5–0.66 length of adjacent fertile lemma, membranous, dark green or grey, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume apex acute.

**Florets.** Fertile lemma ovate, 1.4–2.1 mm long, membranous, dark green or grey, without keel, 1 -veined, 0–3 -veined, one-veined. Lemma apex acute. Palea 2 -veined. Palea keels approximate.

**Flower and Fruit.** Anthers 3, 0.8–1 mm long. Caryopsis with free soft pericarp, obovoid, 0.5–0.7 mm long.

**Distribution (TDWG). Continent.** Africa, Temperate Asia.

**Country /Province /State.** West tropical Africa, West-central tropical Africa, Northeast tropical Africa, East tropical Africa, South tropical Africa, Southern Africa, Western Indian ocean. Nigeria. Burundi, Rwanda, DRC. Ethiopia (inc. Eritrea), Sudan. Kenya, Tanzania, Uganda. Angola, Malawi, Mozambique, Zambia, Zimbabwe. Namibia, Botswana, Limpopo, North-West, Gauteng, Mpumalanga, Swaziland, Kwazulu-Natal, Eastern Cape. Madagascar. **Arabian Peninsula.** Yemen.

### **Sporobolus stolzii** Mez. Fedde, *Repert.* xvii. 297. (1921).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

**TYPE** from Tanzania. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Tanzania, Kissungwe: *Stolz 1212* (K isosyn); Tanzania, Masoko: *Stolz 1241* (K isosyn).

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): in honor of Adolph Ferdinand Stolz (1871–1917) German missionary in East Africa.

**Classification.** Subfamily Chloridoideae. Tribe: Zoysieae.

**Habit, Vegetative Morphology.** Annual, caespitose. Culms erect, 10–60 cm long. Ligule a fringe of hairs. Leaf-blades 1–6 cm long, 2–6 mm wide. Leaf-blade margins ciliate.

**Inflorescence.** Inflorescence a panicle. Panicle open, elliptic, 5–14 cm long. Primary panicle branches whorled at most nodes, bearing 6–30 fertile spikelets on each lower branch. Panicle branches smooth. 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, 0.9–1.6 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes deciduous, similar, exceeding apex of florets. Lower glume lanceolate, 0.4–0.6 mm long, 0.4–0.5 length of upper glume, membranous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume apex acute. Upper glume lanceolate, 0.9–1.6 mm long, 1.1 length of adjacent fertile lemma, membranous, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume surface smooth or spinose. Upper glume apex acute.

**Florets.** Fertile lemma ovate, 0.8–1.5 mm long, membranous, without keel, 1 -veined, 0–3 -veined, one-veined. Lemma surface glabrous or hispidulous. Lemma apex acute. Palea 2 -veined. Palea keels approximate.

**Flower and Fruit.** Anthers 3, 0.1–0.4 mm long. Caryopsis with free soft pericarp, orbicular, isodiametric, 0.3–0.6 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, Southern Africa. Guinea, Mali, Nigeria, Senegal. Burundi, Central African Republic, DRC. Chad, Ethiopia (inc. Eritrea). Kenya, Tanzania, Uganda. Malawi, Zambia, Zimbabwe.

**Sporobolus subglobosus** A.Chev. *Bull. Mus. Hist. Nat. Paris*, Ser. 2, xx. 469 (1948).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

**TYPE** from Ivory Coast. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Cote d'Ivoire, Baoule: *Chevalier 22075* (P holo, K).

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): L. *sub-*, approaching; *globa*, sphere; *-osa*, abundance. Spikelets almost globose.

**Classification.** Subfamily Chloridoideae. Tribe: Zoysieae.

**Habit, Vegetative Morphology.** Annual, caespitose. Culms erect, 35–90 cm long. Ligule a fringe of hairs. Leaf-blades 4–15 cm long, 2–6 mm wide. Leaf-blade margins glabrous or ciliate.

**Inflorescence.** Inflorescence a panicle. Panicle open, lanceolate, 6–40 cm long. Primary panicle branches whorled at most nodes, bearing 5–12 fertile spikelets on each lower branch. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 1.5–2.2 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes deciduous, similar, exceeding apex of florets. Lower glume lanceolate, 0.7–1.3 mm long, 0.5 length of upper glume, membranous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume apex acute. Upper glume lanceolate, 1.5–2.2 mm long, 1.1 length of adjacent fertile lemma, membranous, red, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume surface smooth or asperulous. Upper glume apex acute.

**Florets.** Fertile lemma elliptic, 1.4–2 mm long, membranous, red, without keel, 1 -veined, 0–3 -veined, one-veined. Lemma surface smooth or scaberulous. Lemma apex acute. Palea 2 -veined. Palea keels approximate.

**Flower and Fruit.** Anthers 3, 0.5–0.7 mm long. Caryopsis with free soft pericarp, orbicular, isodiametric, 0.8–1 mm long.

**Distribution (TDWG). Continent.** Africa.

**Country /Province /State.** West tropical Africa, East tropical Africa. Ivory Coast, Nigeria. Kenya, Tanzania.

**Sporobolus subtilis** Kunth. *Rev. Gram.* ii. 421. t. 124. (1831).

**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: Madagascar: *du Petit-Thouars* (P holo).

**Illustrations (Books):** R.M.Polhill, F.T.E.A., *Gramineae* (2(1974):387, Fig.103), G.V.Pope et al., *Flora Zambesiaca* 10 (2(1999):197 t. 55), L.K.A. Chippindall, *Grasses and Pastures of South Africa* (1955) (211, Fig 186), G.E.Gibbs Russell et al., *Grasses of Southern Africa* (1990) (313, Fig 201), J.Bosser, *Graminees des Paturage et des Cultures a Madagascar* (1969) (117, Fig 36).

**Derivation** (Clifford & Bostock 2007): L. *delicate*. Leaf-blades linear.

**Classification.** Subfamily Chloridoideae. Tribe: Zoysieae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Rhizomes short, scaly. Butt sheaths persistent and investing base of culm, with fibrous dead sheaths. Culms erect, 20–60 cm long. Ligule a fringe of hairs. Leaf-blades filiform, convolute, 4–15 cm long, 1–2 mm wide.

**Inflorescence.** Inflorescence a panicle. Panicle open, ovate, effuse, 4–18 cm long. Primary panicle branches 1–2 -nate, not whorled or whorled at lower nodes. Panicle branches capillary, bearded in axils (hairs 4mm long). Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, with a barren rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 1.5–3 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes deciduous, similar, shorter than spikelet. Lower glume lanceolate, 0.7–2 mm long, 1 length of upper glume, membranous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume apex acuminate. Upper glume lanceolate, 0.7–2 mm long, 0.5–0.66 length of adjacent fertile lemma, membranous, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume apex acuminate.

**Florets.** Fertile lemma ovate, 1.5–3 mm long, membranous, without keel, 3 -veined, 0–3 -veined, one-veined. Lemma apex obtuse or acute. Palea 2 -veined. Palea keels approximate. Rhachilla extension 0.5–1 length of fertile floret.

**Flower and Fruit.** Anthers 3, 0.4–1.4 mm long. Caryopsis with free soft pericarp, fusiform, 1 mm long.

**Distribution (TDWG). Continent.** Africa.

**Country /Province /State.** West tropical Africa, West-central tropical Africa, East tropical Africa, South tropical Africa, Southern Africa, Western Indian ocean. Nigeria, Sierre Leone. DRC. Tanzania. Angola, Mozambique, Zambia, Zimbabwe. Limpopo, Gauteng, Mpumalanga, Kwazulu-Natal, Eastern Cape. Madagascar.

### **Sporobolus subulatus** Hack. ex S. Elliot. *Journ. Linn. Soc.* xxix. 65. (1891).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online.

**TYPE** from Madagascar. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: ST: *Scott Elliott 2034*, Madagascar (W; IST: US-87216 (fragm.)). ST: *Scott Elliott 2260*, Madagascar (K; IST: US-87216 (fragm.)). ST: *Scott Elliott 3052*, Madagascar (K; IST: US-87216 (fragm.)).

**Illustrations (Books):** No illustration found (BKS).

**Classification.** Subfamily Chloridoideae. Tribe: Zoysieae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Butt sheaths papery. Culms erect, 20–80 cm long. Ligule a fringe of hairs. Leaf-blades filiform, involute, 5–25 cm long, 1–2.5 mm wide.

**Inflorescence.** Inflorescence a panicle. Panicle open, pyramidal or ovate, 4–16 cm long. Primary panicle branches whorled at most nodes (4–8 whorls), naked below. Panicle branches glabrous in axils. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 2.5–3.8 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes deciduous, similar, exceeding apex of florets. Lower glume lanceolate or ovate, 1.1–2.8 mm long, 0.5–0.75 length of upper glume, membranous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume apex obtuse or acute. Upper glume lanceolate, 2.5–3.8 mm long, 1.1 length of adjacent fertile lemma, membranous, purple, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume apex acute.

**Florets.** Fertile lemma lanceolate, 2–3.5 mm long, membranous, purple, without keel, 1 -veined, 0–3 -veined, one-veined. Lemma apex acute. Palea 2 -veined. Palea keels approximate.

**Flower and Fruit.** Anthers 3, 1.8–2.5 mm long. Caryopsis with free soft pericarp, ellipsoid, 1.8–2 mm long.

**Distribution (TDWG). Continent.** Africa.

**Country /Province /State.** West tropical Africa, West-central tropical Africa, East tropical Africa, South tropical Africa, Southern Africa, Western Indian ocean. Ghana, Guinea, Nigeria, Sierre Leone. Cameroon. Tanzania. Malawi, Mozambique, Zambia, Zimbabwe. Limpopo, Mpumalanga, Kwazulu-Natal, Eastern Cape. Madagascar.

### **Sporobolus temomairemensis** E.J.Judziewicz & P.M.Peterson. *Syst. Bot.*, 14(4): 525 (1989).

**Accepted by:** R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

**TYPE** from Brazil. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Brazil: Amapá: Mt. Temomairem, ca. 2°00–20'N, 54°25–35'W, elev. ca. 400–450 m, rocky slopes, 26 Jul 1939, *Geyskes 9* (HT: US; IT: U).

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): L. -ensis, denoting origin. From Mt Temomairem, Territory of Amapa, Brazil.

**Classification.** Subfamily Chloridoideae. Tribe: Zoysieae.

**Habit, Vegetative Morphology.** Annual, caespitose, clumped densely. Culms 8–20 cm long. Leaves cauline. Ligule a ciliolate membrane, 0.2–0.3 mm long. Leaf-blades curved, involute, 3–5 cm long, 0.4–0.7 mm wide. Leaf-blade apex attenuate.

**Inflorescence.** Inflorescence a panicle. Panicle open, pyramidal, 3–5 cm long, 1–2 cm wide. Primary panicle branches ascending, 1-nate, sparsely divided. Panicle branches capillary, flexuous, glabrous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets elliptic, subterete, 1–1.3 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes deciduous, shorter than spikelet. Lower glume elliptic, 0.3–0.5 mm long, 0.3–0.4 length of upper glume, hyaline, without keels, 0-veined. Lower glume lateral veins absent. Upper glume ovate, 0.7–0.8 mm long, 0.6–0.7 length of adjacent fertile lemma, hyaline, without keels, 1-veined. Upper glume primary vein obscure. Upper glume lateral veins absent.

**Florets.** Fertile lemma elliptic or ovate, 0.8–1.1 mm long, membranous, light brown, without keel, 1-veined, 0–3-veined, one-veined. Lemma apex acute or acuminate. Palea 0.9–1.2 mm long, 2-veined. Palea keels approximate.

**Flower and Fruit.** Caryopsis with free soft pericarp, oblong, laterally compressed, 0.7–1 mm long, obtuse.

**Distribution (TDWG). Continent.** South America.

**Country /Province /State.** Northern South America, Brazil. Surinam. Brazil North.

### **Sporobolus tenellus** (Spreng.) Kunth. *Enum. Pl.* i. 215. (1833).

**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:** *Ehrharta tenella* Spreng., *Tent. Suppl.* 11 (1828). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: IT: South Africa: Cape: Uitenhagen (L).

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): L. slender. Culms or inflorescence branches slender.

**Classification.** Subfamily Chloridoideae. Tribe: Zoysieae.

**Habit, Vegetative Morphology.** Perennial, mat forming. Rhizomes elongated. Culms 6–28 cm long, 1-noded. Leaves mostly basal. Ligule a fringe of hairs. Leaf-blades 0.5–3.5 cm long, 1–3 mm wide. Leaf-blade apex obtuse.

**Inflorescence.** Inflorescence a panicle. Panicle open, ovate, effuse, 2–7 cm long. Panicle branches capillary, glabrous in axils. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 1.5–1.8 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes deciduous, similar, shorter than spikelet, similar to fertile lemma in texture. Lower glume lanceolate, 0.33 length of upper glume, membranous, without keels, 1-veined. Lower glume lateral veins absent. Lower glume apex acute. Upper glume lanceolate, 0.66 length of adjacent fertile lemma, hyaline, without keels, 1-veined. Upper glume lateral veins absent. Upper glume apex acute.

**Florets.** Fertile lemma ovate, 1.5–1.8 mm long, membranous, without keel, 1-veined, 0–3-veined, one-veined. Lemma apex acute. Palea 2-veined. Palea keels approximate.

**Flower and Fruit.** Anthers 3. Caryopsis with free soft pericarp.

**Distribution (TDWG). Continent.** Africa.

**Country /Province /State.** Southern Africa. Northern Cape, Western Cape.

### **Sporobolus tenuissimus** (Schrank.) Kuntze. *Rev. Gen.* iii. II. 369 (1898).

**Accepted by:** R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), S-L Chen et al, *Flora of China* 22 (Poaceae) (2006), J.F.Veldkamp, Poaceae ms (*Flora Malesiana*), N.L.Bor, Grasses of Burma, Ceylon, India and Pakistan (1960), W.D.Clayton & N.Snow, Key to Pacific Grasses (2010).

**TYPE** from Brazil. **Basionym or Replaced Name:** *Panicum tenuissimum* Mart. ex Schrank, *Denkschr. Konigl.-Baier. Bot. Ges. Regensburg* 2: 26 (1822). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *Martius s.n.*, Cultivated in Munich from seeds collected in Brazil (M). merotypic with *Vilfa minutiflora* Trin..

**Illustrations (Books):** J.Bosser, *Graminees des Paturage et des Cultures a Madagascar* (1969) (117, Fig 36), H.Duistermaat, *Field Guide to the Grasses of Singapore* (2005) (129, Fig.135), M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 25 Poaceae, part 2 (2003) (120), S.A.Renvoize, *The Grasses of Bahia*,



1984 (60, Fig. 21), J.A.Steyermark et al, *Flora of the Venezuelan Guayana* Vol. 8 (2004) (275, Fig. 223), G.Harling & C.Persson, *Flora of Ecuador* (2006) (68: 69, Fig. 9 (2001)).

**Images:** H.Duistermaat, *Field Guide to the Grasses of Singapore* (2005);

**Derivation** (Clifford & Bostock 2007): L. slender; -issima, most. Inflorescence slender.

**Classification.** Subfamily Chloridoideae. Tribe: Zoysieae.

**Habit, Vegetative Morphology.** Annual. Culms geniculately ascending, 18–80 cm long. Ligule a fringe of hairs. Leaf-blades 5–20 cm long, 2–5 mm wide.

**Inflorescence.** Inflorescence a panicle. Panicle open, oblong, effuse, 10–40 cm long, 2–6 cm wide. Panicle branches capillary, glabrous in axils. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, filiform.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 0.8–1 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes deciduous, dissimilar, shorter than spikelet, gaping. Lower glume oblong, 0.1–0.2 mm long, 0.3–0.4 length of upper glume, membranous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume apex erose, truncate. Upper glume ovate, 0.3–0.5 mm long, 0.3–0.5 length of adjacent fertile lemma, membranous, without keels, 1 -veined. Upper glume apex acute.

**Florets.** Fertile lemma ovate, 0.8–1 mm long, membranous, without keel, 1 -veined, 0–3 -veined, one-veined. Lemma apex acute. Palea 2 -veined. Palea keels approximate.

**Flower and Fruit.** Anthers 3, 0.1–0.2 mm long. Caryopsis with free soft pericarp, obovoid, 0.4–0.5 mm long.

**Distribution (TDWG). Continent.** Africa, Temperate Asia, Tropical Asia, Pacific, North America, South America.

**Country /Province /State.** Macaronesia, West tropical Africa, West-central tropical Africa, Northeast tropical Africa, East tropical Africa, South tropical Africa, Western Indian ocean. Cape Verde. Guinea, Liberia, Nigeria, Senegal. Central African Republic, Gabon, Annobon, Principe & Sao Tome, Bioko. Somalia, Sudan. Mozambique. Mauritius, Madagascar, Seychelles. **Arabian Peninsula, China, Eastern Asia.** Oman. Taiwan (\*). **Indian Subcontinent, Indo-China, Malesia.** Andaman Is, Thailand. Java, Malaya, Singapore, Sulawesi, Sumatra. **South-central Pacific.** Cook Is (\*), Marquesas, Society Is (\*), Tubuai Is (\*). **Southeastern USA, Mexico.** Florida, South Carolina. Southwest Mexico. **Mesoamerica, Caribbean, Northern South America, Western South America, Brazil.** Belize. Dominican Republic, Haiti, Jamaica, Leeward Is, Windward Islands, Puerto Rico, Trinidad-Tobago. Surinam, Venezuela. Colombia, Peru. Brazil West Central, Brazil Northeast, Brazil North, Brazil Southeast.

**TDWG4.** Kerala. Maharashtra, Tamilnadu. Michoacan.

**Sporobolus teretifolius** Harper. *Bull. Torr. Bot. Club*, iii. 229. (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. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *R.M. Harper 1642*, 20 Sep 1902, USA: Georgia: Colquitt Co.: moist pine barrens near Moultrie (NY; IT: GA, US-431954).

**Illustrations (Books):** M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 25 *Poaceae*, part 2 (2003) (136).

**Derivation** (Clifford & Bostock 2007): L. teres, narrow; folium, leaf. Leaf-blades narrow and generally rigid.

**Classification.** Subfamily Chloridoideae. Tribe: Zoysieae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Culms erect, 60–80 cm long, wiry. Culm-internodes smooth. Lateral branches lacking. Leaf-sheath oral hairs ciliate. Ligule a fringe of hairs, 0.5 mm long. Leaf-blades flexuous, filiform, terete, 0.5–1 mm wide. Leaf-blade surface glabrous, hairless except near base.

**Inflorescence.** Inflorescence a panicle. Panicle open, oblong, 15–20 cm long. Primary panicle branches ascending or spreading. Panicle axis angular, scaberulous. Panicle branches capillary, scabrous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 4–4.5 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes deciduous, reaching apex of florets. Lower glume lanceolate, 0.5 length of upper glume, membranous, without keels. Lower glume apex acute. Upper glume elliptic, 1 length of adjacent fertile lemma, membranous, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume apex acute.

**Florets.** Fertile lemma ovate, 4–4.5 mm long, membranous, without keel, 1 -veined, 0–3 -veined, one-veined. Lemma apex acute. Palea 1 length of lemma, 2 -veined. Palea keels approximate.

**Flower and Fruit.** Caryopsis with free soft pericarp.

**Distribution (TDWG). Continent.** North America.

**Country /Province /State.** Southeastern USA. Alabama, Georgia, North Carolina, South Carolina.

**Sporobolus testudinum** Renvoize. *Kew Bull.*, 25(3): 417 (1971).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

**TYPE** from Aldabra. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: Aladabra: *Renvoize 972* (K holotype).

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): *L. testudo*, tortoise; -inum, belonging to. Growing in association with tortoises.

**Classification.** Subfamily Chloridoideae. Tribe: Zoysieae.

**Habit, Vegetative Morphology.** Annual or perennial. Culms decumbent or prostrate, 2.5–12 cm long. Culm-internodes distally glabrous. Leaf-sheaths glabrous on surface. Ligule a fringe of hairs, 0.1–0.2 mm long. Leaf-blades involute, 1.5–6 cm long, 0.75 mm wide. Leaf-blade surface glabrous.

**Inflorescence.** Inflorescence a panicle. Panicle spiciform, linear, 1–5 cm long, 0.1–0.2 cm wide. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, 0.3–1 mm long.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 0.8–1.3 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes deciduous, shorter than spikelet. Lower glume ovate, 0.2–0.3 mm long, 0.4–0.6 length of upper glume, membranous, without keels, 0 -veined. Lower glume lateral veins absent. Lower glume apex entire or dentate, truncate or acute. Upper glume ovate, 0.5 mm long, 0.5 length of adjacent fertile lemma, membranous, without keels, 0–1 -veined. Upper glume primary vein absent or distinct. Upper glume lateral veins absent. Upper glume apex entire or dentate, truncate or acute.

**Florets.** Fertile lemma ovate, 0.8–1 mm long, membranous, without keel, 0 -veined, 0–3 -veined, without veins. Lemma apex acute. Palea 2 -veined. Palea keels approximate.

**Flower and Fruit.** Anthers 2, 0.5–0.7 mm long. Caryopsis with free soft pericarp, ellipsoid, 0.8 mm long.

**Distribution (TDWG). Continent.** Africa.

**Country /Province /State.** Western Indian ocean. Aldabra, Seychelles.

**Sporobolus tetragonus** Bor. *Kew Bull.* 1949, 251 (1949).

**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 Thailand. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: Thailand, Kanburi: *Kerr 19762* (K holotype).

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): *Gk. tetra*, four; *gony*, knee. Caryopsis acutely four-angled.

**Classification.** Subfamily Chloridoideae. Tribe: Zoysieae.

**Habit, Vegetative Morphology.** Annual. Culms 25–55 cm long. Ligule a fringe of hairs. Leaf-blades linear or lanceolate, 5–15 cm long, 4–9 mm wide, flaccid. Leaf-blade surface scabrous, rough on both sides. Leaf-blade margins scabrous, tuberculate-ciliate, hairy at base.

**Inflorescence.** Inflorescence a panicle. Panicle open, elliptic, effuse, 10–25 cm long, 4–8 cm wide. Primary panicle branches whorled at most nodes, rebranched above middle, 2–5 cm long. Panicle branches smooth or scaberulous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, 1–1.5 mm long, scaberulous.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 1.75 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes deciduous, dissimilar, reaching apex of florets. Lower glume lanceolate, 1 mm long, 0.5–0.66 length of upper glume, hyaline, without keels, 0 -veined. Lower glume lateral veins absent. Lower glume surface scabrous, rough above. Lower glume apex acute. Upper glume elliptic, 1.75 mm long, 1 length of adjacent fertile lemma, membranous, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume surface scabrous, rough above. Upper glume apex acute.

**Florets.** Fertile lemma elliptic, 1.75 mm long, membranous, without keel, 1 -veined, 0–3 -veined, one-veined. Lemma apex obtuse. Palea 1–1.5 mm long, 2 -veined. Palea keels approximate.

**Flower and Fruit.** Anthers 3. Caryopsis with free soft pericarp, ellipsoid, quadrangular, 0.6 mm long.

**Distribution (TDWG). Continent.** Tropical Asia.

**Country /Province /State.** **Indian Subcontinent, Indo-China, Malesia.** Myanmar, Thailand. Malaya. TDWG4. Bihar.

### **Sporobolus texanus** Vasey. *Contrib. U. S. Nat. Herb.* i. 57 (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).

**TYPE** from USA. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *G.C. Nealley 755*, 1889, USA: Texas: Presidio Co.: Screw Bean (US-556895).

**Illustrations (Books):** M.E.Barkworth et al, *Flora of North America north of Mexico Vol 25 Poaceae*, part 2 (2003) (130).

**Derivation** (Clifford & Bostock 2007): L. -ana, indicating location. From Texas, USA.

**Classification.** Subfamily Chloridoideae. Tribe: Zoysieae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Culms erect or geniculately ascending, 30–70 cm long. Leaf-sheaths without keel, glabrous on surface or pilose, with tubercle-based hairs. Ligule a fringe of hairs, 0.2–0.5 mm long. Leaf-blades flat or conduplicate, 2.5–10 cm long, 1–4 mm wide, stiff. Leaf-blade surface scabrous, rough adaxially.

**Inflorescence.** Inflorescence a panicle. Panicle open, ovate, effuse, 15–30 cm long. Primary panicle branches spreading. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, 5–25 mm long.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 2.3–3.3 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes deciduous, reaching apex of florets. Lower glume linear, 0.33–0.5 length of upper glume, membranous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume apex acute. Upper glume lanceolate, 0.9–1 length of adjacent fertile lemma, membranous, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume apex acute.

**Florets.** Fertile lemma ovate, 2.3–3.3 mm long, membranous, without keel, 1 -veined, 0–3 -veined, one-veined. Lemma apex acute. Palea readily splitting down midline, 1 length of lemma, 2 -veined. Palea keels approximate.

**Flower and Fruit.** Caryopsis with free soft pericarp, oblong, laterally compressed, 1–1.5 mm long, light brown. Embryo 0.5 length of caryopsis.

**Distribution (TDWG). Continent.** North America.

**Country /Province /State.** **Northwest USA, North-central USA, Southwestern USA, South-central USA.** Colorado. Kansas, Nebraska, Oklahoma. Arizona, Utah. New Mexico, Texas.

### **Sporobolus tourneuxii** Coss. *Bull. Soc. Bot. Fr.* vi. 250 (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) (as *S. indicus*).

**TYPE** from Algeria. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Algeria: Tunetia: desert, *Letourneux* (HT: K, P).

**Illustrations (Books):** T.A.Cope, in M.Thulin, *Poaceae* (Gramineae). *Flora of Somalia* (1995) (196, Fig 105), N.L.Bor, *Gramineae* in K.H.Rechinger, *Flora Iranica*. No. 70/30 (1970) (Tab. 66).

**Derivation** (Clifford & Bostock 2007): In honor of Aristide Horace Le Tourneux (1820–1890) French magistrate and botanist.

**Classification.** Subfamily Chloridoideae. Tribe: Zoysieae.

**Habit, Vegetative Morphology.** Perennial, cushion forming. Cataphylls evident. Culms erect, 4–15 cm long, 1–3 -noded. Ligule a fringe of hairs. Leaf-blades 0.5–3 cm long, 1–2 mm wide, stiff, glaucous.

**Inflorescence.** Inflorescence a panicle. Panicle contracted, ovate, 1–4 cm long, contracted about primary branches. Panicle branches glabrous in axils. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 1.8–2 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes deciduous, similar, shorter than spikelet, thinner than fertile lemma. Lower glume ovate, 1 mm long, 0.5–0.8 length of upper glume, hyaline, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume surface smooth. Lower glume apex acute. Upper glume ovate, 1 mm long, 0.5 length of adjacent fertile lemma, hyaline, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume surface smooth. Upper glume apex acute.

**Florets.** Fertile lemma ovate, 1.8–2 mm long, membranous, without keel, 1 -veined, 0–3 -veined, one-veined. Lemma midvein thickened. Lemma surface smooth or scaberulous. Lemma apex acute. Palea 2 -veined. Palea keels approximate.

**Flower and Fruit.** Anthers 3, 0.7–1 mm long. Caryopsis with free soft pericarp.

**Distribution (TDWG). Continent.** Africa, Temperate Asia, Tropical Asia.

**Country /Province /State.** Northern Africa, West tropical Africa, Northeast tropical Africa. Tunisia. Mauritania. Ethiopia (inc. Eritrea), Somalia. **Arabian Peninsula.** Oman. **Indian Subcontinent.** Pakistan.

### **Sporobolus tremulus** (Willd.) Kunth. *Rev. Gram.* i. 67. (1829).

Regarded by K as a synonym (*S. virginicus*).

**Accepted by:** U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

**TYPE** from India. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: India:, *Klein* (HT: B).

**Illustrations (Books):** K.M.Matthew, Further Illustrations on the *Flora of Tamilnadu Carnatic* (1988) (pl.829).

**Derivation** (Clifford & Bostock 2007): *L. trembling*. Inflorescence subject to movement in a slight breeze.

**Classification.** Subfamily Chloridoideae. Tribe: Zoysieae.

**Habit, Vegetative Morphology.** Perennial, mat forming. Rhizomes elongated. Stolons present. Culms erect, 30–60 cm long (long). Culm-nodes glabrous. Lateral branches ample. Leaf-sheath oral hairs ciliate, 1–2.5 mm long. Ligule a fringe of hairs, 0.5 mm long. Leaf-blades linear or lanceolate, flat or involute, 0.5–4 cm long, 3–5 mm wide, stiff. Leaf-blade surface scaberulous, rough adaxially. Leaf-blade apex acute.

**Inflorescence.** Inflorescence a panicle. Panicle spiciform, linear, 2–4.5 cm long, 0.2–0.5 cm wide. Primary panicle branches 0.5–1 cm long. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, 1–3 mm long.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 2.5 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes deciduous, reaching apex of florets. Lower glume elliptic or ovate, 1.75 mm long, 0.66 length of upper glume, membranous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume apex obtuse or acute. Upper glume ovate, 2.25 mm long, 1 length of adjacent fertile lemma, membranous, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume apex acute.

**Florets.** Fertile lemma ovate, 2.25 mm long, membranous, without keel, 1 -veined, 0–3 -veined, one-veined. Lemma apex acute. Palea 2 -veined. Palea keels approximate.

**Flower and Fruit.** Anthers 3, 1.2 mm long. Caryopsis with free soft pericarp.

**Distribution (TDWG). Continent.** Tropical Asia.

**Country /Province /State.** Indian Subcontinent, Indo-China. India, Pakistan, Sri Lanka. Thailand.

**TDWG4.** Tamilnadu.

### **Sporobolus trichodes** Hitchcock. *Contrib. US. Nat. Herb.* xvii. 311 (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:** *Sporobolus capillaris* Vasey, *Contr. U.S. Natl. Herb* 1(8): 283 (1893). T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: LT: *E. Palmer* 512, 1886, Mexico: Río Blanco (US-82013; ILT: NY-19973). LT designated by Hitchcock, *Contr. U.S. Natl. Herb.* 17(3): 311 (1913). ST: *C.G. Pringle* 3853, 15 Sep 1891, Mexico: Jalisco: dry ledges, barranca near near Guadalajara (MO, US).

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): *Gk. thrix, hair; -odes, resembling*. Leaf-blades slender.

**Classification.** Subfamily Chloridoideae. Tribe: Zoysieae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Butt sheaths persistent and investing base of culm, with fibrous dead sheaths. Culms erect, slender, 20–60 cm long, wiry. Leaves mostly basal. Ligule a fringe of hairs. Leaf-blades involute, 5–10 cm long, 1–2 mm wide.

**Inflorescence.** Inflorescence a panicle. Panicle open, ovate, effuse, 5–10 cm long, 5–10 cm wide. Primary panicle branches spreading, 1 -nate. Panicle branches capillary. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, filiform, flexuous.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 1.5–2 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes deciduous, shorter than spikelet. Lower glume lanceolate, 0.6–0.7 mm long, 0.3–0.4 length of upper glume, membranous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume apex acute. Upper glume ovate, 0.7–1 mm long, 0.5 length of adjacent fertile lemma, membranous, light brown or purple, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume apex acute.

**Florets.** Fertile lemma ovate, 1.5–2 mm long, membranous, light brown or purple, without keel, 1 -veined, 0–3 -veined, one-veined. Lemma apex acute. Palea 1 length of lemma, 2 -veined. Palea keels approximate.

**Flower and Fruit.** Caryopsis with free soft pericarp, 1 mm long.

**Distribution (TDWG). Continent.** North America.

**Country /Province /State. Mexico.** Central Mexico, Northeast Mexico, Gulf (Mexico), Southwest Mexico.

**TDWG4.** Mexico State, Morelos. Aguascalientes, Chihuahua, Guanajuato, Zacatecas. Veracruz. Guerrero, Jalisco, Michoacan.

### **Sporobolus uniglumis** Stent & Rattray. *Proc. Rhodes. Scientif. Assoc.* ii. :52 (1933).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online.

**TYPE** from Zimbabwe. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Zimbabwe: Mundy in SRGH2896 (SRGH holo, K).

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): L. unus, one; gluma, husk. Lower glume absent or reduced to a minute callus.

**Classification.** Subfamily Chloridoideae. Tribe: Zoysieae.

**Habit, Vegetative Morphology.** Annual, caespitose. Culms erect or geniculately ascending, 20–30 cm long. Ligule a fringe of hairs. Leaf-blades lanceolate, 3–8 cm long, 3–6 mm wide. Leaf-blade margins ciliate, hairy at base.

**Inflorescence.** Inflorescence a panicle. Panicle open, ovate, 3–6 cm long. Primary panicle branches whorled at most nodes. 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, 1.2–1.6 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes one the lower absent or obscure or two, deciduous, dissimilar, reaching apex of florets. Lower glume ovate, 0–0.2 mm long, 0–0.1 length of upper glume, hyaline, without keels, 0 -veined. Lower glume lateral veins absent. Lower glume apex obtuse. Upper glume ovate, 1.2–1.6 mm long, 1 length of adjacent fertile lemma, membranous, grey, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume surface hispidulous. Upper glume apex acute.

**Florets.** Fertile lemma ovate, 1.2–1.6 mm long, membranous, grey, without keel, 1 -veined, 0–3 -veined, one-veined. Lemma surface hispidulous. Lemma apex acute. Palea 2 -veined. Palea keels approximate.

**Flower and Fruit.** Anthers 3, 0.4–0.6 mm long. Caryopsis with free soft pericarp, ellipsoid or obovoid, 0.7–0.8 mm long.

**Distribution (TDWG). Continent.** Africa.

**Country /Province /State. West-central tropical Africa, East tropical Africa, South tropical Africa.** DRC. Tanzania. Zambia, Zimbabwe.

### **Sporobolus vaginiflorus** (Gray) Wood. *Classbook* :775 (1861).

**Accepted by:** R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

**TYPE** from USA. **Basionym or Replaced Name:** *Vilfa vaginiflora* Torr. ex A. Gray, *N. Amer. Gram.* 1: no. 3 (1834). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: USA: New Jersey,.

**Illustrations (Books):** M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 25 *Poaceae*, part 2 (2003) (as var. *vaginiflorus* & *ozarkanus*), F.W.Gould, *The Grasses of Texas* (1975) (308, Fig. 162), E.Hafliger & E.Schultz, *Grass Weeds*, CIBA-GEIGY (2:130(1980)).

**Derivation** (Clifford & Bostock 2007): L. vagina, sheath; flos, flower. Inflorescence remaining tightly wrapped in subtending leaf-sheath.

**Classification.** Subfamily Chloridoideae. Tribe: Zoysieae.

**Habit, Vegetative Morphology.** Annual, caespitose. Culms erect, 15–55(–70) cm long. Ligule a fringe of hairs. Leaf-blades flat or involute, 4–13 cm long, 1–2 mm wide. Leaf-blade surface glabrous or pilose.

**Inflorescence.** Inflorescence a panicle, terminal and axillary, subtended by an unspecialized leaf-sheath or an inflated leaf-sheath, embraced at base by subtending leaf or enclosed. Panicle contracted, linear, 1–4 cm long, 0.2–0.5 cm wide. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, laterally compressed, 3–5 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes deciduous, similar, shorter than spikelet, thinner than fertile lemma. Lower glume lanceolate, 1.8–4.5 mm long, 1 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume lateral veins absent. Lower glume apex acuminate. Upper glume lanceolate, 1.8–4.5 mm long, 0.7–0.9 length of adjacent fertile lemma, membranous, 1-keeled, 1 -veined. Upper glume lateral veins absent. Upper glume apex acuminate.

**Florets.** Fertile lemma elliptic, 3–5 mm long, chartaceous, keeled, 1–3 -veined, 0–3 -veined, one-veined or several-veined. Lemma surface pubescent. Lemma apex acuminate. Palea 2 -veined. Palea keels approximate.

**Flower and Fruit.** Anthers 3. Caryopsis with free soft pericarp, ellipsoid, 2 mm long.

Cleistogenes present, in upper sheaths.

**Distribution (TDWG). Continent.** North America.

**Country /Province /State.** Northwest USA, North-central USA, Northeast USA, Southwestern USA, South-central USA, Southeastern USA. Idaho. 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. New Mexico, Texas. Alabama, Arkansas, Delaware, Kentucky, Louisiana, Maryland, Mississippi, North Carolina, South Carolina, Tennessee, Virginia, District of Columbia.

## **Sporobolus virginicus** (L.) Kunth. *Rev. Gram.* 1:67 (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), D.Sharp, D. & B.K.Simon, *AusGrass* (2002), S-L Chen et al, *Flora of China* 22 (Poaceae) (2006), J.F.Veldkamp, *Poaceae ms (Flora Malesiana)*, N.L.Bor, *Grasses of Burma, Ceylon, India and Pakistan* (1960) (& as *S. tremulus*), T.Koyama, *Grasses of Japan and its neighboring regions* (1987), W.D.Clayton & N.Snow, *Key to Pacific Grasses* (2010).

**TYPE** from USA. **Basionym or Replaced Name:** *Agrostis virginica* L., *Sp. Pl.* 1: 63 (1753). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: LT: *J. Clayton 507*, USA: habitat in Virginia (LINN-84.30; ILT: BM, US-76294 (fragm. ex BM)). LT designated by Hitchcock, *Contr. U.S. Natl. Herb.* 12: 119 (1908).

**Illustrations (Books):** L.K.A. Chippindall, *Grasses and Pastures of South Africa* (1955) (226, Fig 200), J.Bosser, *Graminees des Paturage et des Cultures a Madagascar* (1969) (119, Fig. 37), C-C Hsu, *Flora of Taiwan*, Vol 5 (1978) (446), C-C Hsu, *Taiwan Grasses* (1975) (505, Pl. 1412), K.M.Matthew, *Further Illustrations on the Flora of Tamilnadu Carnatic* (1988) (Pl.830), H.Duistermaat, *Field Guide to the Grasses of Singapore* (2005) (129, Fig. 133), J.P.Jessop, G.R.M. Dashorst & F.M.James, *Grasses of South Australia* (2006) (401, Fig 334), C.A.Gardner, *Flora of Western Australia*, Vol 1, Part 1, *Gramineae* (1952) (161, Pl. 48), J.R.Wheeler et al, *Flora of the Kimberley Region* (1992) (1224, Fig. 346), N.Walsh & T.Entwistle, *Flora of Victoria* Vol 2 (1994) (573, Fig. 115), S.W.L.Jacobs, R.D.B.Whalley & D.J.B.Wheeler., *Grasses of New South Wales*, 4th edn (2008) (380), T.D.Stanley & E.Ross, *Flora of South East Queensland, Gramineae* (1989) (183, Fig. 28), *Flora of Australia Oceanic Islands Poaceae* 50(1993) & 49(1994) (49: 468 Fig.95 (1993)), D.Sharp & B.K.Simon, *AusGrass. Grasses of Australia. CD-Rom Version 1.0.* (2002), W.L.Wagner et al., *Manual of the Flowering Plants of Hawai'i*, Vol. 2 (1990) (1595, Pl. 236), M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 25 *Poaceae*, part 2 (2003) (123), F.W.Gould, *The Grasses of Texas* (1975) (293, Fig. 154), A.S.Hitchcock, *Manual of the Grasses of the West Indies* (1936) (86, Fig. 51), S.A.Renvoize, *The Grasses of Bahia*, 1984 (60, Fig. 21), L.B. Smith, D.C. Wasshausen, R.M. Klein *Flora Illustrada Catarinensis Gramineas* (1981–1982) (379, Fig. 87 & 388, Fig. 89), W.Burger, *Flora Costaricensis* 15, *Gramineae: Fieldiana Botany New Series* 4 (1980) (548, Fig. 205), G.Harling & C.Persson, *Flora of Ecuador* (2006) (68: 69, Fig. 9 (2001)), E.Hafliger & E.Schultz, *Grass Weeds*, CIBA-GEIGY (2:131(1980)).

**Illustrations (Journals):** *Ruizia* (13:252, Fig 29i (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*;, H.B.Gilliland et al., *Flora of Malaya Vol. 3 Grasses* (1971);.

**Derivation** (Clifford & Bostock 2007): L. -ica, belonging to. From Virginia, USA.

**Classification.** Subfamily Chloridoideae. Tribe: Zoysieae.

**Habit, Vegetative Morphology.** Perennial, mat forming. Rhizomes elongated. Culms 10–30 cm long, 1–2 mm diam. Leaves distichous. Ligule a fringe of hairs. Leaf-blades convolute, 2–10 cm long, 1–4 mm wide, stiff. Leaf-blade apex pungent.

**Inflorescence.** Inflorescence a panicle. Panicle spiciform, linear, 2–10 cm long, (0.3–)0.6–0.8(–1) cm wide. Primary panicle branches appressed, 0.5–1.5 cm long. Panicle branches glabrous in axils. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 1.7–2.5 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes deciduous, similar, reaching apex of florets. Lower glume lanceolate, 1.2–2 mm long, 0.66–0.8 length of upper glume, membranous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume apex acute. Upper glume ovate, 1.7–2.5 mm long, 1 length of adjacent fertile lemma, membranous, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume apex acute.

**Florets.** Fertile lemma ovate, 1.7–2.5 mm long, membranous, without keel, 1 -veined, 0–3 -veined, one-veined. Lemma apex acute. Palea 2 -veined. Palea keels approximate.

**Flower and Fruit.** Anthers 3, 1–1.3 mm long. Caryopsis with free soft pericarp, orbicular, 0.7 mm long.

*N* = 20 (1 ref TROPICOS), or 30 (1 ref TROPICOS), or 31 (1 ref TROPICOS).

**Distribution (TDWG). Continent.** Africa, Temperate Asia, Tropical Asia, Australasia, Pacific, North America, South America.

**Country /Province /State. Northern Africa, Macaronesia, West tropical Africa, West-central tropical Africa, Northeast tropical Africa, East tropical Africa, South tropical Africa, Southern Africa, Western Indian ocean.** Algeria, Libya, Morocco, Tunisia. Benin, Ghana, Ivory Coast, Liberia, Senegal, Sierre Leone. Congo, Gabon. Somalia. Kenya, Tanzania. Angola, Mozambique, Zimbabwe. Namibia, Limpopo, Kwazulu-Natal, Northern Cape, Western Cape, Eastern Cape. Aldabra, Mauritius, Madagascar, Rodrigues, Seychelles. **Western Asia, Arabian Peninsula, China, Mongolia, Eastern Asia.** Oman. Hainan, China Southeast. Nansei-Shoto, Ogosawara-shoto, Taiwan. **Indian Subcontinent, Indo-China, Malesia, Papuaasia.** Bangladesh, India, Pakistan, Sri Lanka. Cambodia, Myanmar, Thailand, Vietnam. Borneo, Cocos (Keeling) Is, Java, Lesser Sunda Is, Malaya, Singapore, Moluccas, Philippines, Sulawesi, Sumatra, Christmas I. New Guinea West Papua (Irian Jaya). New Guinea. **Australia.** Western Australia, Northern Territory, South Australia, Queensland, New South Wales, A.C.T., Victoria, Tasmania, Lord Howe-Norfolk Is. **Southwestern Pacific, South-central Pacific, Northwestern Pacific, North-central Pacific.** Fiji, New Caledonia, Tonga, Marquesas. Caroline Is, Marianas, Marshall Is. Hawaii. **South-central USA, Southeastern USA, Mexico.** Texas. Alabama, Florida, Georgia, Louisiana, Mississippi, North Carolina, South Carolina. Northeast Mexico, Gulf (Mexico), Northwest Mexico, Southwest Mexico, Southeast Mexico. **Mesoamerica, Caribbean, Northern South America, Western South America, Brazil, Southern South America.** Belize, Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua, Panama. Bahamas, Bermuda, Cayman Is, Cuba, Dominican Republic, Haiti, Jamaica, Leeward Is, Windward Islands, Puerto Rico, Trinidad-Tobago. French Guiana, Guyana, Surinam, Venezuela. Colombia, Ecuador, Galapagos, Peru. Brazil Northeast, Brazil North, Brazil Southeast, Brazil South. Chile North.

**TDWG4.** Fujian, Guangdong, Zhejiang. Tamilnadu. Kimberley, Ereman, South-West. Darwin & Gulf, Victoria R & Barkly Tableland, Central Australia. NW & Lake Eyre, Southern. North, Central, South East. Coast, Tablelands. Tarapaca. Tamaulipas. Veracruz. Baja California, Baja California Sur, Sonora. Colima, Jalisco. Campeche, Quintana Roo, Tabasco, Yucatan.

**Sporobolus viscidus** Sohns. *Journ. Wash. Acad. Sci.* xlv. 385 (1957).

**Accepted by:** R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

**TYPE** from Mexico. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *E. Matuda* 29813, 20 Dec 1953, Mexico: México: La Junta (US-2181966; IT: US-2206400).

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): L. sticky. Plant sticky to touch.

**Classification.** Subfamily Chloridoideae. Tribe: Zoysieae.

**Habit, Vegetative Morphology.** Annual. Glands raised crateriform. Culms erect, slender, 25–30 cm long. Leaf-sheaths mostly shorter than adjacent culm internode, glandular (on veins), glabrous on surface. Ligule a

fringe of hairs, 0.5 mm long. Leaf-blades 4–20 cm long, 3–6 mm wide. Leaf-blade surface scaberulous, rough abaxially. Leaf-blade margins glandular (near base), ciliate.

**Inflorescence.** Inflorescence a panicle. Panicle open, oblong, 15 cm long. Panicle axis glandular. Panicle branches glandular, viscid. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets elliptic, subterete, 3.5–4 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes deciduous, reaching apex of florets. Lower glume lanceolate, 1.9–3 mm long, 0.75 length of upper glume, hyaline, without keels, 0 -veined. Lower glume lateral veins absent. Lower glume apex acute. Upper glume lanceolate, 2.5–4 mm long, 1 length of adjacent fertile lemma, membranous, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume apex acute.

**Florets.** Fertile lemma lanceolate, 3.5–4 mm long, membranous, without keel, 1 -veined, 0–3 -veined, one-veined. Lemma apex acute. Palea readily splitting down midline, 1 length of lemma, 2 -veined. Palea keels approximate.

**Flower and Fruit.** Lodicules 2, 0.2 mm long. Anthers 3, 1.8–2.2 mm long. Caryopsis with free soft pericarp, ellipsoid, 3 mm long.

**Distribution (TDWG). Continent.** North America.

**Country /Province /State.** Mexico. Central Mexico.

**TDWG4.** Mexico State.

### **Sporobolus wallichii** Munro ex Trim. *Journ. Bot.* xxvii. 171. (1889).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), S-L Chen et al, *Flora of China* 22 (Poaceae) (2006), N.L.Bor, *Grasses of Burma, Ceylon, India and Pakistan* (1960).

**TYPE** from India. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: India, Rajmahal Hills: Wallich 3769A (K iso).

**Illustrations (Books):** K.M.Matthew, *Flora Palni Hills* (1996) (873, Pl 873), K.M.Matthew, Further Illustrations on the *Flora of Tamilnadu Carnatic* (1988) (pl.831).

**Derivation** (Clifford & Bostock 2007): in honor of Nathaniel Wallich (1786–1854) Danish-born physician and sometime superintendent Calcutta Botanic Gardens.

**Classification.** Subfamily Chloridoideae. Tribe: Zoysieae.

**Habit, Vegetative Morphology.** Annual or perennial, short-lived, caespitose. Culms erect or geniculately ascending, 90–120 cm long. Culm-nodes glabrous. Lateral branches lacking. Leaf-sheaths glabrous on surface, outer margin hairy. Leaf-sheath oral hairs ciliate. Ligule a fringe of hairs, 0.5 mm long. Leaf-blades 20–46 cm long, 4–8 mm wide. Leaf-blade margins smooth or scaberulous, glabrous. Leaf-blade apex attenuate.

**Inflorescence.** Inflorescence a panicle. Panicle open, ovate, effuse, 25–45 cm long, 10–20 cm wide. Primary panicle branches 5–10 cm long. Panicle branches capillary. Spikelets solitary or in pairs. Fertile spikelets pedicelled. Pedicels present, 3–8 mm long.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 2 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes deciduous, shorter than spikelet. Lower glume elliptic or oblong, 0.5–0.75 mm long, 0.5–0.75 length of upper glume, membranous, without keels, 0 -veined. Lower glume lateral veins absent. Lower glume margins ciliolate. Lower glume apex obtuse. Upper glume elliptic, 1 mm long, 0.5 length of adjacent fertile lemma, membranous, without keels, 0 -veined. Upper glume primary vein absent. Upper glume lateral veins absent. Upper glume apex obtuse.

**Florets.** Fertile lemma ovate, 2 mm long, membranous, without keel, 1 -veined, 0–3 -veined, one-veined. Lemma apex acuminate. Palea 2 -veined. Palea keels approximate.

**Flower and Fruit.** Anthers 3, 1 mm long. Caryopsis with free soft pericarp, obovoid, quadrangular, 1 mm long, dark brown, truncate. Embryo 0.5 length of caryopsis.

**Distribution (TDWG). Continent.** Temperate Asia, Tropical Asia.

**Country /Province /State.** China. China South Central. **Indian Subcontinent, Indo-China.** India, Sri Lanka, Myanmar, Thailand.

**TDWG4.** Yunnan. Maharashtra.



**Sporobolus welwitschii** Rendle. *Cat. Welw. Afr. Pl.* ii. 207. (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, Lopollo: *Welwitsch 2690* (K iso).

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): in honor of Friedrich Martin Josef Welwitsch (1806–72) Austrian-born botanist, physician and traveller.

**Classification.** Subfamily Chloridoideae. Tribe: Zoysieae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Rhizomes short. Butt sheaths persistent and investing base of culm, with compacted dead sheaths. Culms 60–70 cm long. Leaves cauline. Ligule a fringe of hairs. Leaf-blades filiform, 4–8 cm long, 1–2 mm wide.

**Inflorescence.** Inflorescence a panicle. Panicle open, ovate, effuse, 4–11 cm long. Primary panicle branches spreading. Panicle branches capillary, bearded in axils. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 0.8–2.1 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes deciduous, similar, shorter than spikelet, similar to fertile lemma in texture, shiny. Lower glume lanceolate, 0.5 length of upper glume, membranous, without keels, 0 -veined. Lower glume lateral veins absent. Lower glume apex obtuse. Upper glume lanceolate, 0.66 length of adjacent fertile lemma, hyaline, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume apex acute.

**Florets.** Fertile lemma ovate, 0.8–2.1 mm long, membranous, shiny, without keel, 1 -veined, 0–3 -veined, one-veined. Lemma apex acute. Palea 2 -veined. Palea keels approximate.

**Flower and Fruit.** Anthers 3. Caryopsis with free soft pericarp.

**Distribution (TDWG). Continent.** Africa.

**Country /Province /State.** West-central tropical Africa, South tropical Africa, Southern Africa. Congo. Angola, Mozambique, Zambia, Zimbabwe. Namibia, Limpopo.

**Sporobolus wrightii** Scribn. *Bull. Torr. Bot. Cl.* 9:103 (1882).

**Accepted by:** R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), N.L.Bor, *Grasses of Burma, Ceylon, India and Pakistan* (1960).

**TYPE** from USA. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: IT: *C.G. Pringle 190*, 28 Jun 1881, USA: Arizona (US-825415).

**Illustrations (Books):** M.E.Barkworth et al, *Flora of North America north of Mexico Vol 25 Poaceae*, part 2 (2003) (128).

**Images:** R.Darke, *Ornamental Grasses* (2004);, R.Darke, *The Encyclopaedia of Grasses for Liveable Landscapes* (2007);.

**Derivation** (Clifford & Bostock 2007): in honor of Charles Wright (1811–1885) United States botanist.

**Classification.** Subfamily Chloridoideae. Tribe: Zoysieae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Culms erect, robust, 90–250 cm long, 2–9 mm diam. Leaf-sheaths without keel. Ligule a fringe of hairs, 1–2 mm long. Leaf-blades 20–70 cm long, 3–6 mm wide.

**Inflorescence.** Inflorescence a panicle. Panicle open, lanceolate, 20–60 cm long, 12–26 cm wide. Panicle branches bearing congested spikelets. Spikelets appressed, solitary. Fertile spikelets pedicelled. Pedicels present, 0.5 mm long.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 1.5–2.1 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes deciduous, shorter than spikelet. Lower glume ovate, 0.5–1 mm long, 0.5–0.66 length of upper glume, membranous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume apex acute. Upper glume ovate, 0.8–1.8 mm long, 0.66–0.9 length of adjacent fertile lemma, membranous, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume apex acute.

**Florets.** Fertile lemma ovate, 1.2–2.1 mm long, membranous, without keel, 1 -veined, 0–3 -veined, one-veined. Lemma apex obtuse. Palea 2 -veined. Palea keels approximate.

**Flower and Fruit.** Anthers 3. Caryopsis with free soft pericarp, 1.3 mm long.

**Distribution (TDWG). Continent.** Africa, North America.

**Country /Province /State. Northern Africa.** Egypt. **North-central USA, Southwestern USA, South-central USA, Mexico.** Oklahoma. Arizona, California, Utah. New Mexico, Texas. Central Mexico, Northeast Mexico, Northwest Mexico.

Puebla. Aguascalientes, Coahuila, Chihuahua, Durango, Hidalgo, Neuvo Leon, San Luis Potosi, Tamaulipas, Zacatecas. Baja California, Baja California Sur, Sonora.

**Steinchisma cupreum** (Hitchcock & Chase) W.V. Brown. *Mem. Torrey Bot. Club*, 23(3): 20 (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 Mexico. **Basionym or Replaced Name:** *Panicum hians* var. *purpurascens* Scribn., *Proc. Acad. Nat. Sci. Philadelphia* 43(2): 296, t. 13, f. 3, 3a-3d (1891). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: C.G. Pringle 3449, 4 Sep 1890, Mexico: México: wet hollows in prairies of Flor de Maria (US-80756).

**Illustrations (Books):** F.W.Gould, *The Grasses of Texas* (1975) (461, Fig. 246 as *Panicum hians*), F.O.Zuloaga et al, *Flora del Paraguay* 23 (1994) (239, Fig. 66 as *Panicum hians*).

**Derivation** (Clifford & Bostock 2007): L. coppers. The purple spikelets are reminiscent of burnished copper.

**Classification.** Subfamily Panicoideae. Tribe: Paspaleae. Subtribe OTACHYRIINAE.

**Habit, Vegetative Morphology.** Perennial, caespitose. Culms erect, 40–60 cm long, wiry. Culm-internodes distally glabrous. Lateral branches lacking. Leaf-sheaths as wide as blade at the collar, keeled, glabrous on surface. Ligule a ciliolate membrane, 0.5 mm long. Leaf-blades erect or ascending, conduplicate, 5–15 cm long, 2–4 mm wide. Leaf-blade surface glabrous.

**Inflorescence.** Inflorescence a panicle. Panicle open, lanceolate, 3–11 cm long, contracted about secondary branches. Primary panicle branches appressed or ascending. 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, 3 mm long, falling entire.

**Glumes.** Glumes dissimilar, shorter than spikelet, thinner than fertile lemma. Lower glume ovate, 0.33 length of spikelet, membranous, without keels, 3 -veined. Lower glume apex obtuse. Upper glume elliptic, 0.9 length of spikelet, membranous, purple, 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, 2.4 mm long, 0.9 length of spikelet, membranous, purple, acute. Palea of lower sterile floret becoming indurate on flanks at maturity (and orbicular). Fertile lemma elliptic, 3 mm long, coriaceous, without keel. Lemma margins involute. Lemma apex acute. Palea coriaceous, without keels.

**Distribution (TDWG). Continent.** North America.

**Country /Province /State. Mexico.** Central Mexico, Northeast Mexico, Gulf (Mexico), Southwest Mexico.

**TDWG4.** Mexico State, Puebla. Durango, Guanajuato, Zacatecas. Veracruz. Jalisco, Michoacan.

**Steinchisma decipiens** (Nees ex Trin.) W.V. Brown. *Mem. Torrey Bot. Club*, 23(3): 20 (1977).

**Accepted by:** R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

**TYPE** from Brazil. **Basionym or Replaced Name:** *Panicum decipiens* Nees ex Trin., *Gram. Panic.* 227 (1826)

. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: G.H. von Langsdorff s.n., Sep 1824, Brazil: Minas Gerais: in humidis arenosis pr. Agua Quenti (LE-TRIN-0665.0; IT: B, K (photo), US-2903516 (fragm. ex B), US-974489 (fragm. ex LE)).

**Recent Synonyms:** *Panicum cupreum* Hitchc. & Chase, *Contr. U.S. Natl. Herb.* 15: 120, f. 113 (1910).

**Illustrations (Books):** A.L.Cabrera, *Flora de la Provincia de Buenos Aires, IV Pt 2 Gramineas* (1970) (as *Panicum*).

**Illustrations (Journals):** *Ann. Missouri Bot. Gard.* (85: 645, Fig.7 (1996)).

**Derivation** (Clifford & Bostock 2007): L. decipio, deceive. Resembling another species, or in some other way deceptive.

**Classification.** Subfamily Panicoideae. Tribe: Paspaleae. Subtribe OTACHYRIINAE.

**Habit, Vegetative Morphology.** Perennial. Rhizomes short. Culms erect, 30–90 cm long. Ligule a ciliolate membrane. Leaf-blades flat or conduplicate, 6–16 cm long, 2–6 mm wide. Leaf-blade surface glabrous or pubescent, hairy adaxially. Leaf-blade apex acute or acuminate.

**Inflorescence.** Inflorescence a panicle. Panicle contracted, linear, interrupted, 4–16 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 elliptic or oblong, laterally compressed, acute, 1.7–2.5 mm long, falling entire.

**Glumes.** Glumes dissimilar, shorter than spikelet, thinner than fertile lemma. Lower glume ovate, 0.33–0.5 length of spikelet, membranous, purple, without keels, 3 -veined. Lower glume apex obtuse. Upper glume lanceolate or elliptic, 0.66 length of spikelet, membranous, purple, without keels, 3 -veined. Upper glume lateral veins ribbed. Upper glume apex obtuse.

**Florets.** Basal sterile florets 1, male, with palea. Lemma of lower sterile floret similar to upper glume, oblong, 0.75 length of spikelet, membranous, 5 -veined, obtuse. Palea of lower sterile floret becoming indurate on flanks at maturity, 1.2 length of lemma. Fertile lemma elliptic, 1.5–2.3 mm long, coriaceous, without keel. Lemma surface papillose. Lemma margins involute. Lemma apex acute. Palea coriaceous, without keels.

**Distribution (TDWG).** Continent. South America.

**Country /Province /State.** Northern South America, Western South America, Brazil, Southern South America. Venezuela. Bolivia, Colombia. Brazil West Central, Brazil Northeast, Brazil North, Brazil Southeast, Brazil South. Argentina Northeast, Paraguay, Uruguay.

**TDWG4.** Goias, Bahia, Minas Gerais, Rio de Janeiro, Espirito Santo, Sao Paulo Parana, Catarina, Rio Grande do Sul. Salta, Tucuman. Buenos Aires, Corrientes, Misiones.

**Steinchisma exiguiflorum** (Griseb.) W.V. Brown. *Mem. Torrey Bot. Club*, 23(3): 20 (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 Cuba. **Basionym or Replaced Name:** *Panicum minutiflorum* A. Rich., *Hist. Fis. Cuba, Bot.* 11: 305 (1850). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *R. de la Sagra s.n.*, no date, Cuba (P; IT: US-80782 (fragm. ex P & photo)).

**Recent Synonyms:** *Panicum exiguiflorum* Griseb., *Cat. Pl. Cub.* 234 (1866).

**Illustrations (Books):** A.S.Hitchcock, *Manual of the Grasses of the West Indies* (1936) (as *Panicum*).

**Derivation** (Clifford & Bostock 2007): *L. exiguus*, wanting in size and number; flos, flower. Panicle weakly developed.

**Classification.** Subfamily Panicoideae. Tribe: Paspaleae. Subtribe OTACHYRIINAE.

**Habit, Vegetative Morphology.** Perennial, caespitose. Stolons absent or present. Culms geniculately ascending, 15–30 cm long, wiry. Lateral branches lacking or sparse, arising from upper culm. Leaf-sheaths glabrous on surface, outer margin hairy. Ligule a ciliolate membrane. Leaf-blades erect or ascending, 2–6 cm long, 0.5–1.5 mm wide. Leaf-blade surface glabrous.

**Inflorescence.** Inflorescence a panicle. Panicle open, ovate, 3–10 cm long, 0.33–0.5 of culm length. Primary panicle branches spreading or reflexed, rebranched near base. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets oblong, dorsally compressed, 1.4–1.5 mm long, falling entire.

**Glumes.** Glumes dissimilar, shorter than spikelet, thinner than fertile lemma. Lower glume ovate, 0.33 length of spikelet, membranous, without keels, 3 -veined. Lower glume apex acute. Upper glume elliptic, 0.66 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, acute. Palea of lower sterile floret becoming indurate on flanks at maturity (and orbicular). Fertile lemma elliptic, 1.3 mm long, coriaceous, without keel. Lemma margins involute. Lemma apex acute. Palea coriaceous, without keels.

**Distribution (TDWG).** Continent. South America.

**Country /Province /State.** Caribbean. Bahamas, Cuba, Haiti.

**Steinchisma hians** (Ell.) Nash. *Small, Fl. S. E. U. S.* 105 (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), D.Sharp, D. & B.K.Simon, *AusGrass* (2002).

**TYPE** from USA. **Basionym or Replaced Name:** *Panicum hians* Elliott, *Sketch Bot. S. Carolina* 1(2): 118 (1816). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *S. Elliott s.n.*, Aug-Oct,

USA: South Carolina: Charleston Co.: Hab. in pinetis humidis (CHARL; IT: US-80696 (fragm. ex CHARL & photo)). Cited as coming from Virginia by Zuloaga et al., *Ann. Missouri Bot. Gard.* 85(4): 647 (1998).

**Recent Synonyms:** *Fasciculochloa sparshottiorum* B.K.Simon & C.M.Weiller, *Austrobaileya* 4(3): 374 (1995). *Panicum milioides* Nees ex Trin., *Gram. Panic.* 225 (1826).

**Illustrations (Books):** 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) (564), S.A.Rennoize, *Gramineas de Bolivia* (1998) (414, Fig. 88), S.A.Rennoize, *The Grasses of Bahia*, 1984 (132, Fig. 46 as *Panicum hians*), L.B. Smith, D.C. Wasshausen, R.M. Klein *Flora Illustrada Catarinensis Gramineas* (1981–1982) (656, Fig. 140 as *Panicum*), A.L.Cabrera, *Flora de la Provincia de Buenos Aires, IV Pt 2 Gramineas* (1970) (as *Panicum milioides*), B.Rosengurt, *Gramineas Uruguayas I* (1970) (338, Fig. 143 as *Panicum milioides*), A.Burkat, *Flora Ilustrada de Entre Rios (Argentina)*, Pt II, *Gramineas* (1969) (303, Fig. 121 as *Panicum milioides* var. *filifolium*).

**Illustrations (Journals):** *Ann. Missouri Bot. Gard.* (85: 648, Fig.8 (1996)).

**Images:** D.Sharp & B.K.Simon, *AusGrass*. Grasses of Australia. CD-Rom Version 1.0. (2002);

**Derivation** (Clifford & Bostock 2007): L. hio, gape. Glumes spreading at anthesis or when antherium mature.

**Classification.** Subfamily Panicoideae. Tribe: Paspaleae. Subtribe OTACHYRIINAE.

**Habit, Vegetative Morphology.** Perennial. Culms erect or decumbent, 20–75 cm long. Ligule a ciliate membrane, 0.5 mm long. Leaf-blades 6–18 cm long, 2–5 mm wide.

**Inflorescence.** Inflorescence a panicle. Panicle open, oblong, 6–20 cm long, contracted about primary branches. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets oblong, dorsally compressed, acute, 1.8–2.6 mm long, falling entire.

**Glumes.** Glumes dissimilar, reaching apex of florets, thinner than fertile lemma. Lower glume ovate, 0.33–0.5 length of spikelet, membranous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume apex acute. Upper glume elliptic, 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, 3 -veined, acute. Palea of lower sterile floret becoming indurate on flanks at maturity (and orbicular). Fertile lemma ovate, 1.2–1.7 mm long, coriaceous, without keel, 3 -veined, 0–3 -veined. Lemma margins involute. Lemma apex acute. Palea coriaceous, without keels.

**Distribution (TDWG). Continent.** Europe (\*), Africa, Australasia (\*), North America, South America.

**Region. Northern Europe** (\*).

**Country /Province /State.** : GB Aliens (Ryves et al). **Southern Africa.** Kwazulu-Natal. **Australia.** Queensland (\*). **North-central USA, South-central USA, Southeastern USA.** Missouri. New Mexico, Texas. Alabama, Arkansas, Delaware, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, North Carolina, South Carolina, Tennessee, Virginia, District of Columbia. **Mesoamerica, Western South America, Brazil, Southern South America.** Guatemala, Honduras, Nicaragua. Bolivia, Colombia. Brazil Northeast, Brazil Southeast, Brazil South. Argentina Northeast, Paraguay.

**TDWG4.** South East. Jujuy, Salta, Santiago del Estero, Tucuman. Buenos Aires, Chaco, Cordoba, Corrientes, Distrito Federal, Entre Rios, Formosa, La Pampa, Misiones, Santa Fe.

**Steinchisma laxa** (Sw.) Zuloaga. *Amer. J. Bot.* 90:817 (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) (as *Panicum*), D.Sharp, D. & B.K.Simon, *AusGrass* (2002).

**TYPE** from USA. **Basionym or Replaced Name:** *Panicum laxum* Sw., *Prodr.* 23 (1788). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: Swartz s.n., Jamaica (S; IT: US (fragm.)).

**Recent Synonyms:** *Cliffordiochloa parvispicula* B.K.Simon, *Austrobaileya*, 3(4): 676 (1992).

**Illustrations (Books):** H.Duistermaat, *Field Guide to the Grasses of Singapore* (2005), A.S.Hitchcock, *Manual of the Grasses of the West Indies* (1936) (269, Fig. 231), S.A.Rennoize, *Gramineas de Bolivia* (1998) (391, Fig. 83 as *Panicum laxa*), S.A.Rennoize, *The Grasses of Bahia*, 1984 (132, Fig. 46 as *Panicum*), L.B. Smith, D.C. Wasshausen, R.M. Klein *Flora Illustrada Catarinensis Gramineas* (1981–1982) (683, Fig.145 as *Panicum*), A.Burkat, *Flora Ilustrada de Entre Rios (Argentina)*, Pt II, *Gramineas* (1969) (318, Fig. 129), W.Burger, *Flora Costaricensis* 15, *Gramineae: Fieldiana Botany New Series* 4 (1980) (373, Fig. 136), A.L.Cabrera, *Flora de la Provincia de Buenos Aires, IV Pt 2 Gramineas* (1970), F.O.Zuloaga et al, *Flora del Paraguay* 23 (1994) (247, Fig. 69 as *Panicum laxum*), B.Rosengurt, *Gramineas Uruguayas I* (1970) (330, Fig. 139 all as *Panicum*), E.Judziewicz, *Flora of the Guianas*, 187. *Poaceae* (1990) (Fig. 71 as *Panicum*).

**Illustrations (Journals):** *Austrobaileya* 3(4): 675, Fig.3 (1992) as *Cliffordiochloa parvispicula*).

**Derivation** (Clifford & Bostock 2007): L. loose. Inflorescence much branched either as a single panicle or from branching of the culms.

**Classification.** Subfamily Panicoideae. Tribe: Paspaleae. Subtribe OTACHYRIINAE.

**Habit, Vegetative Morphology.** Annual or perennial. Culms decumbent, 30–90 cm long, rooting from lower nodes. Culm-internodes elliptical in section. Leaf-sheaths keeled. Ligule an eciliate membrane, 0.5–0.6 mm long. Leaf-blades linear or lanceolate, 6.5–30 cm long, 6–13 mm wide. Leaf-blade margins scabrous.

**Inflorescence.** Inflorescence a panicle. Panicle open, pyramidal, 9–25 cm long, contracted about primary branches. Primary panicle branches bearing spikelets almost to the base. Panicle branches angular, secund. Spikelets appressed, 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, subacute, 1.4–1.7 mm long, 0.7–0.8 mm wide, falling entire.

**Glumes.** Glumes dissimilar, exceeding apex of florets, thinner than fertile lemma. Lower glume ovate, 0.33 length of spikelet, membranous, without keels, 3 -veined. Lower glume primary vein scaberulous. 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, 3 -veined, glabrous or pubescent, acute. Fertile lemma oblong, dorsally compressed, 1–1.5 mm long, indurate, pallid, without keel, more than 3-veined. Lemma margins involute. Lemma apex obtuse. Palea involute, indurate.

**Flower and Fruit.** Caryopsis with adherent pericarp, oblong, 0.9 mm long.

**Distribution (TDWG). Continent.** Africa, Australasia (\*), North America, South America.

**Country /Province /State. West tropical Africa, Middle Atlantic ocean.** Ghana, Ivory Coast, Liberia, Nigeria, Sierra Leone. Ascension. **Australia.** Queensland (\*). **Mexico.** Central Mexico, Northeast Mexico, Gulf (Mexico), Southwest Mexico, Southeast Mexico. **Mesoamerica, Caribbean, Northern South America, Western South America, Brazil, Southern South America.** Belize, Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua, Panama. Cuba, Dominican Republic, Haiti, Jamaica, Leeward Is, Windward Islands, Puerto Rico, Trinidad-Tobago. French Guiana, Guyana, Surinam, Venezuela. Bolivia, Colombia, Ecuador, Galapagos, Peru. Brazil North, Brazil South. Argentina Northeast, Argentina Northwest, Paraguay, Uruguay.

**TDWG4.** North. Roraima, Para, Amapa, Amazonas, Acre, Rondonia, Mato Grosso, Goias, Bahia, Maranhao, Piaui, Ceara, Rio Grande do Norte, Paraiba, Pernambuco, Alagoas, Sergipe, Minas Gerais, Rio de Janeiro, Espirito Santo, Sao Paulo Parana, Catarina, Rio Grande do Sul. Jujuy, Salta, Tucuman. Buenos Aires, Chaco, Corrientes, Entre Rios, Formosa, Misiones, Santa Fe. Mexico State. San Luis Potosi, Tamaulipas. Veracruz. Michoacan, Nayarit, Oaxaca. Campeche, Chiapas, Tabasco, Yucatan.

**Steinchisma spathellosum** (Doell) S.A. Renvoize. *Kew Bull.*, 42(4): 921: (1987).

**Accepted by:** R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

**TYPE** from Brazil. **Basionym or Replaced Name:** *Panicum spathellosum* Döll, *Fl. Bras.* 2(2): 241 (1877). T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: HT: *F. Sellow s.n.*, no date, Brazil (B; IT: BAA-1975 (fragm. ex B), K, US-1061588, US-81127 (fragm. ex BR)).

**Recent Synonyms:** *Panicum schenckii* Hack., *Oesterr. Bot. Zeitschr.* 1901, 426. (1901).

**Illustrations (Books):** L.B. Smith, D.C. Wasshausen, R.M. Klein *Flora Illustrada Catarinensis Gramineas* (1981–1982) (656, Fig. 140 as *Panicum spathellosum*), A.L.Cabrera, *Flora de la Provincia de Buenos Aires, IV Pt 2 Gramineas* (1970) (as *Panicum schenckii*), F.O.Zuloaga et al, *Flora del Paraguay* 23 (1994) (303, Fig. 88 as *Panicum*).

**Illustrations (Journals):** *Ann. Missouri Bot. Gard.* (85: 650, Fig.9 (1996)).

**Derivation** (Clifford & Bostock 2007): L. spatha, spatula; -ella, diminutive; -osum, abundance.

**Classification.** Subfamily Panicoideae. Tribe: Paspaleae. Subtribe OTACHYRIINAE.

**Habit, Vegetative Morphology.** Perennial, caespitose. Rhizomes short. Culms geniculately ascending, 30–80 cm long, 2–3 mm diam. Ligule a ciliolate membrane. Leaf-blades 10–20 cm long, 1–5 mm wide.

**Inflorescence.** Inflorescence a panicle. Panicle open, lanceolate, 10–20 cm long. Panicle branches secund. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, 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, acute, 3–4 mm long, falling entire.

**Glumes.** Glumes dissimilar, shorter than spikelet, thinner than fertile lemma. Lower glume ovate, 0.33–0.5 length of spikelet, membranous, without keels, 3 -veined. Lower glume apex obtuse. Upper glume lanceolate, 0.9 length of spikelet, membranous, without keels, 3 -veined. Upper glume apex acute.

**Florets.** Basal sterile florets 1, barren, with palea. Lemma of lower sterile floret similar to upper glume, elliptic, 1 length of spikelet, membranous, 3 -veined, acute. Palea of lower sterile floret becoming indurate on flanks at maturity, 1 length of lemma. Fertile lemma elliptic, 2.5–3.5 mm long, coriaceous, without keel. Lemma margins involute. Lemma apex acute. Palea coriaceous, without keels.

**Distribution (TDWG).** Continent. South America.

**Country /Province /State.** Brazil, Southern South America. Brazil Southeast. Argentina Northeast, Paraguay.

**TDWG4.** Mato Grosso, Minas Gerais, Rio de Janeiro, Espirito Santo, Sao Paulo Parana, Catarina, Rio Grande do Sul. Buenos Aires, Distrito Federal, Entre Rios, Misiones.

**Steinchisma stenophylla** (Hack.) F.O. Zuloaga & O. Morrone. *Ann. Missouri Bot. Gard.*, 85(4): 651 (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 Brazil. **Basionym or Replaced Name:** *Panicum stenophyllum* Hack., *Oesterr. Bot. Z.* 51: 371 (1901). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: A.F.M. Glaziou 22534, 28 May 1895, Brazil: Goiás: Paranana (W; IT: G, K, P, US-1720074 (fragm.), US-974508 (fragm.)).

**Illustrations (Books):** J.A.Steyermark et al, *Flora of the Venezuelan Guayana* Vol. 8 (2004) (277, Fig. 224).

**Illustrations (Journals):** *Ann. Missouri Bot. Gard.* (85: 652, Fig.10 (1996)).

**Derivation** (Clifford & Bostock 2007): Gk. stenos, narrow; phyllon, leaf. Leaf-blades filiform.

**Classification.** Subfamily Panicoideae. Tribe: Paspaleae. Subtribe OTACHYRIINAE.

**Habit, Vegetative Morphology.** Perennial. Rhizomes short. Culms erect or geniculately ascending or decumbent, 30–120 cm long. Culm-internodes 10–15 cm long, distally glabrous. Culm-nodes glabrous. Lateral branches ample. Leaf-sheaths 5–11 cm long, mostly shorter than adjacent culm internode, glabrous on surface, outer margin glabrous or hairy. Ligule an eciliate membrane, 0.4–0.7 mm long, lacerate. Collar glabrous. Leaf-blades involute, 9–16(–30) cm long, 0.2–2 mm wide. Leaf-blade surface glabrous or pilose, hairy adaxially. Leaf-blade apex attenuate.

**Inflorescence.** Inflorescence a panicle, terminal or terminal and axillary. Axillary inflorescences similar to terminal. Peduncle 10–25 cm long, glabrous. Panicle open, elliptic, 2–15 cm long, 2–10 cm wide. Primary panicle branches ascending, 1 -nate. Panicle axis angular, scaberulous. Panicle branches angular, scaberulous, glabrous in axils. 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, laterally compressed, 2.4–3.2 mm long, 0.5–0.8 mm wide, falling entire.

**Glumes.** Glumes dissimilar, shorter than spikelet, thinner than fertile lemma. Lower glume ovate, 1–1.2 mm long, 0.33 length of spikelet, membranous, without keels, 3 -veined. Lower glume apex obtuse or acute. Upper glume elliptic or oblong, 2.2–3 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, elliptic or ovate, 2.2–3 mm long, 1 length of spikelet, chartaceous, 3–5 -veined. Palea of lower sterile floret becoming indurate on flanks at maturity, 2.2–2.8 mm long. Fertile lemma ovate, 2.2–2.8 mm long, 0.6 mm wide, coriaceous, yellow, without keel. Lemma surface papillose. Lemma margins involute. Lemma apex acute. Palea coriaceous, without keels.

**Flower and Fruit.** Lodicules 2, 0.5 mm long. Anthers 3, 1.2–1.4 mm long. Caryopsis with adherent pericarp, oblong, 1.3 mm long. Embryo 0.5 length of caryopsis. Hilum elliptic.

**Distribution (TDWG).** Continent. South America.

**Country /Province /State.** Northern South America, Brazil. Venezuela. Brazil West Central, Brazil Northeast, Brazil North, Brazil Southeast.

Para, Amapa, Goias, Minas Gerais, Rio de Janeiro, Espirito Santo.

**Steirachne barbata** (Trin.) S.A. Renvoize. *Kew Bull.*, 39(1): 184 (1984).

**Accepted by:** R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

**TYPE** from Brazil. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: IT: *s.c. s.n.*, Jun 1822, Brazil (LE). IT: *Riedel s.n.*, s.d., Brasilia (K, LE). HT: *Riedel*, 1831, Bahia (LE-TRIN-2309.01). IT: *L. Riedel s.n.*, no date, Brazil (US-911782, US-2891449 (fragm.)).

**Illustrations (Books):** S.A.Renvoize, *The Grasses of Bahia*, 1984 (75, Fig. 26), J.A.Steyermark et al, *Flora of the Venezuelan Guayana* Vol. 8 (2004) (277, Fig. 225), E.Judziewicz, *Flora of the Guianas*, 187. *Poaceae* (1990) (617, Fig. 106).

**Classification.** Subfamily Chloridoideae. Tribe: Eragrostideae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Butt sheaths herbaceous. Culms 15–47 cm long. Ligule a ciliolate membrane. Leaf-blades 2–9 cm long, 1–2 mm wide. Leaf-blade apex attenuate.

**Inflorescence.** Inflorescence a panicle. Panicle open, oblong, 2–7 cm long. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 6–10 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets oblong, laterally compressed, 8–12 mm long, breaking up at maturity, disarticulating below each fertile floret or below groups of fertile florets (upper falling together). Rhachilla internodes 0.5 mm long, eventually visible between lemmas, pubescent, hairy at tip.

**Glumes.** Glumes persistent, similar, shorter than spikelet. Lower glume lanceolate, 1–2.5 mm long, 0.5–1 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume lateral veins absent. Lower glume apex acuminate. Upper glume lanceolate, 2–2.5 mm long, 0.5 length of adjacent fertile lemma, membranous, 1-keeled, 1 -veined. Upper glume lateral veins absent. Upper glume apex acuminate.

**Florets.** Fertile florets divergent, free at tip, increasing in size upwards. Fertile lemma ovate, 4–4.5 mm long, membranous, keeled, 3 -veined, 0–3 -veined. Lemma midvein scaberulous. Lemma apex attenuate, awned, 1 -awned. Principal lemma awn 0.5–0.75 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. Caryopsis with adherent pericarp, oblong, 1.5 mm long.

Cleistogenes present, in upper sheaths.

**Distribution (TDWG). Continent.** South America.

**Country /Province /State. Northern South America, Brazil.** Guyana, Venezuela. Brazil Northeast, Brazil North, Brazil Southeast.

**TDWG4.** Bahia.

**Steirachne diandra** Ekman. *Arkiv Bot. Stockh.* x. No. 17, 36 (1911).

**Accepted by:** R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

**TYPE** from Brazil. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: ST: *Loefgren* 488, 9 Apr 1910, Brazil (S). ST: *Loefgren* 489, 9 Apr 1910, Brazil (S).

**Illustrations (Books):** E.Judziewicz, *Flora of the Guianas*, 187. *Poaceae* (1990) (617, Fig 106).

**Derivation** (Clifford & Bostock 2007): Gk. dis, twice; aner, man. Florets with two stamens.

**Classification.** Subfamily Chloridoideae. Tribe: Eragrostideae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Butt sheaths thickened and forming a bulb, yellow. Culms 20–40 cm long, 3–4 -noded. Ligule a fringe of hairs. Leaf-blades filiform or linear, 3–12 cm long, 1–2 mm wide. Leaf-blade surface glabrous or pilose, hairy adaxially, with tubercle-based hairs. Leaf-blade apex attenuate, filiform.

**Inflorescence.** Inflorescence a panicle. Panicle open, ovate, effuse, 4–12 cm long. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 7–8 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets oblong, laterally compressed, 8–11 mm long, breaking up at maturity, disarticulating below each fertile floret or below groups of fertile florets (upper falling together). Rhachilla internodes 0.5 mm long, eventually visible between lemmas, pubescent, hairy at tip.

**Glumes.** Glumes persistent, similar, shorter than spikelet. Lower glume lanceolate, 2–3 mm long, 0.7–0.8 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume lateral veins absent. Lower glume apex acuminate. Upper glume lanceolate, 2.5–4 mm long, 0.7–0.8 length of adjacent fertile lemma, membranous, 1-keeled, 1 -veined. Upper glume lateral veins absent. Upper glume apex acuminate.

**Florets.** Fertile florets divergent, free at tip, increasing in size upwards. Fertile lemma ovate, 3.5–5 mm long, membranous, keeled, 3 -veined, 0–3 -veined. Lemma lateral veins prominent. Lemma surface asperulous. Lemma apex attenuate, awned, 1 -awned. Principal lemma awn 0.5–1.5 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. Caryopsis with adherent pericarp. Cleistogenes present, in lower sheaths.

**Distribution (TDWG). Continent.** South America.

**Country /Province /State.** Northern South America, Brazil. Venezuela. Brazil Northeast, Brazil North. Maranhao, Piaui, Ceara, Rio Grande do Norte, Paraiba, Penambuco, Alagoas, Sergipe.

**Stenostachys deceptorix** H.E.Connor. *New Zealand J. Bot.*, 32(2): 144 (1994).

**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) (as *Hystrix*).

**TYPE** from New Zealand. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: New Zealand, Mt. Luna: Druce (CHR holo).

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): *L. deceptor*, a deceiver; *-trix*, indicating femininity. Species often mistaken for another.

**Classification.** Subfamily Pooideae. Tribe: Triticeae.

**Habit, Vegetative Morphology.** Perennial. Stolons present. Butt sheaths persistent and investing base of culm, with fibrous dead sheaths. Culms erect or geniculately ascending, robust, 40–100 cm long. Culm-internodes distally glabrous. Leaf-sheaths 5–10 cm long, keeled, glabrous on surface or pubescent. Leaf-sheath oral hairs lacking or ciliate. Leaf-sheath auricles falcate, 0.5–0.7 mm long. Ligule an eciliate membrane, 0.25–0.5 mm long, erose. Leaf-blades 10–30 cm long, 1–2.5 mm wide. Leaf-blade surface scaberulous, rough on both sides. Leaf-blade margins scaberulous.

**Inflorescence.** Inflorescence composed of racemes. Racemes 1, single, drooping, bilateral, 10–20 cm long, bearing 20–30 fertile spikelets on each. Rhachis flattened. Spikelet packing broadside to rhachis. Rhachis internodes oblong. Spikelets solitary. Fertile spikelets sessile.

**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 lanceolate, dorsally compressed, 10–15 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes 1.8–2 mm long, pubescent. Floret callus pubescent.

**Glumes.** Glumes persistent, similar, shorter than spikelet. Lower glume subulate, 0.5–10 mm long. Upper glume subulate, 2.5–10 mm long, 0.25–1 length of adjacent fertile lemma.

**Florets.** Fertile lemma elliptic, 8–10 mm long, coriaceous, without keel, 0–3 -veined or more than 3-veined. Lemma surface smooth. Lemma apex dentate, 2 -fid, awned, 1 -awned. Principal lemma awn from a sinus, 5–6.5 mm long overall. Palea 8–10 mm long. Palea apex emarginate or obtuse. Rhachilla extension 3–3.5 mm long.

**Flower and Fruit.** Lodicules 2, 0.7–0.8 mm long. Anthers 3, 3–3.5 mm long. Caryopsis with adherent pericarp, 5–5.5 mm long. Embryo 0.2–0.25 length of caryopsis.

**Distribution (TDWG). Continent.** Australasia.

**Country /Province /State.** New Zealand. New Zealand South I.

**Stenostachys enysii** (Kirk) Barkworth & S.W.L. Jacobs. *Telopea* 13 (1–2): 45 (2011).

**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:** *Agropyron enysii* T. Kirk, *Trans N. Z. Inst.* 27: 352 (1895). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: New Zealand, Mt. Torlesse: Petrie (WELT lecto, K).

**Recent Synonyms:** *Elymus enysii* (Kirk) A. Love & H.E. Connor, *New Zealand J. Bot.*, 20(2): 183 (1982).

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): in honor of John Davis Gilbert Enys (1837–1912) English-born amateur botanist and long serving New Zealand magistrate.

**Classification.** Subfamily Pooideae. Tribe: Triticeae.

**Habit, Vegetative Morphology.** Perennial, caespitose, clumped loosely. Basal innovations intravaginal. Culms geniculately ascending, weak, 40–80 cm long. Leaf-sheaths glabrous on surface or pilose. Ligule an eciliate membrane, erose, truncate. Collar glabrous. Leaf-blades 2–5 mm wide, flaccid, glaucous. Leaf-blade surface scaberulous, glabrous or pilose, sparsely hairy.

**Inflorescence.** Inflorescence composed of racemes. Racemes 1, single, bilateral, 5–13 cm long, bearing 10–18 fertile spikelets on each. Rhachis flattened, scabrous on margins. Spikelet packing broadside to rhachis. Rhachis internodes linear. Rhachis internode tip flat. 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 elliptic to oblong, laterally compressed, 10–14 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes 1–1.5 mm long, pubescent. Floret callus bearded.

**Glumes.** Glumes persistent, similar, shorter than spikelet. Lower glume lanceolate, 6–9 mm long, 1 length of upper glume, coriaceous, without keels, 3–5 -veined. Lower glume apex setaceously acuminate. Upper glume lanceolate, 6–9 mm long, coriaceous, without keels, 3–5 -veined. Upper glume apex setaceously acuminate.

**Florets.** Fertile lemma lanceolate, 7–9 mm long, coriaceous, 3–5 -veined, 0–3 -veined or more than 3-veined. Lemma surface scaberulous, rough above. Lemma apex entire or dentate, 2 -fid, acute, awned, 1 -awned. Principal lemma awn apical or from a sinus, 1–2 mm long overall. Palea 1 length of lemma. Palea keels scabrous. Apical sterile florets resembling fertile though underdeveloped.

**Flower and Fruit.** Lodicules 2, membranous. Anthers 3, 2–2.5 mm long, yellow. Stigmas 2. Caryopsis with adherent pericarp.

$2n = 28$  (2 refs TROPICOS).

**Distribution (TDWG). Continent.** Australasia.

**Country /Province /State.** New Zealand. New Zealand South I.

**Stenostachys gracilis** (Hook. f.) Connor. *Telopea* 13 (1–2): 45 (2011).

**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) (as *Hystrix*).

**TYPE** from New Zealand. **Basionym or Replaced Name:** *Gymnostichum gracile* Hook. f., *Fl. N. Zel.* 312. t. 70 (1853). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: New Zealand, Patea village: Colenso 1611 (K lecto).

**Recent Synonyms:** *Stenostachys gracilis* (Hook. f.) H.E. Connor, *New Zealand J. Bot.* 32(2): 146 (1994).

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): L. slender. Culms or inflorescences slender.

**Classification.** Subfamily Pooideae. Tribe: Triticeae.

**Habit, Vegetative Morphology.** Perennial. Culms decumbent, weak, 30–100 cm long. Culm-internodes smooth, distally glabrous. Leaves cauline. Leaf-sheaths smooth, glabrous on surface. Ligule an eciliate membrane. Leaf-blades 7–15 cm long, 2–4 mm wide, flaccid. Leaf-blade surface scaberulous, rough adaxially. Leaf-blade margins scaberulous.

**Inflorescence.** Inflorescence composed of racemes. Racemes 1, single, bilateral, 7–20 cm long, bearing 20–40 fertile spikelets on each. Rhachis flattened, ciliate on margins. Spikelet packing broadside to rhachis, lax. Rhachis internodes oblong. Spikelets solitary. Fertile spikelets sessile.

**Fertile Spikelets.** Spikelets comprising 1–2 fertile florets, with a barren rhachilla extension or with diminished florets at the apex. Spikelets of 1 fertile floret with or without additional sterile florets, or of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, dorsally compressed, 7–16 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus evident, 0.5 mm long, pubescent.

**Glumes.** Glumes both absent or obscure.

**Florets.** Fertile lemma lanceolate, 6–7 mm long, coriaceous, without keel, 5 -veined, more than 3-veined. Lemma surface asperulous to scabrous. Lemma apex attenuate, awned, 1 -awned. Principal lemma awn 1–3 mm long overall. Palea 1 length of lemma, 2 -veined. Palea keels ciliolate.

**Flower and Fruit.** Anthers 3. Ovary pubescent on apex. Caryopsis with adherent pericarp, hairy at apex.

**Distribution (TDWG). Continent.** Australasia.

**Country /Province /State.** New Zealand. New Zealand North I, New Zealand South I, Stewart Is.

**Stenostachys laevis** (Petrie) Connor. *Telopea* 13 (1–2): 45 (2011).

**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) (as *Hystrix*).

**TYPE** from New Zealand. **Basionym or Replaced Name:** *Asperella laevis* Petrie, *Trans. N. Z. Inst.* 27: 406 (1895). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: New Zealand, Matukituki valley: Petrie (WELT lecto, K).

**Recent Synonyms:** *Stenostachys laevis* (Petrie) H.E. Connor, *New Zealand J. Bot.* 32(2): 146 (1994).

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): L. smooth. Lacking hairs or roughness, usually of leaf-blades or lemmas.

**Classification.** Subfamily Pooideae. Tribe: Triticeae.

**Habit, Vegetative Morphology.** Perennial. Culms decumbent, 25–75 cm long. Leaf-sheaths glabrous on surface or pubescent. Ligule an eciliate membrane. Leaf-blades flat or involute, 7–22 cm long, 1–2 mm wide. Leaf-blade surface ribbed.

**Inflorescence.** Inflorescence composed of racemes. Racemes 1, single, bilateral, 7–15 cm long, bearing 15–30 fertile spikelets on each. Rhachis flattened, scabrous on margins. Spikelet packing broadside to rhachis. Rhachis internodes oblong. Spikelets solitary. Fertile spikelets sessile.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, with a barren rhachilla extension or with diminished florets at the apex. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, dorsally compressed, 8–10 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes persistent, similar, shorter than spikelet. Lower glume subulate, 6–8 mm long. Upper glume subulate, 6–8 mm long, 0.7–0.8 length of adjacent fertile lemma.

**Florets.** Fertile lemma elliptic, 8–10 mm long, coriaceous, without keel, 3–5 -veined, 0–3 -veined or more than 3-veined. Lemma surface scaberulous, rough above. Lemma apex dentate, 3 -fid, mucronate (0.5–1mm). Palea 0.9 length of lemma, 2 -veined. Palea keels eciliate or ciliolate. Apical sterile florets distinct from fertile.

**Flower and Fruit.** Anthers 3. Ovary pubescent on apex. Caryopsis with adherent pericarp, hairy at apex.

**Distribution (TDWG). Continent.** Australasia.

**Country /Province /State.** New Zealand. New Zealand North I, New Zealand South I, Stewart Is.

**Stenotaphrum clavigerum** Stapf. *Kew Bull.* 1919, 142. (1919).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online.

**TYPE** from Aldabra. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: IT: *W. Fox* 255, 1916, British Indian Ocean Territory (US-1502682). HT: *P. R. Dupont* 255, 1916, Aldabra Group: Assumption Island (K).

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): L. clava, club; gero, carry. Inflorescence club-shaped.

**Classification.** Subfamily Panicoideae. Tribe: Paniceae. Subtribe SETARIINAE.

**Habit, Vegetative Morphology.** Annual, mat forming. Basal innovations flabellate. Culms 3–20 cm long. Leaf-sheaths keeled. Ligule a fringe of hairs. Leaf-blades conduplicate, 2–6 cm long, 2–3 mm wide. Leaf-blade apex acute.

**Inflorescence.** Inflorescence composed of racemes, deciduous as a whole. Peduncle disarticulating, disarticulating above uppermost sheath, base blunt. Racemes 1, single, clavate (corky), bilateral, 0.5–0.75 cm long, bearing few fertile spikelets, bearing 3–5 fertile spikelets on each. Rhachis subterete, 2–3 mm wide, terminating in a barren extension, extension inconspicuous (corky). Spikelet packing abaxial. Spikelets sunken (representing reduced racemes), solitary. Fertile spikelets sessile.

**Fertile Spikelets.** Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets ovate, dorsally compressed, 2–2.5 mm long, falling entire, deciduous with accessory branch structures.

**Glumes.** Glumes similar, shorter than spikelet, thinner than fertile lemma. Lower glume ovate, 0.2–0.5 mm long, 0.1–0.2 length of spikelet, hyaline, without keels, 0 -veined. Lower glume lateral veins absent. Lower glume apex truncate. Upper glume ovate, 0.2–0.5 mm long, 0.1–0.2 length of spikelet, hyaline, without keels, 0 -veined. Upper glume primary vein absent. Upper glume lateral veins absent. Upper glume apex truncate.

**Florets.** Basal sterile florets 1, male, with palea. Lemma of lower sterile floret oblong, 1 length of spikelet, coriaceous, 3 -veined, acute. Palea of lower sterile floret winged on keels. Fertile lemma oblong, 2–2.5 mm long, chartaceous, without keel. Lemma margins flat. Lemma apex acute. Palea chartaceous. Palea apex obtuse.

**Distribution (TDWG). Continent.** Africa.

**Country /Province /State.** Western Indian ocean. Aldabra, Seychelles.

**TDWG4.**

**Stenotaphrum dimidiatum** (L.) Brongn. *Duperr. Voy. Coq. Bot.* 127 (1832).

**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), W.D.Clayton & N.Snow, *Key to Pacific Grasses* (2010).

**TYPE** from India. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: LT: (LINN-80.25). LT designated by Clayton & Renvoize, *Fl. Trop. East Africa, Gramineae* 3: 549 (1982), but specific sheet not indicated; specific sheet indicated by Renvoize in Cafferty et al., *Taxon* 49(2): 253 (2000).

**Illustrations (Books):** R.M.Polhill, F.T.E.A., *Gramineae* (3(1982):550, Fig 132), G.V.Pope et al., *Flora Zambesiaca* 10, J.Bosser, *Graminees des Paturage et des Cultures a Madagascar* (1969) (365, Fig. 137), N.L.Bor, *The grasses of Burma, Ceylon, India and Pakistan* (1960) (367, Fig 41), K.M.Mathew, *Flora Palni Hills* (1996) (874, Pl. 874), R.Pilger, *Die Naturlichen Pflanzenfamilien* 14e (1940) (91, Fig. 56).

**Derivation** (Clifford & Bostock 2007): L. divided down the middle. Panicle with paired racemes.

**Classification.** Subfamily Panicoideae. Tribe: Paniceae. Subtribe SETARIINAE.

**Habit, Vegetative Morphology.** Perennial, mat forming. Stolons present. Basal innovations flabellate. Culms prostrate, 10–30 cm long. Leaf-sheaths keeled. Ligule a fringe of hairs. Leaf-blades conduplicate, 5–20 cm long, 5–12 mm wide. Leaf-blade apex obtuse.

**Inflorescence.** Inflorescence composed of racemes. Racemes borne along a central axis, in a unilateral false spike, sunken, unilateral, 0.7–1.5 cm long, bearing few fertile spikelets, bearing 3–8 fertile spikelets on each. Central inflorescence axis 6–12 cm long, foliaceous (with shallow pockets), fracturing into irregular segments, tip subulate. Rhachis flattened, terminating in a barren extension, extension subulate. Spikelet packing abaxial. Spikelets sunken (in axis), solitary. Fertile spikelets sessile.

**Fertile Spikelets.** Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets ovate, dorsally compressed, (3–)4–5 mm long, falling entire, deciduous with accessory branch structures.

**Glumes.** Glumes dissimilar, reaching apex of florets, thinner than fertile lemma. Lower glume ovate, 0.1–0.3 length of upper glume, 0.1–0.3 length of spikelet, membranous, pallid, without keels. Lower glume apex obtuse. Upper glume ovate, membranous, without keels, 7–9 -veined. Upper glume apex acute.

**Florets.** Basal sterile florets 1, male, with palea. Lemma of lower sterile floret ovate, 1 length of spikelet, coriaceous, 5 -veined, without grooves, acute. Fertile lemma lanceolate, 3.5–4.5 mm long, chartaceous, without keel, 5 -veined, more than 3-veined. Lemma margins flat. Lemma apex acute. Palea chartaceous.

**Flower and Fruit.** *N* = 18 (1 ref TROPICOS).

**Distribution (TDWG). Continent.** Africa, Tropical Asia, Pacific.

**Country /Province/State.** West tropical Africa, East tropical Africa, South tropical Africa, Southern Africa, Western Indian ocean. Burkina, Ghana. Kenya, Tanzania, Uganda. Mozambique, Zimbabwe. Kwazulu-Natal, Eastern Cape. Mauritius, Madagascar, Reunion, Rodrigues, Seychelles. **Indian Subcontinent, Indo-China, Malesia.** India, Sri Lanka. Myanmar, Thailand. Malaya. **Southwestern Pacific, South-central Pacific.** New Caledonia (\*), Samoa (\*), Vanuatu (\*). Marquesas (\*).

**TDWG4.** Kerala.

**Stenotaphrum helferi** Munro. *Fl. Brit. India* 7:91 (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), J.F.Veldkamp, *Poaceae ms (Flora Malesiana)*, N.L.Bor, *Grasses of Burma, Ceylon, India and Pakistan* (1960).

**TYPE** from Burma. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Myanmar: Tenasserim, ca. 1840, *J.W. Helfer 195/801 (herb. E. India Co. 6561)* (LT: K; ILT: B, W).

**Illustrations (Books):** H.B.Gilliland, *Grasses of Malaya* (1971) (206, Fig 44), S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 750).

**Images:** H.B.Gilliland et al., *Flora of Malaya Vol. 3 Grasses* (1971);

**Derivation** (Clifford & Bostock 2007): in honor of Johan Wilhem Helfer (1810–1840) Bohemian physician and traveller who collected in Myanmar.

**Classification.** Subfamily Panicoideae. Tribe: Paniceae. Subtribe SETARIINAE.

**Habit, Vegetative Morphology.** Perennial, mat forming. Stolons present. Basal innovations flabellate. Culms 10–30 cm long. Leaf-sheaths keeled. Ligule a fringe of hairs. Leaf-blades lanceolate, conduplicate, 10–20 cm long, 2–10 mm wide. Leaf-blade apex abruptly acute.

**Inflorescence.** Inflorescence composed of racemes. Racemes 8–10, borne along a central axis, in a unilateral false spike, appressed, unilateral, 1–1.5 cm long, bearing few fertile spikelets, bearing 4–8 fertile spikelets on each. Central inflorescence axis 10–15 cm long, foliaceous (with shallow pockets), tough, tip with blunt extension. Rhachis broadly winged, with sharp-edged midrib, 1.5 mm wide, terminating in a barren extension, extension flattened. Spikelet packing abaxial, regular, 2 -rowed. Spikelets appressed, solitary or in pairs. Fertile spikelets sessile or sessile and 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, 4–4.5 mm long, falling entire.

**Glumes.** Glumes dissimilar, reaching apex of florets, thinner than fertile lemma. Lower glume ovate, 2–3 mm long, 0.5–0.75 length of spikelet, membranous, without keels, 5–7 -veined. Lower glume apex obtuse or

acute. Upper glume ovate, 1 length of spikelet, membranous, without keels, 7–9 -veined. Upper glume apex acute.

**Florets.** Basal sterile florets 1, male, with palea. Lemma of lower sterile floret ovate, 1 length of spikelet, membranous, 5–7 -veined, acute. Fertile lemma ovate, 3–3.5 mm long, indurate, without keel, 3–5 -veined, 0–3 -veined or more than 3-veined. Lemma margins flat. Lemma apex rostrate. Palea reflexed at apex, indurate. Palea apex acuminate.

**Distribution (TDWG). Continent.** Temperate Asia, Tropical Asia.

**Country /Province /State.** **China.** China South Central, Hainan, China Southeast. **Indo-China, Malesia.** Myanmar, Thailand, Vietnam. Malaya.

**TDWG4.** Fujian, Guangdong. Yunnan.

**Stenotaphrum micranthum** (Desv.) C.E.Hubb. C. E. Hubbard & R. E. Vaughan, *Grasses Mauritius*, 73 (1940).

**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*), T.Koyama, *Grasses of Japan and its neighboring regions* (1987) (as *S. subulatum*), W.D.Clayton & N.Snow, Key to Pacific Grasses (2010).

**TYPE** from Reunion. **Basionym or Replaced Name:** *Ophiurinella micrantha* Desv., *Mem. Soc. Agric. Angers* 1: 179, pl. 8, f. 4 (1831). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: *Crescit in insula Borboniae*.

**Recent Synonyms:** *Stenotaphrum subulatum* Trin., *Mem. Acad. Petersb. Ser. 6. Sc. Nat.* 3: 190. (1835).

**Illustrations (Books):** E.E.Henty, *A Manual of the Grasses of New Guinea* (1969) (186, Pl. 70), D.Sharp & B.K.Simon, *AusGrass*. Grasses of Australia. CD-Rom Version 1.0. (2002), R.Pilger, *Die Natürlichen Pflanzenfamilien* 14e (1940) (as *S. subulatum*), S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 749).

**Derivation** (Clifford & Bostock 2007): Gk. mikros, small; anthos, flower. Spikelets small.

**Classification.** Subfamily Panicoideae. Tribe: Paniceae. Subtribe SETARIINAE.

**Habit, Vegetative Morphology.** Annual, mat forming. Stolons present. Basal innovations subterete. Culms decumbent, 10–30 cm long. Leaf-sheaths without keel. Ligule a fringe of hairs. Leaf-blades lanceolate, flat, 3–12 cm long, 4–15 mm wide. Leaf-blade apex acuminate.

**Inflorescence.** Inflorescence composed of racemes. Racemes borne along a central axis, in a bilateral false spike, sunken, unilateral, 0.5–1.2 cm long, bearing few fertile spikelets, bearing 2–6 fertile spikelets on each. Central inflorescence axis 5–20 cm long, fracturing into irregular segments, tip subulate. Rhachis flattened, terminating in a barren extension, extension subulate. Spikelet packing abaxial. Spikelets sunken (in axis), solitary. Fertile spikelets sessile.

**Fertile Spikelets.** Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets ovate, dorsally compressed, 2.5–3.5 mm long, falling entire, deciduous with accessory branch structures.

**Glumes.** Glumes similar, shorter than spikelet, thinner than fertile lemma. Lower glume ovate, 1 length of upper glume, 0.1–0.3 length of spikelet, membranous, pallid, without keels. Lower glume apex obtuse. Upper glume ovate, membranous, without keels, 0 -veined. Upper glume primary vein absent. Upper glume lateral veins absent. Upper glume apex obtuse.

**Florets.** Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret ovate, 1 length of spikelet, coriaceous, 2-keeled, 5 -veined, with 2 longitudinal grooves, acute. Fertile lemma lanceolate, 2–3 mm long, coriaceous, much thinner on margins, without keel, 5 -veined, more than 3-veined. Lemma margins flat, covering most of palea. Lemma apex acute. Palea coriaceous.

**Distribution (TDWG). Continent.** Africa, Temperate Asia, Tropical Asia, Australasia, Pacific.

**Country /Province /State.** **East tropical Africa, Western Indian ocean.** Tanzania. Aldabra, Chagos Archipelago, Mauritius, Madagascar, Rodrigues, Seychelles. **Eastern Asia.** Kazan-retto, Ogosawara-shoto. **Indo-China, Malesia, Papuasia.** South China Sea. Cocos (Keeling) Is, Java, Philippines. New Guinea West Papua (Irian Jaya). New Guinea, Solomon Is. **Australia.** Queensland. **Southwestern Pacific, South-central Pacific, Northwestern Pacific.** Fiji, Niue, New Caledonia, Samoa, Tonga, Vanuatu, Wallis-Futuna Is. Cook Is, Society Is, Tubuai Is. Marianas, Marshall Is. Hawaii.

**TDWG4.** North, Central.

**Stenotaphrum oostachyum** Baker. *Journ. Linn. Soc.* xx. 299. (1883).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online.

**TYPE** from Madagascar. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *Baron 655*, Madagascar (K; IT: P).

**Illustrations (Books):** J.Bosser, *Graminees des Paturage et des Cultures a Madagascar* (1969) (365, Fig 137).

**Derivation** (Clifford & Bostock 2007): Gk. oon, egg; stachys, ear of corn. Inflorescence a solitary oblong spike.

**Classification.** Subfamily Panicoideae. Tribe: Paniceae. Subtribe SETARIINAE.

**Habit, Vegetative Morphology.** Perennial, mat forming. Stolons present. Basal innovations flabellate. Culms 6–30 cm long. Leaf-sheaths keeled. Ligule a fringe of hairs. Leaf-blades conduplicate, 2–8 cm long, 3–8 mm wide. Leaf-blade apex obtuse.

**Inflorescence.** Inflorescence composed of racemes, deciduous as a whole. Peduncle disarticulating, disarticulating above uppermost sheath, base blunt. Racemes 1, single, clavate (corky), bilateral, 0.5–1.5 cm long, bearing few fertile spikelets, bearing 4–6 fertile spikelets on each. Rhachis subterete, 3–4 mm wide, terminating in a barren extension, extension inconspicuous (corky). Spikelet packing abaxial. Spikelets sunken (representing reduced racemes), solitary. Fertile spikelets sessile.

**Fertile Spikelets.** Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets ovate, laterally compressed, 2–2.5 mm long, falling entire, deciduous with accessory branch structures.

**Glumes.** Glumes similar, shorter than spikelet, thinner than fertile lemma. Lower glume ovate, 0.5 mm long, 0.2–0.25 length of spikelet, hyaline, without keels, 0 -veined. Lower glume lateral veins absent. Lower glume apex obtuse. Upper glume ovate, 0.5 mm long, 0.25 length of spikelet, hyaline, without keels, 0 -veined. Upper glume primary vein absent. Upper glume lateral veins absent. Upper glume apex obtuse.

**Florets.** Basal sterile florets 1, male, with palea. Lemma of lower sterile floret oblong, 1 length of spikelet, coriaceous, 3–5 -veined, acute. Fertile lemma oblong, 2–2.5 mm long, chartaceous, without keel. Lemma margins flat. Lemma apex acute. Palea chartaceous.

**Distribution (TDWG). Continent.** Africa.

**Country /Province /State.** Western Indian ocean. Madagascar.

### **Stenotaphrum secundatum** (Walt.) Kuntze. *Rev. Gen. Pl.* ii. 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), 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*), T.G.Tutin et al, *Flora Europaea* 5 (1980), W.D.Clayton & N.Snow, Key to Pacific Grasses (2010).

**TYPE** from USA. **Basionym or Replaced Name:** *Ischaemum secundatum* Walter, *Fl. Carol.* 249 (1788). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: USA: South Carolina, *Walter s.n.* (HT: BM).

**Illustrations (Books):** H.Jacques-Felix, *Les Graminees d'Afrique tropicale* (1962) (240, Fig. 167), L.K.A. Chippindall, *Grasses and Pastures of South Africa* (1955) (368, Fig. 316), G.E.Gibbs Russell et al, *Grasses of Southern Africa* (1990) (314, Fig. 202), L.Boulos, *Flora of Egypt* 4 (2005) (303, Pl. 89), H.Duistermaat, *Field Guide to the Grasses of Singapore* (2005) (133, Fig.137), J.P.Jessop, G.R.M. Dashorst & F.M.James, *Grasses of South Australia* (2006) (489, Fig. 423), C.A.Gardner, *Flora of Western Australia*, Vol 1, Part 1, *Gramineae* (1952), N.Walsh & T.Entwistle, *Flora of Victoria* Vol 2 (1994) (602, Fig. 122), S.W.L.Jacobs, R.D.B.Whalley & D.J.B.Wheeler,, *Grasses of New South Wales*, 4th edn (2008) (380), J.C.Tothill, & J.B.Hacker. *The grasses of southern Queensland* (1983) (390), T.D.Stanley & E.Ross, *Flora of South East Queensland, Gramineae* (1989) (215, Fig. 34), D.Sharp & B.K.Simon, *AusGrass*. Grasses of Australia. CD-Rom Version 1.0. (2002), W.L.Wagner et al., *Manual of the Flowering Plants of Hawai'i*, Vol. 2 (1990) (1595, Pl. 236), M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 25 *Poaceae*, part 2 (2003) (562), F.W.Gould, *The Grasses of Texas* (1975) (423, Fig. 226), A.S.Hitchcock, *Manual of the Grasses of the West Indies* (1936) (178, Fig. 113), S.A.Rennoize, *Gramineas de Bolivia* (1998) (526, Fig. 118), S.A.Rennoize, *The Grasses of Bahia*, 1984 (186, Fig. 70), E.G.Nicora, *Los Generos de Gramineas de America Austral* (1987) (452, Fig. 160), L.B. Smith, D.C. Wasshausen, R.M. Klein *Flora Illustrada Catarinensis Gramineas* (1981–1982) (623, Fig. 135 & 624, Fig. 136), A.Burkat, *Flora Illustrada de Entre Rios (Argentina)*, Pt II, Gramineas (1969) (327, Fig. 134), W.Burger, *Flora Costaricensis* 15, Gramineae: *Fieldiana Botany New Series* 4 (1980) (550, Fig. 206), A.L.Cabrera, *Flora de la Provincia de Buenos Aires, IV Pt 2 Gramineas* (1970) (470, Fig. 121), B.Rosengurtt, *Gramineas Uruguayas I* (1970) (395, Fig. 176), G.Harling & C.Persson, *Flora of Ecuador* (2006) (78: 83, Fig. 4 (2006)), E.Judziewicz, *Flora of the Guianas*, 187. *Poaceae* (1990) (225, Fig. 36), E.Hafliger & E.Schultz, *Grass Weeds*, CIBA-GEIGY (1:137(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);, F.van Oudtshoorn, *Guide to Grasses of Southern Africa* (1999).

**Derivation** (Clifford & Bostock 2007): *L. secundus*, bent to one side; -atus, possessing. Inflorescence a curved fleshy axis.

**Classification.** Subfamily Panicoideae. Tribe: Paniceae. Subtribe SETARIINAE.

**Habit, Vegetative Morphology.** Perennial, mat forming. Stolons present. Basal innovations flabellate. Culms prostrate, 10–30 cm long. Leaf-sheaths keeled. Ligule a fringe of hairs. Leaf-blades conduplicate, 2–15 cm long, 4–9 mm wide. Leaf-blade apex obtuse.

**Inflorescence.** Inflorescence composed of racemes, deciduous as a whole. Racemes borne along a central axis, in a unilateral false spike, sunken, unilateral, 0.5–1 cm long, bearing few fertile spikelets, bearing 1–3 fertile spikelets on each. Central inflorescence axis 2–10 cm long, corky, tough, tip subulate. Rhachis flattened, terminating in a barren extension, extension subulate. Spikelet packing abaxial. Spikelets sunken (in axis), solitary. Fertile spikelets sessile.

**Fertile Spikelets.** Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets oblong, dorsally compressed, 5 mm long, falling entire, deciduous with accessory branch structures.

**Glumes.** Glumes dissimilar, reaching apex of florets, thinner than fertile lemma. Lower glume ovate, 0.1–0.3 length of upper glume, 0.1–0.3 length of spikelet, membranous, pallid, without keels. Lower glume apex obtuse. Upper glume ovate, membranous, without keels, 7–9 -veined. Upper glume apex acute.

**Florets.** Basal sterile florets 1, male, with palea. Lemma of lower sterile floret ovate, 1 length of spikelet, coriaceous, 7–9 -veined, without grooves, acute. Fertile lemma lanceolate, 4.5 mm long, chartaceous, without keel, 5 -veined, more than 3-veined. Lemma margins flat. Lemma apex acute. Palea chartaceous.

**Flower and Fruit.**  $N = 9$  (1 ref TROPICOS).  $2n = 32$  (1 ref TROPICOS).

**Distribution (TDWG). Continent.** Europe, Africa, Temperate Asia, Tropical Asia, Australasia (\*), Pacific, North America, South America.

**Region.** Southwestern Europe, Southeastern Europe.

**Country /Province /State.** : Balears, France, Portugal, Spain, Azores. : Sicily. **Northern Africa, Macaronesia, West tropical Africa, West-central tropical Africa, Northeast tropical Africa, South tropical Africa, Southern Africa, Middle Atlantic ocean.** Egypt. Azores, Canary Is, Cape Verde, Madeira. Ghana, Ivory Coast, Liberia, Nigeria, Senegal, Sierra Leone. Cameroon, Gabon. Ethiopia (inc. Eritrea). Mozambique. Namibia, Swaziland, Kwazulu-Natal, Western Cape, Eastern Cape. Ascension, St Helena. **Arabian Peninsula, China.** Gulf States. China Southeast. **Malesia, Papuasia.** Malaya, Singapore, Philippines. Solomon Is (\*). **Australia, New Zealand.** Western Australia (\*), Northern Territory (\*), South Australia (\*), Queensland (\*), New South Wales (\*), Victoria (\*), Tasmania (\*), Lord Howe-Norfolk Is (\*). Kermadec Is, New Zealand North I, New Zealand South I. **Southwestern Pacific, South-central Pacific, North-central Pacific.** Fiji (\*), New Caledonia (\*), Samoa (\*), Tonga (\*), Vanuatu (\*). Marquesas (\*), Society Is (\*). Marianas (\*). Hawaii (\*). **Southwestern USA, South-central USA, Southeastern USA, Mexico.** Arizona, California, Nevada. New Mexico, Texas. Alabama, Florida, Georgia, Louisiana, Mississippi, North Carolina, South Carolina. Gulf (Mexico), Southeast Mexico. **Mesoamerica, Caribbean, Northern South America, Western South America, Brazil, Southern South America.** Belize, Costa Rica, Guatemala, Honduras, Nicaragua, Panama. Bahamas, Bermuda, Cayman Is, Cuba, Dominican Republic, Haiti, Jamaica, Leeward Is, Windward Islands, Puerto Rico, Trinidad-Tobago. French Guiana, Guyana, Venezuela. Bolivia, Colombia, Ecuador, Galapagos, Peru. Brazil Northeast, Brazil Southeast, Brazil South. Argentina Northeast, Chile North, Chile Central, Paraguay, Uruguay.

**TDWG4.** Hong Kong (+). South-West. Central Australia. Southern. North, Central, South East. Coast, Western Slopes. Tucuman. Buenos Aires, Cordoba, Entre Rios, Santa Fe. Tarapaca. Biobio, La Araucania. Veracruz. Chiapas, Quintana Roo, Yucatan.

**Stenotaphrum unilaterale** Baker. *Journ. Linn. Soc.* xx. 299. (1883).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online.

**TYPE** from Madagascar. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: Central Madagascar, ca. 1880, *R. Baron 1069* (HT: K; IT: P).

**Illustrations (Books):** J.Bosser, *Graminees des Paturage et des Cultures a Madagascar* (1969) (365, Fig 137).

**Derivation** (Clifford & Bostock 2007): *L. unus*, one; *latus*, side; -ale, pertaining to. Rhachis flattened on one side only.

**Classification.** Subfamily Panicoideae. Tribe: Paniceae. Subtribe SETARIINAE.

**Habit, Vegetative Morphology.** Perennial, mat forming. Stolons present. Basal innovations flabellate. Culms slender, 10–30 cm long. Leaf-sheaths keeled. Ligule a fringe of hairs. Leaf-blades conduplicate, 5–12 cm long, 3–6 mm wide. Leaf-blade apex obtuse.

**Inflorescence.** Inflorescence composed of racemes. Racemes 12–16, borne along a central axis, in a unilateral false spike, appressed, unilateral, 0.6–1.5 cm long, bearing few fertile spikelets, bearing 2–4 fertile spikelets on each. Central inflorescence axis 15–25 cm long, flattened, tough, tip with blunt extension. Rhachis angular, terminating in a barren extension, extension subulate. Spikelet packing abaxial. Spikelets appressed, solitary. Fertile spikelets sessile.

**Fertile Spikelets.** Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets ovate, dorsally compressed, acuminate, 5 mm long, falling entire. Spikelet callus pubescent.

**Glumes.** Glumes dissimilar, reaching apex of florets, thinner than fertile lemma. Lower glume oblong, 0.5 mm long, 0.1 length of spikelet, hyaline, without keels, 0 -veined. Lower glume lateral veins absent. Lower glume apex lobed, 2 -fid, obtuse. Upper glume ovate, 1 length of spikelet, membranous, without keels, 7–9 -veined. Upper glume apex acuminate.

**Florets.** Basal sterile florets 1, male, with palea. Lemma of lower sterile floret ovate, 1 length of spikelet, membranous, 5–9 -veined, acuminate. Fertile lemma oblong, 5 mm long, coriaceous, without keel, 5 -veined, more than 3-veined. Lemma margins flat. Lemma apex acuminate. Palea reflexed at apex, coriaceous. Palea apex acuminate.

**Distribution (TDWG). Continent.** Africa.

**Country /Province /State.** Western Indian ocean. Madagascar.

**Stephanachne monandra** (P.C. Kuo & S.L. Lu) P.C. Kuo & S.L. Lu. *Fl. Reipubl. Popul. Sin.*, 9(3): 305 (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 China. **Basionym or Replaced Name:** *Stephanachne pappophorea* var. *monandra* P.C. Kuo & S.L. Lu, *Rep. Invest. Zool. Bot. Ngari Region Tibet* 106, 127 (1979)

. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: China: Xizang: Burang, *K. Ba* 4232 (HT: NWBI).

**Illustrations (Books):** S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 255).

**Classification.** Subfamily Pooideae. Tribe: Phaenospermateae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Rhizomes short. Culms erect, 30–50 cm long, 1–2 mm diam., 2–3 -noded. Culm-internodes antrorsely scabrous. Leaf-sheaths tight. Ligule an eciliate membrane, 2–3 mm long, erose. Leaf-blades involute, 10–25 cm long, 1–3 mm wide. Leaf-blade surface scabrous, rough on both sides. Leaf-blade apex acuminate.

**Inflorescence.** Inflorescence a panicle. Panicle spiciform, linear or oblong, 4–6 cm long. Panicle branches smooth. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, filiform, 1–5 mm long, pubescent.

**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, 7–9 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes persistent, similar, exceeding apex of florets. Lower glume lanceolate, 1 length of upper glume, membranous, mid-green and purple, without keels, 3–5 -veined. Lower glume primary vein scaberulous. Lower glume apex acuminate. Upper glume lanceolate, 7–9 mm long, 1.2–1.3 length of adjacent fertile lemma, membranous, mid-green and purple, without keels, 3–5 -veined. Upper glume primary vein scaberulous. Upper glume apex acuminate.

**Florets.** Fertile lemma ovate, 6–7 mm long, membranous, without keel, 5 -veined, more than 3-veined. Lemma surface pilose, with a transverse fringe of hair. Lemma hairs 2.5–3 mm long. Lemma apex lobed, 2 -fid, awned, 3 -awned. Principal lemma awn from a sinus, geniculate, 7.5–9 mm long overall, with a straight or slightly twisted column. Lateral lemma awns present, arising on apex of lobes, 1.5–3 mm long. Palea 3–4 mm long, 2 -veined.

**Flower and Fruit.** Lodicules 2, 0.55–1.3 mm long. Anthers 1, 0.7–1 mm long.

**Distribution (TDWG). Continent.** Temperate Asia.

**Country /Province /State.** China. Tibet.

**Stephanachne nigrescens** Keng. *Contrib. Biol. Lab. Sc. Soc. China, Bot. Ser.*, ix. 135 (1934).

**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: 8 Aug. 1928, *W.P. Fang 4026* (IT: US-1526629).

**Illustrations (Books):** S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 255).

**Derivation** (Clifford & Bostock 2007): *L. nigresco*, become black. Spikelets black at maturity.

**Classification.** Subfamily Pooideae. Tribe: Phaenospermateae.

**Habit, Vegetative Morphology.** Perennial. Culms erect, 90 cm long, 2 mm diam., 4 -noded. Culm-internodes 12–23 cm long. Leaf-sheaths as wide as blade at the collar, striately veined, glabrous on surface. Ligule an eciliate membrane, 1–5 mm long, erose. Leaf-blades erect, flat or involute, 15–20 cm long, 5–6 mm wide. Leaf-blade surface smooth or scaberulous, rough abaxially, glabrous or puberulous, hairy adaxially. Leaf-blade margins scaberulous. Leaf-blade apex acuminate.

**Inflorescence.** Inflorescence a panicle. Panicle spiciform, linear, interrupted, 7–9 cm long, 1.2 cm wide. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, filiform, 1–4 mm long, puberulous.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, laterally compressed, 12–16 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus pilose. Floret callus hairs 1.5 mm long.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, gaping. Lower glume linear, 1 length of upper glume, membranous, much thinner on margins, without keels, 3–5 -veined. Lower glume apex acuminate. Upper glume linear, 12–16 mm long, 1.3–1.8 length of adjacent fertile lemma, membranous, with hyaline margins, without keels, 3 -veined. Upper glume apex acuminate.

**Florets.** Fertile lemma ovate, 9 mm long, membranous, without keel, 5 -veined, more than 3-veined. Lemma lateral veins obscure. Lemma surface pubescent, hairy below, with a transverse fringe of hair. Lemma hairs 4–5 mm long. Lemma apex lobed, 2 -fid, with lanceolate lobes, with lobes 4 mm long, incised 0.3–0.4 of lemma length, awned, 3 -awned. Principal lemma awn from a sinus, geniculate, 12–15 mm long overall, with twisted column. Lateral lemma awns present, arising on apex of lobes, 2–4 mm long. Palea 7–8 mm long, 2 -veined. Palea surface pilose, hairy on back.

**Flower and Fruit.** Lodicules 3, 3 mm long. Anthers 3, 1.2–1.6 mm long. Stigmas 2. Ovary glabrous. Caryopsis with adherent pericarp.

**Distribution (TDWG). Continent.** Temperate Asia.

**Country /Province /State.** China. China South Central, China North-Central, Qinghai.

**TDWG4.** Gansu, Shaanxi. Sichuan.

**Stephanachne pappophorea** (Hack.) Keng. *Contrib. Biol. Lab. Sc. Soc. China, Bot. Ser.*, ix. 136 (1934).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online, S-L Chen et al, *Flora of China* 22 (Poaceae) (2006), N.Tsvelev, *Grasses of the Soviet Union* (1983) (as *Stephanachne*).

**TYPE** from Turkestan. **Basionym or Replaced Name:** *Calamagrostis pappophorea* Hack., *Annuaire Conserv. Jard. Bot. Geneve* 7: 325 (1904)

. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: HT: *Brocherel 385*, 1900, Turkestan (W; IT: US-3099608 (fragm. ex W)).

**Recent Synonyms:** *Pappagrostis pappophorea* (Hack.) Roshev.

**Illustrations (Books):** S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 255).

**Derivation** (Clifford & Bostock 2007): *L. -ea*, resembling. Similar to *Pappophorum*.

**Classification.** Subfamily Pooideae. Tribe: Phaenospermateae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Butt sheaths persistent and investing base of culm, with compacted dead sheaths. Culms 10–40 cm long. Ligule an eciliate membrane, 1.5–3 mm long. Leaf-blades 7–15 cm long, 0.6–2.5 mm wide. Leaf-blade surface scabrous, rough on both sides. Leaf-blade apex attenuate, filiform.

**Inflorescence.** Inflorescence a panicle. Panicle spiciform, linear, 4–10 cm long. Panicle branches scabrous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, filiform, 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, 5–7 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus pilose.

**Glumes.** Glumes persistent, similar, exceeding apex of florets. Lower glume lanceolate, 1 length of upper glume, membranous, without keels, 1–3 -veined. Lower glume surface asperulous. Lower glume apex acute.



Upper glume lanceolate, 5–7 mm long, 2–2.25 length of adjacent fertile lemma, membranous, without keels, 1–3 -veined. Upper glume surface asperulous. Upper glume apex acute.

**Florets.** Fertile lemma ovate, 2.2–3.2 mm long, membranous, without keel, 5 -veined, more than 3-veined. Lemma surface pilose, with a transverse fringe of hair. Lemma hairs 2.5–3.5 mm long. Lemma apex lobed, 2 -fid, with lanceolate lobes, incised 0.25–0.33 of lemma length, awned, 1 -awned. Principal lemma awn from a sinus, geniculate, 6–8 mm long overall, with twisted column. Palea 2 -veined. Palea surface pilose, hairy on back. Rhachilla extension 0.1 length of fertile floret, pilose.

**Flower and Fruit.** Lodicules 2. Anthers 3, 0.6–1 mm long. Stigmas 2. Ovary glabrous. Caryopsis with adherent pericarp, ellipsoid, 1.6–2.2 mm long. Hilum linear, 0.9 length of caryopsis.

**Distribution (TDWG). Continent.** Temperate Asia.

**Country /Province /State. Middle Asia, China, Mongolia.** Kirgizistan, Tadzhikistan. Inner Mongolia, China North-Central, Qinghai, Tibet, Xinjiang. Mongolia.

**TDWG4.** Gansu. Nei Mongol.

### **Stephostachys mertensii** (Roth ex Roem. & Schult.) Zuloaga & Morrone. *Taxon* 59: 1540 (2010).

**Accepted by:** R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

**TYPE** from Guyana. **Basionym or Replaced Name:** *Panicum mertensii* Roth ex Roem. & Schult., *Syst.* 2. 458 (1817). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *C.H. Mertens s.n.*, 1809, Guyana: Essequibo (BM; IT: BAA-1889 (fragm. ex B), US-2903015 (fragm. ex BM)).

**Illustrations (Books):** A.S.Hitchcock, *Manual of the Grasses of the West Indies* (1936) (276, Fig. 246 as *Panicum*), S.A.Renvoize, *Gramineas de Bolivia* (1998) (402, Fig. 85), S.A.Renvoize, *The Grasses of Bahia*, 1984 (150, Fig. 53 as *Panicum*), J.A.Steyermark et al, *Flora of the Venezuelan Guayana* Vol. 8 (2004) (203, Fig. 157 as *Panicum*), L.B. Smith, D.C. Wasshausen, R.M. Klein *Flora Illustrada Catarinensis Gramineas* (1981–1982) (675, Fig. 143 as *Panicum*), A.Burkat, *Flora Illustrada de Entre Rios (Argentina)*, Pt II, Gramineas (1969) (288, Fig. 111), W.Burger, *Flora Costaricensis* 15, Gramineae: *Fieldiana Botany New Series* 4 (1980) (375, Fig. 137), F.O.Zuloaga et al, *Flora del Paraguay* 23 (1994) (254, Fig. 71), R.Pilger, *Die Natürlichen Pflanzenfamilien* 14e (1940) (16, Fig. 5 as *Panicum*).

**Illustrations (Journals):** *Darwiniana* (22: 13, Fig.2 (1979) as *Panicum*), *Ruizia* (13:321, Fig 39a-b (1993) as *Panicum*), *Taxon* (59: 1540, Fig.2 (2010)).

**Derivation** (Clifford & Bostock 2007): in honor of Carl Heinrich Mertens (1796–1830) German-born physician and traveller.

**Classification.** Subfamily Panicoideae. Tribe: Paspaleae. Subtribe ARTHROPOGONINE.

**Habit, Vegetative Morphology.** Perennial. Rootstock evident. Culms erect, robust, 200–300 cm long, 4–8 mm diam., without nodal roots or with prop roots. Culm-internodes distally glabrous. Lateral branches lacking. Leaf-sheaths glabrous on surface. Leaf-sheath auricles erect. Ligule a ciliolate membrane, 2–3 mm long. Leaf-blades tapering towards tip and sheath, 30–60 cm long, 14–25 mm wide, dark green. Leaf-blade midrib conspicuous. Leaf-blade surface glabrous.

**Inflorescence.** Inflorescence a panicle. Peduncle 2–5 cm long. Panicle open, ovate, 40–50 cm long, 17–30 cm wide. Primary panicle branches whorled at most nodes, simple, 8–16 cm long. Panicle branches stiff, straight. Spikelets solitary or in pairs. 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, subacute, 3.5–4 mm long, falling entire.

**Glumes.** Glumes dissimilar, reaching apex of florets, thinner than fertile lemma. Lower glume oblate, 1.4–1.7 mm long, 0.25–0.33 length of spikelet, membranous, without keels, 3–4 -veined. Lower glume apex acute. Upper glume ovate, 3.2–3.8 mm long, 1 length of spikelet, membranous, without keels, 9 -veined. Upper glume apex acute.

**Florets.** Basal sterile florets 1, barren, with palea. Lemma of lower sterile floret similar to upper glume, ovate, 3.2–3.7 mm long, 1 length of spikelet, membranous, 9 -veined, acute. Fertile lemma ovate, dorsally compressed, 2.7–3 mm long, indurate, shiny, without keel. Lemma margins involute. Lemma apex acute. Palea involute, indurate.

**Flower and Fruit.** Anthers 3, 1.4 mm long, purple. Caryopsis ellipsoid, 1.6 mm long.

**Distribution (TDWG). Continent.** North America, South America.

**Country /Province /State. Mexico.** Gulf (Mexico), Southwest Mexico, Southeast Mexico. **Mesoamerica, Caribbean, Northern South America, Western South America, Brazil, Southern South America.** Costa Rica, El Salvador, Guatemala, Honduras, Panama. Cuba, Trinidad-Tobago. French Guiana, Guyana, Surinam,

Venezuela. Bolivia, Colombia, Ecuador, Peru. Brazil West Central, Brazil Northeast, Brazil Southeast, Brazil North, Brazil South. Paraguay.

**TDWG4.** Para, Amapa, Amazonas, Acre, Rondonia, Mato Grosso, Bahia, Maranhao, Piaui, Ceara, Rio Grande do Norte, Paraiba, Pernambuco, Alagoas, Sergipe, Minas Gerais, Rio de Janeiro, Espirito Santo, Sao Paulo Parana, Catarina, Rio Grande do Sul. Chaco, Corrientes, Formosa, Misiones, Santa Fe. Veracruz. Guerrero, Jalisco, Michoacan. Campeche, Tabasco.

**Stereochlaena annua** Clayton. *Kew Bull.*, 33(2): 295 (1978).

**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: IT: *E.W.B. Milne-Redhead & P. Taylor 9891*, 4 May 1956 or 5 Apr 1956, Tanzania: Songea District (US-2883004).

**Illustrations (Books):** R.M.Pohill, F.T.E.A., *Gramineae* (3(1982):657, Fig 148).

**Derivation** (Clifford & Bostock 2007): *L. annuus*, lasting a year. Annuals.

**Classification.** Subfamily Panicoideae. Tribe: Paniceae. Subtribe ANTHEPHORINAE.

**Habit, Vegetative Morphology.** Annual, caespitose. Culms geniculately ascending, 30–60 cm long. Ligule a ciliolate membrane. Leaf-blades 2–7 cm long, 2–5 mm wide. Leaf-blade surface pilose. Leaf-blade margins cartilaginous.

**Inflorescence.** Inflorescence composed of racemes. Racemes (1–)2(–3), single or paired or digitate, unilateral, 3–8 cm long. Rhachis narrowly winged, angular, 1 mm wide, pubescent on margins. Spikelets appressed, in pairs. Fertile spikelets pedicelled, 2 in the cluster. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets elliptic, dorsally compressed, 2.5–3.5 mm long, falling entire.

**Glumes.** Glumes one the lower absent or obscure, shorter than spikelet, thinner than fertile lemma. Upper glume ovate, 0.5–1.5 mm long, 0.2–0.4 length of spikelet, membranous, without keels, 0–1 -veined. Upper glume primary vein absent or distinct. Upper glume lateral veins absent. Upper glume apex obtuse or acute, muticous or awned, 1 -awned.

**Florets.** Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret elliptic, 1 length of spikelet, membranous, 5 -veined, ribbed, convex across back, scabrous, rough on veins, acute, awned. Awn of lower sterile floret 10–25 mm long. Fertile lemma elliptic, 2.5–3.5 mm long, chartaceous, much thinner on margins, dark brown, without keel. Lemma margins flat, covering most of palea. Lemma apex acute. Palea chartaceous.

**Distribution (TDWG). Continent.** Africa.

**Country /Province /State.** East tropical Africa. Tanzania.

**Stereochlaena caespitosa** Clayton. *Kew Bull.*, 33(2): 296 (1978).

**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: IT: *E. Milne-Redhead & P. Taylor 9145*, 13 Mar 1956, Tanzania: Songea District (US-2883005).

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): *L. caespes*, grass that has been cut; -osa, abundance. Habit tufted.

**Classification.** Subfamily Panicoideae. Tribe: Paniceae. Subtribe ANTHEPHORINAE.

**Habit, Vegetative Morphology.** Perennial, caespitose. Butt sheaths pubescent. Culms 100–150 cm long. Ligule a ciliolate membrane. Leaf-blades flat or conduplicate, 10–40 cm long, 2–11 mm wide. Leaf-blade surface scabrous, glabrous. Leaf-blade margins cartilaginous.

**Inflorescence.** Inflorescence composed of racemes. Racemes (2–)3–8, digitate, unilateral, 8–12 cm long. Rhachis narrowly winged, angular, 1 mm wide, ciliate on margins. Spikelets appressed, in pairs. Fertile spikelets pedicelled, 2 in the cluster. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets elliptic, dorsally compressed, 3–4.5 mm long, falling entire.

**Glumes.** Glumes one the lower absent or obscure, reaching apex of florets or shorter than spikelet, thinner than fertile lemma. Upper glume elliptic, 0.5–1 length of spikelet, membranous, without keels. Upper glume apex acuminate, muticous or awned, 1 -awned.

**Florets.** Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret elliptic, 1 length of spikelet, membranous, 7 -veined, ribbed, convex across back or flat across back, scabrous, rough on

veins, acute, awned. Awn of lower sterile floret 1–3 mm long. Fertile lemma elliptic, 3–4.5 mm long, chartaceous, much thinner on margins, without keel. Lemma margins flat, covering most of palea. Lemma apex acute. Palea chartaceous.

**Distribution (TDWG). Continent.** Africa.

**Country /Province /State.** East tropical Africa, South tropical Africa. Tanzania. Malawi.

**Stereochlaena cameronii** (Stapf) Pilger. *Engl. & Prantl, Nat. Pflanzenfam., Aufl. 2*, xiv e. 45 (1940).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

**TYPE** from Malawi. **Basionym or Replaced Name:** *Chloridion cameronii* Stapf, *Hooker's Icon. Pl.* 28: t. 2640 (1900)

. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: HT: *Cameron 15*, Malawi: Namasi (K).

**Illustrations (Books):** G.V.Pope et al., *Flora Zambesiaca* 10 (3(1989):129, t. 35), L.K.A. Chippindall, *Grasses and Pastures of South Africa* (1955) (425, Fig 353), G.E.Gibbs Russell et al, *Grasses of Southern Africa* (1990) (314, Fig 203).

**Derivation** (Clifford & Bostock 2007): in honor of Cameron who collected in East Africa.

**Classification.** Subfamily Panicoideae. Tribe: Paniceae. Subtribe ANTHEPHORINAE.

**Habit, Vegetative Morphology.** Perennial, caespitose. Butt sheaths pubescent or woolly. Culms erect or geniculately ascending, 30–100 cm long. Ligule a ciliolate membrane. Leaf-blades 8–20 cm long, 2–8 mm wide. Leaf-blade margins cartilaginous.

**Inflorescence.** Inflorescence composed of racemes. Racemes (2–)3–8(–10), digitate, unilateral, 3–16 cm long. Rhachis narrowly winged, angular, 0.6–0.8 mm wide, ciliate on margins. Spikelets appressed, in pairs. Fertile spikelets pedicelled, 2 in the cluster. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets lanceolate, dorsally compressed, 2.5–3.5 mm long, falling entire.

**Glumes.** Glumes one the lower absent or obscure, shorter than spikelet, thinner than fertile lemma. Upper glume ovate, 0.1–0.5 mm long, 0.05 length of spikelet, membranous, without keels, 0–1 -veined. Upper glume primary vein absent or distinct. Upper glume lateral veins absent. Upper glume apex obtuse or acute.

**Florets.** Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret lanceolate, 1 length of spikelet, membranous, 7 -veined, ribbed, scabrous, rough on veins, acute, awned. Awn of lower sterile floret 5–20 mm long. Fertile lemma lanceolate, 1.5–2 mm long, chartaceous, much thinner on margins, dark brown, without keel, 3 -veined, more than 3-veined. Lemma margins flat, covering most of palea. Lemma apex acute. Palea chartaceous.

**Distribution (TDWG). Continent.** Africa.

**Country /Province /State.** East tropical Africa, South tropical Africa, Southern Africa. Tanzania. Angola, Malawi, Mozambique, Zambia, Zimbabwe. Botswana, Limpopo.

**Stereochlaena tridentata** Clayton. *Kew Bull.*, 33(2): 296 (1978).

**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>: *vide* TROPICOS and Kew Synonymy Database: Tanzania: Chunya Dist.: Rungwa Game Reserve, miombo woodland, *Edong in College of African Wildlife Management 4450* (HT: K).

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): L. tria, three; dens, tooth; -ata, possessing. One or both glumes three-toothed.

**Classification.** Subfamily Panicoideae. Tribe: Paniceae. Subtribe ANTHEPHORINAE.

**Habit, Vegetative Morphology.** Perennial, caespitose. Butt sheaths pubescent. Culms 60–80 cm long. Ligule a ciliolate membrane. Leaf-blades 5–15 cm long, 3–6 mm wide. Leaf-blade surface pubescent. Leaf-blade margins cartilaginous.

**Inflorescence.** Inflorescence composed of racemes. Racemes 4–7, digitate, unilateral, 6–7 cm long. Rhachis narrowly winged, angular, 1 mm wide, ciliate on margins. Spikelets appressed, in pairs. Fertile spikelets pedicelled, 2 in the cluster. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets elliptic, dorsally compressed, 4–4.5 mm long, falling entire.

**Glumes.** Glumes one the lower absent or obscure, shorter than spikelet, thinner than fertile lemma. Upper glume ovate, 0.33–0.66 length of spikelet, membranous, without keels. Upper glume apex acuminate, awned, 1 -awned.

**Florets.** Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret elliptic, 1 length of spikelet, membranous, 2-keeled (keels coriaceous), 7 -veined, ribbed, flat across back, scabrous, rough on veins, dentate, 3 -fid, awned. Awn of lower sterile floret 1–3 mm long. Fertile lemma elliptic, 4–4.5 mm long, chartaceous, much thinner on margins, without keel. Lemma margins flat, covering most of palea. Lemma apex acute. Palea chartaceous.

**Distribution (TDWG).** Continent. Africa.

**Country /Province /State.** East tropical Africa. Tanzania.

**Steyermarkochloa angustifolia** (Sprengel) E.J.Judziewicz. *Ann. Missouri Bot. Gard.*, 77(1): 204: (1990).

**Accepted by:** R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

**TYPE** from Venezuela. **Basionym or Replaced Name:** *Pariana angustifolia* Spreng., *Syst. Veg.* 2: 609 (1825). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *F.W.H.A. von Humboldt & Bonpland s.n.*, no date, Venezuela: Amazonas (B; IT: P, US-2946998 (fragm. ex P)).

**Illustrations (Books):** J.A.Steyermark et al, *Flora of the Venezuelan Guayana* Vol. 8 (2004) (279, Fig. 226).

**Illustrations (Journals):** *Ann. Missouri Bot. Gard.* (71: 998, Fig.1; 1000, Fig.2; 1001, Fig.3 (1984)).

**Derivation** (Clifford & Bostock 2007): *L. angustus*, narrow; folium, leaf. Leaf-blades narrow.

**Classification.** Subfamily Panicoideae. Tribe: Steyermarkochloae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Butt sheaths absent. Culms erect, 40–350 cm long. Culm-sheaths present. Leaves cauline, 1 per branch. Leaf-sheaths solid and functionally replacing culm, longer than adjacent culm internode. Ligule absent. Leaf-blades 40–150 cm long, 2.8–6.5 mm wide. Leaf-blade apex hooded. Monoecious, with male and female spikelets in the same inflorescence.

**Inflorescence.** Synflorescence on a separate leafless culm.

Inflorescence a panicle. Panicle spiciform, linear, 7–49 cm long. Primary panicle branches accrescent to a central axis, with lateral stumps on axis. Panicle axis with rounded ribs. Sexes segregated, with male below. Spikelets solitary. Fertile spikelets pedicelled. Male spikelets pedicelled. Pedicels present, oblong, angular, 0.4–1 mm long (male 4–13mm).

**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 two-flowered - the lower floret male or barren, the upper fertile. Spikelets lanceolate, curved, dorsally compressed, 9–17 mm long, falling entire.

**Glumes.** Glumes dissimilar, shorter than spikelet. Lower glume lanceolate, 2.2–4.7 mm long, 1–1.3 length of upper glume, herbaceous, 2-keeled, 3–7 -veined. Lower glume primary vein scaberulous. Lower glume surface flat. Lower glume apex truncate or obtuse. Upper glume lanceolate, 2.1–3.7 mm long, 0.33 length of adjacent fertile lemma, herbaceous, without keels, 3–6 -veined. Upper glume apex truncate or obtuse.

**Florets.** Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret lanceolate, 4.8–7 mm long, 0.5 length of spikelet, herbaceous, 5–9 -veined, ribbed, obtuse. Fertile florets female. Fertile lemma lanceolate, 6.1–9 mm long, herbaceous, without keel, (5–)9–11(–13) -veined, more than 3-veined. Lemma lateral veins ribbed. Lemma apex truncate or obtuse. Palea lanceolate, tightly convolute around flower, falcate, 1.3–1.5 length of lemma, spongy, (5–)7–11 -veined. Palea keels approximate (sulcate above). Apical sterile florets distinct from fertile, 1 in number, barren, linear, 0.3–3 mm long.

**Flower and Fruit.** Lodicules absent. Anthers 2, 2.2–3.8 mm long. Filaments free or united in a tube. Stigmas 2, terminally exerted. Caryopsis with adherent pericarp, fusiform, 5 mm long. Embryo 0.2 length of caryopsis. Hilum linear, 0.7 length of caryopsis.

Male spikelets similar to female but less developed, 2 flowered, without rhachilla extension or with rudimentary apical florets, lanceolate, 4.5–7.5 mm long. Male spikelet glumes 2. Male spikelet lemma 3–7 -veined.

**Distribution (TDWG).** Continent. South America.

**Country /Province /State.** Northern South America, Western South America, Brazil. Venezuela. Colombia. Brazil North.

**Stiburus alopecuroides** (Hack.) Stapf. Dyer, *Fl. Cap.* vii. 697 (1900).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006) (as *Eragrostis*).

**TYPE** from South Africa. **Basionym or Replaced Name:** *Lasiochloa alopecuroides* Hack., *Bull. Herb. Boissier* 3(8): 393 (1895). T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: IT: *Rehmann s.n.*, South Africa: Natal: Karkloof (K).

**Recent Synonyms:** *Eragrostis tinctoria* Phillips, *Kew Bull.* 37(1): 159 (1982).

**Illustrations (Books):** G.V.Pope et al., *Flora Zambesiaca* 10 (2(1999):123, t. 39 as *Eragrostis tinctoria*), L.K.A. Chippindall, *Grasses and Pastures of South Africa* (1955), G.E.Gibbs Russell et al, *Grasses of Southern Africa* (1990) (316, Fig 204).

**Illustrations (Journals):** *Hooker's Icones Plantarum* (t.2612 (1899) as *Triphlebia alopecuroides*).

**Images:** F.van Oudtshoorn, *Guide to Grasses of Southern Africa* (1999).

**Derivation** (Clifford & Bostock 2007): Gk. -oides, resembling. Similar to *Alopecurus*, usually in respect of the inflorescence.

**Classification.** Subfamily Chloridoideae. Tribe: Eragrostideae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Culms erect, 15–70 cm long. Culm-internodes distally glabrous. Lateral branches lacking or sparse. Leaf-sheaths glabrous on surface. Ligule a fringe of hairs. Collar pubescent. Leaf-blades flat or involute, 10–30 cm long, 1–3 mm wide. Leaf-blade midrib prominent beneath. Leaf-blade venation distinct, with 4–6 secondary veins. Leaf-blade apex attenuate.

**Inflorescence.** Inflorescence a panicle, aerial or shorter than basal leaves. Panicle spiciform, linear or oblong, 2–9 cm long. Panicle axis plumose (below). Spikelets solitary. Fertile spikelets sessile or pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 7–8 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets ovate, laterally compressed, 3–7 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes persistent, similar, shorter than spikelet, gaping. Lower glume lanceolate, 1.5–3 mm long, 0.75 length of upper glume, membranous, purple, 1-keeled, 1 -veined. Lower glume primary vein scabrous. Lower glume lateral veins absent. Lower glume surface pilose, with tubercle-based hairs. Lower glume apex acuminate. Upper glume lanceolate, 2–3.5 mm long, 0.75 length of adjacent fertile lemma, 1-keeled, 3 -veined. Upper glume primary vein scabrous. Upper glume apex acuminate.

**Florets.** Fertile lemma elliptic or oblong, 2.5–4 mm long, membranous, purple, keeled, 3 -veined, 0–3 -veined. Lemma lateral veins distinct. Lemma surface scaberulous, pilose, with tubercle-based hairs. Lemma apex acuminate or apiculate. Palea keels tuberculate, ciliate. Apical sterile florets resembling fertile though underdeveloped.

**Flower and Fruit.** Anthers 2. Caryopsis with adherent pericarp, orbicular, 0.5 mm long.

**Distribution (TDWG). Continent.** Africa.

**Country /Province /State.** South tropical Africa, Southern Africa. Zimbabwe. Limpopo, Gauteng, Mpumalanga, Swaziland, Free State, Kwazulu-Natal, Lesotho, Eastern Cape.

**Stiburus conrathii** Hack. *Oesterr. Bot. Zeitschr.* 1902, 375. (1902).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006) (as *Eragrostis*).

**TYPE** from South Africa. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: IT: *Conrath s.n.*, South Africa: Modderfontein (K).

**Recent Synonyms:** *Eragrostis conrathii* (Hack.) Phillips, *Kew Bull.*, 37(1): 159 (1982).

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): in honor of Paul Conrath (1861–1931) Czech chemist and naturalist.

**Classification.** Subfamily Chloridoideae. Tribe: Eragrostideae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Rhizomes short. Butt sheaths persistent and investing base of culm, with compacted dead sheaths. Basal innovations intravaginal. Culms erect, 10–40 cm long, 0 -noded. Culm-internodes terete, distally glabrous. Lateral branches lacking. Leaves mostly basal. Leaf-sheaths pilose. Ligule a fringe of hairs. Leaf-blades filiform, convolute, 3–10 cm long, 2 mm wide, glaucous. Leaf-blade surface pilose. Leaf-blade apex filiform.

**Inflorescence.** Inflorescence a panicle, aerial. Panicle spiciform, oblong, 2.5–3 cm long, 0.6–1 cm wide. Primary panicle branches 1 -nate. Panicle axis smooth or scaberulous, glabrous. Spikelets solitary. Fertile spikelets sessile.

**Fertile Spikelets.** Spikelets comprising 3 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile.

Spikelets ovate, laterally compressed, 1.7–3 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes pubescent.

**Glumes.** Glumes persistent, similar, shorter than spikelet, similar to fertile lemma in texture, gaping. Lower glume lanceolate, 1–2 mm long, membranous, yellow or purple, 1-keeled, 1 -veined. Lower glume lateral veins absent. Lower glume surface pilose, with tubercle-based hairs. Lower glume apex acute. Upper glume lanceolate, 1.6 mm long, 0.8 length of adjacent fertile lemma, membranous, yellow or purple, 1-keeled, 1 -veined. Upper glume lateral veins absent. Upper glume surface pilose, with tubercle-based hairs. Upper glume apex acute.

**Florets.** Fertile lemma lanceolate, 1.8 mm long, membranous, yellow or purple, keeled, 3 -veined, 0–3 -veined. Lemma lateral veins obscure. Lemma surface pilose, with tubercle-based hairs. Lemma apex obtuse. Palea 1 length of lemma, 2 -veined. Palea keels ciliate. Palea apex obtuse. Apical sterile florets resembling fertile though underdeveloped.

**Flower and Fruit.** Lodicules 2, cuneate, fleshy. Anthers 2, 1 mm long.

**Distribution (TDWG). Continent.** Africa.

**Country /Province /State. Southern Africa.** Gauteng, Mpumalanga, Swaziland, Free State, Kwazulu-Natal, Lesotho.

### **Stipa adamii\***

**Habit, Vegetative Morphology.** Perennial, caespitose, clumped densely. Culms erect, 25–45 cm long, 3 -noded. Culm-nodes glabrous. Leaf-sheaths mostly shorter than adjacent culm internode, scaberulous, glabrous on surface or pubescent, outer margin hairy. Ligule a ciliolate membrane, 0.3–1 mm long, truncate or obtuse. Leaf-blades filiform, convolute, 10–22 cm long, 0.4–0.7 mm wide. Leaf-blade surface pubescent, hairy adaxially.

**Inflorescence.** Inflorescence a panicle, embraced at base by subtending leaf. Panicle contracted, linear, 10–16 cm long, bearing few spikelets. Primary panicle branches appressed, 1–2 -nate, bearing 1–2 fertile spikelets on each lower branch. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 39–45 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus evident, 1.4–1.7 mm long, acute, with elliptic scar.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 39–45 mm long, 1.1 length of upper glume, membranous, without keels. Lower glume primary vein scaberulous. Lower glume apex attenuate. Upper glume lanceolate, 36–44 mm long, 4 length of adjacent fertile lemma, membranous, without keels. Upper glume primary vein scaberulous. Upper glume surface pubescent or pilose. Upper glume hairs 1.3–1.7 mm long. Upper glume apex attenuate.

**Florets.** Fertile lemma lanceolate, subterete, 9–10 mm long, 0.8–1 mm wide, coriaceous, light green, without keel, 5 -veined, more than 3-veined. Lemma surface papillose, pilose, hairy below, hairy in lines, with conspicuous apical hairs. Lemma margins convolute, covering most of palea. Lemma hairs 0.3–0.5 mm long. Lemma apex awned, 1 -awned. Principal lemma awn geniculate, (91–)103–130 mm long overall, with (60–)80–100(–105) mm long limb, with twisted column, limb plumose, with 5.5–7 mm long hairs. Column of lemma awn (21–)23–27 mm long, hirsute, with 2–4 mm long hairs. Palea 1 length of lemma, without keels.

**Flower and Fruit.** Anthers 3, 4–5 mm long.

**Distribution (TDWG). Continent.** Temperate Asia.

**Country /Province /State. Middle Asia.**

**Stipa adoxa** M.V. Klokov & V.V. Osychnyuk. *Novosti Sist. Vyssh. Nizsh. Rast.* (Kiev), 1975: 28 (1976).

**Accepted by:** W.D. Clayton & K. Harman, *GrassBase* (2008) and online.

**TYPE** from Russia. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: Russia, Ukraine, Chomutovskaja: Ossychnyuk (KW holo).

**Illustrations (Books):** No illustration found (BKS).

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial, caespitose, clumped densely. Culms 30–60 cm long, 3 -noded. Culm-internodes distally glabrous. Leaf-sheaths scaberulous, glabrous on surface. Ligule a ciliolate membrane, 3.5–4 mm long, acute. Leaf-blades filiform, conduplicate, 10–15 cm long, 1.4 mm wide. Leaf-blade surface scaberulous, rough abaxially, pilose, sparsely hairy, hairy adaxially. Leaf-blade apex attenuate.

**Inflorescence.** Inflorescence a panicle, comprising 5–7 fertile spikelets. Peduncle pubescent above. Panicle open or contracted, linear or lanceolate, 10–12 cm long, bearing few spikelets. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 30–50 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus elongated.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 1 length of upper glume, membranous, without keels. Lower glume apex acuminate. Upper glume lanceolate, 30–50 mm long, membranous, without keels. Upper glume apex acuminate.

**Florets.** Fertile lemma lanceolate, subterete, 17–20 mm long, coriaceous, without keel, 5 -veined, more than 3-veined. Lemma surface pubescent, hairy on veins, with conspicuous apical hairs. Lemma margins convolute, covering most of palea, pubescent. Lemma hairs 1–1.2 mm long. Lemma apex awned, 1 -awned. Principal lemma awn bigenulate, 270–310 mm long overall, with twisted column, limb plumose, with 4–4.5 mm long hairs. Column of lemma awn ciliate, with 0.5–1.7 mm long hairs. Palea without keels.

**Flower and Fruit.** Hilum linear.

**Distribution (TDWG). Continent.** Europe.

**Region.** Eastern Europe.

**Country /Province /State.** Ukraine.

**Stipa akseirica** Yu.A. Kotukhov. *Turczaninowia*, 1(2): 11 (1998).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online.

**TYPE** from Russia. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Russia, Altai, Saikan: Kotuchov (LE holotype).

**Illustrations (Books):** No illustration found (BKS).

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Butt sheaths persistent and investing base of culm, with compacted dead sheaths. Culms 70–80 cm long. Culm-internodes distally pubescent. Leaf-sheaths puberulous. Ligule a ciliate membrane, 2.5–3 mm long, 0.5–0.7 mm long on basal shoots, pubescent on abaxial surface. Leaf-blades filiform, conduplicate, 0.25–0.35 mm wide. Leaf-blade surface scabrous, rough abaxially, puberulous, hairy adaxially.

**Inflorescence.** Inflorescence a panicle, subtended by an inflated leaf-sheath. Panicle open, oblong, 20–25 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, 22–25 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus elongated, 2.4–2.7 mm long, pubescent, pungent.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 22–25 mm long, 1 length of upper glume, membranous, without keels. Lower glume surface asperulous, rough on veins. Lower glume apex attenuate. Upper glume lanceolate, 22–25 mm long, membranous, without keels. Upper glume surface asperulous, rough on veins. Upper glume apex attenuate.

**Florets.** Fertile lemma elliptic, subterete, 10–11 mm long, coriaceous, without keel, more than 3-veined. Lemma surface pubescent, hairy in lines (6 lines). Lemma margins convolute, covering most of palea. Lemma apex surmounted by a ring of hairs, awned, 1 -awned. Principal lemma awn bigenulate, 130–150 mm long overall, with twisted column, limb scabrous. Column of lemma awn puberulous. Palea without keels.

**Flower and Fruit.** Anthers 3, 6 mm long.

**Distribution (TDWG). Continent.** Temperate Asia.

**Country /Province /State.** Middle Asia. Kazakhstan.

**Stipa aktauensis** Roshev. *Bull. Jard. Bot. Acad. Sc. URSS* . 302 (1932).

**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.Tsvelev, *Grasses of the Soviet Union* (1983).

**TYPE** from Russia. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: [Asia]: "Turkestan. Prov. Syr-Darja. Aktau (inter opp. Turkestan et Petro-Aleksandrowsk).", *S. Filatwo* 219; 6v. 1916..

**Illustrations (Books):** No illustration found (BKS).

**Illustrations (Journals):** *Bot. J. Linn. Soc.* (167:413, Fig.6 (2011)).

**Derivation** (Clifford & Bostock 2007): L. -ense, denoting origin. From Aktau, in the Kyzyl Mountains, Central Asia, former Soviet Union.

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial, caespitose, clumped densely. Culms 25–30 cm long. Culm-internodes distally pubescent. Leaf-sheaths antrorsely scabrous, puberulous. Ligule an eciliate membrane. Leaf-blades filiform, involute, 1–2 mm wide. Leaf-blade surface ribbed, scabrous, rough abaxially, pubescent, hairy adaxially.

**Inflorescence.** Inflorescence a panicle, subtended by an inflated leaf-sheath, embraced at base by subtending leaf. Panicle open, elliptic, 6–10 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, 40–45 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus evident, 0.7–0.8 mm long, glabrous, acute.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 1 length of upper glume, membranous, without keels. Lower glume apex attenuate. Upper glume lanceolate, 40–45 mm long, membranous, without keels. Upper glume apex attenuate.

**Florets.** Fertile lemma lanceolate, subterete, 10–12 mm long, coriaceous, without keel, 5 -veined, more than 3-veined. Lemma surface pubescent, hairy below, hairy in lines. Lemma margins convolute, covering most of palea. Lemma apex surmounted by a ring of hairs, awned, 1 -awned. Principal lemma awn geniculate, 135 mm long overall, with twisted column, limb plumose, with 4–5 mm long hairs, glabrescent towards tip. Column of lemma awn 15 mm long, plumose, with 4–5 mm long hairs. Palea without keels.

**Flower and Fruit.** Lodicules 3. Anthers 3. Stigmas 2. Ovary glabrous. Caryopsis with adherent pericarp, fusiform. Hilum linear.

**Distribution (TDWG). Continent.** Temperate Asia.

**Country /Province /State. Middle Asia.** Uzbekistan.

**TDWG4.**

**Stipa alaiica** Pazij. *Opred. Rast. Sred. Azii*, i. 76, 200 (1968).

**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: Russia, Alai range, Sary-Tash: Puchkova 152 (TAK holo).

**Illustrations (Books):** No illustration found (BKS).

**Illustrations (Journals):** *Bot. J. Linn. Soc.* (167:434, Fig.17 (2011)).

**Derivation** (Clifford & Bostock 2007): *L. -ica*, belonging to. From the Alai valley, Turkestan, former Soviet Union.

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Culms 17–23 cm long. Ligule a ciliolate membrane, 0.2–1 mm long, pubescent on abaxial surface. Leaf-blades filiform, involute, 0.3–0.6 mm wide. Leaf-blade surface ribbed, smooth or scaberulous, rough abaxially, pubescent, hairy adaxially.

**Inflorescence.** Inflorescence a panicle, embraced at base by subtending leaf. Panicle open, lanceolate, 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, 27 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus evident, pilose, acute.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 1 length of upper glume, membranous, without keels. Lower glume apex acuminate. Upper glume lanceolate, 27 mm long, membranous, without keels. Upper glume apex acuminate.

**Florets.** Fertile lemma lanceolate, subterete, 10–12.5 mm long, coriaceous, without keel, 5 -veined, more than 3-veined. Lemma surface pubescent, hairy all along, hairy in lines. Lemma margins convolute, covering most of palea. Lemma apex surmounted by a ring of hairs, awned, 1 -awned. Principal lemma awn geniculate, 120–140 mm long overall, with twisted column, limb plumose, with 4–6 mm long hairs. Column of lemma awn glabrous. Palea without keels.

**Flower and Fruit.** Anthers 3. Stigmas 2. Ovary glabrous. Caryopsis with adherent pericarp, fusiform. Hilum linear.

**Distribution (TDWG). Continent.** Temperate Asia.

**Country /Province /State. Middle Asia.** Kazakhstan, Kirgizistan, Turkmenistan.

**TDWG4.**



**Stipa aliena** Keng. *Sunyatsenia*, vi. 74 (1941).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), S-L Chen et al, *Flora of China* 22 (Poaceae) (2006).

**TYPE** from China. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: China: Gansu:..

**Illustrations (Books):** S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 278).

**Derivation** (Clifford & Bostock 2007): *L.* different from. Readily confused with related species.

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Culms 30 cm long, 1 mm diam. Leaf-sheaths smooth. Ligule an eciliate membrane, 1–1.5 mm long, truncate or obtuse. Leaf-blades convolute, 5–10 cm long, 1.5–2 mm wide. Leaf-blade surface ribbed, smooth.

**Inflorescence.** Inflorescence a panicle, comprising 20 fertile spikelets, embraced at base by subtending leaf. Panicle open, 17 cm long. Primary panicle branches appressed, 2-nate, 4–7 cm long, bearing 2–3 fertile spikelets on each lower branch. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, 1.5–4 mm long, puberulous.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 11–13 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus evident, 1 mm long, pubescent, acute.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 1 length of upper glume, membranous, yellow or light brown, without keels, 7–9 -veined. Lower glume apex acuminate. Upper glume lanceolate, 11–13 mm long, membranous, yellow or light brown, without keels, 5–7 -veined. Upper glume apex acuminate.

**Florets.** Fertile lemma lanceolate, subterete, 8 mm long, coriaceous, light brown, without keel, 5 -veined, more than 3-veined. Lemma surface pubescent, with conspicuous apical hairs. Lemma margins convolute, covering most of palea. Lemma hairs 1.5 mm long. Lemma apex awned, 1 -awned. Principal lemma awn bigeniculate, 20–27 mm long overall, with twisted column. Middle segment of lemma awn 4–5 mm long, puberulous. Column of lemma awn 4–5 mm long, pubescent. Palea without keels.

**Flower and Fruit.** Anthers 3. Stigmas 2. Ovary glabrous. Caryopsis with adherent pericarp, fusiform. Hilum linear.

**Distribution (TDWG). Continent.** Temperate Asia.

**Country /Province /State.** China. China South Central, China North-Central, Qinghai, Tibet.

**TDWG4.** Gansu. Sichuan.

**Stipa almeriensis** F.M.Vázquez. *Acta Bot. Malac.* 31: 78 (2006).

**TYPE** from Spain. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: Spain, Almeria, Minas de Almagrera: Guirado (ALME holo).

**Illustrations (Books):** No illustration found (BKS).

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Culms 30–80 cm long. Leaf-sheaths scaberulous, glabrous on surface. Ligule an eciliate membrane, 5–12 mm long, scaberulous on abaxial surface. Leaf-blades convolute, 5–50 cm long, 0.7–0.9 mm wide. Leaf-blade surface scaberulous, rough abaxially. Leaf-blade margins pubescent.

**Inflorescence.** Inflorescence a panicle. Panicle open, ovate, 10–29 cm long. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, 10–15 mm long, pubescent.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 75–95 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus elongated, 5–7 mm long, pubescent, pungent.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 75–95 mm long, 1.1 length of upper glume, membranous, without keels. Lower glume apex attenuate. Upper glume lanceolate, 70–90 mm long, 4 length of adjacent fertile lemma, membranous, without keels. Upper glume apex attenuate.

**Florets.** Fertile lemma lanceolate, subterete, 17–19 mm long, coriaceous, without keel, 5 -veined, more than 3-veined. Lemma surface pubescent, hairy below, hairy in lines. Lemma margins convolute, covering most of palea. Lemma apex awned, 1 -awned. Principal lemma awn bigeniculate, 290–410 mm long overall, with twisted column, limb plumose, with 8 mm long hairs. Column of lemma awn glabrous. Palea 14–17 mm long, 0.8 length of lemma, without keels. Palea surface glabrous. Palea apex acute.

**Flower and Fruit.** Lodicules 3. Anthers 3, 15 mm long. Caryopsis with adherent pericarp, fusiform, 16 mm long.

**Distribution (TDWG). Continent.** Europe.

**Region.** Southwestern Europe.

**Country /Province /State. :** Spain.

**Stipa alpina** (Schmidt) Petrov. *Fl. Iakut. Fasc. I.* 138 (1930).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online, N.Tsvelev, *Grasses of the Soviet Union* (1983) (as *Ptilagrostis*).

**TYPE** from Russia. **Basionym or Replaced Name:** *Lasiagrostis alpina* F. Schmidt, *Reis. Amur-Land., Bot.* 73 (1868). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: [Asia]: "Auf dem Kahlen Berge an der Bureja-Quelle"[Amurlande],,.

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): *L. alpes*, high mountain; -ina, belonging to. Species growing at high altitudes.

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial, caespitose, clumped densely. Culms erect, 15–35 cm long. Culm-internodes distally glabrous. Leaves basal and cauline. Leaf-sheaths mostly shorter than adjacent culm internode, scaberulous, glabrous on surface. Ligule an eciliate membrane, obtuse. Leaf-blades filiform, convolute, 0.3–0.4 mm wide. Leaf-blade venation with 5–7 secondary veins. Leaf-blade surface scabrous.

**Inflorescence.** Inflorescence a panicle. Panicle open, ovate, 5–15 cm long, bearing few spikelets. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 3.6–4.5 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus brief, 0.2–0.8 mm long, pubescent, acute.

**Glumes.** Glumes persistent, similar, subequal in width, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 1 length of upper glume, hyaline. Lower glume apex acute. Upper glume lanceolate, 3.6–4.5 mm long, hyaline, without keels. Upper glume apex acute.

**Florets.** Fertile lemma linear to lanceolate, subterete, 3.5–4.3 mm long, coriaceous, dark brown, without keel, 3 -veined, 0–3 -veined. Lemma surface puberulous, hairy below, hairy on veins. Lemma margins convolute, covering most of palea. Lemma apex dentate, 2 -fid, awned, 1 -awned. Principal lemma awn from a sinus, bigenulate, 15–20 mm long overall, with twisted column, limb plumose. Middle segment of lemma awn plumose. Column of lemma awn plumose. Palea 2 -veined, without keels.

**Flower and Fruit.** Lodicules 3. Anthers 3, anther tip penicillate. Stigmas 2. Ovary glabrous. Caryopsis with adherent pericarp.

**Distribution (TDWG). Continent.** Temperate Asia.

**Country /Province /State.** Siberia, Russian far east. Buryatiya, Chita. Amur, Magadan, Primorye.

**TDWG4.**

**Stipa aquilana** Moraldo. *Annot. Checkl. Italian Vasc. Fl.:*22 (2005).

**Classification.** Tribe: Stipeae.

**Distribution (TDWG). Continent.** Europe.

**Region.** Southeastern Europe.

**Country /Province /State. :** Italy.

**Stipa apertifolia** Martinovsky. *Preslia*, ix. 274 (1967).

**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, Cuenca: Gandoger (PR holotype).

**Illustrations (Books):** No illustration found (BKS).

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Culms 30–45 cm long. Culm-internodes distally pubescent. Leaf-sheaths pilose. Ligule an eciliate membrane, 2–5 mm long, 0.5–1 mm long on basal shoots. Leaf-blades flat, 2–3 mm wide. Leaf-blade surface ribbed, smooth or scaberulous, glabrous, hairless except near base. Leaf-blade apex hairy.

**Inflorescence.** Inflorescence a panicle, comprising 7 fertile spikelets. Peduncle pubescent above. Panicle contracted, linear, 8–12 cm long, bearing few spikelets. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 35–65 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus evident, acute.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 1 length of upper glume, membranous, without keels. Lower glume apex setaceously acuminate. Upper glume lanceolate, 35–65 mm long, membranous, without keels. Upper glume apex setaceously acuminate.

**Florets.** Fertile lemma lanceolate, subterete, 20–21 mm long, coriaceous, without keel, 5 -veined, more than 3-veined. Lemma surface pubescent, hairy all along, hairy in lines. Lemma margins convolute, covering most of palea. Lemma apex awned, 1 -awned. Principal lemma awn bigeniculate, 220–240 mm long overall, with twisted column, limb plumose. Middle segment of lemma awn 19–20 mm long, pubescent. Column of lemma awn 25–55 mm long, pubescent. Palea without keels.

**Flower and Fruit.** Lodicules 3. Anthers 3. Stigmas 2. Ovary glabrous. Caryopsis with adherent pericarp, fusiform. Hilum linear.

**Distribution (TDWG). Continent.** Europe.

**Region.** Southwestern Europe.

**Country /Province /State.** : Spain.

**Stipa arabica** Trin. & Rupr. *Mem. Acad. Petersb. Ser. VI. Sc. Nat.* v. 77 (1842).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), S-L Chen et al, *Flora of China* 22 (Poaceae) (2006), N.L.Bor, *Grasses of Burma, Ceylon, India and Pakistan* (1960) (as *S. szowitsiana*), T.G.Tutin et al, *Flora Europaea* 5 (1980), N.Tsvelev, *Grasses of the Soviet Union* (1983).

**TYPE** from Israel. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: Israel: Mount Sinai, *G.H.W. Schimper 107* (HT: K; IT: L).

**Illustrations (Books):** L.Boulos, *Flora of Egypt* 4 (2005) (133, Fig 38).

**Derivation** (Clifford & Bostock 2007): L. -ica, belonging to. From Arabia.

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Culms erect, 30–70 cm long. Culm-internodes distally pubescent. Leaf-sheaths glabrous on surface or pubescent. Ligule an eciliate membrane, 4–6 mm long. Leaf-blades filiform, involute, 1–2.5 mm wide, stiff. Leaf-blade surface pubescent, hairy abaxially or on both sides.

**Inflorescence.** Inflorescence a panicle, embraced at base by subtending leaf. Panicle open, linear, 15–35 cm long, bearing few spikelets. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 25–35 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus elongated, curved, pubescent, pungent.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 1 length of upper glume, membranous, without keels, 3(–5) -veined. Lower glume apex acuminate. Upper glume lanceolate, 25–35 mm long, membranous, without keels, 3(–5) -veined. Upper glume apex acuminate.

**Florets.** Fertile lemma elliptic, subterete, 8–11.5 mm long, coriaceous, without keel, more than 3-veined. Lemma surface pubescent, hairy in lines. Lemma margins convolute, covering most of palea. Lemma apex surmounted by a ring of hairs, awned, 1 -awned. Principal lemma awn bigeniculate, 100–160 mm long overall, with twisted column, deciduous, limb plumose, with 2–4 mm long hairs. Column of lemma awn pubescent, with 0.5–1.3 mm long hairs. Palea 2 -veined, without keels.

**Flower and Fruit.** Anthers 3. Stigmas 2. Ovary glabrous. Caryopsis with adherent pericarp. Hilum linear.

**Distribution (TDWG). Continent.** Europe, Africa, Temperate Asia, Tropical Asia.

**Region.** Eastern Europe.

**Country /Province /State.** East European Russia, South European Russia. **Northern Africa.** Egypt. **Middle Asia, Caucasus, Western Asia, China, Russia.** Kazakhstan, Kirgizistan, Turkmenistan, Tadjikistan, Uzbekistan. Transcaucasus. Afghanistan, Iran, Iraq, Palestine, Israel & Jordan, Sinai, Turkey. Tibet, Xinjiang. **Indian Subcontinent.** Pakistan.

**TDWG4.**

**Stipa araxensis** Grossheim. *Beih. Bot. Centralbl.* xliv. II. 200 (1927).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

**TYPE** from Russia. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: ST: *A. Grossheim s.n.*, 16 May 1923, "Transcaucasia, distr. Nachitschevan, inter St. viae ferr. Negram et Daroscham.,,"

ST: *A. Grossheim s.n.*, 25 May 1923, "Prope oppidum Ordubad, in calcareis...".

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): L. -ensis, denoting origin. From the valley of the Araxes, now Araks river at the boundary of Iran and former Soviet Union.

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial, caespitose, clumped loosely. Culms 50–100 cm long. Leaf-sheaths glabrous on surface. Ligule an eciliate membrane, 1–7 mm long. Leaf-blades involute, 15–30 cm long, 3–4 mm wide, stiff. Leaf-blade surface scabrous. Leaf-blade apex smooth.

**Inflorescence.** Inflorescence a panicle, embraced at base by subtending leaf. Panicle contracted, linear. 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, 70–75 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus elongated, curved, pubescent, pungent.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 1 length of upper glume, membranous, without keels, 5–7 -veined. Lower glume apex attenuate. Upper glume lanceolate, 70–75 mm long, membranous, without keels, 5–7 -veined. Upper glume apex attenuate.

**Florets.** Fertile lemma elliptic, subterete, 19–21 mm long, coriaceous, without keel, more than 3-veined. Lemma surface pubescent, hairy in lines. Lemma margins convolute, covering most of palea, ciliate, hairy below. Lemma apex awned, 1 -awned. Principal lemma awn bigeniculate, 250–350 mm long overall, with twisted column, limb plumose, with 5 mm long hairs. Palea 2 -veined, without keels.

**Flower and Fruit.** Anthers 3. Stigmas 2. Ovary glabrous. Caryopsis with adherent pericarp. Hilum linear.

**Distribution (TDWG).** Continent. Temperate Asia.

**Country /Province /State.** Western Asia. Turkey.

**Stipa argillosa** Yu.A. Kotukhov. *Turczaninowia*, 1(1): 8 (1998).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online.

**TYPE** from Russia. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: Russia, Altai, Agatau: Kotuchov (LE holo).

**Illustrations (Books):** No illustration found (BKS).

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Butt sheaths persistent and investing base of culm, with compacted dead sheaths. Culms 30–40 cm long. Leaf-sheaths pubescent. Ligule a ciliate membrane, 0.6–1 mm long, 0.2–0.3 mm long on basal shoots, pubescent on abaxial surface. Leaf-blades filiform, flat or conduplicate, 0.25–0.4 mm wide. Leaf-blade surface smooth or scaberulous, rough abaxially, puberulous, hairy adaxially.

**Inflorescence.** Inflorescence a panicle. Panicle contracted, linear, 15–20 cm long. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 13–16 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus elongated, 1–1.3 mm long, pubescent, pungent.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, membranous, without keels. Lower glume primary vein scabrous. Lower glume apex attenuate. Upper glume lanceolate, 13–16 mm long, membranous, without keels. Upper glume primary vein scabrous. Upper glume apex attenuate.

**Florets.** Fertile lemma elliptic, subterete, 7–8 mm long, coriaceous, without keel, more than 3-veined. Lemma surface pubescent, hairy in lines. Lemma margins convolute, covering most of palea. Lemma apex surmounted by a ring of hairs, awned, 1 -awned. Principal lemma awn bigeniculate, 80–95 mm long overall, with twisted column, limb pubescent, with 1–1.2 mm long hairs. Column of lemma awn 150–200 mm long, smooth or scabrous. Palea without keels.

**Flower and Fruit.** Anthers 3, 3–3.2 mm long.

**Distribution (TDWG).** Temperate Asia.  
**Country /Province /State.** Siberia. Altay.

**Stipa asperella** M.V. Klokov & V.V. Osychnyuk. *Novosti Sist. Vyssh. Nizsh. Rast.* (Kiev), 1975: 35 (1976).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online.

**TYPE** from Russia. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: Russia, Ukraine, Chomutovskaja: Ossychnjuk (KW holo).

**Illustrations (Books):** No illustration found (BKS).

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial, caespitose, clumped densely. Culms 75–90 cm long, 2 -noded. Culm-internodes distally pubescent. Leaf-sheaths glabrous on surface. Ligule a ciliolate membrane, 3–5 mm long, pubescent on abaxial surface. Leaf-blades conduplicate, 6–18 cm long, 1.8–2.5 mm wide, glaucous. Leaf-blade surface puberulous, hairy adaxially. Leaf-blade apex attenuate.

**Inflorescence.** Inflorescence a panicle, comprising 7–9 fertile spikelets. Peduncle pubescent above. Panicle open or contracted, linear or lanceolate, 11–13.5 cm long, bearing few spikelets. Panicle branches bearded in axils (of lowest node). 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, 55–75 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus elongated.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 1 length of upper glume, membranous, without keels. Lower glume surface pubescent, hairy at base. Lower glume apex acuminate. Upper glume lanceolate, 55–75 mm long, membranous, without keels. Upper glume surface pubescent, hairy at base. Upper glume apex acuminate.

**Florets.** Fertile lemma lanceolate, subterete, 18–21.5 mm long, coriaceous, without keel, 5 -veined, more than 3-veined. Lemma surface pubescent, hairy on veins. Lemma margins convolute, covering most of palea. Lemma apex awned, 1 -awned. Principal lemma awn bigeniculate, 260–360 mm long overall, with 190–270 mm long limb, with twisted column, limb plumose, with 3–6 mm long hairs. Column of lemma awn 60–95 mm long. Palea without keels.

**Flower and Fruit.** Hilum linear.

**Distribution (TDWG).** Europe.

**Region.** Eastern Europe.

**Country /Province /State.** Ukraine.

**Stipa atlantica** P. Smirnow. Fedde, *Repert.* 26: 270 (1929).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online.

**TYPE** from Algeria. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: Algeria, Dhalga: Munby (LE holo).

**Illustrations (Books):** No illustration found (BKS).

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Culms 30 cm long, 2–3 -noded. Culm-internodes distally pubescent. Leaf-sheaths longer than adjacent culm internode, glabrous on surface. Ligule a ciliolate membrane, 3–10 mm long, acute. Leaf-blades filiform, conduplicate, 1 mm wide. Leaf-blade surface scaberulous, rough abaxially, puberulous, hairy adaxially. Leaf-blade apex attenuate.

**Inflorescence.** Inflorescence a panicle, comprising 4–6 fertile spikelets, subtended by an inflated leaf-sheath. Peduncle pubescent above. Panicle open or contracted, linear or lanceolate, bearing few spikelets. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 30–70 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus elongated, pilose.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 1 length of upper glume, membranous, without keels. Lower glume apex acuminate, awned, 1 -awned. Upper glume lanceolate, 30–70 mm long, membranous, without keels. Upper glume apex acuminate, awned, 1 -awned.

**Florets.** Fertile lemma lanceolate, subterete, 19–21 mm long, coriaceous, without keel, 5 -veined, more than 3-veined. Lemma surface pubescent, hairy on veins, without hair tufts or with conspicuous apical hairs. Lemma margins convolute, covering most of palea, pubescent. Lemma apex awned, 1 -awned. Principal lemma awn

bigeniculate, 260–300 mm long overall, with 190–220 mm long limb, with twisted column, limb plumose, with 3–5 mm long hairs. Column of lemma awn glabrous. Palea without keels.

**Flower and Fruit.** Hilum linear.

**Distribution (TDWG). Continent.** Africa.

**Country /Province /State.** Northern Africa. Algeria.

**Stipa atriseta** Stapf ex Bor. *K. H. Rechinger, Fl. Iran., Lief. 70, 389 (1970).*

**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, Kuh Bul: Stapf 1536 (W holo).

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): L. ater, dark; seta, bristle. Awn dark-purple.

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial, caespitose, clumped densely. Culms erect, 30–60 cm long. Lateral branches lacking. Ligule a ciliate membrane. Leaf-blades involute or convolute, 15–20 cm long, 1–2 mm wide, glaucous. Leaf-blade surface puberulous, hairy adaxially.

**Inflorescence.** Inflorescence a panicle. Panicle contracted, linear, 30 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, 25–30 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus elongated, glabrous, pungent.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 1 length of upper glume, membranous, without keels. Lower glume apex acuminate. Upper glume lanceolate, 25–30 mm long, membranous, without keels. Upper glume apex acuminate.

**Florets.** Fertile lemma lanceolate, subterete, 7–8 mm long, coriaceous, without keel, 5 -veined, more than 3-veined. Lemma surface puberulous, hairy below, hairy between veins. Lemma margins convolute, covering most of palea. Lemma apex surmounted by a ring of hairs, awned, 1 -awned. Principal lemma awn bigeniculate, 300 mm long overall, with twisted column, limb puberulous. Column of lemma awn 30 mm long, hispidulous. Palea 2 -veined, without keels.

**Flower and Fruit.** Lodicules 3. Anthers 3. Stigmas 2. Ovary glabrous. Caryopsis with adherent pericarp, fusiform. Hilum linear.

**Distribution (TDWG). Continent.** Temperate Asia.

**Country /Province /State.** Western Asia. Iran.

**Stipa austroaltaica** Yu.A. Kotukhov. *Bot. Zhurn., 72(9): 1254 (1987).*

**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 Russia. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Russia, Altai, Mt. Mramornaja: Kotuchov (LE holo, AA).

**Illustrations (Books):** No illustration found (BKS).

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Butt sheaths persistent and investing base of culm, with compacted dead sheaths. Culms 90–115 cm long. Culm-internodes distally pubescent. Leaf-sheaths pubescent. Ligule a ciliolate membrane, 3–3.5 mm long, 1–1.2 mm long on basal shoots, pubescent on abaxial surface. Leaf-blades filiform, conduplicate, 0.2–0.3 mm wide. Leaf-blade surface scaberulous, rough abaxially, pubescent, hairy adaxially.

**Inflorescence.** Inflorescence a panicle. Panicle open, oblong, 25–40 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, 17–20 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus elongated, 2.5–3 mm long, pubescent, pungent.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, membranous, without keels. Lower glume apex attenuate. Upper glume lanceolate, 17–20 mm long, membranous, without keels. Upper glume apex attenuate.

**Florets.** Fertile lemma elliptic, subterete, 2.5–8.2 mm long, coriaceous, without keel, more than 3-veined. Lemma surface pubescent, hairy in lines (6 lines). Lemma margins convolute, covering most of palea. Lemma

apex awned, 1 -awned. Principal lemma awn bigeniculate, 81–96 mm long overall, with twisted column. Column of lemma awn 24–38 mm long, scabrous. Palea without keels.

**Flower and Fruit.** Anthers 3, 5.7–6.1 mm long.

**Distribution (TDWG). Continent.** Temperate Asia.

**Country /Province /State.** Siberia. Altay.

### **Stipa austroitalica** Martinovsky. *Webbia*, 20: 723 (1965).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

**TYPE** from Italy. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: Italy, Monte Gargano: Coll? (FI holo).

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): *L. auster*, south; Italia, Italy; -ica, belonging to. From southern Italy.

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Culms 40–70 cm long. Culm-internodes distally pilose. Leaf-sheaths glabrous on surface or pilose. Ligule a ciliolate membrane, 3–5 mm long, 1–2.5 mm long on basal shoots, pubescent on abaxial surface. Leaf-blades 0.4–0.6 mm wide. Leaf-blade surface ribbed, smooth, pubescent, densely hairy, hairy adaxially.

**Inflorescence.** Inflorescence a panicle, comprising 3–8 fertile spikelets. Panicle contracted, linear, 10–15 cm long, bearing few spikelets. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 30–70 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus evident, acute.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 1 length of upper glume, membranous, without keels. Lower glume apex setaceously acuminate. Upper glume lanceolate, 30–70 mm long, membranous, without keels. Upper glume apex setaceously acuminate.

**Florets.** Fertile lemma lanceolate, subterete, 17–18.5 mm long, coriaceous, without keel, 5 -veined, more than 3-veined. Lemma surface pubescent, hairy all along, hairy in lines. Lemma margins convolute, covering most of palea. Lemma apex entire or dentate, 2 -fid, awned, 1 -awned. Principal lemma awn apical or from a sinus, bigeniculate, 200–300 mm long overall, with twisted column, limb plumose. Middle segment of lemma awn 18–22 mm long, glabrous. Column of lemma awn 25–40 mm long. Palea without keels.

**Flower and Fruit.** Lodicules 3. Anthers 3. Stigmas 2. Ovary glabrous. Caryopsis with adherent pericarp, fusiform. Hilum linear.

**Distribution (TDWG). Continent.** Europe.

**Region. Southeastern Europe.**

**Country /Province /State.** : Italy, Sicily.

### **Stipa azutavica** Yu.A. Kotukhov. *Turczaninowia*, 1(2): 9 (1998).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online.

**TYPE** from Russia. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: Russia, Altai, Azutau: Kotuchov (LE holo).

**Illustrations (Books):** No illustration found (BKS).

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Butt sheaths persistent and investing base of culm, with compacted dead sheaths. Culms geniculately ascending, 12–20 cm long. Culm-internodes distally pubescent. Leaf-sheaths pubescent, outer margin hairy. Ligule a ciliolate membrane, 2–3 mm long, pubescent on abaxial surface. Leaf-blades filiform, conduplicate, 0.3–0.4 mm wide. Leaf-blade surface smooth or scaberulous, rough abaxially, puberulous, hairy adaxially. Leaf-blade margins ciliate.

**Inflorescence.** Inflorescence a panicle, subtended by an inflated leaf-sheath. Panicle contracted, linear, 7–10 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, 15–17 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus elongated, 1.5–1.7 mm long, pubescent, pungent.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, membranous, without keels. Lower glume apex attenuate. Upper glume lanceolate, 15–17 mm long, membranous, without keels. Upper glume apex attenuate.

**Florets.** Fertile lemma elliptic, subterete, 7 mm long, coriaceous, without keel, more than 3-veined. Lemma surface pubescent, hairy in lines (7 lines). Lemma margins convolute, covering most of palea. Lemma apex surmounted by a ring of hairs, awned, 1 -awned. Principal lemma awn bigeniculate, 40–45 mm long overall, with twisted column, limb hirsute, with 2–2.2 mm long hairs. Column of lemma awn puberulous, with 0.3–0.5 mm long hairs. Palea without keels.

**Flower and Fruit.** Anthers 3, 2.5–3 mm long.

**Distribution (TDWG). Continent.** Temperate Asia.

**Country /Province /State. Middle Asia.** Kazakhstan.

### ***Stipa badachschanica*** Roshev. *Not. Syst. Herb. Inst. Bot. Acad. Sci. URSS*, xi. 19 (1949).

**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: ST: *Th. Alekseenko*; n. 3262, 27 Jul 1901, "Asia Media: ... Vachan, in valle fl. Pamir Prope Ljangan-ghischt, 3200 m,..." ST: *N. Tuturin et P. Bessedin*; n. 80, 30 May 1914, "Asia media: ... et in valle fl. Pjandsh, inter Chorog et Nischus..." ST: *N. Tuturin et P. Bessedin*; n. 183, 9 Jun 1914, "Asisa media: Pamir. Schugnan, in valle Darschai, inter pontem Pul-i-furs et ostium fl. Darschai..."

**Recent Synonyms:** *Stipa pamirica* Roshev., *Not. Syst. Herb. Inst. Bot. Acad. Sci. URSS*, 11: 20 (1949).

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): L. -ica, belonging to. From Badakhshan Province, Afghanistan.

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial, caespitose, clumped densely. Culms 50–60 cm long. Culm-internodes distally pubescent, with reflexed hairs. Culm-nodes black. Leaf-sheaths pubescent. Ligule an eciliate membrane, 5–10 mm long. Leaf-blades involute, 15–30 cm long, 2–4 mm wide. Leaf-blade surface pubescent, densely hairy, hairy on both sides. Leaf-blade apex acuminate.

**Inflorescence.** Inflorescence a panicle. Panicle open, lanceolate, 15–30 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, 20–30 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus elongated, curved, 1 mm long, glabrous, acute.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 1 length of upper glume, membranous, without keels. Lower glume apex acuminate. Upper glume lanceolate, 20–30 mm long, membranous, without keels. Upper glume apex acuminate.

**Florets.** Fertile lemma lanceolate, subterete, 9–11 mm long, coriaceous, without keel, 5 -veined, more than 3-veined. Lemma surface pilose, hairy below. Lemma margins convolute, covering most of palea. Lemma apex surmounted by a ring of hairs, awned, 1 -awned. Principal lemma awn bigeniculate, 90–140 mm long overall, with twisted column, limb ciliate, with 2 mm long hairs. Column of lemma awn 50–60 mm long, pubescent. Palea 2 -veined, without keels.

**Flower and Fruit.** Lodicules 3. Anthers 3. Stigmas 2. Ovary glabrous. Caryopsis with adherent pericarp, fusiform. Hilum linear.

**Distribution (TDWG). Continent.** Temperate Asia.

**Country /Province /State. Middle Asia, Western Asia.** Turkmenistan. Iran.

**TDWG4.**

### ***Stipa baicalensis*** Roshev. *Bull. Jard. Bot. Princ. URSS*, xxviii. 380 (1929).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), S-L Chen et al, *Flora of China* 22 (Poaceae) (2006), N.Tsvelev, *Grasses of the Soviet Union* (1983).

**TYPE** from Russia. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: LT: *G. Poplavskaya*, *M. Poplavskii* & *E. Ditner* 2441, 6 Aug 1913, Transbaikal: Barguzinskii tract, stn. Tataurova, roks Belykamen near the pass through Selenga (LE).

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): L. -ensis, denoting origin. From the steppes around Lake Baikal, former Soviet Union.



**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial, caespitose, clumped densely. Culms (15–)50–70(–100) cm long. Culm-internodes smooth. Leaf-sheaths glabrous on surface. Ligule an eciliate membrane, 1–1.6 mm long. Leaf-blades filiform, involute, 15–30 cm long, 0.4–0.7 mm wide. Leaf-blade surface ribbed, smooth or scaberulous, rough abaxially, pubescent, densely hairy, hairy adaxially. Leaf-blade apex acuminate.

**Inflorescence.** Inflorescence a panicle, embraced at base by subtending leaf. Panicle contracted, linear, 10–30 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, 22–32 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus evident, acute.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 1 length of upper glume, membranous, without keels. Lower glume apex acuminate. Upper glume lanceolate, 22–32 mm long, membranous, without keels. Upper glume apex acuminate.

**Florets.** Fertile lemma lanceolate, subterete, 12–18 mm long, coriaceous, without keel, 5 -veined, more than 3-veined. Lemma surface pubescent, hairy below, hairy in lines. Lemma margins convolute, covering most of palea. Lemma apex surmounted by a ring of hairs, awned, 1 -awned. Principal lemma awn bigeniculate, (70–)110–120(–280) mm long overall, with twisted column. Palea without keels.

**Flower and Fruit.** Anthers 3. Stigmas 2. Ovary glabrous. Caryopsis with adherent pericarp, fusiform. Hilum linear.

**Distribution (TDWG). Continent.** Temperate Asia.

**Country /Province /State.** Siberia, Russian far east, **Middle Asia, China, Mongolia, Russia.** Altay, Buryatiya, Chita, Irkutsk, Tuva. Amur, Primorye. Kazakhstan. Inner Mongolia, Manchuria, Qinghai, Tibet. Mongolia.

**TDWG4.** Gansu, Hebei, Shaanxi, Shanxi.

**Stipa barbata** Desf. *Fl. Atlant.* i. 97. t. 27. (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), T.G.Tutin et al, *Flora Europaea* 5 (1980), N.Tsvelev, *Grasses of the Soviet Union* (1983).

**TYPE** from Tunisia. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Habitat in collibus incultis circa Mascar et Tlemsen, *Desfontaines s.n.* (HT: P).

**Illustrations (Books):** N.Feinbrun-Dothan, *Flora Palaestina* 4 (1986) (Pl. 344), N.L.Bor, *Gramineae* in K.H.Rechinger, *Flora Iranica*. No. 70/30 (1970) (Tab. 56), N.L.Bor, *Gramineae* in *Flora of Iraq* (1968) (401, Pl. 150).

**Images:** R.Darke, *Ornamental Grasses* (2004);, R.Darke, *The Encyclopaedia of Grasses for Liveable Landscapes* (2007);

**Derivation** (Clifford & Bostock 2007): L. bearded, barbed. With hairs on the callus, glumes or lemma.

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Rootstock evident. Culms erect, 30–60 cm long. Ligule an eciliate membrane. Leaf-blades flexuous, filiform, conduplicate or involute, 15–30 cm long, 1–2 mm wide. Leaf-blade surface scabrous, rough abaxially, puberulous, hairy adaxially.

**Inflorescence.** Inflorescence a panicle, embraced at base by subtending leaf. Panicle contracted, linear, 15–30 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, 25–35 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus elongated, curved, 1.5 mm long, pubescent, pungent.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma, shiny. Lower glume linear or lanceolate, 20–30 mm long, 0.7–0.8 length of upper glume, membranous, without keels, 5 -veined. Lower glume apex acuminate. Upper glume linear or lanceolate, 25–35 mm long, membranous, without keels, 5 -veined. Upper glume apex attenuate.

**Florets.** Fertile lemma oblong, subterete, 10–12 mm long, coriaceous, without keel, more than 3-veined. Lemma surface pubescent. Lemma margins convolute, covering most of palea. Lemma apex surmounted by a ring of hairs, awned, 1 -awned. Principal lemma awn bigeniculate, 150–200 mm long overall, with twisted column, limb plumose, with 1–2 mm long hairs. Column of lemma awn 45–50 mm long, pubescent. Palea 2 -veined, without keels.

**Flower and Fruit.** Anthers 3. Stigmas 2. Ovary glabrous. Caryopsis with adherent pericarp. Hilum linear.

$2n = 44$  (1 ref TROPICOS).

**Distribution (TDWG).** Continent. Europe, Africa, Temperate Asia.  
**Region.** Northern Europe (\*), Southwestern Europe, Southeastern Europe.  
**Country /Province /State.** : GB Aliens (Ryves et al). : Spain. : Italy, Sicily. **Northern Africa.** Algeria, Libya, Morocco, Tunisia. **Caucasus, Western Asia.** Iran, Iraq.  
**TDWG4.**

**Stipa bavarica** Martinovsky & Scholz. *Willdenowia*, iv. 322 (1968).

**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 Germany. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Germany, Finkenstein: Scholz (B holo).

**Illustrations (Books):** No illustration found (BKS).

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Culms 35–70 cm long. Culm-internodes distally glabrous or pubescent. Leaf-sheaths pubescent. Ligule an eciliate membrane, 2–4 mm long, 1–2 mm long on basal shoots, truncate. Leaf-blades conduplicate, 35–70 cm long, 1–1.3 mm wide. Leaf-blade surface ribbed, scabrous, pubescent, hairy on both sides. Leaf-blade apex acute.

**Inflorescence.** Inflorescence a panicle, comprising 6–9 fertile spikelets. Peduncle glabrous or pubescent above. Panicle contracted, linear, bearing few spikelets. Panicle axis pubescent. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 50–80 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus evident, acute.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 1 length of upper glume, membranous, without keels. Lower glume apex setaceously acuminate. Upper glume lanceolate, 50–80 mm long, membranous, without keels. Upper glume apex setaceously acuminate.

**Florets.** Fertile lemma lanceolate, subterete, 23–26 mm long, coriaceous, without keel, 5 -veined, more than 3-veined. Lemma surface pubescent, hairy all along, hairy in lines. Lemma margins convolute, covering most of palea. Lemma apex awned, 1 -awned. Principal lemma awn bigeniculate, 330–440 mm long overall, with twisted column, limb plumose, with 3–4 mm long hairs. Palea without keels.

**Flower and Fruit.** Lodicules 3. Anthers 3. Stigmas 2. Ovary glabrous. Caryopsis with adherent pericarp, fusiform. Hilum linear.

**Distribution (TDWG).** Continent. Europe.

**Region.** Middle Europe.

**Country /Province /State.** : Germany.

**Stipa bhutanica** H.J. Noltie. *Edinburgh J. Bot.*, 56(2): 289 (1999).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

**TYPE** from Bhutan. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Bhutan: HA District: W side of Chelai La, 27.22N, 89.20E, 3600 m, 29 Sep 1998, Noltie, Pradham, Sherub & Wangdi 349 (HT: E; IT: THIM).

**Illustrations (Books):** H.J.Noltie, *The Grasses of Bhutan* (2000) (527, Fig.11).

**Derivation** (Clifford & Bostock 2007): L. -ica, belonging to. From Bhutan.

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Culms 8–32.5 cm long. Leaf-sheaths 6.8–11 cm long, glabrous on surface. Ligule an eciliate membrane, 2.8–3.3 mm long, obtuse or acute. Leaf-blades filiform, convolute, 5–15 cm long, 0.3–0.5 mm wide. Leaf-blade surface smooth or scaberulous, rough abaxially, glabrous.

**Inflorescence.** Inflorescence a panicle. Panicle open, linear, 5–10.5 cm long. Primary panicle branches indistinct the panicle almost racemose. Spikelets solitary or in pairs. Fertile spikelets pedicelled. Pedicels present, filiform, 4–9 mm long.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 7–8 mm long, breaking up at maturity, disarticulating below

each fertile floret. Floret callus 0.5 mm long, pilose, obtuse, with circular scar. Floret callus hairs 0.7–1 mm long.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 7–8 mm long, 1 length of upper glume, hyaline, purple, without keels, 3 -veined. Lower glume apex acute. Upper glume oblong, 7–8 mm long, hyaline, purple, without keels, 5 -veined. Upper glume apex acute.

**Florets.** Fertile lemma linear, subterete, 6–7 mm long, 0.7–0.8 mm wide, coriaceous, without keel, 5 -veined, more than 3-veined. Lemma surface pubescent, hairy above and at base. Lemma margins convolute, covering most of palea. Lemma hairs 0.4–0.6 mm long. Lemma apex awned, 1 -awned. Principal lemma awn geniculate, 13–16 mm long overall, with twisted column. Column of lemma awn 6–7 mm long, pubescent, with 0.7–0.9 mm long hairs. Palea linear, 4.2–5 mm long, 2 -veined, without keels. Palea surface pubescent. Palea apex acute.

**Flower and Fruit.** Anthers 3, 1.6–1.7 mm long, anther tip smooth. Stigmas 2. Caryopsis with adherent pericarp. Hilum linear.

**Distribution (TDWG). Continent.** Tropical Asia.

**Country /Province /State. Indian Subcontinent.** Eastern Himalaya.

**TDWG4.** Bhutan.

### **Stipa brachyptera** M.V. Klokov. *Novosti Sist. Vyssh. Nizsh. Rast.* (Kiev), 1975: 26 (1976).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online.

**TYPE** from Russia. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: Russia, Crimea, Mt. Czatyr-dag: Kotov (KW holo).

**Illustrations (Books):** No illustration found (BKS).

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial, caespitose, clumped loosely. Culms 30–50 cm long, 3 -noded. Culm-internodes distally glabrous or pubescent. Leaf-sheaths smooth, glabrous on surface, outer margin glabrous. Ligule a ciliolate membrane, 1.5–5 mm long. Leaf-blades conduplicate, 3–8 cm long, 1–2 mm wide, grey-green. Leaf-blade apex attenuate.

**Inflorescence.** Inflorescence a panicle, comprising 3–7 fertile spikelets. Peduncle glabrous. Panicle open or contracted, linear or lanceolate, 3–8 cm long, bearing few spikelets. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 50–70 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus elongated.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 1 length of upper glume, membranous, without keels. Lower glume surface glabrous. Lower glume apex acuminate. Upper glume lanceolate, 50–70 mm long, membranous, without keels. Upper glume surface glabrous. Upper glume apex acuminate.

**Florets.** Fertile lemma lanceolate, subterete, 15.5–18.5 mm long, coriaceous, without keel, 5 -veined, more than 3-veined. Lemma margins convolute, covering most of palea, pubescent. Lemma apex awned, 1 -awned. Principal lemma awn bigeniculate, 170–220 mm long overall, with twisted column, limb plumose, with 3.5–5 mm long hairs. Column of lemma awn 40–50 mm long, pubescent, with 0.1–1 mm long hairs. Palea without keels.

**Flower and Fruit.** Caryopsis with adherent pericarp, fusiform, 11–12 mm long. Hilum linear.

**Distribution (TDWG). Continent.** Europe.

**Region.** Eastern Europe.

**Country /Province /State.** East European Russia.

**TDWG4.**

### **Stipa brandisii** Mez. Fedde, *Repert.* xvii. 207 (1921).

**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: Kulla, *D. Brandis s.n.* (HT: B?; IT: US-866139 (fragm. ex B)).

**Illustrations (Books):** H.J.Noltie, *The Grasses of Bhutan* (2000) (523, Fig.10).

**Derivation** (Clifford & Bostock 2007): in honor of Dietrich Brand (1824–1907) German-born Indian forester.

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial, caespitose, clumped loosely. Culms erect, 70–150 cm long, 3–4-noded. Leaf-sheaths longer than adjacent culm internode. Ligule an eciliate membrane, 0.4–1 mm long, truncate. Leaf-blades flat, 20–40 cm long, 4–10 mm wide. Leaf-blade surface smooth or scaberulous, rough abaxially. Leaf-blade apex acuminate.

**Inflorescence.** Inflorescence a panicle. Panicle open, oblong, 10–30 cm long. Primary panicle branches ascending or spreading, 2-nate, naked below or bearing spikelets almost to the base. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 7–10 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus evident, 0.3–0.5 mm long, obtuse.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume elliptic or oblong, 1 length of upper glume, membranous, pallid or mid-green, without keels, 3-veined. Lower glume primary vein scabrous. Lower glume apex acute. Upper glume elliptic or oblong, 7–10 mm long, 1.2–1.3 length of adjacent fertile lemma, membranous, pallid or mid-green, without keels, 3-veined. Upper glume primary vein scabrous. Upper glume apex acute.

**Florets.** Fertile lemma lanceolate, subterete, 5.5–7.5 mm long, coriaceous, without keel, more than 3-veined. Lemma surface pilose, hairy all along. Lemma margins convolute, covering most of palea. Lemma apex surmounted by a ring of hairs, awned, 1-awned. Principal lemma awn geniculate or bigeniculate, 10–18 mm long overall, with twisted column. Column of lemma awn scabrous, glabrous. Palea 2-veined, without keels.

**Flower and Fruit.** Anthers 3, 4–5 mm long, anther tip penicillate. Stigmas 2. Caryopsis with adherent pericarp.

**Distribution (TDWG). Continent.** Temperate Asia, Tropical Asia.

**Country /Province /State. Western Asia, China.** Afghanistan. China South Central, China North-Central, Qinghai, Tibet. **Indian Subcontinent.** Eastern Himalaya, India, Nepal, Pakistan.

**TDWG4.** Gansu, Sichuan, Yunnan, Bhutan.

### **Stipa breviflora** Griseb. *Goett. Nachr.* 82. (1868).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), S-L Chen et al, *Flora of China* 22 (Poaceae) (2006), N.L.Bor, *Grasses of Burma, Ceylon, India and Pakistan* (1960), N.Tsvelev, *Grasses of the Soviet Union* (1983).

**TYPE** from China. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: ST: *J.H. Lance* 320, Kashmir: Ladakh, 12000 ft (K).

**Illustrations (Books):** S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 272).

**Derivation** (Clifford & Bostock 2007): *L. brevis*, short; flos, flower. Spikelets short.

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Culms 25–40 cm long. Ligule an eciliate membrane, 1 mm long. Leaf-blades filiform, involute, 1–1.5 mm wide.

**Inflorescence.** Inflorescence a panicle. Panicle contracted, linear, 10–25 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, 10–25 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus elongated, 0.9–1.3 mm long, pubescent, pungent.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 0.9 length of upper glume, membranous, without keels, 3-veined. Lower glume apex attenuate. Upper glume lanceolate, 10–25 mm long, membranous, without keels, 3-veined. Upper glume apex attenuate.

**Florets.** Fertile lemma elliptic, subterete, 5–7 mm long, coriaceous, without keel, more than 3-veined. Lemma surface scabrous, rough above, pubescent, hairy below, hairy in lines. Lemma margins convolute, covering most of palea. Lemma apex surmounted by a ring of hairs, awned, 1-awned. Principal lemma awn bigeniculate, 55–80 mm long overall, with twisted column, deciduous, limb pubescent, with 0.5–0.8 mm long hairs. Column of lemma awn pubescent, with 0.5–0.8 mm long hairs. Palea 2-veined, without keels.

**Flower and Fruit.** Anthers 3. Stigmas 2. Ovary glabrous. Caryopsis with adherent pericarp. Hilum linear.

**Distribution (TDWG). Continent.** Temperate Asia, Tropical Asia.

**Country /Province /State. Middle Asia, China, Mongolia.** Kazakhstan, Kirgizistan, Tadzhikistan, Uzbekistan. China South Central, Inner Mongolia, China North-Central, Qinghai, Tibet, Xinjiang. Mongolia. **Indian Subcontinent.** Nepal, Pakistan.

**TDWG4.** Gansu, Hebei, Shaanxi, Shanxi. Sichuan.

**Stipa bungeana** Trin. ex Bunge. *Enum. Pl. China Bor.*: 70 (1833).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), S-L Chen et al, *Flora of China* 22 (Poaceae) (2006), N.L.Bor, *Grasses of Burma, Ceylon, India and Pakistan* (1960), N.Tsvelev, *Grasses of the Soviet Union* (1983).

**TYPE** from China. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: China: Hebei: "ad radices montium Zui-wei-schan et ad vias prope Ssi-jui-ssi.", *Bunge s.n.* (HT: ?).

**Illustrations (Books):** S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 266).

**Derivation** (Clifford & Bostock 2007): L. -ana, indicating connection. In honor of Aleksandr Andreevic Bunge (1803–1890) Ukrainian physician and botanist.

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Culms erect or geniculately ascending, 30–60 cm long. Ligule an eciliate membrane. Leaf-blades curled, filiform, conduplicate, 4–8 cm long, 1 mm wide. Leaf-blade surface glabrous. Leaf-blade margins scaberulous.

**Inflorescence.** Inflorescence a panicle. Panicle contracted, lanceolate, 7–15 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, 9–11 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus elongated, glabrous, acute.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 1 length of upper glume, membranous, without keels, 3 -veined. Lower glume apex acuminate. Upper glume lanceolate, 9–11 mm long, membranous, without keels, 3–5 -veined. Upper glume apex acuminate.

**Florets.** Fertile lemma lanceolate, subterete, 5–6 mm long, coriaceous, without keel, 5 -veined, more than 3-veined. Lemma surface scabrous, rough above, glabrous or pubescent, hairy below. Lemma margins convolute, covering most of palea. Lemma apex surmounted by a ring of hairs, awned, 1 -awned. Principal lemma awn bigenulate, 30–80 mm long overall, with twisted column, limb glabrous. Column of lemma awn 50–60 mm long, glabrous. Palea 2 -veined, without keels.

**Flower and Fruit.** Lodicules 3. Anthers 3. Stigmas 2. Ovary glabrous. Caryopsis with adherent pericarp, fusiform. Hilum linear.

**Distribution (TDWG). Continent.** Temperate Asia.

**Country /Province /State. Middle Asia, Western Asia, China, Mongolia.** Kazakhstan, Kirgizistan. Iran. China South Central, Inner Mongolia, China North-Central, Qinghai, China Southeast, Tibet, Xinjiang. Mongolia.

**TDWG4.** Gansu, Hebei, Shaanxi, Shandong. Anhui, Henan, Jiangsu. Sichuan.

**Stipa capensis** Thunb. *Prod. Pl. Cap.* 19 (1794).

**Accepted by:** R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), 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 South Africa. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: South Africa: Cape of Good Hope, dry stony hillsides and deserts, *Thunberg s.n.* (HT: UPS).

**Illustrations (Books):** L.K.A. Chippindall, *Grasses and Pastures of South Africa* (1955) (289, Fig 259), N.Feinbrun-Dothan, *Flora Palaestina* 4 (1986) (Pl. 343), L.Boulos, *Flora of Egypt* 4 (2005) (133, Fig 38), N.L.Bor, *Gramineae* in K.H.Rechinger, *Flora Iranica*. No. 70/30 (1970), N.L.Bor, *Gramineae* in *Flora of Iraq* (1968) (403, Pl. 151), T.A.Cope, *Flora of Pakistan* 143: *Poaceae* (1982) (539, Fig 61), M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 24 *Poaceae*, part 1 (2007) (156).

**Images:** L.Boulos, *Flora of Egypt* 4 (2005);.

**Derivation** (Clifford & Bostock 2007): L. -ense, denoting origin. From the Cape of Good Hope, South Africa.

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Annual, caespitose. Culms decumbent, 10–30 cm long. Ligule an eciliate membrane. Leaf-blades involute, 5–15 cm long, 1–1.5 mm wide, glaucous. Leaf-blade surface glabrous or pubescent, hairy adaxially. Leaf-blade apex acuminate.

**Inflorescence.** Inflorescence a panicle, embraced at base by subtending leaf. Panicle contracted, linear, 5–15 cm long, 1 cm wide. Primary panicle branches appressed, bearing spikelets almost to the base. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 10–20 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus elongated, curved, 1 mm long, bearded, pungent.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 10–20 mm long, 1 length of upper glume, hyaline, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume apex acuminate. Upper glume lanceolate, 10–20 mm long, 2 length of adjacent fertile lemma, hyaline, without keels, 3 -veined. Upper glume apex acuminate.

**Florets.** Fertile lemma lanceolate, subterete, 5–7 mm long, coriaceous, without keel, 5 -veined, more than 3-veined. Lemma surface pilose. Lemma margins convolute, covering most of palea. Lemma apex entire, surmounted by a ring of hairs, awned, 1 -awned. Principal lemma awn bigeniculate, twisted together, 60–70 mm long overall, with twisted column. Column of lemma awn 30 mm long, hirtellous. Palea elliptic, 0.4 length of lemma, 2 -veined, without keels.

**Flower and Fruit.** Lodicules 2, oblanceolate, membranous. Anthers 3. Stigmas 2. Ovary glabrous. Caryopsis with adherent pericarp, fusiform. Hilum linear.

$2n = 36$  (3 refs TROPICOS).

**Distribution (TDWG).** **Continent.** Europe, Africa, Temperate Asia, Tropical Asia.

**Region.** Northern Europe (\*), Southwestern Europe, Southeastern Europe.

**Country /Province /State.** : GB Aliens (Ryves et al). : Balears, Corsica, France, Portugal, Sardinia, Spain. : Albania, Greece, Italy, Crete, Sicily, Yugoslavia. **Northern Africa, Macaronesia, West tropical Africa, Southern Africa.** Algeria, Egypt, Libya, Morocco, Tunisia. Canary Is, Madeira. Northern Cape, Western Cape. **Middle Asia, Caucasus, Western Asia, Arabian Peninsula.** Tadjikistan. Iran, Iraq. Gulf States, Kuwait, Oman. **Indian Subcontinent.** Pakistan, West Himalaya.

**TDWG4.**

**Stipa capillacea** Keng. *Sunyatsenia*, vi. 100 (1941).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), S-L Chen et al, *Flora of China* 22 (Poaceae) (2006).

**TYPE** from China. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: China: Sichuan: open grass land in rear of Shaowusi Agricultural Station, Taining Xian, *K.L. Chu 7449* (HT: Biol. Lab., Science Soc. of China).

**Illustrations (Books):** H.J.Noltie, *The Grasses of Bhutan* (2000) (523, Fig. 10 as *S. koelzii*), S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 265).

**Derivation** (Clifford & Bostock 2007): *L. capillis*, a hair; -acea, indicating resemblance. Glume apices drawn out into long threads.

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Culms 25–50 cm long, 1 mm diam., 2 -noded, with 0.15–0.33 of their length below uppermost node. Leaf-sheaths 11–12 cm long, glabrous on surface. Ligule a ciliolate membrane, 0.6 mm long, truncate. Leaf-blades convolute, 6–9(–20) cm long, 1.5–2 mm wide. Leaf-blade surface ribbed, scaberulous.

**Inflorescence.** Inflorescence a panicle, exerted or embraced at base by subtending leaf. Panicle open, linear, 14–18 cm long. Primary panicle branches 2 -nate, bearing 1–3 fertile spikelets on each lower branch. Panicle axis with lower internodes 2–3.5 cm long, smooth. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, 2–4 mm long, glabrous or puberulous.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 25–30 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus elongated, 2.5 mm long, pubescent, pungent. Floret callus hairs 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 green or purple, without keels, 3 -veined. Lower glume apex setaceously acuminate. Upper glume lanceolate, 25–30 mm long, membranous, light green or purple, without keels, 3–5 -veined. Upper glume apex setaceously acuminate.

**Florets.** Fertile lemma lanceolate, subterete, 10 mm long, coriaceous, without keel, 5 -veined, more than 3-veined. Lemma midvein pubescent, hairy below. Lemma surface hispidulous, with conspicuous apical hairs. Lemma margins convolute, covering most of palea, pubescent. Lemma hairs 1 mm long. Lemma apex awned, 1 -awned. Principal lemma awn bigeniculate, 23–27 mm long overall, with twisted column. Middle segment of lemma awn 7–8 mm long, puberulous. Column of lemma awn 10–12 mm long, puberulous. Palea without keels.

**Flower and Fruit.** Anthers 3. Stigmas 2. Ovary glabrous. Caryopsis with adherent pericarp, fusiform. Hilum linear.

**Distribution (TDWG). Continent.** Temperate Asia, Tropical Asia.

**Country /Province /State. China.** China South Central, China North-Central, Qinghai, Tibet. **Indian Subcontinent.** Eastern Himalaya, Nepal, Pakistan.

**TDWG4.** Gansu, Sichuan, Yunnan. Bhutan, Sikkim.

### **Stipa capillata** L. *Sp. Pl.* ed. II. 116. (1762).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), S-L Chen et al, *Flora of China* 22 (Poaceae) (2006), N.L.Bor, *Grasses of Burma, Ceylon, India and Pakistan* (1960), T.G.Tutin et al, *Flora Europaea* 5 (1980), N.Tsvelev, *Grasses of the Soviet Union* (1983).

**TYPE** from Europe. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: ST: *V. Jacquemont 193*, Kashmir: Sonamarg, 3000 m (K). Possible type..

**Illustrations (Books):** G.Hegi, *Flora von Mitteleuropa* 1 (1909).

**Images:** R.Darke, *Ornamental Grasses* (2004);, R.Darke, *The Encyclopaedia of Grasses for Liveable Landscapes* (2007);.

**Derivation** (Clifford & Bostock 2007): *L. capillis*, hair; -ata, possessing. Leaf-blades thread-like.

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Butt sheaths persistent and investing base of culm. Culms 50–100 cm long, 4–6 -noded. Ligule an eciliate membrane, 3.5–17 mm long. Leaf-blades filiform, 20–45 cm long, 1–2 mm wide, glaucous. Leaf-blade surface smooth or scaberulous, rough abaxially, pilose, hairy adaxially.

**Inflorescence.** Inflorescence a panicle, embraced at base by subtending leaf. Panicle contracted, linear, 10–25 cm long. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rachilla extension. Spikelets of 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, 23–35 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus elongated, curved, 2.5–4 mm long, pubescent, pungent.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma, shiny. Lower glume lanceolate, 1 length of upper glume, membranous, without keels, 3 -veined. Lower glume apex acuminate. Upper glume lanceolate, 23–35 mm long, membranous, without keels, 3 -veined. Upper glume apex acuminate.

**Florets.** Fertile lemma elliptic, subterete, 11–15 mm long, coriaceous, without keel, more than 3-veined. Lemma surface pubescent, hairy in lines. Lemma margins convolute, covering most of palea. Lemma apex awned, 1 -awned. Principal lemma awn bigeniculate, 100–200 mm long overall, with twisted column, deciduous. Palea 2 -veined, without keels.

**Flower and Fruit.** Anthers 3. Stigmas 2. Ovary glabrous. Caryopsis with adherent pericarp. Hilum linear.

$2n = 44$  (2 refs TROPICOS).

**Distribution (TDWG). Continent.** Europe, Temperate Asia, Tropical Asia.

**Region. Middle Europe, Southwestern Europe, Southeastern Europe, Eastern Europe.**

**Country /Province /State.** : Austria, Czechoslovakia, Germany, Hungary, Poland, Switzerland. : France, Sardinia, Spain. : Albania, Bulgaria, Greece, Italy, Crete, Romania, Sicily, Turkey Europe, Yugoslavia. Krym, Central European Russia, East European Russia, South European Russia, Northwest European Russia, Ukraine. Siberia, **Middle Asia, Caucasus, Western Asia, China, Mongolia, Russia.** Altay, Buryatiya, Chita, Irkutsk, Tuva. Kazakhstan, Kirgizistan, Turkmenistan, Tadjikistan, Uzbekistan. Iran. China North-Central, Xinjiang. Mongolia. **Indian Subcontinent.** Pakistan, West Himalaya.

**TDWG4.** Gansu, Hebei, Shanxi. Jammu Kashmir.

### **Stipa caucasica** Schmalh. *Ber. Deutsch. Bot. Ges.* x. 293; (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), N.Tsvelev, *Grasses of the Soviet Union* (1983).

**TYPE** from Russia. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: T: ST: *Lipski*, 11 May, 6 May 1891, Russia: "Daghestania: Czir-Jurt 11. Majo et Temir-Chan-Schura 6. Majo 1891" (LE).

**Recent Synonyms:** *Stipa glareosa* P. Smirn., *Bull. Soc. Nat. Mosc., Sect. Biol.*, n. s., 38: 12 (1929).

**Illustrations (Books):** S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 268 as subsp. *caucasica* and subsp. *glareosa*; Fig 271 as subsp. *glareosa*).

**Illustrations (Journals):** *Bot. J. Linn. Soc.* (167:413, Fig.6 (2011) as subsp. *drobovii*).

**Derivation** (Clifford & Bostock 2007): *L. -ica*, belonging to. From Caucasus Mountains, former Soviet Union.

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Culms 25–70 cm long. Culm-nodes glabrous or bearded. Ligule an eciliate membrane, 0.5–0.7 mm long, lacerate. Leaf-blades filiform, involute, 7–15 cm long, 2–3.5 mm wide, stiff. Leaf-blade surface glabrous. Leaf-blade apex pungent.

**Inflorescence.** Inflorescence a panicle, embraced at base by subtending leaf. Panicle contracted, linear, 5–10 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, 25–50 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus elongated, 2–3 mm long, pubescent, pungent.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma, shiny. Lower glume lanceolate, 1 length of upper glume, membranous, without keels, 5 -veined. Lower glume apex attenuate. Upper glume lanceolate, 25–50 mm long, membranous, without keels, 5 -veined. Upper glume apex attenuate.

**Florets.** Fertile lemma elliptic, subterete, 9–13 mm long, coriaceous, without keel, more than 3-veined. Lemma surface pubescent or pilose, hairy in lines. Lemma margins convolute, covering most of palea. Lemma apex surmounted by a ring of hairs, awned, 1 -awned. Principal lemma awn geniculate, spreading (falcate), 80–135 mm long overall, with twisted column, deciduous, limb plumose, with 4–6 mm long hairs, glabrescent towards tip. Column of lemma awn hirtellous, with 1–3 mm long hairs. Palea 2 -veined, without keels.

**Flower and Fruit.** Anthers 3. Stigmas 2. Ovary glabrous. Caryopsis with adherent pericarp. Hilum linear.

**Distribution (TDWG). Continent.** Temperate Asia, Tropical Asia.

**Country /Province /State.** Siberia, **Middle Asia, Caucasus, Western Asia, China, Mongolia.** Altay, Irkutsk, Tuva. Kazakhstan, Kirgizistan, Turkmenistan, Tadzhikistan. Transcaucasus. Afghanistan, Iran. Inner Mongolia, China North-Central, Qinghai, China Southeast, Tibet, Xinjiang. Mongolia. **Indian Subcontinent.** Pakistan, West Himalaya.

**TDWG4.** Gansu, Hebei, Shaanxi. Henan.

**Stipa celakovskiy** J.O. Martinovsky. *Preslia*, 48(2): 18 (1976).

**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, *Serrenia de Cua*: Gandoger (PRC holo).

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): in honor of Ladislav Josef Celakovsky (1834–1902) or his son, Ladislav Franz Celakovsky (1864–1916) Bohemian botanists.

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Butt sheaths glabrous. Culms 25–50 cm long. Leaf-sheaths glabrous on surface. Ligule an eciliate membrane, 2 mm long. Leaf-blades convolute, elliptic in section, 1 mm wide. Leaf-blade surface ribbed.

**Inflorescence.** Inflorescence a panicle. Panicle contracted, lanceolate, 30–40 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, 30–60 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus evident, acute.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 1 length of upper glume, membranous, without keels. Lower glume apex attenuate. Upper glume lanceolate, 30–60 mm long, membranous, without keels. Upper glume apex attenuate.

**Florets.** Fertile lemma lanceolate, subterete, 12–14 mm long, coriaceous, without keel, 5 -veined, more than 3-veined. Lemma margins convolute, covering most of palea. Lemma apex surmounted by a ring of hairs, awned, 1 -awned. Principal lemma awn bigeniculate, 200–250 mm long overall, with twisted column, limb pubescent. Column of lemma awn hispidulous, hairy on the spiral. Palea without keels.

**Flower and Fruit.** Lodicules 3. Anthers 3, anther tip smooth. Stigmas 2. Ovary glabrous. Caryopsis with adherent pericarp, fusiform. Hilum linear.

**Distribution (TDWG). Continent.** Europe.

**Region. Southwestern Europe.**

**Country /Province /State.** : Spain.



**Stipa cernua** Stebbins & Love. *Madrono*, vi. 137 (1941).

**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 USA. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: USA: California: West side of Cedar Mountain Ridge, Alameda County, *G. L. Stebbins 2732* (HT: UC-641631).

**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. nodding*. Panicle branches pendant.

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial, caespitose, clumped densely. Culms erect, 60–90 cm long. Leaf-sheaths glabrous on surface. Ligule an eciliate membrane, 2 mm long. Leaf-blades flat or involute, 1.2–2.4 mm wide, glaucous. Leaf-blade surface pilose, hairy adaxially or on both sides.

**Inflorescence.** Inflorescence a panicle, exerted or embraced at base by subtending leaf. Panicle open, linear, 30–50 cm long. Primary panicle branches ascending or spreading. Panicle branches flexuous. 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, 12–19 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus elongated, 2 mm long, pubescent, pungent.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume linear or lanceolate, 12–19 mm long, 1.1–1.7 length of upper glume, membranous, without keels, 3 -veined. Lower glume apex acuminate. Upper glume linear or lanceolate, 11 mm long, 1.1–2 length of adjacent fertile lemma, membranous, without keels, 3 -veined. Upper glume apex acuminate.

**Florets.** Fertile lemma elliptic, subterete, 5–10 mm long, chartaceous, without keel, more than 3-veined. Lemma surface papillose, pilose, hairy below. Lemma margins convolute, covering most of palea. Lemma apex awned, 1 -awned. Principal lemma awn bigeniculate, 60–110 mm long overall, with twisted column. Column of lemma awn glabrous or hispidulous. Palea ovate, 1–1.5 mm long, 0 -veined, without keels. Palea apex obtuse.

**Flower and Fruit.** Anthers 3. Stigmas 2. Caryopsis with adherent pericarp, trigonous, 4 mm long, light brown. Hilum linear.

**Distribution (TDWG). Continent.** Pacific, North America.

**Country /Province /State.** North-central Pacific. Hawaii (\*). Southwestern USA, Mexico. California. Northwest Mexico.

**Stipa chingii** Hitchcock. *Proc. Biol. Soc. Wash.* xliii. 94. (1930).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online.

**TYPE** from China. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: China: Gansu: Labrang, open woods, 4000 m, 17–20 Aug. 1923, *R.C. Ching 785* (HT: US-1245799).

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): in honor of Ching Ren-chang (1898–1986) Chinese botanist.

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Culms erect, slender, 80 cm long. Leaf-sheaths glabrous on surface. Ligule an eciliate membrane, 2–3 mm long. Leaf-blades flexuous, filiform, 15–20 cm long, 0.5–1 mm wide. Leaf-blade surface ribbed, scaberulous.

**Inflorescence.** Inflorescence a panicle. Panicle open, elliptic, 15–20 cm long, with spikelets clustered towards branch tips. Panicle branches capillary, scabrous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 7–9 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus evident, 1 mm long, acute.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 1 length of upper glume, membranous, without keels. Lower glume apex obtuse. Upper glume lanceolate, 7–9 mm long, membranous, without keels. Upper glume apex obtuse.

**Florets.** Fertile lemma lanceolate, subterete, 6 mm long, coriaceous, without keel, 5 -veined, more than 3-veined. Lemma surface pubescent, hairy below. Lemma margins convolute, covering most of palea. Lemma apex awned, 1 -awned. Principal lemma awn bigeniculate, 13 mm long overall, with twisted column. Middle segment of lemma awn 4 mm long. Column of lemma awn 1 mm long, puberulous. Palea without keels.

**Flower and Fruit.** Anthers 3. Stigmas 2. Ovary glabrous. Caryopsis with adherent pericarp, fusiform. Hilum linear.

**Distribution (TDWG). Continent.** Temperate Asia.  
**Country /Province /State. China.** China South Central, China North-Central, Qinghai, Tibet.  
**TDWG4.** Gansu, Shaanxi, Shanxi, Sichuan, Yunnan.

**Stipa chitralensis** Bor. *Kew Bull.* 1954, 500 (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 Pakistan. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Pakistan: Chitral: Gugar, ca. 3000 m, 18 May 1895, *Lt. S.A. Harriss 16800* (HT: K; IT: UW-993626) known only from the type.

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): L. -ensis, denoting origin. From the Chitral District, Pakistan.

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Rhizomes elongated. Culms erect, 20–40 cm long. Ligule an eciliate membrane, 1.5 mm long, truncate. Leaf-blades flexuous, flat or involute, 10–25 cm long, 2.5–6 mm wide. Leaf-blade surface glabrous. Leaf-blade margins scabrous. Leaf-blade apex acuminate, filiform.

**Inflorescence.** Inflorescence a panicle. Panicle contracted, elliptic, 8–10 cm long, 2 cm wide. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 9–10 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus evident, 0.5 mm long, bearded, obtuse.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma, shiny. Lower glume oblong, 7–8 mm long, 0.75 length of upper glume, hyaline, without keels, 3 -veined. Lower glume apex acute. Upper glume elliptic, 8.5–9.5 mm long, 1 length of adjacent fertile lemma, hyaline, without keels, 5 -veined. Upper glume apex acute.

**Florets.** Fertile lemma lanceolate, subterete, 9–10 mm long, membranous, without keel, 5 -veined, more than 3-veined. Lemma surface pilose. Lemma margins convolute, covering most of palea. Lemma hairs 2 mm long. Lemma apex lobed, 2 -fid, with lobes 2.5 mm long, incised 0.25 of lemma length, awned, 1 -awned. Principal lemma awn from a sinus, geniculate, 16–20 mm long overall, with a straight or slightly twisted column. Column of lemma awn 6 mm long, glabrous. Palea 1 length of lemma, 2 -veined, without keels. Palea surface pilose, hairy on back.

**Flower and Fruit.** Lodicules 2, linear. Anthers 3, 6 mm long. Stigmas 2. Ovary glabrous. Caryopsis with adherent pericarp. Hilum linear.

**Distribution (TDWG). Continent.** Temperate Asia, Tropical Asia.

**Country /Province /State. Western Asia. Iran. Indian Subcontinent.** Pakistan.

**Stipa clandestina** Hack. Fedde, *Repert. Nov. Sp.* viii. 516 (1910).

**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: LT: *Arsène 3441*, Mar 1908, Mexico: Coahuila: Saltillo (W; ILT: MO-845904, US-1030718, US-3168628 (fragm. ex W)). LT designated by Hitchcock, *Contr. U.S. Natl. Herb.* 24(7): 238 (1925). Although this number is attributed to Michoacán by Hackel in the protologue, the labels on the MO and US specimens indicate that the collection was made in Coahuila. A transcription error seems probable.-- *fide* G. Davidse, 1998. ST: *E. Palmer 3*, Apr 1898, Mexico: Coahuila: prope Saltillo (MO, US).

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): L. hidden. The inflorescence is enclosed or partially enclosed in the upper leaf-sheath.

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial. Culms erect, 50–80 cm long, 1–2 -noded. Culm-internodes distally glabrous. Leaf-sheaths glabrous on surface. Leaf-sheath oral hairs ciliate. Ligule an eciliate membrane, 1 mm long, pilose on abaxial surface. Leaf-blades flat or conduplicate or involute, 10–20 cm long, 1–2 mm wide, light green. Leaf-blade apex hardened.

**Inflorescence.** Inflorescence a panicle, terminal or terminal and axillary, embraced at base by subtending leaf or enclosed. Axillary inflorescences different from terminal (cleistogamous), enclosed. Panicle open, lanceolate, 10–20 cm long. Primary panicle branches appressed or ascending. Panicle branches bearded in axils. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 8 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus evident, 1 mm long, pubescent (white), acute.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 1 length of upper glume, chartaceous, without keels, 3 -veined. Lower glume surface asperulous. Lower glume apex acuminate. Upper glume lanceolate, 8 mm long, chartaceous, without keels, 3 -veined. Upper glume surface asperulous. Upper glume apex acuminate.

**Florets.** Fertile lemma linear, subterete, 6 mm long, coriaceous, pallid, without keel, 5 -veined, more than 3-veined. Lemma surface pilose, hairy below. Lemma margins convolute, covering most of palea. Lemma hairs white. Lemma apex surmounted by a ring of hairs, with this appendage 1 mm long, awned, 1 -awned. Principal lemma awn bigenulate, 11–18 mm long overall, with twisted column. Middle segment of lemma awn 3–5 mm long. Column of lemma awn 3–5 mm long. Palea 2 -veined, without keels.

**Flower and Fruit.** Lodicules 3. Anthers 3. Stigmas 2. Ovary glabrous. Caryopsis with adherent pericarp. Hilum linear.

**Distribution (TDWG).** Continent. Africa, North America.

**Country /Province /State.** Southern Africa. Western Cape. Mexico. Northeast Mexico, Southwest Mexico.

**TDWG4.** Aguascalientes, Zacatecas. Michoacan.

### **Stipa concinna** Hook. f. *Fl. Brit. Ind.* vii. 230. (1896).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online, N.L.Bor, Grasses of Burma, Ceylon, India and Pakistan (1960), N.Tsvelev, *Grasses of the Soviet Union* (1983) (as *Ptilagrostis*).

**TYPE** from China. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: T: *Hooker & Thomson*, (K).

**ST:** *Herb. India Orient. Hooker f. & Thomson*, Sept. 1849, Momuy (K-H584/97–2).

**Illustrations (Books):** S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 279 as *Ptilagrostis*).

**Derivation** (Clifford & Bostock 2007): L. elegant. Panicles or habit attractive.

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Butt sheaths persistent and investing base of culm. Culms 8–22 cm long. Ligule an eciliate membrane, 1.5–2 mm long. Leaf-blades flexuous, filiform, involute, 0.5–0.8 mm wide.

**Inflorescence.** Inflorescence a panicle. Panicle contracted, linear, 2.5–5 cm long. Primary panicle branches appressed. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 4.5–6.5 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus evident, 0.4 mm long, pubescent, obtuse.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume elliptic, 1 length of upper glume, membranous, purple, without keels, 1(–3) -veined. Lower glume lateral veins absent or obscure. Lower glume apex acute. Upper glume elliptic, 4.5–6.5 mm long, membranous, purple, without keels, 3 -veined. Upper glume apex acute.

**Florets.** Fertile lemma elliptic, subterete, 3.5–5 mm long, coriaceous, light brown, without keel, more than 3-veined. Lemma surface pilose, hairy below. Lemma margins convolute, covering most of palea. Lemma apex dentate, 2 -fid, with lobes 0.3–0.5 mm long, awned, 1 -awned. Principal lemma awn geniculate, 10–15 mm long overall, with twisted column, limb plumose, with 0.75–1 mm long hairs. Column of lemma awn plumose, with 0.75–1 mm long hairs. Palea 2 -veined, without keels.

**Flower and Fruit.** Anthers 3. Stigmas 2. Ovary glabrous. Caryopsis with adherent pericarp. Hilum linear.

**Distribution (TDWG).** Continent. Temperate Asia, Tropical Asia.

**Country /Province /State.** Middle Asia, China. Kirgizistan, Tadjikistan. China South Central, China North-Central, Qinghai, Tibet, Xinjiang. Indian Subcontinent. Eastern Himalaya, Pakistan, West Himalaya.

**TDWG4.** Gansu, Shaanxi. Sichuan, Yunnan. Sikkim.

### **Stipa confusa** Litw. *Bull. Acad. Sc. U.R.S.S.* 1928, Ser. VII. 53. (1929).

**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: Russia: "In Sibiriae prov. Tobolsk, Altai, Semipalatinsk (distr. Ustkamenogorsk), Jenisej (prov. Krasnojarsk. et Minusinsk), Irkutsk, Transbaikalia, Jakutsk (distr. Jakutsk)".

**Illustrations (Books):** No illustration found (BKS).

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Basal innovations extravaginal. Culms 30–120 cm long. Ligule an eciliate membrane, 0.2–1 mm long. Leaf-blades flat or convolute, 1–3 mm wide, indurate. Leaf-blade surface scabrous, rough adaxially, puberulous, sparsely hairy, hairy adaxially.

**Inflorescence.** Inflorescence a panicle. Panicle contracted, oblong, 5–30 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, 6–13 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus evident, 0.7–1 mm long, pubescent, acute.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 1 length of upper glume, membranous, without keels, 3 -veined. Lower glume apex acute. Upper glume lanceolate or elliptic, 6–13 mm long, 1.5–1.6 length of adjacent fertile lemma, membranous, without keels, 3 -veined. Upper glume surface scabrous, rough generally. Upper glume apex acute.

**Florets.** Fertile lemma elliptic, subterete, 4–8 mm long, coriaceous, without keel, more than 3-veined. Lemma surface pubescent, hairy all along. Lemma margins convolute, covering most of palea. Lemma apex awned, 1 -awned. Principal lemma awn bigenulate, 14–25 mm long overall, with twisted column. Palea 2 -veined, without keels.

**Flower and Fruit.** Anthers 3, anther tip smooth. Stigmas 2. Ovary glabrous. Caryopsis with adherent pericarp. Hilum linear.

**Distribution (TDWG). Continent.** Europe.

**Country /Province /State.** Siberia and Russian far east. Altay, Buryatiya, Chita, Irkutsk, Krasnoyarsk, Tuva. Amur, Kamchatka, Primorye, Sakhalin.

**TDWG4.**

**Stipa consanguinea** Trin. & Rupr. *Mem. Acad. Petersb. Ser. VI. Sc. Nat.* v. 78 (1842).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), S-L Chen et al, *Flora of China* 22 (Poaceae) (2006), N.L.Bor, *Grasses of Burma, Ceylon, India and Pakistan* (1960), N.Tsvelev, *Grasses of the Soviet Union* (1983).

**TYPE** from Russia. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Russia: Siberia: Altai, near Tschuga river, 1832, *Bunge s.n.* (HT: LE; IT: LE).

**Recent Synonyms:** *Stipa koelzii* R. R. Stewart, *Brittonia* 5: 441 (1945).

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): L. con, with; sanguineus, blood-red. Spikelets or inflorescence branches reddish.

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Culms 17–25(–75) cm long. Ligule an eciliate membrane, 1–1.5 mm long. Leaf-blades linear, flat or conduplicate, 10–20 cm long, 1–5 mm wide. Leaf-blade surface puberulous, hairy adaxially or on both sides.

**Inflorescence.** Inflorescence a panicle, embraced at base by subtending leaf. Panicle contracted, linear, 6–12 cm long, 1–2 cm wide. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 20–25 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus elongated, 1.8–2.3 mm long, pubescent, pungent.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 1 length of upper glume, membranous, without keels, 3 -veined. Lower glume apex attenuate. Upper glume lanceolate, 20–25 mm long, membranous, without keels, 3 -veined. Upper glume apex attenuate.

**Florets.** Fertile lemma elliptic, subterete, 8–10 mm long, coriaceous, without keel, more than 3-veined. Lemma surface pubescent, hairy below, hairy in lines. Lemma margins convolute, covering most of palea. Lemma apex surmounted by a ring of hairs, awned, 1 -awned. Principal lemma awn bigenulate, twisted together, 55–90 mm long overall, with twisted column, deciduous, limb pubescent, with 0.5–0.8 mm long hairs. Column of lemma awn pubescent, with 0.5–0.8 mm long hairs. Palea 2 -veined, without keels.

**Flower and Fruit.** Anthers 3. Stigmas 2. Ovary glabrous. Caryopsis with adherent pericarp. Hilum linear.

**Distribution (TDWG). Continent.** Temperate Asia, Tropical Asia.

**Country /Province /State.** Siberia, **China, Mongolia, Russia.** Altay. Xinjiang. Mongolia. **Indian Subcontinent.** Eastern Himalaya, Pakistan.

**TDWG4.** Arunachal Pradesh, Darjeeling, Bhutan, Sikkim. Himachal Pradesh, Jammu Kashmir, Uttaranchal.

**Stipa crassiculmis** P. Smirn. Fedde, *Repert.* xxii. 375 (1926).

Regarded by K as a synonym (*S. pulcherrima*).

**Accepted by:** U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), T.G.Tutin et al, *Flora Europaea* 5 (1980).

**TYPE** from Russia. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: [USSR]: "Turcomania: Montes Kopetdag, in transvallio Arvas, ...", *Kultiassow s.n.* ("Herb. Univ. Asiae Mediae").

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): *L. crassus*, thick; *culmus*, stalk. Culms thicker than those of related species.

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Distribution (TDWG). Continent.** Europe.

**Region. Southeastern Europe, Eastern Europe, Middle Europe.**

**Country /Province /State.** : Czechoslovakia, Hungary. : Bulgaria, Greece, Yugoslavia. Northwest European Russia.

**Stipa cretacea** P. Smirn. *Bull. Soc. Nat. Mosc., Biol.*, n. s. xlix. 1. 90. (1940).

**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 Russia. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: "Hab. ...ad fluminem Coerulea (rossice 'Golubaja' vocatur)prov. Stalingradensis, distr. Ssirotinskij (olim Terra Cosaccorum Tanaiticorum) 49 5 lat. sept. et 43 30 long. or ubi vivam observavit et... specimina fructifera numerosa pro edition....", *P. Smirnow s.n.*; 8-VI-1938 ("Typus in Herb. Univ. Mosq.").

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): *L. chalk-white*. Spikelets white.

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Butt sheaths persistent and investing base of culm, with compacted dead sheaths. Culms erect, 30–40 cm long, 3-noded. Culm-internodes distally glabrous. Leaves basal and cauline. Leaf-sheaths pubescent, outer margin hairy, inner surface puberulous. Leaf-sheath oral hairs ciliate, 1 mm long. Ligule an eciliate membrane, 3–3.5 mm long, 0.5–3 mm long on basal shoots, pubescent on abaxial surface, bilobed or trilobed. Leaf-blades filiform, convolute, 0.7 mm wide. Leaf-blade venation with 7 secondary veins. Leaf-blade surface smooth, pilose, hairy adaxially. Leaf-blade apex acuminate.

**Inflorescence.** Inflorescence a panicle. Panicle open. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rachilla extension. Spikelets of 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, 60–70 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus evident, pilose, hairy on the margins, acute. Floret callus hairs 4–5 mm long.

**Glumes.** Glumes persistent, similar, subequal in width, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 1 length of upper glume, membranous. Lower glume apex acute. Upper glume lanceolate, 60–70 mm long, membranous, without keels. Upper glume apex acute.

**Florets.** Fertile lemma linear to lanceolate, subterete, 21–23 mm long, coriaceous, without keel, more than 3-veined. Lemma margins convolute, covering most of palea. Lemma apex awned, 1-awned. Principal lemma awn bigeniculate, 270–320 mm long overall, with 190–240 mm long limb, with twisted column, limb plumose, with 5 mm long hairs. Middle segment of lemma awn 18–20 mm long. Column of lemma awn 50–60 mm long, smooth. Palea 2-veined, without keels.

**Flower and Fruit.** Lodicules 3. Anthers 3. Stigmas 2. Caryopsis with adherent pericarp.

**Distribution (TDWG). Continent.** Europe.

**Region. Eastern Europe.**

**Country /Province /State.** East European Russia, South European Russia.

**TDWG4.**

**Stipa czerepanovii** Yu.A. Kotukhov. *Turczaninowia*, 1(2): 13 (1998).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online.

**TYPE** from Russia. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: Russia, Altai, Akseir: Kotuchov (LE holotype).

**Illustrations (Books):** No illustration found (BKS).

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Butt sheaths persistent and investing base of culm, with compacted dead sheaths. Culms 45–60 cm long. Culm-internodes distally glabrous. Leaf-sheaths pubescent, outer margin hairy. Ligule a ciliolate membrane, 1–2 mm long, 0.5–1.1 mm long on basal shoots, pubescent on abaxial surface. Leaf-blades filiform, conduplicate, 0.3–0.45 mm wide. Leaf-blade surface scabrous, rough abaxially, puberulous, hairy adaxially.

**Inflorescence.** Inflorescence a panicle. Panicle contracted, linear, 10–20 cm long. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 13–15 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus elongated, 1.4–1.6 mm long, pubescent, pungent.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, membranous, without keels. Lower glume primary vein scabrous. Lower glume apex attenuate. Upper glume lanceolate, 13–15 mm long, membranous, without keels. Upper glume primary vein scabrous. Upper glume apex attenuate.

**Florets.** Fertile lemma elliptic, subterete, 7–7.5 mm long, coriaceous, without keel, more than 3-veined. Lemma surface pubescent, hairy in lines (7 lines). Lemma margins convolute, covering most of palea. Lemma apex surmounted by a ring of hairs, awned, 1 -awned. Principal lemma awn bigeniculate, 60–75 mm long overall, with twisted column, limb pubescent, with 1.3–1.5 mm long hairs. Column of lemma awn pubescent, with 0.3–0.5 mm long hairs. Palea without keels.

**Flower and Fruit.** Anthers 3, 4–4.5 mm long.

**Distribution (TDWG). Continent.** Temperate Asia.

**Country /Province/State. Middle Asia.** Kazakhstan.

**Stipa daghestanica** Grossheim. *Monit. Jard. Bot. Tiflis, Ann.* xiii-xiv. 29 (1919).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online.

**TYPE** from Russia. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: [Europe: USSR]: "In distr. Andi et Gunib Daghestaniae crescit, 4000–6000', in declivibus siccis et calcareis.", A. Grossheim *s.n.*; 1915 ("Typus in Horto Tiflisiensi").

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): L. -ica, belonging to. From Daghestan, former Soviet Union.

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial, caespitose, clumped densely. Rhizomes short. Culms 40–80 cm long. Ligule an ciliate membrane. Leaf-blades filiform, conduplicate, 15–80 cm long, 1–2 mm wide. Leaf-blade surface puberulous, hairy adaxially.

**Inflorescence.** Inflorescence a panicle. Panicle open, ovate, 12–25 cm long, bearing few spikelets. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 30–35 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus elongated, glabrous, acute.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 1 length of upper glume, membranous, pallid, without keels, 3 -veined. Lower glume apex attenuate. Upper glume lanceolate, 30–35 mm long, membranous, pallid, without keels, 3–5 -veined. Upper glume apex attenuate.

**Florets.** Fertile lemma lanceolate, subterete, 10–12 mm long, coriaceous, without keel, 5 -veined, more than 3-veined. Lemma surface glabrous. Lemma margins convolute, covering most of palea. Lemma apex surmounted by a ring of hairs, awned, 1 -awned. Principal lemma awn bigeniculate, 80–110 mm long overall, with twisted column, limb puberulous. Column of lemma awn 50–60 mm long, puberulous. Palea 2 -veined, without keels.

**Flower and Fruit.** Lodicules 3. Anthers 3. Stigmas 2. Ovary glabrous. Caryopsis with adherent pericarp, fusiform. Hilum linear.

**Distribution (TDWG). Continent.** Temperate Asia.

**Country /Province /State.** Caucasus. North Caucasus.  
**TDWG4.**

**Stipa danubialis** Dihoru & Roman. *Rev. Roumaine Biol., Ser. Bot.*, xiv. 26 (1969).

**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 Rumania. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Rumania, Turnu-Severin: Roman.

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): L. -alis, pertaining to. Growing near the River Danube.

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial, caespitose, clumped densely. Culms 80–90 cm long, 5 -noded. Culm-internodes distally pubescent. Leaf-sheaths longer than adjacent culm internode, retrorsely scabrous. Ligule an eciliate membrane, 3.5–7 mm long. Leaf-blades 2.3–2.5 mm wide. Leaf-blade surface ribbed, scabrous, rough adaxially, glabrous.

**Inflorescence.** Inflorescence a panicle, comprising 9–12 fertile spikelets. Panicle open, 9–15 cm long, bearing few spikelets. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 48–57 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus evident, acute.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 1 length of upper glume, membranous, without keels. Lower glume apex setaceously acuminate. Upper glume lanceolate, 48–57 mm long, membranous, without keels. Upper glume apex setaceously acuminate.

**Florets.** Fertile lemma lanceolate, subterete, 23–25 mm long, coriaceous, without keel, 5 -veined, more than 3-veined. Lemma surface pubescent, hairy in lines. Lemma margins convolute, covering most of palea. Lemma apex awned, 1 -awned. Principal lemma awn bigeniculate, 286–363 mm long overall, with twisted column, limb plumose, with 5 mm long hairs. Middle segment of lemma awn 6–20 mm long, ciliate. Column of lemma awn 40–48 mm long, pubescent, with 2 mm long hairs. Palea without keels.

**Flower and Fruit.** Lodicules 3. Anthers 3. Stigmas 2. Ovary glabrous. Caryopsis with adherent pericarp, fusiform. Hilum linear.

**Distribution (TDWG).** Continent. Europe.

**Region.** Southeastern Europe.

**Country /Province /State.** : Romania.

**Stipa dasyphylla** (Lindem.) Czern. ex Trautv. *Act. Hort. Petrop.* ix. 350 (1884).

**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 Russia. **Basionym or Replaced Name:** *Stipa pennata* var. *dasyphylla* Lindem., *Fl. Cherson.* 2:283 (1882). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Russia, Kharkhov: Chernyaev (LE lecto).

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): Gk. dasys, hairy; phyllon, leaf. Leaf-blades hairy.

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Culms 40–80 cm long. Leaf-sheaths puberulous. Ligule an eciliate membrane. Leaf-blades convolute, 1–3 mm wide, grey-green. Leaf-blade surface pubescent, densely hairy, hairy on both sides.

**Inflorescence.** Inflorescence a panicle, comprising 5–7 fertile spikelets. Panicle open, linear, 7–12 cm long, bearing few spikelets. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 50–70 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus evident, acute.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 1 length of upper glume, membranous, without keels. Lower glume apex setaceously acuminate.

Upper glume lanceolate, 50–70 mm long, membranous, without keels. Upper glume apex setaceously acuminate.

**Florets.** Fertile lemma lanceolate, subterete, 20–22 mm long, coriaceous, without keel, 5 -veined, more than 3-veined. Lemma surface pubescent, hairy in lines. Lemma margins convolute, covering most of palea. Lemma apex awned, 1 -awned. Principal lemma awn bigeniculate, 35–45 mm long overall, with twisted column, limb plumose, with 5–6 mm long hairs. Column of lemma awn glabrous. Palea without keels.

**Flower and Fruit.** Lodicules 3. Anthers 3. Stigmas 2. Ovary glabrous. Caryopsis with adherent pericarp, fusiform. Hilum linear.

**Distribution (TDWG). Continent.** Europe, Temperate Asia.

**Region. Middle Europe, Southeastern Europe, Eastern Europe.**

**Country /Province /State.** : Czechoslovakia, Germany, Hungary. : Romania. Central European Russia, East European Russia, South European Russia, Northwest European Russia, Ukraine. Siberia, **Caucasus.** Altay.

**TDWG4.**

**Stipa dasyvaginata** Martinovsky. *An. Inst. Bot. A. J. Cavan.* xxvii. 61 (1970).

**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, Mt. Dornajo: Winkler (PR holo).

**Illustrations (Books):** No illustration found (BKS).

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Culms 25–50 cm long. Culm-internodes distally pubescent. Leaf-sheaths pubescent. Ligule a ciliolate membrane, 2.5–5 mm long on basal shoots. Leaf-blades 1–2 mm wide. Leaf-blade surface ribbed, scabrous, glabrous.

**Inflorescence.** Inflorescence a panicle. Peduncle pubescent above. Panicle contracted, linear. 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, 45–70 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus evident, acute.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 1 length of upper glume, membranous, without keels. Lower glume apex acuminate. Upper glume lanceolate, 45–70 mm long, membranous, without keels. Upper glume apex acuminate.

**Florets.** Fertile lemma lanceolate, subterete, 20–22 mm long, coriaceous, without keel, 5 -veined, more than 3-veined. Lemma surface pubescent, hairy all along, hairy between veins. Lemma margins convolute, covering most of palea. Lemma apex awned, 1 -awned. Principal lemma awn bigeniculate, 350 mm long overall, with twisted column, limb plumose. Palea without keels.

**Flower and Fruit.** Lodicules 3. Anthers 3. Stigmas 2. Ovary glabrous. Caryopsis with adherent pericarp, fusiform. Hilum linear.

**Distribution (TDWG). Continent.** Europe.

**Region. Southwestern Europe.**

**Country /Province /State.** : Spain.

**Stipa dregeana** Steud., non *S.capensis* Thunb.(1794). *Syn. Pl. Gram.* 132. (1855).

**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, Cape: Drege (K iso).

**Illustrations (Books):** R.M.Pohill, F.T.E.A., *Gramineae* (1(1970):116, Fig.37), L.K.A. Chippindall, *Grasses and Pastures of South Africa* (1955) (288, Fig 258 var. *elongata*), G.E.Gibbs Russell et al, *Grasses of Southern Africa* (1990) (317, Fig 205).

**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 Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Rhizomes short, knotty. Culms 90–150 cm long. Ligule an eciliate membrane, 2–3 mm long. Leaf-blades 30–60 cm long, 6–12 mm wide. Leaf-blade surface glabrous or hirsute, sparsely hairy.



**Inflorescence.** Inflorescence a panicle. Panicle open, elliptic, dense or loose, 15–40 cm long. Primary panicle branches ascending or spreading, naked below or bearing spikelets almost to the base. Panicle branches stiff or flexible, scabrous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 6–7 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus brief, 0.5 mm long, pubescent, obtuse.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume elliptic, 1 length of upper glume, membranous, without keels, 3 -veined. Lower glume apex acute or acuminate. Upper glume elliptic, 6–7 mm long, membranous, without keels, 3 -veined. Upper glume apex acute or acuminate.

**Florets.** Fertile lemma elliptic, subterete, 5–6 mm long, coriaceous, without keel, 5 -veined, more than 3-veined. Lemma surface pubescent, hairy all along. Lemma margins convolute, covering most of palea. Lemma apex dentate, 2 -fid, awned, 1 -awned. Principal lemma awn from a sinus, straight, 10–15 mm long overall, without a column. Palea 2 -veined, 2-keeled. Palea surface pubescent, hairy on flanks.

**Flower and Fruit.** Anthers 3. Stigmas 2. Ovary glabrous. Caryopsis with adherent pericarp. Hilum linear.

**Distribution (TDWG).** Continent. Europe (\*), Africa.

**Region.** Northern Europe (\*).

**Country /Province /State.** : GB Aliens (Ryves et al). **East tropical Africa, Southern Africa.** Kenya, Tanzania. Limpopo, North-West, Gauteng, Mpumalanga, Free State, Kwazulu-Natal, Western Cape, Eastern Cape.

**Stipa duthiei** Hook. f. *Fl. Brit. Ind.* vii. 232. (1896).

**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: Garwhal, 12–13,000 ft, *Duthie 273* (HT: ?).

**Illustrations (Books):** H.J.Noltie, *The Grasses of Bhutan* (2000) (523, Fig.10).

**Derivation** (Clifford & Bostock 2007): in honor of John Firminger Duthie (1845–1922) English botanist who collected in India.

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Culms 100–160 cm long. Ligule an eciliate membrane, obtuse. Leaf-blades flat or convolute, 30–45 cm long, 2–3 mm wide. Leaf-blade apex filiform.

**Inflorescence.** Inflorescence a panicle. Panicle open, elliptic, effuse, 20–25 cm long. Primary panicle branches 4–7 cm long. Panicle branches capillary. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 10–12 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus pubescent, acute.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma, shiny. Lower glume lanceolate, 10–12 mm long, 1 length of upper glume, hyaline, pallid, without keels, 3 -veined. Lower glume apex acuminate. Upper glume lanceolate, 10–12 mm long, hyaline, pallid, without keels, 5 -veined. Upper glume apex acuminate.

**Florets.** Fertile lemma lanceolate, subterete, 6–7 mm long, coriaceous, without keel, 5 -veined, more than 3-veined. Lemma surface pubescent. Lemma margins convolute, covering most of palea. Lemma apex dentate, 2 -fid, awned, 1 -awned. Principal lemma awn from a sinus, geniculate, 15 mm long overall, with twisted column. Column of lemma awn pubescent. Palea 1 length of lemma, 2 -veined, without keels.

**Flower and Fruit.** Anthers 3. Stigmas 2. Ovary glabrous. Caryopsis with adherent pericarp. Hilum linear.

**Distribution (TDWG).** Continent. Temperate Asia, Tropical Asia.

**Country /Province /State.** **China.** China South Central, China North-Central, Qinghai, Tibet. **Indian Subcontinent.** Eastern Himalaya, India, Nepal, Pakistan.

**TDWG4.** Shaanxi, Sichuan, Yunnan, Sikkim, Himachal Pradesh, Jammu Kashmir, Uttaranchal.

**Stipa ehrenbergiana** Trin. & Rupr. *Mem. Acad. Petersb. Ser. VI. Sc. Nat.* v. 75 (1842).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online, N.Tsvelev, *Grasses of the Soviet Union* (1983).

**TYPE** from Syria. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Syria, Ehrenberg *s.n.*.

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): L. -ana, indicating connection. In honor of Christian Gottfried Ehrenberg (1795–1876) German physician and naturalist.

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Culms erect, 30–70 cm long. Ligule an eciliate membrane, 4–6 mm long. Leaf-blades filiform, involute, 1–2.5 mm wide, stiff. Leaf-blade surface glabrous.

**Inflorescence.** Inflorescence a panicle, embraced at base by subtending leaf. Panicle open, linear, 15–35 cm long, bearing few spikelets. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 45–55 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus elongated, curved, pubescent, pungent.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 1 length of upper glume, membranous, without keels, 3(–5) -veined. Lower glume apex acuminate. Upper glume lanceolate, 45–55 mm long, membranous, without keels, 3(–5) -veined. Upper glume apex acuminate.

**Florets.** Fertile lemma elliptic, subterete, 8–11.5 mm long, coriaceous, without keel, more than 3-veined. Lemma midvein ciliate. Lemma surface pubescent, hairy in lines. Lemma margins convolute, covering most of palea. Lemma apex surmounted by a ring of hairs, awned, 1 -awned. Principal lemma awn bigeniculate, 100–160 mm long overall, with twisted column, deciduous, limb plumose, with 2–4 mm long hairs. Column of lemma awn pubescent, with 0.5–1.3 mm long hairs. Palea 2 -veined, without keels.

**Flower and Fruit.** Anthers 3. Stigmas 2. Ovary glabrous. Caryopsis with adherent pericarp. Hilum linear.

**Distribution (TDWG). Continent.** Temperate Asia.

**Country /Province /State. Caucasus, Western Asia.** Transcaucasus. Turkey.

**TDWG4.**

**Stipa endotricha** Martinovsky. *Preslia*. 44(1): 12 (1972).

**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>: *fide* TROPICOS and Kew Synonymy Database: Greece, Bornmüller 1580 (W holo).

**Recent Synonyms:** *Stipa monticola* H. Scholz, *Willdenowia* 23:117 (1993).

**Illustrations (Books):** No illustration found (BKS).

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Butt sheaths pubescent. Culms 30–50 cm long. Culm-internodes distally pubescent. Leaf-sheaths antrorsely scabrous. Ligule a ciliate membrane, 2–5 mm long, 1 mm long on basal shoots. Leaf-blades conduplicate, 1–2 mm wide. Leaf-blade surface ribbed, with rectangular ribs, smooth, pubescent, sparsely hairy, hairy adaxially. Leaf-blade apex acuminate, antrorsely scabrous.

**Inflorescence.** Inflorescence a panicle, comprising 3–8 fertile spikelets. Peduncle pubescent above. Panicle contracted, linear, bearing few spikelets. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 30–60 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus evident, pilose, acute.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 1 length of upper glume, membranous, without keels. Lower glume apex acuminate. Upper glume lanceolate, 30–60 mm long, membranous, without keels. Upper glume apex acuminate.

**Florets.** Fertile lemma lanceolate, subterete, 19–21 mm long, coriaceous, without keel, 5 -veined, more than 3-veined. Lemma margins convolute, covering most of palea. Lemma apex awned, 1 -awned. Principal lemma awn bigeniculate, 250–270 mm long overall, with twisted column, limb plumose, with 5 mm long hairs. Palea without keels.

**Flower and Fruit.** Lodicules 3. Anthers 3. Stigmas 2. Ovary glabrous. Caryopsis with adherent pericarp, fusiform. Hilum linear.

**Distribution (TDWG). Continent.** Europe.

**Region. Southeastern Europe.**

**Country /Province /State. :** Greece.

**Stipa epilosa** Martinovsky. *Preslut*, ix. 273 (1967).

Regarded by K as a synonym (*S. pulcherrima*).

**Accepted by:** T.G.Tutin et al, *Flora Europaea* 5 (1980).

**TYPE** from Turkey. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: IT: *J. Bornmueller*, 9 Jul 1889, Anatolia orientalis: Amasia: in mt. Ak-Dagh: 18–19000' (LE).

**Illustrations (Books):** No illustration found (BKS).

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Flower and Fruit.**  $2n = 44$  (2 refs TROPICOS), or 66 (1 ref TROPICOS).

**Distribution (TDWG). Continent.** Europe.

**Region. Southeastern Europe.**

**Country /Province /State.** : Bulgaria, Greece, Italy, Romania, Yugoslavia.

**Stipa fallacina** M.V. Klokov & V.V. Osychnyuk. *Novosti Sist. Vyssh. Nizsh. Rast.* (Kiev), 1975: 62 (1976).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online.

**TYPE** from Russia. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Russia, Ukraine, Chomutovskaja: Ossychnjuk (KW holo).

**Illustrations (Books):** No illustration found (BKS).

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial, caespitose, clumped densely. Culms 80–85 cm long, 1.2 mm diam., 3–4 -noded. Culm-internodes distally pubescent. Leaf-sheaths scaberulous, glabrous on surface. Ligule a ciliate membrane, 0.4–0.6 mm long, obtuse. Leaf-blades filiform, conduplicate, 50–70 cm long, 0.8–1 mm wide, grey-green. Leaf-blade surface puberulous, hairy on both sides. Leaf-blade apex attenuate.

**Inflorescence.** Inflorescence a panicle, comprising 7–8 fertile spikelets. Peduncle pilose above. Panicle open or contracted, linear or lanceolate, 13–16 cm long, bearing few spikelets. Panicle branches hispidulous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 40–55 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus elongated.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 1 length of upper glume, membranous, without keels. Lower glume surface glabrous. Lower glume apex acuminate. Upper glume lanceolate, 40–55 mm long, membranous, without keels. Upper glume surface glabrous. Upper glume apex acuminate.

**Florets.** Fertile lemma lanceolate, subterete, 11–14 mm long, coriaceous, without keel, 5 -veined, more than 3-veined. Lemma surface pubescent, hairy on veins, with conspicuous apical hairs. Lemma margins convolute, covering most of palea, pubescent. Lemma hairs 0.5 mm long. Lemma apex awned, 1 -awned. Principal lemma awn bigenulate, 290–320 mm long overall, with 190–230 mm long limb, with twisted column, limb plumose, with 3 mm long hairs. Column of lemma awn 85–100 mm long, ciliate, hairy on upper part. Palea without keels.

**Flower and Fruit.** Caryopsis with adherent pericarp, fusiform, 7 mm long. Hilum linear.

**Distribution (TDWG). Continent.** Europe.

**Region. Eastern Europe.**

**Country /Province /State.** Ukraine.

**Stipa fontanesii** Parl. *Fl. Ital.* i. 167 (1848).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), T.G.Tutin et al, *Flora Europaea* 5 (1980).

**TYPE** from Italy. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: [Italy],.

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): in honor of Reni Louiche Desfontaines (1750–1833) French botanist.

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial, caespitose, clumped densely. Culms erect, 40–60 cm long. Culm-internodes antrorsely scabrous. Leaf-sheaths smooth or scaberulous, glabrous on surface. Ligule an eciliate membrane, 5–10 mm long, acute. Leaf-blades filiform, conduplicate, 15–30 cm long, 0.4–0.8 mm wide. Leaf-blade venation with 7 secondary veins, with continuous uniform subepidermal sclerenchyma layer on the underside. Leaf-blade surface ribbed, scabrous, rough adaxially. Leaf-blade apex attenuate.

**Inflorescence.** Inflorescence a panicle. Panicle open, ovate, 10–20 cm long, bearing few spikelets. Primary panicle branches 2-nate. Panicle axis scabrous. Panicle branches scabrous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 18–25 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus elongated, 2 mm long, pubescent, acute.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 18–25 mm long, 1 length of upper glume, membranous, without keels, 3-veined. Lower glume apex attenuate. Upper glume lanceolate, 18–25 mm long, 1.8–2 length of adjacent fertile lemma, membranous, without keels, 3-veined. Upper glume apex attenuate.

**Florets.** Fertile lemma lanceolate, subterete, 10–13 mm long, coriaceous, without keel, 5-veined, more than 3-veined. Lemma surface pubescent, hairy above or at base. Lemma margins convolute, covering most of palea. Lemma apex awned, 1-awned. Principal lemma awn geniculate, 100–150 mm long overall, with twisted column. Column of lemma awn pubescent. Palea 1 length of lemma, coriaceous, 2-veined, without keels.

**Flower and Fruit.** Lodicules 2, 2 mm long. Anthers 3, 8–9 mm long, anther tip penicillate. Stigmas 2. Ovary glabrous. Caryopsis with adherent pericarp. Hilum linear.

$2n = 44$  (1 ref TROPICOS).

**Distribution (TDWG). Continent.** Europe, Africa.

**Region.** Southeastern Europe.

**Country /Province /State.** : Greece, Italy, Crete, Sicily. **Northern Africa.** Algeria, Morocco, Tunisia.

**Stipa gaubae** Bor. K. H. Rechinger, *Fl. Iran., Lief.* 70, 388 (1970).

**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, Karaj: Gauba 1632 (W holo, K).

**Illustrations (Books):** No illustration found (BKS).

**Illustrations (Journals):** *Bot. J. Linn. Soc.* (167:439, Fig.20 (2011)).

**Derivation** (Clifford & Bostock 2007): in honor of Erwin Gauba (1891–1964) Austrian-born Australian botanist.

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Butt sheaths persistent and investing base of culm, with compacted dead sheaths. Culms 10–20 cm long. Ligule an eciliate membrane. Leaf-blades flat or involute, 5–10 cm long, 3 mm wide. Leaf-blade surface puberulous, hairy adaxially.

**Inflorescence.** Inflorescence a panicle, embraced at base by subtending leaf. Panicle contracted, linear. 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, 50–60 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus elongated, 1.5 mm long, glabrous, acute.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 1 length of upper glume, membranous, much thinner above, without keels, 1–3-veined. Lower glume lateral veins absent or distinct. Lower glume apex caudate. Upper glume lanceolate, 50–60 mm long, membranous, much thinner above, without keels, 3–5-veined. Upper glume apex caudate.

**Florets.** Fertile lemma lanceolate, subterete, 13.5 mm long, coriaceous, without keel, 5-veined, more than 3-veined. Lemma surface pilose. Lemma margins convolute, covering most of palea. Lemma apex awned, 1-awned. Principal lemma awn geniculate, 220 mm long overall, with 180–200 mm long limb, with twisted column, limb hirsute, with 2.5 mm long hairs. Column of lemma awn 25 mm long, glabrous. Palea 2-veined, without keels.

**Flower and Fruit.** Lodicules 3. Anthers 3. Stigmas 2. Ovary glabrous. Caryopsis with adherent pericarp, fusiform. Hilum linear.

**Distribution (TDWG). Continent.** Temperate Asia.

**Country /Province /State.** **Caucasus, Western Asia.** Transcaucasus. Iran.

**Stipa gegarkunii** P. Smirn. *Wiss. Ber. Moskau. Staatsuniv.* ii. 333, (1934).

**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: IT: *P. Smirnow 48, Herb. Gramin. Select. Edit.*, 28 Jul 1929, [Caucasus]: Armenia: Lk. Sevan: Schordsha: elev. 1950 m (LE).

**Illustrations (Books):** No illustration found (BKS).

**Illustrations (Journals):** *Bot. J. Linn. Soc.* (167:438, Fig.19 (2011)).

**Derivation** (Clifford & Bostock 2007): in honor of Gegarkun, Russian botanist.

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial, caespitose, clumped densely. Butt sheaths persistent and investing base of culm, with compacted dead sheaths or fibrous dead sheaths. Culms erect, 30–50 cm long. Culm-internodes distally glabrous. Leaves basal and cauline. Leaf-sheaths glabrous on surface or puberulous, outer margin hairy. Leaf-sheath oral hairs ciliate. Ligule an eciliate membrane, 3–5 mm long, 0.4–0.6 mm long on basal shoots. Leaf-blades straight, filiform, terete, 15–30 cm long, 0.5–1 mm wide, light green. Leaf-blade surface puberulous, hairy adaxially.

**Inflorescence.** Inflorescence a panicle. Panicle open. 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, 50–70 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus evident, acute.

**Glumes.** Glumes persistent, similar, subequal in width, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 1 length of upper glume, membranous. Lower glume apex acute. Upper glume lanceolate, 20–70 mm long, membranous, without keels. Upper glume apex acute.

**Florets.** Fertile lemma linear to lanceolate, subterete, 16–19 mm long, coriaceous, without keel, more than 3-veined. Lemma surface pilose. Lemma margins convolute, covering most of palea. Lemma apex surmounted by a ring of hairs, awned, 1 -awned. Principal lemma awn geniculate or bigeniculate, 200–250 mm long overall, with twisted column, limb plumose, with 5 mm long hairs. Middle segment of lemma awn 10–15 mm long, hirtellous. Column of lemma awn 35–50 mm long. Palea 2 -veined, without keels.

**Flower and Fruit.** Lodicules 3. Anthers 3. Stigmas 2. Caryopsis with adherent pericarp.

**Distribution (TDWG). Continent.** Temperate Asia.

**Country /Province /State.** Caucasus. Transcaucasus.

**TDWG4.**

**Stipa gnezdilloi** Pazij. *Opred. Rast. Sred. Azii*, i. 77, 201 (1968).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online.

**TYPE** from Russia. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: Russia, Maidan: Gnezdillo 134 (TAK holo).

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): in honor of Gnezdillo.

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Culms 30–50 cm long. Ligule an eciliate membrane, 1.5–2 mm long. Leaf-blades filiform, convolute, 0.8–1 mm wide. Leaf-blade surface ribbed, smooth, pubescent, hairy adaxially.

**Inflorescence.** Inflorescence a panicle, embraced at base by subtending leaf. Panicle open, linear, 6–10 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, 40–50 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus evident, pubescent, acute.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 1 length of upper glume, membranous, without keels. Lower glume apex acuminate. Upper glume lanceolate, 40–50 mm long, membranous, without keels. Upper glume apex acuminate.

**Florets.** Fertile lemma lanceolate, subterete, 11–13 mm long, coriaceous, without keel, 5 -veined, more than 3-veined. Lemma surface pubescent, hairy below, hairy in lines. Lemma margins convolute, covering most of palea. Lemma apex awned, 1 -awned. Principal lemma awn bigeniculate, 120–135 mm long overall, with twisted column, limb plumose, with 3–4 mm long hairs. Column of lemma awn pubescent, with 0.2–0.3 mm long hairs. Palea without keels.

**Flower and Fruit.** Anthers 3. Stigmas 2. Ovary glabrous. Caryopsis with adherent pericarp, fusiform. Hilum linear.

**Distribution (TDWG). Continent.** Temperate Asia.

**Country /Province /State.** Middle Asia. Kazakhstan.  
**TDWG4.**

**Stipa gracilis** Roshev. *B. Fedtsch. Fl. Asiat. Ross.* xii. 151 (1916).

**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: [USSR]: "Turkestan: Prov. Semiretschje: distr. Pischpek. In montibus Tianschan, trajectis Tschemaldy, ad declivia orientali-borealis vallis fluvii Tschemaldynka In declivibus Petrosis valle.", *M. Spiridonow*, 23.VII.1915.

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): L. slender. Culms or inflorescences slender.

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Culms 25–35 cm long. Culm-internodes distally glabrous. Leaf-sheaths glabrous on surface. Ligule an eciliate membrane, 2 mm long. Leaf-blades filiform, involute, 0.5 mm wide. Leaf-blade surface ribbed, scabrous.

**Inflorescence.** Inflorescence a panicle. Panicle open, lanceolate, 5–10 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, 15 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus evident, pubescent, with longer hairs above, acute.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 1 length of upper glume, membranous, without keels. Lower glume apex acuminate. Upper glume lanceolate, 15 mm long, membranous, without keels. Upper glume apex acuminate.

**Florets.** Fertile lemma lanceolate, subterete, 7 mm long, coriaceous, without keel, 5 -veined, more than 3-veined. Lemma surface pubescent, hairy below, hairy in lines. Lemma margins convolute, covering most of palea. Lemma apex awned, 1 -awned. Principal lemma awn bigeniculate, 40–50 mm long overall, with twisted column, limb plumose. Palea without keels.

**Flower and Fruit.** Anthers 3. Stigmas 2. Ovary glabrous. Caryopsis with adherent pericarp, fusiform. Hilum linear.

**Distribution (TDWG). Continent.** Temperate Asia.

**Country /Province /State.** Middle Asia. Kirgizistan.

**TDWG4.**

**Stipa grandis** P. Smirn. Fedde, *Repert.* xxvi. 267 (1929).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), S-L Chen et al, *Flora of China* 22 (Poaceae) (2006), N.Tsvelev, *Grasses of the Soviet Union* (1983).

**TYPE** from Mongolia. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: HT: Pavlov N. s.n., 23 Jul 1924, Mongolia: NW: inter river Tamir et Tola-Bilczir (MW; IT: LE). Orig. lab.: "SZ Mongolia, step' mezdu r. Tamir i ur. Tola=Bil'chir".

**Illustrations (Books):** S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 270).

**Images:** R.Darke, *The Encyclopaedia of Grasses for Liveable Landscapes* (2007);.

**Derivation** (Clifford & Bostock 2007): L. tall. Plants robust and vigorous, often with tall culms.

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Culms 50–100 cm long, 3 -noded. Culm-internodes scaberulous. Leaf-sheaths smooth or scaberulous, glabrous on surface. Ligule an eciliate membrane, 4–6 mm long, 0.5–1 mm long on basal shoots. Leaf-blades filiform, involute, 0.6–1 mm wide. Leaf-blade surface ribbed, pubescent, hairy adaxially.

**Inflorescence.** Inflorescence a panicle, embraced at base by subtending leaf. Panicle contracted, linear, 15–25 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, 30–43 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus evident, acute.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 1 length of upper glume, membranous, without keels. Lower glume apex acuminate. Upper glume lanceolate, 30–43 mm long, membranous, without keels. Upper glume apex acuminate.

**Florets.** Fertile lemma lanceolate, subterete, 15–18 mm long, coriaceous, without keel, 5 -veined, more than 3-veined. Lemma surface pubescent, hairy below, hairy in lines. Lemma margins convolute, covering most of palea. Lemma apex surmounted by a ring of hairs, awned, 1 -awned. Principal lemma awn bigeniculate, 240–270 mm long overall, with twisted column. Palea without keels.

**Flower and Fruit.** Anthers 3. Stigmas 2. Ovary glabrous. Caryopsis with adherent pericarp, fusiform. Hilum linear.

**Distribution (TDWG). Continent.** Temperate Asia.

**Country /Province /State.** Siberia, **China, Mongolia, Russia.** Buryatiya, Chita, Irkutsk, Tuva. Inner Mongolia, Manchuria, China North-Central, Qinghai, China Southeast. Mongolia.

**TDWG4.** Gansu, Hebei, Shaanxi, Shanxi. Henan.

### **Stipa haussknechtii** Boiss. *Fl. Orient.* v. 501. (1884).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

**TYPE** from Iran. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Iran, Gulbar: Haussknecht (G holo).

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): in honor of Heinrich Carl Haussknecht (1838–1903) German botanist.

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial. Culms 15–30 cm long. Lateral branches lacking. Ligule an eciliate membrane. Leaf-blades involute, 10–20 cm long, 2–3 mm wide, stiff. Leaf-blade surface glabrous. Leaf-blade margins scabrous. Leaf-blade apex acuminate.

**Inflorescence.** Inflorescence a panicle. Panicle open, ovate. Primary panicle branches spreading, 2–3 -nate. Panicle branches capillary. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rachilla extension. Spikelets of 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, 11–12 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus brief, glabrous, obtuse.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 1 length of upper glume, membranous, pallid, without keels, 3 -veined. Lower glume apex acuminate. Upper glume lanceolate, 11–12 mm long, membranous, pallid, without keels, 3 -veined. Upper glume apex acuminate.

**Florets.** Fertile lemma lanceolate, subterete, 6 mm long, coriaceous, without keel, 5 -veined, more than 3-veined. Lemma surface pubescent. Lemma margins convolute, covering most of palea. Lemma apex dentate, 2 -fid, surmounted by a ring of hairs, awned, 1 -awned. Principal lemma awn from a sinus, bigeniculate, 90 mm long overall, with twisted column. Column of lemma awn 30 mm long, puberulous. Palea 2 -veined, without keels.

**Flower and Fruit.** Lodicules 3. Anthers 3. Stigmas 2. Ovary glabrous. Caryopsis with adherent pericarp, fusiform. Hilum linear.

**Distribution (TDWG). Continent.** Temperate Asia.

**Country /Province /State.** **Western Asia.** Iran.

### **Stipa heptapotamica** Golosk. *Not. Syst. Herb. Inst. Bot. Acad. Sci. URSS*, xix. 46 (1959).

**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: Russia, Chulak mts., Mongasai: Goloskokov (LE holo).

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): Gk. *hepta*, seven; *potamos*, river; L. *-ica*, belonging to. From "Land of the Seven Streams" in Dzungaria region of Central Asia.

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial, caespitose, clumped densely. Culms erect, 35–55 cm long. Culm-internodes distally pubescent. Leaf-sheaths puberulous. Ligule a ciliolate membrane, 0.5 mm long, obtuse. Leaf-blades filiform, convolute, 0.4–0.5 mm wide. Leaf-blade surface ribbed, smooth or scabrous, rough abaxially, puberulous, hairy adaxially.

**Inflorescence.** Inflorescence a panicle. Panicle open, linear, 10–20 cm long, bearing few spikelets. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 15–20 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus evident, curved, glabrous, acute.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 1 length of upper glume, membranous, without keels. Lower glume apex acuminate. Upper glume lanceolate, 15–20 mm long, membranous, without keels. Upper glume apex acuminate.

**Florets.** Fertile lemma lanceolate, subterete, 8–10 mm long, coriaceous, without keel, 5 -veined, more than 3-veined. Lemma surface pubescent. Lemma margins convolute, covering most of palea. Lemma apex surmounted by a ring of hairs, awned, 1 -awned. Principal lemma awn bigenulate, 110–130 mm long overall, with twisted column, limb ciliate, with 1–1.2 mm long hairs. Column of lemma awn puberulous, with 0.1–0.2 mm long hairs. Palea without keels.

**Flower and Fruit.** Anthers 3. Stigmas 2. Ovary glabrous. Caryopsis with adherent pericarp, fusiform. Hilum linear.

**Distribution (TDWG). Continent.** Temperate Asia.

**Country /Province /State. Middle Asia.** Kazakhstan.

**TDWG4.**

**Stipa himalaica** Roshev. *Not. Syst. Herb. Hort. Petrop.* v. 11 (1924).

**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 China. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: ST: *Dr. Giles, Herb. Schlag. 4. gen. No. Cat. 6067*, Jan. 1887, [Asia]: "Tibet... Gilgit Exped." ST: *Dr. Giles, Herb. Schlagintweit No. Cat. 1337*, Jan. 1887, [Asia]: "Tibet... Gilgit Exped."

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): L. -ica, belonging to. From the Himalayas.

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Culms 20–45 cm long. Ligule an eciliate membrane, 2–4 mm long. Leaf-blades filiform, involute, 0.5–1 cm long, 1–1.5 mm wide. Leaf-blade surface smooth or scabrous, rough abaxially.

**Inflorescence.** Inflorescence a panicle, embraced at base by subtending leaf. Panicle contracted, linear, 5–10 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, 20–30 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus elongated, 1.5–2 mm long, pubescent, pungent.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 1 length of upper glume, membranous, without keels, 3 -veined. Lower glume apex attenuate. Upper glume lanceolate, 20–30 mm long, membranous, without keels, 5 -veined. Upper glume apex attenuate.

**Florets.** Fertile lemma elliptic, subterete, 8–11.5 mm long, coriaceous, without keel, more than 3-veined. Lemma surface pilose, hairy all along. Lemma margins convolute, covering most of palea. Lemma apex surmounted by a ring of hairs, with this appendage 1–2 mm long, awned, 1 -awned. Principal lemma awn bigenulate, 100–160 mm long overall, with twisted column, deciduous, limb plumose, with 4–5 mm long hairs. Column of lemma awn hirtellous, with 2–3 mm long hairs. Palea 2 -veined, without keels.

**Flower and Fruit.** Anthers 3. Stigmas 2. Ovary glabrous. Caryopsis with adherent pericarp. Hilum linear.

**Distribution (TDWG). Continent.** Tropical Asia.

**Country /Province /State. Indian Subcontinent.** Pakistan, West Himalaya.

**Stipa hoggarensis** Chrtek & Martinovsky. *Webbia*, xxiv. 396 (1969).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

**TYPE** from Algeria. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: Algeria, Tamanreasset: Kyrle (K holotype).

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): L. -ensis, denoting origin. From the Hoggar, also known as Ahaggar Mountains of southern Algeria.

**Classification.** Subfamily Pooideae. Tribe: Stipeae.



**Habit, Vegetative Morphology.** Perennial, caespitose. Culms erect, 30–70 cm long. Culm-internodes smooth. Leaf-sheaths smooth, glabrous on surface. Ligule an eciliate membrane, 1 mm long. Leaf-blades convolute, 10–20 cm long, 3–7 mm wide.

**Inflorescence.** Inflorescence a panicle, exserted. Panicle open, ovate, 15–22 cm long. Panicle branches pubescent. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 15 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus evident, curved, acute.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 15 mm long, 2 length of upper glume, membranous, without keels, 3 -veined. Lower glume primary vein pubescent. Lower glume apex attenuate. Upper glume lanceolate, 7 mm long, 1.4 length of adjacent fertile lemma, membranous, without keels, 3 -veined. Upper glume apex attenuate.

**Florets.** Fertile lemma lanceolate, subterete, 4.5–6.7 mm long, coriaceous, without keel, 5 -veined, more than 3-veined. Lemma surface scabrous and tuberculate, rough above, pilose. Lemma margins convolute, covering most of palea. Lemma apex acute, awned, 1 -awned. Principal lemma awn bigeniculate, 50–85 mm long overall, with twisted column, deciduous. Column of lemma awn hirtellous, with 0.7 mm long hairs.

**Flower and Fruit.** Anthers 3, 2.3–2.5 mm long.

**Distribution (TDWG). Continent.** Africa.

**Country /Province /State.** Northern Africa. Algeria.

**Stipa hohenackeriana** Trin. & Rupr. *Mem. Acad. Petersb. Ser. VI. Sc. Nat.* v. 80 (1842).

**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>: *vide* TROPICOS and Kew Synonymy Database: T: (LE (fragm.)). HT: *Hohenacker 1253*, Azerbaijan: Transcaucasia, circa Shusha et Helendorf (LE).

**Illustrations (Books):** N.Feinbrun-Dothan, *Flora Palaestina* 4 (1986) (Pl. 345).

**Derivation** (Clifford & Bostock 2007): L. -ana, indicating connection. In honor of Rudolf Friedrich Hohenacker (1798–1874) Swiss-born German botanist.

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Butt sheaths pubescent, persistent and investing base of culm, with compacted dead sheaths. Culms 40–80 cm long. Leaf-sheaths scaberulous. Ligule an eciliate membrane, 2–4 mm long. Leaf-blades filiform, involute, 10–20 cm long, 1–2 mm wide. Leaf-blade surface scaberulous, rough abaxially, pubescent, sparsely hairy.

**Inflorescence.** Inflorescence a panicle, embraced at base by subtending leaf. Panicle contracted, lanceolate, 10–20 cm long. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 20–35 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus elongated, curved, 2.5 mm long, pilose, pungent.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma, shiny. Lower glume lanceolate, 20–35 mm long, 1 length of upper glume, membranous, without keels, 3 -veined. Lower glume apex acuminate. Upper glume lanceolate, 20–35 mm long, 1.6–2.3 length of adjacent fertile lemma, membranous, without keels, 3 -veined. Upper glume apex acuminate.

**Florets.** Fertile lemma lanceolate, subterete, 12–15 mm long, coriaceous, without keel, 5 -veined, more than 3-veined. Lemma surface pilose, hairy below. Lemma margins convolute, covering most of palea. Lemma apex acute, awned, 1 -awned. Principal lemma awn bigeniculate, 100–180 mm long overall, with twisted column, deciduous, limb ciliate (limb), with 2 mm long hairs. Column of lemma awn glabrous. Palea 2 -veined, without keels.

**Flower and Fruit.** Anthers 3. Stigmas 2. Ovary glabrous. Caryopsis with adherent pericarp, fusiform. Hilum linear.

**Distribution (TDWG). Continent.** Temperate Asia.

**Country /Province /State.** Siberia, Middle Asia, Caucasus, Western Asia, Arabian Peninsula, China. Kazakhstan, Kirgizistan, Turkmenistan, Tadjikistan, Uzbekistan. Iran.

**TDWG4.**

**Stipa holosericea** Trin. *Mem. Acad. Petersb. Ser. VI. i. 81* (1831).

**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 Iran. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Iran, Badalan: Szovits 10 (LE holo).

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): Gk. holos, entire; sericea, silky. Plant or spikelets totally invested in dense hairs.

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Culms erect, 40–90 cm long. Culm-internodes distally glabrous or pubescent. Leaf-sheaths glabrous on surface or puberulous, outer margin hairy. Ligule an eciliate membrane, 5–11 mm long. Leaf-blades filiform, 1–2 mm wide, stiff. Leaf-blade surface smooth or scaberulous, rough abaxially, pubescent, hairy adaxially.

**Inflorescence.** Inflorescence a panicle. Panicle open, linear, bearing few spikelets. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 15–40 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus elongated, curved, pubescent, pungent.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 1 length of upper glume, membranous, without keels. Lower glume apex acuminate. Upper glume lanceolate, 15–40 mm long, membranous, without keels. Upper glume apex acuminate.

**Florets.** Fertile lemma elliptic, subterete, 11–18 mm long, coriaceous, without keel, more than 3-veined. Lemma surface pubescent, hairy below. Lemma margins convolute, covering most of palea, ciliate. Lemma apex surmounted by a ring of hairs, awned, 1 -awned. Principal lemma awn bigeniculate, 180–250 mm long overall, with twisted column, limb glabrous or puberulous. Column of lemma awn puberulous. Palea 2 -veined, without keels.

**Flower and Fruit.** Anthers 3, anther tip penicillate. Stigmas 2. Ovary glabrous. Caryopsis with adherent pericarp. Hilum linear.

$2n = 44$  (1 ref TROPICOS).

**Distribution (TDWG). Continent.** Temperate Asia.

**Country /Province /State.** Middle Asia, Caucasus, Western Asia. Tadjhikistan.

**TDWG4.**

**Stipa iberica** Martinovshy. Fedde, *Repert. lxxiii. 150* (1966).

**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, Herdam: Agelet (FI holo).

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): L. -ica, belonging to. From Iberia, a province in Transcaucasia, former Soviet Union.

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Culms 35–50 cm long, 4 -noded. Culm-internodes distally pubescent. Leaf-sheaths glabrous on surface. Ligule an eciliate membrane, 4–6 mm long, 1–3 mm long on basal shoots, acuminate. Leaf-blades filiform, conduplicate, 0.5 mm wide, stiff. Leaf-blade surface ribbed, scabrous, puberulous, densely hairy, hairy adaxially.

**Inflorescence.** Inflorescence a panicle, comprising 3–8 fertile spikelets. Panicle contracted, bearing few spikelets. Panicle branches pilose. 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, 30–40 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus evident, acute.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 1 length of upper glume, membranous, without keels. Lower glume apex setaceously acuminate. Upper glume lanceolate, 30–40 mm long, membranous, without keels. Upper glume apex setaceously acuminate.

**Florets.** Fertile lemma lanceolate, subterete, 19–21 mm long, coriaceous, without keel, 5 -veined, more than 3-veined. Lemma surface pubescent, hairy in lines. Lemma margins convolute, covering most of palea. Lemma

apex awned, 1 -awned. Principal lemma awn bigeniculate, 300 mm long overall, with twisted column, limb hirsute. Middle segment of lemma awn 18–25 mm long, puberulous. Column of lemma awn 45–65 mm long. Palea without keels.

**Flower and Fruit.** Lodicules 3. Anthers 3. Stigmas 2. Ovary glabrous. Caryopsis with adherent pericarp, fusiform. Hilum linear.

$2n = 44$  (1 ref TROPICOS).

**Distribution (TDWG). Continent.** Europe.

**Region.** Southwestern Europe.

**Country /Province /State.** : France, Spain.

### **Stipa inebrians** Hance. *Journ. Bot.* xiv. 212. (1876).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online.

**TYPE** from China. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: In montibus Ala shan, Mongoliae interioris, *Herb. propr. [Hance] 19204*.

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): *L. inebrio*, intoxicate. When grazed by cattle in Mongolia, they exhibit symptoms of intoxication.

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Culms erect, 30–60 cm long. Culm-internodes distally glabrous. Leaf-sheaths glabrous on surface. Ligule an eciliate membrane, truncate. Leaf-blades involute, 20 cm long, 4–6 mm wide. Leaf-blade surface ribbed, scabrous. Leaf-blade apex acuminate.

**Inflorescence.** Inflorescence a panicle. Panicle contracted, linear, 12–18 cm long. Primary panicle branches 2.5–5 cm long, bearing spikelets almost to the base. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, 2–4 mm long.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 5 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus evident, acute.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 1 length of upper glume, membranous, without keels, 3 -veined. Lower glume apex acuminate. Upper glume lanceolate, 5 mm long, membranous, without keels, 3 -veined. Upper glume apex acuminate.

**Florets.** Fertile lemma lanceolate, subterete, 3 mm long, coriaceous, dark brown, without keel, 3 -veined, 0–3 -veined. Lemma surface pilose, with conspicuous apical hairs. Lemma margins convolute, covering most of palea. Lemma apex pubescent, awned, 1 -awned. Principal lemma awn geniculate, 10 mm long overall, with twisted column. Column of lemma awn puberulous. Palea 1 -veined, without keels.

**Flower and Fruit.** Anthers 3, anther tip penicillate. Stigmas 2. Ovary glabrous. Caryopsis with adherent pericarp, fusiform. Hilum linear.

**Distribution (TDWG). Continent.** Temperate Asia.

**Country /Province /State.** **China, Mongolia.** China South Central, Inner Mongolia, China North-Central, Qinghai, Tibet, Xinjiang, Mongolia.

**TDWG4.** Gansu, Sichuan.

### **Stipa iranica** H. Freitag. *Notes Roy. Bot. Gard. Edinburgh*, 42(3): 474 (1985).

**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, Kuh Daena: Kotschy 685 (G holo, E, K, W).

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): *L. -ica*, belonging to. From Iran.

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Basal innovations intravaginal. Culms geniculately ascending, 40–90 cm long, 3 -noded. Culm-internodes distally glabrous or pubescent. Leaf-sheaths subequal to internodes or longer than adjacent culm internode, glabrous on surface or pubescent, outer margin hairy. Ligule a ciliolate membrane, 1–1.5 mm long, obtuse. Leaf-blades flat or convolute, 10–25 cm long, 1.5–3.5 mm wide. Leaf-blade surface scaberulous or scabrous, rough abaxially, pilose, hairy adaxially.

**Inflorescence.** Inflorescence a panicle, exerted or embraced at base by subtending leaf. Panicle contracted, linear, 10–25 cm long, 1.5–4 cm wide. Primary panicle branches appressed, 1–2 -nate, 2–4 cm long, bearing 1–3 fertile spikelets on each lower branch. Panicle branches smooth or scaberulous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 30–40 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus elongated, curved, 1–2 mm long, pubescent, acute, with elliptic scar. Floret callus hairs 0.5 mm long.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume linear or lanceolate, 30–40 mm long, 1 length of upper glume, membranous, without keels, 5–9 -veined. Lower glume apex attenuate. Upper glume linear or lanceolate, 30–40 mm long, membranous, without keels, 5–9 -veined. Upper glume apex attenuate.

**Florets.** Fertile lemma elliptic, subterete, 9–12 mm long, coriaceous, light green, without keel, more than 3-veined. Lemma surface pilose, hairy below. Lemma margins convolute, covering most of palea. Lemma hairs 0.4–0.9 mm long. Lemma apex surmounted by a ring of hairs, with this appendage 0.5–1 mm long, awned, 1 -awned. Principal lemma awn bigenulate, 130–180 mm long overall, with twisted column. Middle segment of lemma awn 14–17 mm long. Column of lemma awn 20–28 mm long, puberulous, with 0.15–0.3 mm long hairs. Palea 1 length of lemma, 2 -veined, without keels. Palea surface pilose, hairy on back.

**Flower and Fruit.** Lodicules 3, lanceolate, 1.4–1.6 mm long, glabrous. Anthers 3, 3.5–5 mm long, yellow. Stigmas 3. Caryopsis with adherent pericarp, 9 mm long. Embryo 0.15 length of caryopsis. Hilum linear, 1 length of caryopsis.

**Distribution (TDWG).** Continent. Temperate Asia.

**Country /Province /State.** Western Asia. Iran.

**Stipa isoldeae** H. Scholz. *Willdenowia*, 19(1): 127 (1989).

**TYPE** from Greece. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Greece, Vourinos Massif: Hagemann, Ketelhut & Wolf 962 (B holo).

**Classification.** Tribe: Stipeae.

**Distribution (TDWG).** Continent. Europe.

**Region.** Southeastern Europe.

**Country /Province /State.** : Greece.

**Stipa jacquemontii** Jaub. & Spach. *Illustr.* iv. 60. (1851).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online, N.L.Bor, *Grasses of Burma, Ceylon, India and Pakistan* (1960), U.Quattrocchi, *CRC World Dictionary of Grasses* (2006) (as *Achnatherum*).

**TYPE** from India. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Kashmir: arid soils in rock crevices, 2000–4600 m, Aug. 1831, *Jacquemont 994* (HT: P; ST?: US-1063790).

**Illustrations (Books):** H.J.Noltie, *The Grasses of Bhutan* (2000) (527, Fig. 11 as ssp. *chuzomica*).

**Derivation** (Clifford & Bostock 2007): in honor of Victor Jacquemont (1801–1832), French naturalist and traveller.

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Rhizomes short. Culms erect, 30–90 cm long. Ligule an eciliate membrane, 0.2–0.4 mm long. Leaf-blades filiform, involute, 10–20 cm long, 1–2 mm wide, stiff, glaucous. Leaf-blade surface puberulous, hairy adaxially.

**Inflorescence.** Inflorescence a panicle. Panicle contracted, linear, 6–16 cm long, 2 cm wide. Primary panicle branches ascending, 2–3 cm long, bearing spikelets almost to the base. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 5–7 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus evident, 0.3–0.4 mm long, pubescent, obtuse.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate or elliptic, 1 length of upper glume, membranous, without keels, 3 -veined. Lower glume apex acute. Upper glume lanceolate or elliptic, 5–7 mm long, membranous, without keels, 3 -veined. Upper glume apex acute.

**Florets.** Fertile lemma elliptic, subterete, 4.3–5 mm long, coriaceous, without keel, more than 3-veined. Lemma surface pilose. Lemma margins convolute, covering most of palea. Lemma apex dentate, 2 -fid, awned, 1 -awned. Principal lemma awn bigenulate, 35 mm long overall, with twisted column. Column of lemma awn 15 mm long, puberulous. Palea 2 -veined, without keels.

**Flower and Fruit.** Anthers 3. Stigmas 2. Ovary glabrous. Caryopsis with adherent pericarp. Hilum linear.

**Distribution (TDWG).** Continent. Temperate Asia, Tropical Asia.

**Country /Province /State. Caucasus, Western Asia, China.** Afghanistan, Iran. Tibet. **Indian Subcontinent.** Eastern Himalaya, India, Pakistan, West Himalaya.  
**TDWG4.** Bhutan. Uttah Pradesh. Jammu Kashmir.

**Stipa joannis** Celak. Formanek, *Kvetena*, i. 92. (1887).

**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 Czechoslovakia. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: In dem romantischen St. Joansthale unweit Karkstein bei Prag wachst sie um die Felsenhohle des hlg. Jvan., *d.h. Johannes s.n.*.

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): from St. Joansthale near Prague, Czechoslovakia.

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial, caespitose, clumped loosely. Culms 50–100 cm long. Leaf-sheaths glabrous on surface. Ligule an ciliate membrane, 1–7 mm long. Leaf-blades involute, 15–30 cm long, 0.5–2 mm wide, stiff. Leaf-blade surface scaberulous. Leaf-blade apex hairy.

**Inflorescence.** Inflorescence a panicle, embraced at base by subtending leaf. Panicle contracted, linear. 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, 30–50 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus elongated, curved, pubescent, pungent.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 1 length of upper glume, membranous, without keels, 5–7 -veined. Lower glume apex attenuate. Upper glume lanceolate, 30–50 mm long, membranous, without keels, 5–7 -veined. Upper glume apex attenuate.

**Florets.** Fertile lemma elliptic, subterete, 16–17 mm long, coriaceous, without keel, more than 3-veined. Lemma surface pubescent, hairy in lines. Lemma margins convolute, covering most of palea, ciliate, hairy below. Lemma apex awned, 1 -awned. Principal lemma awn bigenulate, 250–350 mm long overall, with twisted column, limb plumose, with 5 mm long hairs. Palea 2 -veined, without keels.

**Flower and Fruit.** Anthers 3. Stigmas 2. Ovary glabrous. Caryopsis with adherent pericarp. Hilum linear.  $2n = 44$  (1 ref TROPICOS).

**Distribution (TDWG). Continent.** Europe, Temperate Asia.

**Region.** Northern Europe, Southwestern Europe, Southeastern Europe, Eastern Europe, Middle Europe.

**Country /Province /State.** : Sweden. : Austria, Czechoslovakia, Germany, Hungary, Poland, Switzerland. : France. : Albania, Bulgaria, Greece, Italy, Romania, Yugoslavia. Central European Russia, East European Russia, Northwest European Russia. Siberia, **Middle Asia, Caucasus, Western Asia.** Altay, Buryatiya, Chita, Irkutsk, Tuva. Kazakhstan.

**Stipa juncea** L. *Sp. Pl.* 78. (1753).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

**TYPE** from Europe. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: ST: *van Royen s.n.*, (L).

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): L. *juncea*, rush-like. Leaf-blades convolute resembling those of certain *Juncus* species.

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial. Culms 40–80 cm long. Leaf-sheaths smooth, glabrous on surface. Ligule a ciliolate membrane, 4.5–5.5 mm long, acute. Leaf-blades filiform, convolute, 0.5 mm wide. Leaf-blade surface puberulous, densely hairy, hairy adaxially.

**Inflorescence.** Inflorescence a panicle. Panicle open, linear or lanceolate, 8–15 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, 14–20 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus evident, pilose, acute.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 1 length of upper glume, membranous, without keels. Lower glume apex acuminate. Upper glume lanceolate, 14–20 mm long, membranous, without keels. Upper glume apex acuminate.

**Florets.** Fertile lemma lanceolate, subterete, 10–13 mm long, coriaceous, light brown, without keel, 5 -veined, more than 3-veined. Lemma margins convolute, covering most of palea, ciliate, hairy below. Lemma apex surmounted by a ring of hairs, awned, 1 -awned. Principal lemma awn bigeniculate, 90–110 mm long overall, with twisted column, limb puberulous. Column of lemma awn pubescent, with 0.4–0.6 mm long hairs. Palea without keels.

**Flower and Fruit.** Lodicules 3. Anthers 3. Stigmas 2. Ovary glabrous. Caryopsis with adherent pericarp, fusiform. Hilum linear.

**Distribution (TDWG). Continent.** North America.

**Country /Province /State.** Western Canada, Eastern Canada, Northwest USA, North-central USA, Northeast USA. Alberta, British Columbia, Saskatchewan. Labrador, New Brunswick, Newfoundland, Nova Scotia, Ontario, Prince Edward I, Quebec. Wyoming. Minnesota, Wisconsin. Maine, Michigan, New York, Vermont, West Virginia.

**Stipa kamelinii** Yu.A. Kotukhov. *Turczaninowia*, 1(1): 10 (1998).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online.

**TYPE** from Russia. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: Russia, Altai, Sajkan: Kotuchov (LE holo).

**Illustrations (Books):** No illustration found (BKS).

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Butt sheaths persistent and investing base of culm, with compacted dead sheaths. Culms 30–45 cm long. Culm-internodes distally glabrous or pubescent. Leaf-sheaths mostly shorter than adjacent culm internode. Ligule a ciliolate membrane, 1.2–1.7 mm long, 0.5–1 mm long on basal shoots, pubescent on abaxial surface. Leaf-blades filiform, conduplicate, 0.3–0.4 mm wide. Leaf-blade surface smooth or scaberulous, rough abaxially, puberulous, densely hairy, hairy adaxially.

**Inflorescence.** Inflorescence a panicle, subtended by an inflated leaf-sheath. Panicle contracted, linear, 7–10 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, 21–25 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus elongated, 1.4–1.6 mm long, pubescent, pungent.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, membranous, without keels. Lower glume apex attenuate. Upper glume lanceolate, 21–25 mm long, membranous, without keels. Upper glume apex attenuate.

**Florets.** Fertile lemma elliptic, subterete, 8.5–9 mm long, coriaceous, without keel, more than 3-veined. Lemma surface pubescent, hairy in lines. Lemma margins convolute, covering most of palea. Lemma apex awned, 1 -awned. Principal lemma awn bigeniculate, 90–110 mm long overall, with twisted column, limb plumose, with 3.5–4 mm long hairs. Column of lemma awn pubescent, with 0.3–1 mm long hairs. Palea without keels.

**Flower and Fruit.** Anthers 3, 4–5 mm long.

**Distribution (TDWG). Continent.** Temperate Asia.

**Country /Province /State.** Siberia. Altay.

**Stipa karakabinica** Yu.A. Kotukhov. *Bot. Zhurn.*, 79(7): 105 (1994).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online.

**TYPE** from Russia. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: Russia, Altai, Tarbagatai: Kotuchov (LE holo).

**Illustrations (Books):** No illustration found (BKS).

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Butt sheaths persistent and investing base of culm, with compacted dead sheaths. Culms 25–40 cm long. Culm-internodes distally glabrous. Leaf-sheaths glabrous on surface or puberulous. Ligule a ciliolate membrane, 3.5–5 mm long, 0.5–2 mm long on basal shoots, pubescent on abaxial surface. Leaf-blades filiform, conduplicate, 0.3–0.5 mm wide. Leaf-blade surface scabrous, rough abaxially, puberulous, hairy adaxially.

**Inflorescence.** Inflorescence a panicle, subtended by an inflated leaf-sheath. Panicle contracted, linear, 10 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, 18–20 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus elongated, 2–2.3 mm long, pubescent, pungent.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, membranous, without keels. Lower glume surface smooth or asperulous, rough on veins. Lower glume apex attenuate. Upper glume lanceolate, 18–20 mm long, membranous, without keels. Upper glume surface smooth or asperulous, rough on veins. Upper glume apex attenuate.

**Florets.** Fertile lemma elliptic, subterete, 9–11 mm long, coriaceous, without keel, more than 3-veined. Lemma surface pubescent, hairy in lines (6 lines). Lemma margins convolute, covering most of palea. Lemma apex awned, 1 -awned. Principal lemma awn bigenulate, 70–100 mm long overall, with twisted column. Column of lemma awn 35 mm long. Palea without keels.

**Flower and Fruit.** Anthers 3.

**Distribution (TDWG). Continent.** Temperate Asia.

**Country /Province /State.** Siberia. Altay.

**Stipa karataviensis** Roshev. *Tr. Pochv.-bot. Eksped. Peresel. Upr., Bot. Issled.* 6:186 (1909).

**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>: *vide* TROPICOS and Kew Synonymy Database: Russia, Karatau: Minkvits 310 (LE holo).

**Illustrations (Books):** No illustration found (BKS).

**Illustrations (Journals):** *Bot. J. Linn. Soc.* (167:422, Fig.11 (2011)).

**Derivation** (Clifford & Bostock 2007): L. -ensis, denoting origin. From Mt. Karatav, Central Asia, former Soviet Union.

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial, caespitose, clumped densely. Culms erect, 20–30 cm long. Culm-internodes distally glabrous or pubescent. Leaf-sheaths mostly shorter than adjacent culm internode, glabrous on surface, outer margin hairy. Ligule a ciliolate membrane, 1 mm long. Leaf-blades filiform, involute, 7–12 cm long, 1 mm wide. Leaf-blade surface glabrous.

**Inflorescence.** Inflorescence a panicle, comprising 7–10 fertile spikelets, embraced at base by subtending leaf. Panicle contracted, linear, 6–8 cm long, bearing few spikelets. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, pubescent.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 30–35 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus evident, curved, 1 mm long, pilose, hairy on the margins, acute. Floret callus hairs 2 mm long.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 1 length of upper glume, membranous, without keels. Lower glume apex attenuate. Upper glume lanceolate, 30–35 mm long, membranous, without keels. Upper glume apex attenuate.

**Florets.** Fertile lemma lanceolate, subterete, 8–9 mm long, coriaceous, without keel, 5 -veined, more than 3-veined. Lemma margins convolute, covering most of palea. Lemma apex awned, 1 -awned. Principal lemma awn geniculate, 80–90 mm long overall, with twisted column, limb plumose, with 5–6 mm long hairs. Column of lemma awn glabrous. Palea without keels.

**Flower and Fruit.** Lodicules 3. Anthers 3. Stigmas 2. Ovary glabrous. Caryopsis with adherent pericarp, fusiform. Hilum linear.

**Distribution (TDWG). Continent.** Temperate Asia.

**Country /Province /State. Middle Asia.** Kazakhstan, Uzbekistan.

**TDWG4.**

**Stipa karjagini** S.G. Musaev & I.A.Sadykhov. *Novosti Sist. Vyssh. Rast.*, 14: 5 (1977).

**TYPE** from Russia, Azerbaijan. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: Lizbert: Sodychov (BAK holo, LE).

**Classification.** Tribe: Stipeae.

**Distribution (TDWG). Continent.** Temperate Asia.

**Country /Province /State. Caucasus.** Transcaucasus.

**Stipa kazachstanica** Yu.A. Kotukhov. *Bot. Zhurn.*, 79(7): 104 (1994).

**Accepted by:** W.D. Clayton & K. Harman, *GrassBase* (2008) and online.

**TYPE** from Russia. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: Russia, Altai, Manrak: Kotuchov (LE holo).

**Illustrations (Books):** No illustration found (BKS).

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Butt sheaths persistent and investing base of culm, with compacted dead sheaths. Culms 40–50 cm long. Culm-internodes distally pubescent. Leaf-sheaths smooth or scaberulous. Ligule a ciliolate membrane, 4.5 mm long, 1.2–7 mm long on basal shoots, pubescent on abaxial surface. Leaf-blades filiform, conduplicate, 0.2–0.3 mm wide. Leaf-blade surface smooth or scaberulous, rough abaxially, puberulous, hairy adaxially.

**Inflorescence.** Inflorescence a panicle, comprising 5–7 fertile spikelets. Panicle open, lanceolate, 10–15 cm long, bearing few spikelets. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 45–56 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus elongated, 2.5–3 mm long, pubescent, pungent.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 45–56 mm long, 1 length of upper glume, membranous, without keels. Lower glume apex attenuate. Upper glume lanceolate, 45–56 mm long, membranous, without keels. Upper glume apex attenuate.

**Florets.** Fertile lemma elliptic, subterete, 10–12 mm long, coriaceous, without keel, more than 3-veined. Lemma surface pubescent, hairy in lines (6 lines). Lemma margins convolute, covering most of palea. Lemma apex awned, 1 -awned. Principal lemma awn bigeniculate, 100–200 mm long overall, with twisted column, limb plumose, with 4.5–5 mm long hairs. Column of lemma awn 20–27 mm long, glabrous. Palea without keels.

**Flower and Fruit.** Anthers 3.

**Distribution (TDWG). Continent.** Temperate Asia.

**Country /Province /State.** Siberia. Altay.

**Stipa kempirica** Yu.A. Kotukhov. *Bot. Zhurn.*, 79(7): 101 (1994).

**Accepted by:** W.D. Clayton & K. Harman, *GrassBase* (2008) and online.

**TYPE** from Russia. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: Russia, Altai, Manrak: Kotuchov (LE holo).

**Illustrations (Books):** No illustration found (BKS).

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Butt sheaths persistent and investing base of culm, with compacted dead sheaths. Culms 60–70 cm long. Culm-internodes distally pubescent. Leaf-sheaths mostly shorter than adjacent culm internode, glabrous on surface or puberulous. Ligule a ciliolate membrane, 5–9 mm long, 1.2–3.5 mm long on basal shoots, pubescent on abaxial surface. Leaf-blades filiform, conduplicate, 0.5–0.8 mm wide. Leaf-blade surface scaberulous, rough abaxially, puberulous, hairy adaxially.

**Inflorescence.** Inflorescence a panicle. Panicle contracted, linear, 25–35 cm long. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 35–45 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus elongated, 3–3.5 mm long, pubescent, pungent.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, membranous, without keels. Lower glume apex attenuate. Upper glume lanceolate, 35–45 mm long, membranous, without keels. Upper glume apex attenuate.

**Florets.** Fertile lemma elliptic, subterete, 14–16 mm long, coriaceous, without keel, more than 3-veined. Lemma surface pubescent, hairy in lines. Lemma margins convolute, covering most of palea. Lemma apex awned, 1 -awned. Principal lemma awn bigeniculate, 210–250 mm long overall, with twisted column, limb hirsute, with 2.5–3 mm long hairs. Column of lemma awn 50–60 mm long, glabrous. Palea without keels.

**Flower and Fruit.** Anthers 3, 7.5–8.5 mm long.

**Distribution (TDWG). Continent.** Temperate Asia.

**Country /Province /State.** Siberia. Altay.



**Stipa keniensis** (Pilger) H. Freitag. *Davis & Hedge Festschrift* (ed. Kit Tan): 122 (1989).

**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:** *Oryzopsis keniensis* Pilg., *Notizbl. Bot. Gart. Berlin-Dahlem* 9(87): 509 (1926). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Kenia, Westseite: Nieri-Wald, 21 Dec 1922, R.E. Fries & T.C.E. Fries 248.

**Illustrations (Books):** S.Phillips, *Poaceae* (Gramineae) in I.Hedberg & S.Edwards, *Flora of Ethiopia and Eritrea* (1995) (14, Fig 7).

**Derivation** (Clifford & Bostock 2007): L. -ensis, denoting origin. From Kenya.

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial. Rhizomes short, knotty. Culms 90–150 cm long. Leaves cauline. Ligule an eciliate membrane, 3–5 mm long. Leaf-blades 30–60 cm long, 6–12 mm wide. Leaf-blade surface glabrous or hirsute, sparsely hairy.

**Inflorescence.** Inflorescence a panicle. Panicle open, elliptic, dense or loose, 15–40 cm long. Primary panicle branches naked below or bearing spikelets almost to the base. Panicle branches straight or flexuous, scabrous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 6–7 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus evident, 0.5 mm long, bearded, obtuse.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 6–7 mm long, 1 length of upper glume, membranous, without keels, 3 -veined. Lower glume apex acute to acuminate. Upper glume lanceolate, 6–7 mm long, 1.2 length of adjacent fertile lemma, membranous, without keels, 3 -veined. Upper glume apex acute to acuminate.

**Florets.** Fertile lemma lanceolate, subterete, 5–6 mm long, coriaceous, without keel, 5 -veined, more than 3-veined. Lemma surface pilose. Lemma margins convolute, covering most of palea. Lemma apex dentate, 2 -fid, awned, 1 -awned. Principal lemma awn from a sinus, straight, 10–15 mm long overall. Palea elliptic, 0.8 length of lemma, coriaceous, 2 -veined, without keels. Palea surface pilose.

**Flower and Fruit.** Lodicules 3, oblancoolate, membranous. Anthers 3. Stigmas 2. Ovary glabrous. Caryopsis with adherent pericarp, fusiform. Embryo 0.1–0.2 length of caryopsis. Hilum linear.

**Distribution (TDWG). Continent.** Africa.

**Country /Province /State.** Northeast tropical Africa, East tropical Africa, Southern Africa. Ethiopia (inc. Eritrea), Somalia. Kenya.

**Stipa klemenzii** Roshev. *Bot. Mater. Gerb. Glavn. Bot. Sada RSFSR* 5: 12 (1924).

**Illustrations (Journals):** *Bot. J. Linn. Soc.* (167:429, Fig.14 (2011)).

**Classification.** Tribe: Stipeae.

**Distribution (TDWG). Continent.** Temperate Asia.

**Country /Province /State.** Mongolia.

**Stipa kirghisorum** Smirnow. Fedde, *Repert.* xxi. 232 (1925).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), S-L Chen et al, *Flora of China* 22 (Poaceae) (2006), N.Tsvelev, *Grasses of the Soviet Union* (1983).

**TYPE** from Kazakhstan. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Kazakhstan: mt. Bokaj, 3300–3700 m, *Kossinsky s.n.* (HT: MW; ST: K, RAW).

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): L. -ica, belonging to. From Karakirghizica in the Terskej Alatan, former Soviet Union.

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Butt sheaths persistent and investing base of culm. Culms 30–70 cm long. Ligule an eciliate membrane, 1.5–3.5 mm long. Leaf-blades filiform, involute, 30–50 cm long, 1–1.5 mm wide. Leaf-blade surface scabrous, rough abaxially.

**Inflorescence.** Inflorescence a panicle. Panicle contracted, linear, 10–21 cm long, bearing few spikelets. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile

or the upper sterile. Spikelets lanceolate, subterete, 28–40 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus elongated, 2.5–4 mm long, pubescent, pungent.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 1 length of upper glume, membranous, without keels, 5 -veined. Lower glume apex attenuate. Upper glume lanceolate, 28–40 mm long, membranous, without keels, 5 -veined. Upper glume apex attenuate.

**Florets.** Fertile lemma elliptic, subterete, 15–18 mm long, coriaceous, without keel, more than 3-veined. Lemma surface pubescent, hairy below, hairy in lines. Lemma margins convolute, covering most of palea. Lemma apex awned, 1 -awned. Principal lemma awn bigeniculate, 18–26 mm long overall, with twisted column, deciduous, limb plumose, with 4–5 mm long hairs. Column of lemma awn glabrous. Palea 2 -veined, without keels.

**Flower and Fruit.** Anthers 3. Stigmas 2. Ovary glabrous. Caryopsis with adherent pericarp. Hilum linear.

**Distribution (TDWG). Continent.** Temperate Asia, Tropical Asia.

**Country /Province /State.** Siberia, **Middle Asia, Western Asia, China, Mongolia.** Kazakhstan, Kirgizistan, Turkmenistan, Tadjikistan, Uzbekistan. Afghanistan, Iran. Xinjiang. **Indian Subcontinent.** Pakistan, West Himalaya.

**TDWG4.**

**Stipa kopetdaghensis** Czopanov. *Novit. Syst. Pl. Vasc., Acad. Sci. URSS*, vi. 22 (1970).

**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: Russia, Kopetdag, Dushak Mt.: Chohanov (ASH holo, LE).

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): L. -ensis, denoting origin. From Kopet Dag Khrebet mountains, Turkmenskaja (Turkmenistan), former Soviet Union.

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial, caespitose, clumped densely. Culms 30–60 cm long. Culm-internodes distally pubescent. Culm-nodes pubescent. Leaf-sheaths puberulous, outer margin hairy. Ligule an eciliate membrane, 1–4.5 mm long on basal shoots. Leaf-blades filiform, conduplicate, 0.4–0.8 mm wide. Leaf-blade surface ribbed, scabrous.

**Inflorescence.** Inflorescence a panicle. Panicle contracted, linear, 12–22 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, 35–50 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus evident, acute.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 1 length of upper glume, membranous, without keels. Lower glume apex acuminate. Upper glume lanceolate, 35–50 mm long, membranous, without keels. Upper glume apex acuminate.

**Florets.** Fertile lemma lanceolate, subterete, 12.5–14.8 mm long, coriaceous, without keel, 5 -veined, more than 3-veined. Lemma surface pubescent, hairy below, hairy in lines. Lemma margins convolute, covering most of palea. Lemma apex surmounted by a ring of hairs, awned, 1 -awned. Principal lemma awn geniculate, 160–190 mm long overall, with twisted column, limb plumose, with 5 mm long hairs. Column of lemma awn glabrous. Palea without keels.

**Flower and Fruit.** Anthers 3. Stigmas 2. Ovary glabrous. Caryopsis with adherent pericarp, fusiform. Hilum linear.

**Distribution (TDWG). Continent.** Temperate Asia.

**Country /Province /State.** **Middle Asia.** Turkmenistan.

**TDWG4.**

**Stipa korshinskyi** Roshev. *B. Fedtsch. Fl. Asiat. Ross.* xii. 163 (1916).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online, T.G.Tutin et al, *Flora Europaea* 5 (1980).

**TYPE** from Russia. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Russia, Atbasarsk: Kapelin 2 (LE lecto).

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): in honor of Sergei Iwanowitsch Korzhinskii (1860–1900) Russian botanist.

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial, caespitose, clumped densely. Culms 35–70 cm long. Culm-internodes distally glabrous. Leaf-sheaths mostly shorter than adjacent culm internode. Ligule an eciliate membrane, 0.5 mm long on basal shoots. Leaf-blades filiform, conduplicate, 1–2 mm wide. Leaf-blade surface ribbed, scabrous.

**Inflorescence.** Inflorescence a panicle. Panicle contracted, linear, 10–20 cm long, bearing few spikelets. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 12–16 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus evident, acute.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 1 length of upper glume, membranous, without keels. Lower glume apex acuminate. Upper glume lanceolate, 12–16 mm long, membranous, without keels. Upper glume apex acuminate.

**Florets.** Fertile lemma lanceolate, subterete, 8–9 mm long, coriaceous, without keel, 5 -veined, more than 3-veined. Lemma surface pubescent. Lemma margins convolute, covering most of palea. Lemma apex surmounted by a ring of hairs, awned, 1 -awned. Principal lemma awn bigeniculate, 90–120 mm long overall, with twisted column, limb pubescent. Column of lemma awn puberulous, hairy on the spiral. Palea without keels.

**Flower and Fruit.** Lodicules 3. Anthers 3. Stigmas 2. Ovary glabrous. Caryopsis with adherent pericarp, fusiform. Hilum linear.

**Distribution (TDWG). Continent.** Europe, Temperate Asia.

**Region. Eastern Europe.**

**Country /Province /State.** Central European Russia, East European Russia, South European Russia. Siberia, **Middle Asia.** Kazakhstan.

**TDWG4.**

**Stipa krylovii** Roshev. *Bull. Jard. Bot. Princ. URSS*, xxviii. 379 (1929).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), S-L Chen et al, *Flora of China* 22 (Poaceae) (2006), N.Tsvelev, *Grasses of the Soviet Union* (1983).

**TYPE** from Russia. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: LT: V. Smirnov 524, 28 Jul 1912, Siberia: Selenginskaya Dauria, mountains between Temnik and Jida, sw part of Borgoiisky range, slopes with steppe vegetation (LE).

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): in honor of Porfirij Nikitic Krylov (1850–1931) Russian botanist.

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial, caespitose, clumped densely. Culms (8–)30–50(–80) cm long. Culm-internodes distally glabrous. Leaf-sheaths glabrous on surface. Ligule an eciliate membrane, 0.5–1 mm long. Leaf-blades filiform, involute, 4–30 cm long, 0.3–0.5 mm wide. Leaf-blade surface ribbed, smooth or scabrous, rough abaxially, glabrous or puberulous, hairy adaxially. Leaf-blade apex acuminate.

**Inflorescence.** Inflorescence a panicle, embraced at base by subtending leaf. Panicle contracted, linear, 10–20 cm long. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 18–25 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus evident, acute.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 1 length of upper glume, membranous, without keels. Lower glume apex acuminate. Upper glume lanceolate, 18–25 mm long, membranous, without keels. Upper glume apex acuminate.

**Florets.** Fertile lemma lanceolate, subterete, 10–13 mm long, coriaceous, without keel, 5 -veined, more than 3-veined. Lemma surface pubescent, hairy below, hairy in lines. Lemma margins convolute, covering most of palea. Lemma apex surmounted by a ring of hairs, awned, 1 -awned. Principal lemma awn bigeniculate, (80–)100–170(–200) mm long overall, with twisted column. Palea without keels.

**Flower and Fruit.** Anthers 3. Stigmas 2. Ovary glabrous. Caryopsis with adherent pericarp, fusiform. Hilum linear.

**Distribution (TDWG). Continent.** Temperate Asia.

**Country /Province /State.** Siberia, **Middle Asia, China, Mongolia.** Altay, Buryatiya, Chita, Irkutsk, Tuva. Kazakhstan, Kirgizistan.

#### TDWG4.

**Stipa kungeica** Golosk. *Not. Syst. Herb. Inst. Bot. Acad. Sci. URSS*, xvi. 39 (1954).

**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: "Kungei Alatau, Tau-Czilik, in decliviis australibus saxosis gypsaceis...", V. Goleskokov, 9.VI.1953. ("In Herb. Inst. botan. nom. V. Komarovii Ac. Sci. URSS in Lenigrad conservatur, cotypus --- in Alma Ata.).

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): L. -ica, belonging to. From Kungei Alatau, Kazakhstan, former Soviet Union.

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial, caespitose, clumped moderately. Culms 30–50 cm long. Culm-internodes distally glabrous or pubescent. Ligule an eciliate membrane, 4 mm long. Leaf-blades filiform, convolute, 0.4–0.7 mm wide. Leaf-blade surface ribbed.

**Inflorescence.** Inflorescence a panicle, embraced at base by subtending leaf. Panicle open, linear, 6–10 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, 40–50 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus evident, pubescent, acute.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 1 length of upper glume, membranous, without keels. Lower glume apex acuminate. Upper glume lanceolate, 40–50 mm long, membranous, without keels. Upper glume apex acuminate.

**Florets.** Fertile lemma lanceolate, subterete, 12–14 mm long, coriaceous, without keel, 5 -veined, more than 3-veined. Lemma surface pubescent, hairy below, hairy in lines. Lemma margins convolute, covering most of palea. Lemma apex awned, 1 -awned. Principal lemma awn bigeniculate, 200–250 mm long overall, with twisted column, limb plumose, with 6–7 mm long hairs. Column of lemma awn 40–50 mm long, pubescent, with 1.5 mm long hairs. Palea without keels.

**Flower and Fruit.** Anthers 3. Stigmas 2. Ovary glabrous. Caryopsis with adherent pericarp, fusiform. Hilum linear.

**Distribution (TDWG). Continent.** Temperate Asia.

**Country /Province /State.** Middle Asia. Kirgizistan.

TDWG4.

**Stipa kurdistanica** Bor. *Taxon*, xvi. 68 (1967).

**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) (as *Achnatherum turcomanicum*).

**TYPE** from Iran. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Iran, Avroman Mt.: Haussknecht (G holo).

**Illustrations (Books):** N.L.Bor, *Gramineae in Flora of Iraq* (1968) (407, Pl. 152).

**Derivation** (Clifford & Bostock 2007): L. -ica, belonging to. From Kurdistan, former Soviet Union.

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Cataphylls evident. Rhizomes short. Culms erect, 80–150 cm long. Culm-internodes distally pubescent. Ligule an eciliate membrane. Leaf-blades involute, 10–20 cm long, 3–7 mm wide. Leaf-blade surface glabrous or puberulous, hairy adaxially.

**Inflorescence.** Inflorescence a panicle. Panicle contracted, linear, 15–35 cm long. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 7–9 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus brief, pubescent, obtuse.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate or ovate, 1 length of upper glume, membranous, without keels, 5 -veined. Lower glume surface asperulous. Lower glume apex acuminate. Upper glume lanceolate or ovate, 7–9 mm long, membranous, without keels, 5 -veined. Upper glume surface asperulous. Upper glume apex acuminate.

**Florets.** Fertile lemma ovate, subterete, 5–6 mm long, coriaceous, dark brown, without keel, 7 -veined, more than 3-veined. Lemma surface pubescent. Lemma margins convolute, covering most of palea. Lemma

apex awned, 1 -awned. Principal lemma awn straight or curved, 16–22 mm long overall, without a column. Palea 2 -veined, without keels.

**Flower and Fruit.** Anthers 3. Stigmas 2. Ovary glabrous. Caryopsis with adherent pericarp. Hilum linear.

**Distribution (TDWG). Continent.** Temperate Asia.

**Country /Province /State.** Middle Asia, Western Asia. Kirgizistan, Turkmenistan, Tadjikistan, Uzbekistan. Iran, Iraq.

**TDWG4.**

**Stipa kyzylkiensis** Yu.A. Kotukhov. *Turczaninowia*, 1(2): 12 (1998).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online.

**TYPE** from Russia. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Russia, Altai, Saur: Kotuchov (LE holotype).

**Illustrations (Books):** No illustration found (BKS).

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Butt sheaths persistent and investing base of culm, with compacted dead sheaths. Culms 80–95 cm long. Culm-internodes antrorsely scabrous. Leaf-sheaths scaberulous. Ligule an eciliate membrane or a ciliolate membrane, 3–3.5 mm long, 1.2–1.4 mm long on basal shoots, scaberulous on abaxial surface. Leaf-blades filiform, conduplicate, 0.25–0.4 mm wide. Leaf-blade surface scabrous, rough abaxially, puberulous, hairy adaxially.

**Inflorescence.** Inflorescence a panicle, subtended by an inflated leaf-sheath. Panicle contracted, linear, 20–30 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, 21–23 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus elongated, 2 mm long, pubescent, pungent.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 21–23 mm long, 1 length of upper glume, membranous, without keels. Lower glume apex attenuate. Upper glume lanceolate, 21–23 mm long, membranous, without keels. Upper glume apex attenuate.

**Florets.** Fertile lemma elliptic, subterete, 9–10 mm long, coriaceous, without keel, more than 3-veined. Lemma surface pubescent, hairy in lines (7 lines). Lemma margins convolute, covering most of palea. Lemma apex pubescent, awned, 1 -awned. Principal lemma awn bigeniculate, 100–110 mm long overall, with twisted column, limb puberulous, with 0.1–0.2 mm long hairs. Column of lemma awn puberulous. Palea without keels.

**Flower and Fruit.** Anthers 3, 5 mm long.

**Distribution (TDWG). Continent.** Temperate Asia.

**Country /Province /State.** Middle Asia. Kazakhstan.

**Stipa lagascae** Roem. & Schult. *Syst. ii.* 333. (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 Italy. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Italy, Samnia: Coll?.

**Illustrations (Books):** N.Feinbrun-Dothan, *Flora Palaestina* 4 (1986) (Pl. 345).

**Images:** L.Boulos, *Flora of Egypt* 4 (2005);.

**Derivation** (Clifford & Bostock 2007): in honor of Mariano de la Lagasca (1776–1839) Spanish botanist.

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Rootstock evident. Culms 30–60 cm long. Ligule an eciliate membrane. Leaf-blades filiform, conduplicate, 15–30 cm long, 1–2 mm wide, stiff. Leaf-blade surface smooth or scaberulous, rough abaxially.

**Inflorescence.** Inflorescence a panicle, embraced at base by subtending leaf. Panicle contracted, linear, nodding, 15–30 cm long, bearing few spikelets. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 25–40 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus elongated, curved, 2.5–3 mm long, pubescent, pungent.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume linear or lanceolate, 1 length of upper glume, membranous, without keels. Lower glume apex attenuate. Upper glume linear or lanceolate, 25–40 mm long, membranous, without keels. Upper glume apex attenuate.

**Florets.** Fertile lemma elliptic, subterete, 14–16 mm long, coriaceous, without keel, more than 3-veined. Lemma surface pubescent, hairy below, hairy in lines. Lemma margins convolute, covering most of palea. Lemma apex surmounted by a ring of hairs, awned, 1 -awned. Principal lemma awn bigeniculate, 160–300 mm long overall, with twisted column, limb glabrous or puberulous. Column of lemma awn 50–60 mm long, plumose, with 1–2 mm long hairs. Palea 2 -veined, without keels.

**Flower and Fruit.** Anthers 3, anther tip penicillate. Stigmas 2. Ovary glabrous. Caryopsis with adherent pericarp. Hilum linear.

*N* = 22 (2 refs TROPICOS).

**Distribution (TDWG). Continent.** Europe, Africa, Temperate Asia.

**Region. Southwestern Europe, Southeastern Europe.**

**Country /Province /State.** : Portugal, Spain. : Italy, Sicily. **Northern Africa.** Algeria, Egypt, Libya, Morocco, Tunisia. **Caucasus, Western Asia.** Transcaucasus. Cyprus, Iran, Iraq, Palestine, Israel & Jordan, Turkey.

**Stipa lemmonii** (Vasey) Scribn. *U.S. Dept. Agric Div. Agrost. Circ.*, 30: 3 (1901).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online.

**TYPE** from USA. **Basionym or Replaced Name:** *Stipa pringlei* var. *lemmonii* Vasey, *Contr. U.S. Natl. Herb.* 3(1): 55 (1892). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *J.G. Lemmon 5456*, May 1889, USA: California: Plumas Co.: Mohawk Valley (US).

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): in honor of John Gill Lemmon (1832–1908) United States forester and botanist.

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Culms 10–70 cm long. Culm-internodes scaberulous. Leaf-sheaths glabrous on surface to hirsute. Ligule an eciliate membrane, 1–2.2 mm long, entire or erose, obtuse. Leaf-blades involute, 10–20 cm long, 1.5–2.5 mm wide.

**Inflorescence.** Inflorescence a panicle. Panicle open, linear, 4–15 cm long. Primary panicle branches appressed. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 7–12 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus evident, 0.5 mm long, pubescent, obtuse.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 1 length of upper glume, membranous, without keels, 5 -veined. Lower glume apex acuminate. Upper glume lanceolate, 7–12 mm long, hyaline, without keels, 3–5 -veined. Upper glume apex acuminate.

**Florets.** Fertile lemma lanceolate, subterete, 5–7.5 mm long, 1.2 mm wide, coriaceous, light brown, without keel, 5 -veined, more than 3-veined. Lemma surface pubescent. Lemma margins convolute, covering most of palea. Lemma apex emarginate, awned, 1 -awned. Principal lemma awn bigeniculate, 18–29 mm long overall, with twisted column, limb glabrous or puberulous. Middle segment of lemma awn pubescent. Column of lemma awn pubescent, with 0.5 mm long hairs. Palea 0.66 length of lemma, 2 -veined, without keels.

**Flower and Fruit.** Lodicules 3, 1.5 mm long. Anthers 3, 3–3.5 mm long, purple. Stigmas 2. Ovary glabrous. Caryopsis with adherent pericarp. Hilum linear.

**Distribution (TDWG). Continent.** North America.

**Country /Province /State. Western Canada, Northwest USA, Southwestern USA.** British Columbia, Idaho, Oregon, Washington. Arizona, California.

**Stipa lessingiana** Trin. & Rupr. *Mem. Acad. Petersb. Sc. Ser. VI. Sc. Nat.* v. 79 (1842).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), S-L Chen et al, *Flora of China* 22 (Poaceae) (2006), T.G.Tutin et al, *Flora Europaea* 5 (1980), N.Tsvelev, *Grasses of the Soviet Union* (1983).

**TYPE** from Russia. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Russia: 'In gubernio Orenburg', *Lessing 413*.

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): L. -ana, indicating connection. In honor of Christian Friedrich Lessing (1809–1862) Polish-born German botanist in Siberia.

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial. Rhizomes short. Culms 100–150 cm long. Leaf-sheaths outer margin hairy. Ligule an eciliate membrane, 1–1.5 mm long. Leaf-blades involute, 20–40 cm long, 4–8 mm wide, stiff. Leaf-blade surface smooth or scaberulous. Leaf-blade margins smooth or scaberulous.

**Inflorescence.** Inflorescence a panicle. Panicle open, elliptic, effuse, nodding, 50–75 cm long. Primary panicle branches 5–8 -nate, whorled at most nodes. Panicle branches capillary. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, laterally compressed, 2.75–3.25 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus pubescent, obtuse.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, firmer than fertile lemma. Lower glume lanceolate, 2.5–3 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 apex acute. Upper glume lanceolate, 2.75–3.25 mm long, 1.3–1.5 length of adjacent fertile lemma, scarious, 1-keeled, 1(–3) -veined. Upper glume primary vein scabrous. Upper glume apex erose, obtuse, mucronate.

**Florets.** Fertile lemma lanceolate, laterally compressed, 2–2.25 mm long, membranous, without keel, 3 -veined, 0–3 -veined. Lemma lateral veins transversely connected at apex. Lemma surface scaberulous, rough above. Lemma apex dentate, 2 -fid, awned, 1 -awned. Principal lemma awn subapical, straight or flexuous, 6–8 mm long overall, deciduous. Palea elliptic, 0.8 length of lemma, 2 -veined, without keels.

**Flower and Fruit.** Lodicules 2, oblanceolate, 0.6 mm long, membranous. Anthers 1, 1 mm long. Stigmas 2. Ovary glabrous. Caryopsis with adherent pericarp, fusiform. Embryo 0.3 length of caryopsis. Hilum elliptic.

$2n = 44$  (1 ref TROPICOS).

**Distribution (TDWG).** Continent. Europe, Temperate Asia.

**Region.** Southeastern Europe, Eastern Europe.

**Country /Province /State.** : Bulgaria, Romania. Krym, Central European Russia, East European Russia, South European Russia, Northwest European Russia, Ukraine. Siberia, **Middle Asia, Caucasus, Western Asia, China, Mongolia, Russia.** Altay. Kazakhstan, Kirgizistan, Turkmenistan, Tadjikistan. North Caucasus, Transcaucasus. Iran. Xinjiang. Mongolia.

**TDWG4.**

**Stipa lingua** Junge. *Bull. Jard. Bot. Petersb.* x. 129 (1910).

**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: "aur les coteaux de la partie occidentale de la Region Transcaspienne, bien plus rapproches de la mer.",.

**Illustrations (Books):** No illustration found (BKS).

**Illustrations (Journals):** *Bot. J. Linn. Soc.* (167:416, Fig.8 (2011) as subsp. *lingua*).

**Derivation** (Clifford & Bostock 2007): *L. lingua*, tongue. Ligule long-fimbriate.

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial, caespitose, clumped densely. Culms erect, 10–20 cm long. Culm-internodes antrorsely scabrous. Leaf-sheaths pubescent. Ligule an eciliate membrane. Leaf-blades filiform, involute, 3–6 cm long, 0.5–1 mm wide.

**Inflorescence.** Inflorescence a panicle, embraced at base by subtending leaf. Panicle contracted, linear, 3–6 cm long. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets cuneate, subterete, 50–75 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus elongated, glabrous, acute.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 1 length of upper glume, membranous, much thinner above, without keels. Lower glume apex caudate. Upper glume lanceolate, 50–75 mm long, membranous, much thinner above, without keels. Upper glume apex caudate.

**Florets.** Fertile lemma lanceolate, subterete, 10–14 mm long, coriaceous, without keel, 5 -veined, more than 3-veined. Lemma surface pilose. Lemma margins convolute, covering most of palea. Lemma apex surmounted by a ring of hairs, awned, 1 -awned. Principal lemma awn geniculate, 120–180 mm long overall, with twisted column, limb plumose, with 8 mm long hairs. Column of lemma awn 15–20 mm long, 0.15 length of limb, ciliate. Palea 2 -veined, without keels.

**Flower and Fruit.** Lodicules 3. Anthers 3. Stigmas 2. Ovary glabrous. Caryopsis with adherent pericarp, fusiform. Hilum linear.

**Distribution (TDWG). Continent.** Temperate Asia.  
**Country /Province /State.** Middle Asia, Western Asia. Turkmenistan, Tadjikistan. Iran.  
**TDWG4.**

**Stipa lipskyi** Roshev. *B. Fedtsch. Fl. Asiat. Ross.* xii. 153 (1916).

**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: Turkestan: In stepposis siccis et in promontoriis prope Samarkand et in prov. Fergana distr. Kokand.",.

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): in honor of Vladimir Hippolitowitsch Lipsky (1863–1937) Russian botanist.

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial, caespitose, clumped densely. Culms 30–50 cm long. Culm-internodes distally glabrous. Leaf-sheaths pubescent, outer margin hairy. Ligule a ciliolate membrane. Leaf-blades filiform, convolute, 15–25 cm long, 0.5–1 mm wide. Leaf-blade surface ribbed, pubescent, hairy adaxially.

**Inflorescence.** Inflorescence a panicle, embraced at base by subtending leaf. Panicle open, lanceolate, 10–20 cm long. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 65–75 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus elongated, curved, 1.5–2 mm long, acute.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 1 length of upper glume, membranous, without keels. Lower glume apex setaceously acuminate. Upper glume lanceolate, 65–75 mm long, membranous, without keels. Upper glume apex setaceously acuminate.

**Florets.** Fertile lemma lanceolate, subterete, 13–15 mm long, coriaceous, without keel, 5 -veined, more than 3-veined. Lemma surface pubescent, hairy all along, hairy in lines. Lemma margins convolute, covering most of palea. Lemma apex surmounted by a ring of hairs, awned, 1 -awned. Principal lemma awn geniculate, 170–210 mm long overall, with twisted column, limb plumose, with 6–7 mm long hairs. Column of lemma awn 20–30 mm long. Palea without keels.

**Flower and Fruit.** Anthers 3. Stigmas 2. Ovary glabrous. Caryopsis with adherent pericarp, fusiform. Hilum linear.

**Distribution (TDWG). Continent.** Temperate Asia.

**Country /Province /State.** Middle Asia. Kazakhstan, Kirgizistan, Turkmenistan, Uzbekistan.

**TDWG4.**

**Stipa longiplumosa** Roshev. ex Komarov. *Fl. URSS*, ii. 87 (1934).

**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: Asia Media: Tadjikistan, ad jugum Saraarjak, circa pagum Margak, 7 Jun 1932, *N. Gontscharow & Grigoriev 227*.

**Illustrations (Books):** No illustration found (BKS).

**Illustrations (Journals):** *Bot. J. Linn. Soc.* (167:432, Fig.16 (2011)).

**Derivation** (Clifford & Bostock 2007): L. long, long; pluma, small soft feather; -osa, abundance. Awn long and feather-like with hairs to one cm long.

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial, caespitose, clumped densely. Culms 30–40 cm long. Culm-internodes antrorsely scabrous, distally pubescent. Leaf-sheaths antrorsely scabrous, glabrous on surface. Ligule a ciliolate membrane. Leaf-blades filiform, involute, 15–20 cm long, 0.5–1 mm wide. Leaf-blade surface ribbed, scabrous.

**Inflorescence.** Inflorescence a panicle, subtended by an inflated leaf-sheath, embraced at base by subtending leaf. Panicle contracted, linear, 10 cm long, bearing few spikelets. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile



or the upper sterile. Spikelets lanceolate, subterete, 60–85 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus elongated, curved, 2 mm long, acute.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 1 length of upper glume, membranous, much thinner above, without keels. Lower glume apex acuminate. Upper glume lanceolate, 60–85 mm long, membranous, much thinner above, without keels. Upper glume apex acuminate.

**Florets.** Fertile lemma lanceolate, subterete, 13–14 mm long, coriaceous, without keel, 5 -veined, more than 3-veined. Lemma surface pubescent, hairy below, hairy in lines. Lemma margins convolute, covering most of palea. Lemma apex awned, 1 -awned. Principal lemma awn geniculate, 200–230 mm long overall, with twisted column, limb plumose, with 9–11 mm long hairs. Column of lemma awn 40–50 mm long. Palea without keels.

**Flower and Fruit.** Anthers 3. Stigmas 2. Ovary glabrous. Caryopsis with adherent pericarp, fusiform. Hilum linear.

**Distribution (TDWG). Continent.** Temperate Asia.

**Country /Province /State. Middle Asia.** Kirgizistan, Turkmenistan.

**TDWG4.**

### **Stipa macroglossa** Smirnow. *Not. Syst. Herb. Hort. Petrop.* v. 47 (1924).

**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: "Turkestan.", *H. Krascheninnikow* In later publication: *Repert. Sp. Nov. Fedde* 21: 234. 1925. "Prov. Turgaj. Mujun-kumy, ad fl. Ssary-ssu, H. Krascheninnikow (typus)".

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): Gk. makros, large; glossa, tongue. Ligule long.

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial, caespitose, clumped densely. Culms 30–50 cm long. Culm-internodes distally pubescent. Ligule an eciliate membrane, 4–7 mm long. Leaf-blades filiform, involute, 15–20 cm long, 0.5 mm wide. Leaf-blade surface scabrous, rough abaxially, glabrous.

**Inflorescence.** Inflorescence a panicle, embraced at base by subtending leaf. Panicle contracted, lanceolate, 10–20 cm long. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rachilla extension. Spikelets of 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, 55 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus elongated, 3 mm long, glabrous, pungent.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 50–55 mm long, 1.1–1.2 length of upper glume, membranous, without keels. Lower glume apex attenuate. Upper glume lanceolate, 40–48 mm long, membranous, without keels. Upper glume apex attenuate.

**Florets.** Fertile lemma lanceolate, subterete, 9–11 mm long, coriaceous, without keel, 5 -veined, more than 3-veined. Lemma surface pubescent, hairy in lines. Lemma margins convolute, covering most of palea. Lemma apex awned, 1 -awned. Principal lemma awn bigeniculate, 250 mm long overall, with twisted column, limb plumose, with 5–7 mm long hairs. Column of lemma awn 50–60 mm long, glabrous. Palea 2 -veined, without keels.

**Flower and Fruit.** Lodicules 3. Anthers 3. Stigmas 2. Ovary glabrous. Caryopsis with adherent pericarp, fusiform. Hilum linear.

**Distribution (TDWG). Continent.** Temperate Asia.

**Country /Province /State. Middle Asia, Western Asia, China.** Kazakhstan, Kirgizistan, Tadzhikistan. Iran. Xinjiang.

**TDWG4.**

### **Stipa magnifica** Junge. *Bull. Jard. Bot. Petersb.* x. 128 (1910).

**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: "dans la région montagnaise de Turkestan russe ;rès de ses frontières orientales et de Turkestan chinois, non loin de Pamir",.

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): L. imposing. Culms tall compared with those of related species.

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Culms 50–90 cm long. Culm-internodes scaberulous. Leaf-sheaths outer margin hairy. Ligule a ciliolate membrane. Leaf-blades filiform, involute, 0.5–1 mm wide. Leaf-blade surface ribbed.

**Inflorescence.** Inflorescence a panicle. Panicle contracted, linear, 20 cm long. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 70 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus evident, acute.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 1 length of upper glume, membranous, without keels. Lower glume apex acuminate. Upper glume lanceolate, 70 mm long, membranous, without keels. Upper glume apex acuminate.

**Florets.** Fertile lemma lanceolate, subterete, 14–16 mm long, coriaceous, without keel, 5 -veined, more than 3-veined. Lemma surface pubescent, hairy all along, hairy in lines. Lemma margins convolute, covering most of palea. Lemma apex surmounted by a ring of hairs, awned, 1 -awned. Principal lemma awn geniculate, 230–270 mm long overall, with twisted column, limb plumose, with 6–7 mm long hairs. Column of lemma awn 23–27 mm long, hirsute. Palea without keels.

**Flower and Fruit.** Anthers 3. Stigmas 2. Ovary glabrous. Caryopsis with adherent pericarp, fusiform. Hilum linear.

**Distribution (TDWG). Continent.** Temperate Asia.

**Country /Province /State.** Middle Asia. Kirgizistan.

**TDWG4.**

**Stipa magrebensis** F.M. Vazquez & J.A. Devesa. *Bot. J. Linn. Soc.*, 124(2): 206 (1997).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

**TYPE** from Morocco. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: Morocco: Ouarzazate: pr. oppidulum Tifoultout, 30.56N 6.59W, ad 1240 m, in clivosis siccis ad viam, /9657, 31 May 1985, n=8, 1240 m, C. Blanché, J. Fernández Casas, J. Molero, J.M. Montserrat & A. Romo (BC-813670a).

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): L. *-ensis*, denoting origin. From Maghreb region of northern Africa.

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Annual, caespitose. Culms erect, 15–45 cm long. Culm-nodes purple. Leaf-sheaths glabrous on surface or pubescent, outer margin hairy. Ligule an eciliate membrane, 0.3–1 mm long, scaberulous on abaxial surface. Leaf-blades convolute, 6–27 cm long, 0.5–1 mm wide. Leaf-blade surface pubescent, hairy adaxially. Leaf-blade apex acuminate.

**Inflorescence.** Inflorescence a panicle. Panicle contracted, linear, 10–20 cm long. Panicle branches scabrous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 14–25 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus elongated, 1.5–4.5 mm long, pungent.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 14–25 mm long, 1 length of upper glume, membranous, without keels, 1–3 -veined. Lower glume lateral veins absent or obscure. Lower glume surface scabrous, rough on veins. Lower glume apex acuminate. Upper glume lanceolate, 14–24 mm long, membranous, without keels, 1–3 -veined. Upper glume lateral veins absent or obscure. Upper glume surface scabrous, rough on veins. Upper glume apex acuminate.

**Florets.** Fertile lemma lanceolate, subterete, 2.3–6.5 mm long, coriaceous, without keel, 5 -veined, more than 3-veined. Lemma surface pubescent. Lemma margins convolute, covering most of palea. Lemma apex awned, 1 -awned. Principal lemma awn bigeniculate, 50–170 mm long overall, with twisted column, deciduous. Palea 0.8–2.8 mm long, without keels. Palea surface puberulous.

**Flower and Fruit.** Lodicules 3, 0.8–2 mm long, membranous. Anthers 3, retained within floret. Caryopsis with adherent pericarp, fusiform, 2.5–5 mm long.

**Distribution (TDWG). Continent.** Africa.

**Country /Province /State.** Northern Africa. Morocco.

**Stipa majalis** M.V. Klokov. *Novosti Sist. Vyssh. Nizsh. Rast. (Kiev)*, 1975: 43 (1976).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online.

**TYPE** from Russia. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: IT: *L.Kritskaya s.n.*, 19 May 1973, Ukraine: Odessa prov.: Komintern dist.: vill.Pershotravnovoe (LE). Orig. label: "Odesskaya obl., Kominternovskij r-n, sel. Pershotravnovoe, stepnye sklony,...".

**Illustrations (Books):** No illustration found (BKS).

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Culms erect, 50–100 cm long. Culm-nodes pubescent. Leaves basal and cauline. Leaf-sheaths glabrous on surface or puberulous, outer margin hairy. Ligule an eciliate membrane, 0.5–4.5 mm long, membranous, pubescent on abaxial surface, erose, obtuse. Leaf-blades erect to ascending, filiform, conduplicate, 30–40 cm long, 1.1–1.6 mm wide. Leaf-blade surface scaberulous, rough adaxially, glabrous.

**Inflorescence.** Inflorescence a panicle, comprising 5–8 fertile spikelets. Peduncle pubescent above. Panicle contracted, elliptic, 12–15 cm long, bearing few spikelets. Primary panicle branches bearing spikelets almost to the base. Panicle branches straight, hispidulous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, laterally compressed, compressed slightly, 45–70 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus elongated, pungent.

**Glumes.** Glumes similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 45–70 mm long, 1 length of upper glume, membranous. Lower glume surface pilose, hairy at base. Lower glume margins flat. Lower glume apex setaceously acuminate. Upper glume lanceolate, 45–70 mm long, 2.5–5.3 length of adjacent fertile lemma, membranous, without keels. Upper glume surface pilose, hairy at base. Upper glume apex setaceously acuminate.

**Florets.** Fertile lemma linear, subterete, 18.5–21.5 mm long, coriaceous, 3(–5) -veined, 0–3 -veined. Lemma margins covering most of palea, ciliate. Lemma apex rostrate, awned, 1 -awned. Principal lemma awn bigenulate, 300–370 mm long overall, with 230–280 mm long limb, with twisted column, deciduous, abscising from top of lemma, limb plumose, with 3–4 mm long hairs. Column of lemma awn 6.5–8.5 mm long. Palea linear, tightly convolute around flower, coriaceous, 2 -veined, without keels.

**Flower and Fruit.** Caryopsis with adherent pericarp.

**Distribution (TDWG). Continent.** Europe.

**Region.** Eastern Europe.

**Country /Province /State.** Ukraine.

**Stipa mandavillei** H. Freitag. *Davis & Hedge Festschrift* (ed. Kit Tan): 118 (1989).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online.

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): In honor of J. P. Mandaville Jr. who collected in the Middle East prior to 2000.

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Culms 30–65 cm long, 4–5 -noded. Leaf-sheaths glabrous on surface or pubescent, outer margin hairy. Leaf-sheath oral hairs bearded, 0.5–1.3 mm long. Ligule an eciliate membrane, 0.5–1.5 mm long, obtuse. Leaf-blades flat or involute, 10–35 cm long, 1–2.5 mm wide. Leaf-blade surface pubescent, densely hairy, hairy adaxially.

**Inflorescence.** Inflorescence a panicle, exerted or embraced at base by subtending leaf. Panicle contracted, linear, (7–)10–15(–20) cm long, 1–2.5 cm wide. Primary panicle branches bearing 3 fertile spikelets on each lower branch. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 7–10 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus evident, curved, 0.5–0.7 mm long, pilose, pungent. Floret callus hairs 0.1–0.2 length of lemma.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, similar to fertile lemma in texture. Lower glume lanceolate, 7–10 mm long, 0.9 length of upper glume, membranous, much thinner on margins, without keels, 3 -veined. Lower glume apex acuminate. Upper glume lanceolate, 6.5–9 mm long, 1.4–1.6 length of adjacent fertile lemma, membranous, with hyaline margins, without keels, 3 -veined. Upper glume apex acuminate.

**Florets.** Fertile lemma lanceolate, subterete, 4.5–5.5 mm long, membranous, without keel, 5 -veined, more than 3-veined. Lemma surface pilose. Lemma margins convolute, covering most of palea. Lemma hairs 0.7–1 mm long. Lemma apex dentate, 2 -fid, awned, 1 -awned. Principal lemma awn from a sinus, geniculate or bigenulate, 250–400 mm long overall, with twisted column, deciduous, limb pubescent (limb), glabrescent

towards tip. Column of lemma awn ciliate, with 0.5–1.5 mm long hairs. Palea 0.25 length of lemma, 2 -veined, without keels. Palea surface pilose.

**Flower and Fruit.** Lodicules 3, 1.1–1.3 mm long. Anthers 3, 2.5–3 mm long, anther tip penicillate. Stigmas 2. Ovary glabrous. Caryopsis with adherent pericarp, fusiform. Hilum linear.

**Distribution (TDWG). Continent.** Temperate Asia.

**Country /Province /State.** Arabian Peninsula. Oman.

**Stipa manrakica** Yu.A. Kotukhov. *Bot. Zhurn.*, 74(3): 414 (1989).

**TYPE** from Kazakhstan. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Manrak: Kotuchov (LE holo).

**Classification.** Tribe: Stipeae.

**Distribution (TDWG). Continent.** Temperate Asia.

**Country /Province /State.** Middle Asia. Kazakhstan.

**Stipa margelanica** P. Smirn. Fedde, *Repert.* xxvi. 264 (1929).

**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: N. Desyatov 892, 31 May 1913, Alai Range.

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): L. *-ica*, belonging to. From the Margelan District, Turkestan.

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial, caespitose, clumped densely. Basal innovations intravaginal. Culms 40–60 cm long, 3 -noded. Culm-internodes distally glabrous. Leaf-sheaths smooth or papillose, outer margin glabrous. Ligule an eciliate membrane, 2–4 mm long, 1–3 mm long on basal shoots, pubescent on abaxial surface, lacerate, obtuse. Leaf-blades flat or convolute, 5–17 cm long, 1.5–2 mm wide. Leaf-blade surface glabrous or puberulous.

**Inflorescence.** Inflorescence a panicle, exerted or embraced at base by subtending leaf. Panicle open, linear, 12–23 cm long, 2–3 cm wide. Primary panicle branches 2 -nate, 3–7 cm long, bearing 1–3 fertile spikelets on each lower branch. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 19–23 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus elongated, curved, 1.5–2 mm long, pilose, pungent, with circular scar. Floret callus hairs 1 mm long.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 19–23 mm long, 1.1 length of upper glume, membranous, without keels, 3–5 -veined. Lower glume primary vein scabrous. Lower glume apex acuminate. Upper glume lanceolate, 17–20 mm long, membranous, without keels, 5–7 -veined. Upper glume primary vein scabrous. Upper glume apex acuminate.

**Florets.** Fertile lemma lanceolate, subterete, 9–10 mm long, coriaceous, without keel, 5 -veined, more than 3-veined. Lemma surface pubescent, hairy below, hairy in lines. Lemma margins convolute, covering most of palea. Lemma hairs 0.5–0.6 mm long. Lemma apex surmounted by a ring of hairs, with this appendage 0.2–0.5 mm long, awned, 1 -awned. Principal lemma awn bigeniculate, 90–110 mm long overall, with twisted column, limb scabrous. Middle segment of lemma awn 10–12 mm long. Column of lemma awn 18–25 mm long. Palea without keels. Palea surface puberulous, hairy on back.

**Flower and Fruit.** Lodicules 3, 2–2.3 mm long, glabrous or ciliate. Anthers 3, 3 mm long, yellow, anther tip smooth. Stigmas 2. Ovary glabrous. Caryopsis with adherent pericarp, fusiform, 5.5–6.5 mm long. Embryo 0.4 length of caryopsis. Hilum linear, 1 length of caryopsis.

**Distribution (TDWG). Continent.** Temperate Asia.

**Country /Province /State.** Middle Asia. Kirgizistan.

**TDWG4.**

**Stipa martinovskiy** M.V. Klokov. *Novosti Sist. Vyssh. Nizsh. Rast.* (Kiev), 1975: 37 (1976).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online.

**TYPE** from Russia. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: : Based on *S. rubens* subsp. *sublevis* ; Russia, Partizanskoe: Barbarich et al. (KW holo).

**Illustrations (Books):** No illustration found (BKS).

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial, caespitose, clumped moderately or densely. Culms 50–100 cm long, (2–)3-noded. Culm-internodes distally pubescent. Leaf-sheaths puberulous, outer margin hairy. Ligule a ciliolate membrane, 0.5–7 mm long, pubescent on abaxial surface. Leaf-blades conduplicate, 23–52 cm long, 1–2 mm wide, grey-green. Leaf-blade surface pubescent, hairy adaxially. Leaf-blade apex attenuate.

**Inflorescence.** Inflorescence a panicle, comprising 5–7 fertile spikelets. Panicle open or contracted, linear or lanceolate, 7.5–14 cm long, bearing few spikelets. Panicle branches bearded in axils (of lowest node). 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, 60–70 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus elongated.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 1 length of upper glume, membranous, without keels. Lower glume surface pilose, hairy at base. Lower glume apex acuminate. Upper glume lanceolate, 60–70 mm long, membranous, without keels. Upper glume surface pilose, hairy at base. Upper glume apex acuminate.

**Florets.** Fertile lemma lanceolate, subterete, 18–21 mm long, coriaceous, without keel, 5-veined, more than 3-veined. Lemma margins convolute, covering most of palea, pubescent. Lemma apex awned, 1-awned. Principal lemma awn bigeniculate, 260–420 mm long overall, with 195–320 mm long limb, with twisted column, limb plumose, with 4–5.5 mm long hairs. Column of lemma awn 70–100 mm long, scabrous. Palea without keels.

**Flower and Fruit.** Hilum linear.

**Distribution (TDWG). Continent.** Europe.

**Region.** Eastern Europe.

**Country /Province /State.** Ukraine.

**Stipa mayeri** Martinovsky. *Acta Bot. Croat.* 30: 145 (1971).

**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 Yugoslavia. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Yugoslavia, Mirusa: Mayer.

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): in honor of Friedrich Mayer (1788–1828) German-born tutor in Italy.

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Culms 50–100 cm long. Culm-internodes distally pubescent. Leaf-sheaths pubescent, outer margin hairy. Ligule an eciliate membrane, 2–5 mm long, pubescent on abaxial surface. Leaf-blades conduplicate, 2 mm wide. Leaf-blade surface ribbed, scabrous, rough on both sides, glabrous. Leaf-blade apex acute.

**Inflorescence.** Inflorescence a panicle. Peduncle pubescent above. Panicle contracted, linear, 10–15 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, 50–75 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus evident, pubescent, acute.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 1 length of upper glume, membranous, without keels, 3–5-veined. Lower glume surface puberulous. Lower glume apex attenuate. Upper glume lanceolate, 50–75 mm long, membranous, without keels, 3–5-veined. Upper glume surface puberulous. Upper glume apex attenuate.

**Florets.** Fertile lemma lanceolate, subterete, 18–19 mm long, coriaceous, without keel, 5-veined, more than 3-veined. Lemma surface puberulous, hairy all along, hairy in lines. Lemma margins convolute, covering most of palea. Lemma apex awned, 1-awned. Principal lemma awn bigeniculate, 240–270 mm long overall, with twisted column, limb plumose, with 3–4 mm long hairs. Palea without keels.

**Flower and Fruit.** Lodicules 3. Anthers 3. Stigmas 2. Ovary glabrous. Caryopsis with adherent pericarp, fusiform. Hilum linear.

**Distribution (TDWG). Continent.** Europe.

**Region.** Southeastern Europe.

**Country /Province /State.** : Yugoslavia.

**Stipa meridionalis** F.M. Vazquez & J.A. Devesa. *Bot. J. Linn. Soc.*, 124(2): 204 (1997).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

**TYPE** from Morocco. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: Morocco: Djebel azrou Akehar, 2000 m, 34.47N 3.50 W, 11 Jun 1929, *Font i Quer 81174a* (BC-81174a).

**Illustrations (Books):** No illustration found (BKS).

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Annual, caespitose. Culms erect, 40–75 cm long. Culm-nodes purple. Leaf-sheaths glabrous on surface. Ligule an eciliate membrane, 5–8 mm long, scaberulous on abaxial surface. Leaf-blades convolute, 10–55 cm long, 0.3–1.1 mm wide. Leaf-blade surface scabrous, rough adaxially. Leaf-blade apex acuminate.

**Inflorescence.** Inflorescence a panicle. Panicle open, lanceolate or ovate, 15–27 cm long. Panicle branches scabrous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 14–40 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus elongated, 1.5–2.9 mm long, pungent.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 14–40 mm long, 1.1 length of upper glume, membranous, without keels, 3 -veined. Lower glume surface scabrous, rough on veins. Lower glume apex acuminate. Upper glume lanceolate, 12–35 mm long, membranous, without keels, 3 -veined. Upper glume surface scabrous, rough on veins. Upper glume apex acuminate.

**Florets.** Fertile lemma lanceolate, subterete, 10–14 mm long, coriaceous, without keel, 5 -veined, more than 3-veined. Lemma surface pubescent, hairy in lines. Lemma margins convolute, covering most of palea. Lemma apex awned, 1 -awned. Principal lemma awn bigeniculate, 80–170 mm long overall, with twisted column. Palea 9–13 mm long, without keels. Palea surface glabrous or pubescent.

**Flower and Fruit.** Lodicules 3, 1.5–3.2 mm long, membranous. Anthers 3, retained within floret. Caryopsis with adherent pericarp, fusiform, 6–8.5 mm long.

**Distribution (TDWG). Continent.** Africa.

**Country /Province /State.** Northern Africa. Morocco.

**Stipa milleri** H.J. Noltie. *Edinburgh J. Bot.*, 56(2): 288 (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: Sikkim: goichang, Lasha Chhu valley, 27°55'52"N, 88°36'17"E, 4555 m, 19 Jul 1996, *Eens 349* (HT: E; IT: BSHC).

**Illustrations (Books):** H.J.Noltie, *The Grasses of Bhutan* (2000) (527, Fig.11).

**Derivation** (Clifford & Bostock 2007): In honor of D.J.Miller (fl. 1984) rangeland and livestock specialist who studied the alpine grasses of the Kingdom of Bhutan.

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial, caespitose, clumped densely. Culms erect, 30–45 cm long. Culm-internodes mid-green or purple, distally glabrous. Leaves basal and cauline. Leaf-sheaths mostly shorter than adjacent culm internode, scaberulous, glabrous on surface. Ligule an eciliate membrane, obtuse. Leaf-blades filiform, 1–2 mm wide. Leaf-blade venation with 3–7 secondary veins. Leaf-blade surface scabrous.

**Inflorescence.** Inflorescence a panicle. Panicle open, linear, 3.7–6 cm long, bearing few spikelets. Primary panicle branches indistinct the panicle almost racemose. Spikelets solitary or in pairs. Fertile spikelets pedicelled. Pedicels present, 7–12 mm long.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 9.4–10.2 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus brief, 0.5–0.7 mm long, pubescent, acute. Floret callus hairs 0.5 mm long.

**Glumes.** Glumes persistent, similar, subequal in width, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 9.5–10.2 mm long, 1.3–1.4 length of upper glume, hyaline, purple. Lower glume apex acuminate. Upper glume lanceolate or oblong, 7.5–7.6 mm long, 1.7 length of adjacent fertile lemma, hyaline, purple, without keels. Upper glume apex acute.

**Florets.** Fertile lemma oblong, subterete, 4.4–4.6 mm long, 0.8 mm wide, coriaceous, without keel. Lemma surface puberulous, hairy below. Lemma margins convolute, covering most of palea. Lemma hairs 0.1–0.3 mm long. Lemma apex dentate, 2 -fid, with lobes 0.2 mm long, awned, 1 -awned. Principal lemma awn from a sinus, geniculate, 13 mm long overall, with twisted column, limb ciliate, with 0.7–1.1 mm long hairs. Column of

lemma awn 9 mm long, with 0.7–1.1 mm long hairs. Palea lanceolate, 4 mm long, 2 -veined, without keels. Palea surface glabrous.

**Flower and Fruit.** Lodicules 3. Anthers 3. Stigmas 2. Caryopsis with adherent pericarp.

**Distribution (TDWG). Continent.** Tropical Asia.

**Country /Province /State. Indian Subcontinent.** Eastern Himalaya.

**TDWG4.** Bhutan, Sikkim.

**Stipa mongolorum** Tsvelev. *Akad. Nauk SSSR Bot. Inst. Komarova, Rast. Tsentral. Azii, Fasc. 4, 57* (1968).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online, S-L Chen et al, *Flora of China* 22 (Poaceae) (2006).

**TYPE** from Mongolia. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *Junatov A. s.n.*, 16 Jun 1941, Mongolia: Erdeny somon: mnt Borocho-Tala: S Dзамын=Ude (LE). Orig. lab.: "MNR, Vost-Gob. ajmak, Ehrdeni somon, uroch. Borokha-Tala, k yugu ot Dзамын=ude, pustynnaya step".

**Illustrations (Books):** S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 268).

**Illustrations (Journals):** *Bot. J. Linn. Soc.* (167:409, Fig.3 (2011)).

**Derivation** (Clifford & Bostock 2007): L. of the Mongols. From Mongolia.

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial, caespitose, clumped densely. Culms erect, 15–40 cm long. Culm-nodes pubescent. Leaf-sheaths smooth, glabrous on surface, outer margin glabrous or hairy. Ligule an eciliate membrane, 0.3 mm long, scaberulous on abaxial surface. Leaf-blades filiform, involute, 0.3–0.7 mm wide. Leaf-blade surface puberulous, hairy adaxially.

**Inflorescence.** Inflorescence a panicle. Panicle open, elliptic, 8–20 cm long. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, laterally compressed, 14–19 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus evident, 1.5 mm long, obtuse.

**Glumes.** Glumes persistent, similar, exceeding apex of florets. Lower glume lanceolate, 14–19 mm long, 0.9 length of upper glume, membranous, 1-keeled, 3–5 -veined. Lower glume apex attenuate. Upper glume lanceolate, 14–19 mm long, membranous, 1-keeled, 3–5 -veined. Upper glume apex attenuate.

**Florets.** Fertile lemma lanceolate, subterete, 6–7.5 mm long, membranous, without keel, 3 -veined, 0–3 -veined. Lemma surface pilose. Lemma margins convolute, covering most of palea. Lemma apex dentate, 2 -fid, awned, 1 -awned. Principal lemma awn from a sinus, geniculate, 45–65 mm long overall, with 40–60 mm long limb, with twisted column, limb hirsute, with 2–3.5 mm long hairs. Column of lemma awn 4–7 mm long, hirtellous, with 2 mm long hairs. Palea 2 -veined, without keels.

**Flower and Fruit.** Anthers 3. Stigmas 2. Caryopsis with adherent pericarp.

**Distribution (TDWG). Continent.** Temperate Asia.

**Country /Province /State. China, Mongolia.** Inner Mongolia. Mongolia.

**TDWG4.** Nei Mongol, or Ningxia.

**Stipa munroana** Bor. *Kew Bull.* 1954, 500 (1954).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online, N.L.Bor, *Grasses of Burma, Ceylon, India and Pakistan* (1960).

**TYPE** from Pakistan. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: "Afghanistan: Siah Sung, West Hindu Kush, 3–3,500m., ..."2, *Griffith 1066* ("typus in Herb. Kew").

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): L. -ana, indicating connection. In honor of William Munro (1818–1880) Scots-born British soldier and amateur botanist who collected extensively in India.

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial. Culms 100–150 cm long. Ligule an eciliate membrane, 10 mm long. Leaf-blades involute, 30–60 cm long, 5 mm wide. Leaf-blade surface scabrous, rough adaxially. Leaf-blade apex acuminate.

**Inflorescence.** Inflorescence a panicle. Panicle open, ovate, effuse, nodding, 20–30 cm long. Primary panicle branches 3–4 -nate, 5–10 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, 9–10 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus evident, obtuse.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume linear or lanceolate, 7 mm long, 0.75 length of upper glume, hyaline, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume surface scabrous. Lower glume apex acute. Upper glume linear or lanceolate, 9–9.5 mm long, 1.1 length of adjacent fertile lemma, hyaline, without keels, 3 -veined. Upper glume surface asperulous. Upper glume apex acute.

**Florets.** Fertile lemma lanceolate, subterete, 8.5 mm long, coriaceous, without keel, 5 -veined, more than 3-veined. Lemma surface pilose. Lemma margins convolute, covering most of palea. Lemma apex dentate, 2 -fid, awned, 1 -awned. Principal lemma awn from a sinus, geniculate, 9–10 mm long overall, with a straight or slightly twisted column. Column of lemma awn 6.5 mm long, glabrous. Palea 6 mm long, 0.75 length of lemma, 2 -veined, without keels. Palea surface pilose, hairy on back.

**Flower and Fruit.** Anthers 3, 4–4.5 mm long, anther tip penicillate. Stigmas 2. Ovary glabrous. Caryopsis with adherent pericarp. Hilum linear.

**Distribution (TDWG). Continent.** Temperate Asia.

**Country /Province /State.** Western Asia. Iran.

**Stipa nachiczewanica** S.G. Musaev & I.A. Sadykhov. *Novosti Sist. Vyssh. Rast.*, 14: 4 (1977).

**TYPE** from Russia, Azerbaijan. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Nachiczewan: Musajev & Sodychov (BAK holo, LE).

**Classification.** Tribe: Stipeae.

**Distribution (TDWG). Continent.** Temperate Asia.

**Country /Province /State. Caucasus.** Transcaucasus.

**Stipa nakaii** Honda. *Rep. First Sc. Exped. Manchoukuo, Sect. IV. iv. (Index Fl. Jehol.)* 104 (1936).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online.

**TYPE** from China. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Manchuria: Prov. Chin-chou: Prope Chao-yang, 8 Aug. 1933, *Nakai, Honda & Kitagawa*.

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): in honor of Takenoshin Nakai (1882–1952) Japanese botanist.

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial, caespitose, clumped loosely. Butt sheaths pubescent. Culms erect, 60 cm long. Culm-internodes distally glabrous. Culm-nodes glabrous. Leaf-sheaths longer than adjacent culm internode, pubescent (below). Ligule an eciliate membrane. Leaf-blades 25–30 cm long, 2–4 mm wide. Leaf-blade surface glabrous.

**Inflorescence.** Inflorescence a panicle. Panicle open, lanceolate, 20–25 cm long. Primary panicle branches appressed, 2 -nate. Panicle axis scabrous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, laterally compressed, 5–6.5 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes persistent, similar, exceeding apex of florets. Lower glume lanceolate or oblong, 5.5 mm long, 0.8–0.9 length of upper glume, membranous, 1-keeled, 3 -veined. Lower glume surface puberulous. Lower glume apex acute. Upper glume lanceolate, 6.5 mm long, membranous, 1-keeled, 3 -veined. Upper glume surface puberulous. Upper glume apex acuminate.

**Florets.** Fertile lemma oblong or ovate, subterete, 5 mm long, coriaceous, without keel, 5 -veined, more than 3-veined. Lemma surface pubescent. Lemma margins convolute, covering most of palea. Lemma apex awned, 1 -awned. Principal lemma awn geniculate, 12 mm long overall, with twisted column. Palea lanceolate, 4 mm long, 0 -veined, without keels. Palea surface puberulous.

**Flower and Fruit.** Anthers 3, 4 mm long. Stigmas 2. Caryopsis with adherent pericarp.

**Distribution (TDWG). Continent.** Temperate Asia.

**Country /Province /State. China, Mongolia.** Inner Mongolia, Manchuria, China North-Central. Mongolia. Hebei, Shanxi. Nei Mongol. Liaoning.

**Stipa nitens** Ball. *Journ. Linn. Soc.* xvi. 712. (1878).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online.



**TYPE** from Morocco. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: T: Atlas Mountains.

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): *L. niteo*, shine. Spikelets or lemmas glossy at maturity.

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial, caespitose, clumped densely. Culms erect, 20–40 cm long. Culm-internodes antrorsely scabrous. Lateral branches lacking. Leaf-sheaths smooth or scaberulous, glabrous on surface. Leaf-sheath oral hairs pubescent. Ligule an eciliate membrane, truncate. Leaf-blades flexuous, filiform, conduplicate or convolute, 5–15 cm long, 0.5–1 mm wide. Leaf-blade surface ribbed, scabrous, rough adaxially. Leaf-blade apex attenuate, pungent.

**Inflorescence.** Inflorescence a panicle. Panicle contracted, linear, 7–15 cm long. Primary panicle branches 3-nate, 1–3 cm long. Panicle axis scabrous. Panicle branches bearded in axils. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 17 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus elongated, 1 mm long, pubescent, acute.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma, shiny. Lower glume lanceolate, 17 mm long, 1.3 length of upper glume, hyaline, without keels, 3 -veined. Lower glume primary vein scaberulous. Lower glume apex attenuate. Upper glume lanceolate, 13 mm long, 2.6 length of adjacent fertile lemma, hyaline, without keels, 3 -veined. Upper glume primary vein scaberulous. Upper glume apex attenuate.

**Florets.** Fertile lemma lanceolate, subterete, 5 mm long, coriaceous, light brown, without keel, 5 -veined, more than 3-veined. Lemma surface pubescent. Lemma margins convolute, covering most of palea. Lemma apex awned, 1 -awned. Principal lemma awn geniculate, twisted together, 60–100 mm long overall, with twisted column. Column of lemma awn hirsute. Palea linear, 2.2 mm long, membranous, 2 -veined, without keels.

**Flower and Fruit.** Lodicules 2, 1 mm long. Anthers 3, 4 mm long, yellow, anther tip penicillate. Stigmas 2. Ovary glabrous. Caryopsis with adherent pericarp, fusiform, 4.5 mm long, light brown. Embryo 0.25 length of caryopsis. Hilum linear, 1 length of caryopsis.

**Distribution (TDWG). Continent.** Africa.

**Country /Province /State.** Northern Africa. Libya, Morocco.

**Stipa novakii** Martinovsky. Fedde, *Repert.* lxxiii. 147 (1966).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online, T.G.Tutin et al, *Flora Europaea* 5 (1980).

**TYPE** from Yugoslavia. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Yugoslavia, Kraljevo: Novak (PR holo).

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): In honor of Frantisek Antonin Novak (1892–1964) Czech botanist.

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Butt sheaths persistent and investing base of culm, with compacted dead sheaths. Culms 25–40 cm long. Culm-internodes distally pubescent. Leaf-sheaths puberulous. Ligule a ciliolate membrane, 2.5–4 mm long, 1 mm long on basal shoots, pubescent on abaxial surface. Leaf-blades filiform, conduplicate, 25–50 cm long, 1–2 mm wide, stiff, glaucous. Leaf-blade venation with 9 inner ridges. Leaf-blade surface ribbed, with rectangular ribs, scabrous, rough adaxially.

**Inflorescence.** Inflorescence a panicle, comprising 7 fertile spikelets. Panicle contracted, linear, bearing few spikelets. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 35–55 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus evident, acute.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 1 length of upper glume, membranous, without keels. Lower glume apex setaceously acuminate. Upper glume lanceolate, 35–55 mm long, membranous, without keels. Upper glume apex setaceously acuminate.

**Florets.** Fertile lemma lanceolate, subterete, 14–15 mm long, coriaceous, without keel, 5 -veined, more than 3-veined. Lemma margins convolute, covering most of palea. Lemma apex awned, 1 -awned. Principal lemma awn bigeniculate, 130–160 mm long overall, with twisted column, limb plumose. Palea without keels.

**Flower and Fruit.** Lodicules 3. Anthers 3. Stigmas 2. Ovary glabrous. Caryopsis with adherent pericarp, fusiform. Hilum linear.

**Distribution (TDWG). Continent.** Europe.

**Region. Southeastern Europe.**

**Country /Province /State. :** Yugoslavia.

**Stipa offneri** Breistr., nom superfl. *Proc. - Verb. Soc. Dauph. Etud. Biol., Grenoble*, Ser. 3, xvii. 2 (1950).

Regarded by K as a synonym (*S. juncea*).

**Accepted by:** T.G.Tutin et al, *Flora Europaea* 5 (1980).

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): in honor of Jules Offner (1873–1957) French botanist.

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial. Culms 40–80 cm long. Leaf-sheaths smooth, glabrous on surface. Ligule a ciliolate membrane, 4.5–5.5 mm long, acute. Leaf-blades filiform, convolute, 0.5 mm wide. Leaf-blade surface puberulous, densely hairy, hairy adaxially.

**Inflorescence.** Inflorescence a panicle. Panicle open, linear or lanceolate, 8–15 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, 14–20 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus evident, pilose, acute.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 1 length of upper glume, membranous, without keels. Lower glume apex acuminate. Upper glume lanceolate, 14–20 mm long, membranous, without keels. Upper glume apex acuminate.

**Florets.** Fertile lemma lanceolate, subterete, 10–13 mm long, coriaceous, light brown, without keel, 5 - veined, more than 3-veined. Lemma margins convolute, covering most of palea, ciliate, hairy below. Lemma apex surmounted by a ring of hairs, awned, 1 -awned. Principal lemma awn bigeniculate, 90–110 mm long overall, with twisted column, limb puberulous. Column of lemma awn pubescent, with 0.4–0.6 mm long hairs. Palea without keels.

**Flower and Fruit.** Lodicules 3. Anthers 3. Stigmas 2. Ovary glabrous. Caryopsis with adherent pericarp, fusiform. Hilum linear.

$2n = 44$  (1 ref TROPICOS).

**Distribution (TDWG). Continent.** Europe.

**Region. Southwestern Europe, Southeastern Europe.**

**Country /Province /State. :** Balears, France, Sardinia, Spain. : Italy.

**Stipa okmirii** A.V. Dengubenko. *Bot. Zhurn.*, 65(3): 431 (1980).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online.

**TYPE** from Russia. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: Russia, Pamirs: Dengubenko 2731.

**Illustrations (Books):** No illustration found (BKS).

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Butt sheaths persistent and investing base of culm, with compacted dead sheaths. Culms 70–85 cm long. Culm-internodes distally pubescent. Leaf-sheaths scaberulous. Ligule a ciliolate membrane, 1–3 mm long, pubescent on abaxial surface. Leaf-blades filiform, convolute, 0.3–0.4 mm wide. Leaf-blade surface scabrous, rough abaxially, pubescent, densely hairy, hairy adaxially.

**Inflorescence.** Inflorescence a panicle. Panicle open, elliptic, 25 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, 60–70 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus elongated, 2.5 mm long, pubescent, pungent.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 60–70 mm long, 1 length of upper glume, membranous, without keels. Lower glume apex attenuate. Upper glume lanceolate, 60–70 mm long, membranous, without keels. Upper glume apex attenuate.

**Florets.** Fertile lemma elliptic, subterete, 12–13 mm long, coriaceous, without keel, more than 3-veined. Lemma surface pubescent, hairy in lines (7 lines). Lemma margins convolute, covering most of palea. Lemma

apex awned, 1 -awned. Principal lemma awn geniculate, 210–230 mm long overall, with twisted column, limb plumose, with 5–6 mm long hairs. Column of lemma awn scabrous. Palea without keels.

**Flower and Fruit.** Anthers 3.

**Distribution (TDWG). Continent.** Temperate Asia.

**Country /Province /State. Middle Asia.** Turkmenistan.

### **Stipa orientalis** Trin. ex Ledeb. *Fl. Alt.* i. 83. (1829).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), S-L Chen et al, *Flora of China* 22 (Poaceae) (2006), N.L.Bor, *Grasses of Burma, Ceylon, India and Pakistan* (1960), T.G.Tutin et al, *Flora Europaea* 5 (1980), N.Tsvelev, *Grasses of the Soviet Union* (1983).

**TYPE** from China. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: ST: *Jacquemont &c.*, China: Xizang: 10–15,000 ft Possible type..

**Illustrations (Books):** S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 273).

**Derivation** (Clifford & Bostock 2007): *L. oriens*, the east; -alis, pertaining to. From the eastern Mediterranean through to Turkey.

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial, caespitose, clumped densely. Butt sheaths coriaceous, persistent and investing base of culm. Culms 20–35 cm long. Ligule an eciliate membrane, 2–3 mm long. Leaf-blades filiform, involute, 10–20 cm long, 0.5–1 mm wide. Leaf-blade surface smooth or scaberulous, rough abaxially.

**Inflorescence.** Inflorescence a panicle, embraced at base by subtending leaf. Panicle contracted, linear, 5–10 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, 20–33 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus elongated, 1.5–2.5 mm long, pubescent, pungent.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma, shiny. Lower glume lanceolate, 1 length of upper glume, membranous, without keels, 3 -veined. Lower glume apex attenuate. Upper glume lanceolate, 20–33 mm long, membranous, without keels, 3 -veined. Upper glume apex attenuate.

**Florets.** Fertile lemma elliptic, subterete, 6–10 mm long, coriaceous, without keel, more than 3-veined. Lemma surface pubescent, hairy in lines. Lemma margins convolute, covering most of palea. Lemma apex surmounted by a ring of hairs, awned, 1 -awned. Principal lemma awn bigeniculate, 35–70 mm long overall, with twisted column, deciduous, limb plumose, with 3–5 mm long hairs. Column of lemma awn pubescent, with 0.4–1 mm long hairs. Palea 2 -veined, without keels.

**Flower and Fruit.** Anthers 3. Stigmas 2. Ovary glabrous. Caryopsis with adherent pericarp. Hilum linear.

$2n = 44$  (1 ref TROPICOS).

**Distribution (TDWG). Continent.** Europe, Temperate Asia, Tropical Asia.

**Region. Eastern Europe.**

**Country /Province /State.** East European Russia, South European Russia. Siberia, **Middle Asia, Western Asia, China, Mongolia.** Altay, Irkutsk, Tuva. Kazakhstan, Kirgizistan, Turkmenistan, Tadzhikistan, Uzbekistan. Iran. Qinghai, Tibet, Xinjiang, Mongolia. **Indian Subcontinent.** West Himalaya.

**TDWG4.** Himachal Pradesh, Jammu Kashmir.

### **Stipa ovczinnikovii** Roshev. ex Kom. *Trudy Bot. Inst. Akad. Nauk S.S.S.R., Ser. 1, Fl. Sist. Vyssh. Rast.* 2: 92 (1936).

**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: "Asia Media: Tadzhikistania in jugo Se??vaschan prope pagum Sjuzhena,...", *P. Ovozinnikov* 144, 3.VI.1932.

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): In honor of Pavel Nikolaevich Ovchinnikov (1903–1975) Russian botanist.

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial, caespitose, clumped densely. Culms geniculately ascending, 25–35 cm long. Culm-internodes distally pubescent. Leaves basal and cauline. Leaf-sheaths mostly shorter than adjacent culm internode, glabrous on surface. Ligule an eciliate membrane, 0.1–0.4 mm long on basal shoots. Leaf-blades filiform, involute, 12–17 cm long, 0.4–1 mm wide. Leaf-blade surface pubescent, hairy adaxially.

**Inflorescence.** Inflorescence a panicle. Panicle contracted, linear, 10 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 linear, subterete, 50–70 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus evident, curved, 1.5 mm long, pubescent, hairy on the margins, acute.

**Glumes.** Glumes persistent, similar, subequal in width, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 1 length of upper glume, membranous, pallid. Lower glume apex attenuate. Upper glume lanceolate, 50–70 mm long, membranous, pallid, without keels. Upper glume apex attenuate.

**Florets.** Fertile lemma linear to lanceolate, subterete, 13–14 mm long, coriaceous, without keel, more than 3-veined. Lemma surface pubescent, hairy on veins. Lemma margins convolute, covering most of palea. Lemma apex surmounted by a ring of hairs, awned, 1 -awned. Principal lemma awn geniculate, 230–280 mm long overall, with twisted column, limb plumose, with 5–8 mm long hairs. Column of lemma awn 20 mm long, plumose. Palea 2 -veined, without keels.

**Flower and Fruit.** Lodicules 3. Anthers 3. Stigmas 2. Caryopsis with adherent pericarp.

**Distribution (TDWG). Continent.** Temperate Asia.

**Country /Province /State.** Middle Asia. Turkmenistan.

**TDWG4.**

### **Stipa parviflora** Desf. *Fl. Atlant.* i. 98. t. 29. (1798).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), S-L Chen et al, *Flora of China* 22 (Poaceae) (2006), T.G.Tutin et al, *Flora Europaea* 5 (1980).

**TYPE** from Tunisia. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *Desfontaines s.n.*, (P). Habitat in collibus aridis prope Mascara et in regno Tunetano.,

**Illustrations (Books):** N.Feinbrun-Dothan, *Flora Palaestina* 4 (1986) (Pl. 342), N.L.Bor, *Gramineae in Flora of Iraq* (1968) (409, Pl. 153).

**Derivation** (Clifford & Bostock 2007): *L. parvus*, small; flos, flower. Spikelets small or with few florets.

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Butt sheaths persistent and investing base of culm, with compacted dead sheaths. Culms erect, 30–70 cm long. Ligule an eciliate membrane. Leaf-blades convolute, 10–20 cm long, 3–7 mm wide, glaucous. Leaf-blade surface scaberulous, rough adaxially.

**Inflorescence.** Inflorescence a panicle, embraced at base by subtending leaf. Panicle open, elliptic, effuse, 10–20 cm long. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 10–15 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus elongated, curved, bearded, pungent.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 10–15 mm long, 1.4–1.5 length of upper glume, membranous, without keels, 3 -veined. Lower glume apex acuminate. Upper glume lanceolate, 7–10 mm long, 1.6–1.7 length of adjacent fertile lemma, membranous, without keels, 3 -veined. Upper glume apex acuminate.

**Florets.** Fertile lemma lanceolate, subterete, 4–6 mm long, coriaceous, without keel, 5 -veined, more than 3-veined. Lemma surface villous. Lemma margins convolute, covering most of palea. Lemma apex acute, awned, 1 -awned. Principal lemma awn bigeniculate, 70–100 mm long overall, with twisted column, deciduous, limb scaberulous. Column of lemma awn glabrous. Palea 2 -veined, without keels.

**Flower and Fruit.** Anthers 3. Stigmas 2. Ovary glabrous. Caryopsis with adherent pericarp, fusiform. Hilum linear.

**Distribution (TDWG). Continent.** Europe, Africa, Temperate Asia.

**Region.** Southwestern Europe.

**Country /Province /State.** : France, Spain. **Northern Africa.** Algeria, Egypt, Libya, Morocco, Tunisia. **Western Asia, Arabian Peninsula.** Iran, Iraq, Lebanon-Syria, Palestine, Israel & Jordan. Saudi Arabia.

### **Stipa pauciliata** (Roseng. & Izag. de Artucio) Roseng., Arrill. de Maffei & Izog. de Artucio. *Gramin. Urug.* 80 (1970).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online.

**TYPE** from Uruguay. **Basionym or Replaced Name:** *Stipa megapotamia* var. *pauciliata* Roseng. & Izag., *Bol. Soc. Argent. Bot.* 9: 288, 290, f. 3, 17–20, t. 1, f. 5–6 (1961). T:<Type of Basionym>: *fide*

TROPICOS and Kew Synonymy Database: HT: *B. Rosengurti* B-5261, 21 Nov 1948, Uruguay: Maldonado: Abra de Perdomo (MVFA; IT: US-2461645, US-2011403).

**Illustrations (Books):** B. Rosengurti, *Gramineas Uruguayas I* (1970) (74, Fig. 23).

**Derivation** (Clifford & Bostock 2007): *L. paucus*, few; *cilium*, hair; *-ata*, possessing. Glabrous or the lower internodes puberulent.

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Distribution (TDWG). Continent.** South America.

**Country /Province /State. Southern South America.** Uruguay.

**Stipa pavlovii** Yu. A. Kotukhov. *Turczaninowia*, 1(1): 7 (1998).

**Accepted by:** W. D. Clayton & K. Harman, *GrassBase* (2008) and online.

**TYPE** from Russia. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: Russia, Altai, Saur: Kotuchov (LE holo).

**Illustrations (Books):** No illustration found (BKS).

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Butt sheaths persistent and investing base of culm, with compacted dead sheaths. Culms 60–70 cm long. Culm-internodes smooth, distally glabrous. Leaf-sheaths glabrous on surface. Ligule a ciliolate membrane, 1.4–3 mm long, 0.3–1.2 mm long on basal shoots, pubescent on abaxial surface. Leaf-blades filiform, conduplicate, 0.3–0.5 mm wide. Leaf-blade surface smooth or scaberulous, rough abaxially, puberulous, hairy adaxially.

**Inflorescence.** Inflorescence a panicle. Panicle contracted, linear, 11–15 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, 25–27 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus elongated, 2–2.2 mm long, pubescent, pungent.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, membranous, without keels. Lower glume apex attenuate. Upper glume lanceolate, 25–27 mm long, membranous, without keels. Upper glume apex attenuate.

**Florets.** Fertile lemma elliptic, subterete, 8.5–9.5 mm long, coriaceous, without keel, more than 3-veined. Lemma surface pubescent. Lemma margins convolute, covering most of palea. Lemma apex surmounted by a ring of hairs, awned, 1 -awned. Principal lemma awn bigeniculate, 90–110 mm long overall, with twisted column, limb puberulous, with 0.4–0.6 mm long hairs. Column of lemma awn pubescent, hairy on upper part. Palea without keels.

**Flower and Fruit.** Anthers 3, 4–5 mm long.

**Distribution (TDWG). Continent.** Temperate Asia.

**Country /Province /State.** Siberia. Altay.

**Stipa pelliottii** Danguy. *Lecomte, Not. Syst.* ii. 167 (1912).

**Accepted by:** W. D. Clayton & K. Harman, *GrassBase* (2008) and online.

**TYPE** from Russia. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: Turkestan: Zamutsh-tagh, montagnes dénudées, 1700 m, 28 July 1907, *Pelliot & Vaillant 375* (HT: ?).

**Illustrations (Books):** S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 279 as *Ptilagrostis*).

**Derivation** (Clifford & Bostock 2007): in honor of Paul Pelliot (1878–1945) French sinologist and explorer who, in company with Louis Vaillant, a medical doctor, collected c. 800 plant specimens from central Asia and China.

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial. Rhizomes elongated, scaly. Culms erect, 25–30 cm long. Culm-internodes channelled, distally glabrous. Leaf-sheaths 1–6 cm long. Ligule a fringe of hairs or absent. Leaf-blades filiform, involute, 3–10 cm long, 1 mm wide.

**Inflorescence.** Inflorescence a panicle. Panicle open, ovate, effuse. Primary panicle branches 2-nate. Panicle branches capillary. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, filiform.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, laterally compressed, 5–6 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes persistent, similar, exceeding apex of florets. Lower glume lanceolate, 5–6 mm long, 1 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume lateral veins absent. Lower glume apex acute. Upper glume lanceolate, 5 mm long, membranous, 1-keeled, 1 -veined. Upper glume lateral veins absent. Upper glume apex acute.

**Florets.** Fertile lemma lanceolate, subterete, 3.5 mm long, membranous, without keel, 1 -veined, 0–3 -veined, one-veined. Lemma surface villous. Lemma margins convolute, covering most of palea. Lemma apex dentate, 2 -fid, awned, 1 -awned. Principal lemma awn from a sinus, curved, 25–30 mm long overall, deciduous, limb plumose. Palea 3.25 mm long, 2 -veined, without keels. Palea surface hirsute.

**Flower and Fruit.** Anthers 3, anther tip smooth. Stigmas 2. Ovary glabrous. Caryopsis with adherent pericarp.

**Distribution (TDWG). Continent.** Temperate Asia.

**Country /Province /State.** China, Mongolia. Inner Mongolia, China North-Central, Qinghai, Xinjiang. Mongolia.

**TDWG4.** Gansu.

**Stipa pellita** (Trin. & Rupr.) Tsvelev. *Nov. Sist. Vysh. Rast.* 1966:19 (1966).

**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 Sicily. **Basionym or Replaced Name:** *Stipa lagascae* var. *pellita* Trin. & Rupr., *Sp. Gram. Stipac.* 71 (1842). T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: LT: *Ehrenberg s.n.*, Alexandria (LE). LT designated by Freitag, *Notes Roy. Bot. Gard. Edinburgh* 42: ? (1985).

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): L. covered with skins. The fertile floret(s) is protected by hairy investing glumes or sterile florets.

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial, caespitose, clumped densely. Culms robust, 40–80 cm long. Culm-internodes smooth, distally glabrous. Leaf-sheaths longer than adjacent culm internode, glabrous on surface or puberulous, outer margin hairy. Ligule an eciliate membrane, 2–6 mm long. Leaf-blades filiform, convolute, 0.4–0.8 mm wide. Leaf-blade surface puberulous, densely hairy, hairy adaxially. Leaf-blade margins ciliate.

**Inflorescence.** Inflorescence a panicle. Panicle contracted, linear, 15–25 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, 50–65 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus elongated.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 60–65 mm long, 1 length of upper glume, membranous, without keels. Lower glume apex setaceously acuminate. Upper glume lanceolate, 50–60 mm long, membranous, without keels. Upper glume apex setaceously acuminate.

**Florets.** Fertile lemma lanceolate, subterete, 16–17 mm long, coriaceous, without keel, 5 -veined, more than 3-veined. Lemma surface puberulous, hairy below, hairy in lines. Lemma margins convolute, covering most of palea. Lemma apex awned, 1 -awned. Principal lemma awn bigeniculate, 220–260 mm long overall, with twisted column, limb pubescent, with 0.3–0.5 mm long hairs. Column of lemma awn scabrous. Palea without keels.

**Flower and Fruit.** Anthers 3. Stigmas 2. Caryopsis with adherent pericarp. Hilum linear.

**Distribution (TDWG). Continent.** Temperate Asia.

**Country /Province /State.** Caucasus. Transcaucasus.

**TDWG4.**

**Stipa penicillata** Hand.-Mazz. *Oesterr. Bot. Zeitschr.* 1 v. 226. (1936).

**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: Shansi: "Kuku-nor. gegen Lombutong, ...", 21 Sept. 1918, *Licent 4869* (HT: ?).

**Recent Synonyms:** *Stipa laxiflora* Keng, *Sunyatsenia*, 6: 73 (1941).

**Illustrations (Books):** S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 277).

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial, caespitose, clumped densely. Butt sheaths yellow, glossy, persistent and investing base of culm, with compacted dead sheaths. Culms erect, 20–40 cm long. Culm-internodes smooth, distally glabrous. Ligule an eciliate membrane, 3–5 mm long, lacerate. Leaf-blades filiform, convolute, 10–20 cm long, 0.5–1 mm wide. Leaf-blade venation with 4 secondary veins. Leaf-blade surface scaberulous, rough adaxially.

**Inflorescence.** Inflorescence a panicle. Panicle open, ovate, effuse, 10–15 cm long. Primary panicle branches 2-nate. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, filiform, 10 mm long.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets linear, laterally compressed, 7 mm long, 1 mm wide, breaking up at maturity, disarticulating below each fertile floret. Floret callus acute, disarticulating obliquely.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, shiny. Lower glume lanceolate, 7 mm long, 1 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume lateral veins absent. Lower glume apex acuminate. Upper glume lanceolate, 7 mm long, membranous, 1-keeled, 3 -veined. Upper glume apex acuminate.

**Florets.** Fertile lemma lanceolate, subterete, 5 mm long, membranous, mid-green or purple, tipped with last colour, without keel, 3 -veined, 0–3 -veined. Lemma surface pubescent. Lemma margins convolute, covering most of palea. Lemma apex awned, 1 -awned. Principal lemma awn geniculate, 15–28 mm long overall, with 10–20 mm long limb, with twisted column, deciduous. Column of lemma awn 5–8 mm long, hirsute, with 3 mm long hairs. Palea without keels. Palea surface puberulous.

**Flower and Fruit.** Anthers 3. Stigmas 2. Caryopsis with adherent pericarp.

**Distribution (TDWG). Continent.** Temperate Asia.

**Country /Province /State. China.** China South Central, China North-Central, Qinghai, Tibet, Xinjiang.

**TDWG4.** Gansu, Shaanxi. Sichuan.

### ***Stipa pennata* L. *Sp. Pl.* 78. (1753).**

**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) (& as *S. borysthenica* & *S. anomala*), N.Tsvelev, *Grasses of the Soviet Union* (1983) (& as *S. eriocaulis*).

**TYPE** from China. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: ST: *Giles*, China: Xizang: Gilgit, 9–10,000 ft Possible type.. LT: Herb. van Royen (L-900.320–437). LT designated by Freitag, *Notes Roy. Bot. Gard. Edinburgh* 42: 437 (1985); not LINN-94.1, as cited by Vickery, Jacobs & Everett, *Telopea* 3: 14 (1986).

**Recent Synonyms:** *Stipa borysthenica* Prokudin, *Fl. Krimea* 1, 4:25 (1951). *S.anomala*.

**Illustrations (Books):** N.N.Tsvelev, *Grasses of the Soviet Union* (1983) (815 (539), Pl.10), N.L.Bor, *Gramineae in Flora of Iraq* (1968) (411, Pl. 154).

**Derivation** (Clifford & Bostock 2007): *L. penna*, feather; -ata, possessing. Awns villous.

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Butt sheaths pubescent. Culms erect, 25–40 cm long. Culm-internodes smooth, distally glabrous or pubescent. Leaves basal and cauline. Leaf-sheaths ribbed. Ligule an eciliate membrane, 4 mm long, membranous, obtuse. Leaf-blades erect to ascending, filiform, conduplicate, 15–30 cm long, 1 mm wide, stiff, glaucous. Leaf-blade surface scabrous, rough adaxially, glabrous. Leaf-blade margins scabrous.

**Inflorescence.** Inflorescence a panicle, embraced at base by subtending leaf. Panicle contracted, elliptic, 10 cm long, bearing few spikelets. Primary panicle branches appressed. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, laterally compressed, compressed slightly, 30–60 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus elongated, pungent.

**Glumes.** Glumes persistent, similar, with lower narrower than upper, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 30–60 mm long, 1 length of upper glume, membranous, yellow, 1-keeled (very slightly), keeled below, 5–7 -veined. Lower glume apex setaceously acuminate. Upper glume lanceolate, 30–60 mm long, 1.7–2 length of adjacent fertile lemma, membranous, yellow, without keels, 5–7 -veined. Upper glume apex setaceously acuminate.

**Florets.** Fertile lemma linear, subterete, 15–20 mm long, coriaceous, 3(–5) -veined, 0–3 -veined. Lemma margins convolute, covering most of palea, ciliate. Lemma apex awned, 1 -awned. Principal lemma awn geniculate, 150–300 mm long overall, with twisted column, deciduous, abscissing from top of lemma, limb

plumose. Column of lemma awn glabrous. Palea linear, tightly convolute around flower, 0.8 length of lemma, coriaceous, 2 -veined, without keels.

**Flower and Fruit.** Lodicules 3, lanceolate, membranous, acute. Caryopsis with adherent pericarp, fusiform.  $2n = 44$  (1 ref TROPICOS).

**Distribution (TDWG). Continent.** Europe, Africa, Temperate Asia.

**Region.** Middle Europe, Southwestern Europe, Southeastern Europe, Eastern Europe.

**Country /Province /State.** : Austria, Czechoslovakia, Germany, Hungary, Switzerland. : Corsica, France, Spain. : Albania, Bulgaria, Greece, Italy, Romania, Turkey Europe, Yugoslavia. Krym, Central European Russia, East European Russia, South European Russia, Ukraine. **Northern Africa.** Algeria, Morocco, Tunisia. Siberia, **Middle Asia, Caucasus, Western Asia, Mongolia.** Altay, Buryatiya, Chita, Irkutsk, Tuva. Kazakhstan. Iran, Iraq. Mongolia.

**TDWG4.**

**Stipa perrieri** A. Camus. *Bull. Soc. Bot. France.* 81: 593 (1934).

**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, Mt. Belamboany: Perrier 10866.

**Illustrations (Books):** No illustration found (BKS).

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Annual. Culms 12–20 cm long. Leaf-sheaths glabrous on surface. Leaf-sheath oral hairs ciliate. Ligule absent. Leaf-blades filiform, conduplicate, 1.5–2 cm long. Leaf-blade surface glabrous or pilose, sparsely hairy.

**Inflorescence.** Inflorescence a panicle. Panicle open, linear, 5–6 cm long. Primary panicle branches 3–6 in number, appressed, 2–3 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, 4 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes persistent, similar, shorter than spikelet, thinner than fertile lemma. Lower glume lanceolate, 3.2 mm long, 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, 3.8 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 elliptic, subterete, 4 mm long, coriaceous, without keel, 5 -veined, more than 3-veined. Lemma surface rugulose. Lemma margins convolute, covering most of palea. Lemma apex awned, 1 -awned. Principal lemma awn geniculate, 12 mm long overall, with twisted column.

**Flower and Fruit.** Anthers 3, 1 mm long.

**Distribution (TDWG). Continent.** Africa.

**Country /Province /State.** Western Indian ocean. Madagascar.

**Stipa platypoda** Bor. *K. Danske Vid. Selsk., Biol. Skrift.,* xiv. No. 4 : 81 (1965).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online.

**TYPE** from Afghanistan. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Afghanistan, Heart: Aitchison 1137 (K holo).

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): Gk. platys, flat; pous, foot. The apex of the glume is expanded into an elliptical area from which the awn arises.

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Culms erect, 30–60 cm long. Culm-internodes distally hispid, with reflexed hairs. Lateral branches lacking. Ligule an eciliate membrane. Leaf-blades involute, 10–20 cm long, 3–7 mm wide. Leaf-blade surface scabrous, rough adaxially. Leaf-blade margins scabrous. Leaf-blade apex pungent.

**Inflorescence.** Inflorescence a panicle, embraced at base by subtending leaf. Panicle open, elliptic, 10–20 cm long. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 50–60 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus elongated, 1–2 mm long, glabrous, expanded.



**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 50–60 mm long, membranous, without keels, 3 -veined. Lower glume apex attenuate. Upper glume lanceolate, 50–60 mm long, membranous, without keels, 3 -veined. Upper glume apex attenuate.

**Florets.** Fertile lemma lanceolate, subterete, 10–15 mm long, coriaceous, without keel, 5 -veined, more than 3-veined. Lemma surface pilose, hairy between veins, with conspicuous apical hairs. Lemma margins convolute, covering most of palea, ciliate. Lemma hairs 1.5 mm long (at apex). Lemma apex acute, awned, 1 -awned. Principal lemma awn bigeniculate, 50–60 mm long overall, with twisted column, limb ciliate, with 1 mm long hairs, glabrescent towards tip. Column of lemma awn glabrous or puberulous. Palea 2 -veined, without keels.

**Flower and Fruit.** Anthers 3. Stigmas 2. Ovary glabrous. Caryopsis with adherent pericarp. Hilum linear.

**Distribution (TDWG). Continent.** Temperate Asia.

**Country /Province /State.** Western Asia. Iran.

**Stipa pontica** P. Smirn. Fedde, *Repert.* xxvi. 268 (1929).

**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 Turkey. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Anatolia: pl. Anatoliae orientalis anno 1890, Pontus Galaticus, in Vineis ad Amasia, 400 m s. m. 20 Jun 1890, fr., *J. Bormüller* 2577 (HT: LE; IT: B).

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): L. -ica, belonging to. From Pontus in ancient times, a Province of Asia Minor, now Turkey.

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Culms 30–60 cm long. Leaf-sheaths longer than adjacent culm internode, glabrous on surface or puberulous. Ligule an eciliate membrane, 2–4 mm long. Leaf-blades filiform, involute, 1–2 mm wide. Leaf-blade apex acuminate, simple.

**Inflorescence.** Inflorescence a panicle. Panicle contracted, linear. 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, 40–55 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus elongated, curved, pubescent, pungent.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 1 length of upper glume, membranous, without keels. Lower glume apex attenuate, awned, 1 -awned, awn 40–55 mm long. Upper glume lanceolate, 40–55 mm long, membranous, without keels. Upper glume apex attenuate, awned, 1 -awned, awn 40–55 mm long.

**Florets.** Fertile lemma elliptic, subterete, 16–18 mm long, coriaceous, without keel, more than 3-veined. Lemma surface pubescent, hairy in lines. Lemma margins convolute, covering most of palea, ciliate. Lemma apex awned, 1 -awned. Principal lemma awn bigeniculate, 250–400 mm long overall, with twisted column, limb plumose, with 5 mm long hairs. Palea 2 -veined, without keels.

**Flower and Fruit.** Anthers 3. Stigmas 2. Ovary glabrous. Caryopsis with adherent pericarp. Hilum linear.

**Distribution (TDWG). Continent.** Europe, Temperate Asia.

**Region.** Southeastern Europe, Eastern Europe.

**Country /Province /State.** : Bulgaria, Turkey Europe. Krym. **Caucasus, Western Asia.** North Caucasus, Transcaucasus. Turkey.

**Stipa przewalskyi** Roshev. *Not. Syst. Herb. Hort. Petrop.* i. No. 6, 3 (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).

**TYPE** from China. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: China: Gansu: 'Terra Tangutorum...', *Przewalsky* 413 (HT: ?).

**Illustrations (Books):** S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 264).

**Derivation** (Clifford & Bostock 2007): in honor of Nikolai Michailowicz Przewalsky (1839–1888) Russian botanist.

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial, caespitose, clumped moderately or densely. Culms erect, 70–100 cm long, 2–3 -noded. Culm-internodes distally glabrous. Leaf-sheaths mostly shorter than adjacent culm internode, glabrous on surface. Ligule an eciliate membrane, 2–4 mm long, obtuse. Leaf-blades filiform, involute, 10–20 cm long, 1.5–2 mm wide.

**Inflorescence.** Inflorescence a panicle, exerted or embraced at base by subtending leaf. Panicle open, elliptic, 15–25 cm long. Primary panicle branches 2–4-nate, whorled at most nodes, 4–9 cm long. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, laterally compressed, 10–15 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus 1 mm long, bearded, pungent.

**Glumes.** Glumes persistent, similar, exceeding apex of florets. Lower glume lanceolate, 10–15 mm long, 1 length of upper glume, membranous, 1-keeled. Lower glume apex acuminate. Upper glume lanceolate, 10–15 mm long, membranous, 1-keeled. Upper glume apex acuminate.

**Florets.** Fertile lemma lanceolate, subterete, 8.5–9.5 mm long, membranous, without keel. Lemma surface pilose, hairy below. Lemma margins convolute, covering most of palea. Lemma apex surmounted by a ring of hairs, awned, 1-awned. Principal lemma awn bigeniculate, 40–60 mm long overall, with twisted column. Column of lemma awn glabrous or hispidulous. Palea without keels.

**Flower and Fruit.** Anthers 3. Stigmas 2. Caryopsis with adherent pericarp.

**Distribution (TDWG). Continent.** Temperate Asia.

**Country /Province /State. China.** China South Central, Inner Mongolia, China North-Central, Qinghai, Tibet.

**TDWG4.** Gansu, Hebei, Shaanxi, Shanxi, Sichuan.

### **Stipa pseudocapillata** Roshev. *B. Fedtsch. Fl. Asiat. Ross.* xii. 172 (1916).

**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: "Songaria legit Alex Schrenk ex herb. Trautvetter.",.

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): Gk *pseudos*, false. Resembling *Stipa capillata*.

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Culms 60–70 cm long. Culm-internodes distally pubescent. Leaf-sheaths glabrous on surface. Ligule an eciliate membrane. Leaf-blades filiform, involute, 0.5–1 mm wide. Leaf-blade surface ribbed, scabrous.

**Inflorescence.** Inflorescence a panicle, embraced at base by subtending leaf. Panicle contracted, linear, 17–25 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, 20–22 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus evident, acute.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 1 length of upper glume, membranous, without keels. Lower glume apex acuminate. Upper glume lanceolate, 20–22 mm long, membranous, without keels. Upper glume apex acuminate.

**Florets.** Fertile lemma lanceolate, subterete, 10 mm long, coriaceous, without keel, 5-veined, more than 3-veined. Lemma surface pubescent, hairy below, hairy in lines. Lemma margins convolute, covering most of palea. Lemma apex surmounted by a ring of hairs, awned, 1-awned. Principal lemma awn bigeniculate, 150–180 mm long overall, with twisted column, limb pubescent, with 0.3–0.5 mm long hairs. Palea without keels.

**Flower and Fruit.** Anthers 3. Stigmas 2. Ovary glabrous. Caryopsis with adherent pericarp, fusiform. Hilum linear.

**Distribution (TDWG). Continent.** Temperate Asia.

**Country /Province /State. Middle Asia.** Kazakhstan.

**TDWG4.**

### **Stipa pulcherrima** C.Koch. *Linnaea*, xxi. 440 (1848).

**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 Russia. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: "Auf Mergel am Kur im Gaue Schamschadil,... in den Hochsteippen des Gaues Daratchitschak in der Provinz Eriwan, ... auch aus der Umgebung von Brussa durch Thirke erhalten.",.

**Illustrations (Books):** M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 24 *Poaceae*, part 1 (2007) (156).

**Derivation** (Clifford & Bostock 2007): L. most beautiful. To be the most beautiful member of a genus.

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial, caespitose, clumped densely. Butt sheaths present, herbaceous or scarious, glabrous. Culms erect, (30–)40–100 cm long. Culm-internodes smooth or scaberulous, distally glabrous. Leaves basal and cauline, differentiated into sheath and blade. Leaf-sheaths wider than blade at the collar, striately veined, scaberulous, glabrous on surface or pubescent. Ligule an eciliate membrane, 5–7(–9) mm long (flowering culms), membranous, glabrous on abaxial surface or pubescent on abaxial surface, obtuse. Leaf-blades erect to ascending, filiform, conduplicate, 20–40 cm long, 1–1.5 mm wide. Leaf-blade surface smooth or scaberulous, glabrous. Bisexual.

**Inflorescence.** Synflorescence simple.

Inflorescence a panicle. Panicle contracted, elliptic, 10–15 cm long, bearing few spikelets. Primary panicle branches bearing spikelets almost to the base. Panicle branches straight, smooth or scaberulous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, glabrous or ciliate.

**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 laterally compressed, compressed slightly, (35–)45–70 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus elongated, straight to curved, 3–4 mm long, bearded, pungent.

**Glumes.** Glumes similar, with lower narrower than upper, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 60–80 mm long, 1 length of upper glume, membranous, 1-keeled (very slightly), keeled below, 3–5(–7) -veined. Lower glume lateral veins unequally thickened. Lower glume margins flat. Lower glume apex setaceously acuminate. Upper glume lanceolate, (35–)40–70 mm long, 1.7–2 length of adjacent fertile lemma, membranous, without keels, 3–7 -veined. Upper glume apex setaceously acuminate.

**Florets.** Fertile lemma linear, subterete, (18–)20–23(–25) mm long, coriaceous, 3(–5) -veined, 0–3 -veined. Lemma surface pilose, hairy on back or in lines. Lemma margins covering most of palea. Lemma apex rostrate, awned, 1 -awned. Principal lemma awn bigeniculate, 200–500 mm long overall, with 120–300 mm long limb, with twisted column, deciduous, abscissing from top of lemma, limb plumose, with 7 mm long hairs. Palea linear, tightly convolute around flower, 0.8 length of lemma, coriaceous, 2 -veined, without keels. Palea surface smooth. Palea apex emarginate.

**Flower and Fruit.** Lodicules 3, lanceolate, 2.5 mm long, membranous, acute. Caryopsis with adherent pericarp, fusiform.

**Distribution (TDWG). Continent.** Europe, Temperate Asia.

**Region.** Middle Europe, Southwestern Europe, Southeastern Europe, Eastern Europe.

**Country /Province /State.** : Austria, Czechoslovakia, Germany, Hungary, Poland. : Corsica, France. : Albania, Bulgaria, Greece, Italy, Romania, Sicily, Yugoslavia. Krym, Central European Russia, East European Russia, South European Russia, Northwest European Russia, Ukraine. **Middle Asia, Caucasus, Western Asia.** Kazakhstan, Kirgizistan, Tadzhikistan. North Caucasus, Transcaucasus. Iran.

**TDWG4.**

**Stipa purpurea** Griseb. *Goett. Nachr.* 3: 82. (1868).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), S-L Chen et al, *Flora of China* 22 (Poaceae) (2006), N.L.Bor, *Grasses of Burma, Ceylon, India and Pakistan* (1960), N.Tsvelev, *Grasses of the Soviet Union* (1983).

**TYPE** from China. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: ST: *J.H. Lance* 322, Kashmir: Rupshu: Salt Lake, 15000 ft (K).

**Illustrations (Books):** H.J.Noltie, *The Grasses of Bhutan* (2000) (523, Fig.10), S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 274).

**Derivation** (Clifford & Bostock 2007): L. purple to reddish. Usually of purple spikelets.

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Culms 15–25(–40) cm long. Ligule an eciliate membrane, 3.5–5 mm long. Leaf-blades filiform, involute, 0.5–1 mm wide.

**Inflorescence.** Inflorescence a panicle. Panicle open, lanceolate, 6–12 cm long, 1–2 cm wide, bearing few spikelets. Panicle branches capillary, flexuous. 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, 15–25 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus elongated, 1.5–2.2 mm long, pubescent, pungent.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 1 length of upper glume, membranous, purple, without keels, 3 -veined. Lower glume apex acuminate. Upper glume lanceolate, 15–25 mm long, membranous, purple, without keels, 5 -veined. Upper glume apex acuminate.

**Florets.** Fertile lemma elliptic, subterete, 9–11 mm long, coriaceous, without keel, more than 3-veined. Lemma surface pubescent. Lemma margins convolute, covering most of palea. Lemma apex awned, 1 -awned. Principal lemma awn bigeniculate, 60–85 mm long overall, with twisted column, deciduous, limb plumose, with 2–3 mm long hairs. Column of lemma awn plumose, with 2–3 mm long hairs. Palea 2 -veined, without keels.

**Flower and Fruit.** Anthers 3. Stigmas 2. Ovary glabrous. Caryopsis with adherent pericarp. Hilum linear.

**Distribution (TDWG). Continent.** Temperate Asia, Tropical Asia.

**Country /Province /State. Middle Asia, China.** Kirgizistan, Tadjikistan, Turkmenistan. China South Central, China North-Central, Qinghai, Tibet, Xinjiang. **Indian Subcontinent.** Eastern Himalaya, Pakistan, West Himalaya.

**TDWG4.** Gansu. Sichuan. Sikkim. Jammu Kashmir.

**Stipa rechingeri** Martinovsky. *Preslia*, 44(1): 10 (1972).

**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 Greece. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Greece, Mt. Pindus: Rechinger (W holo).

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): in honor of Karl Heinz Rechinger (1906–1998) Austrian botanist.

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Culms 40–60 cm long. Leaf-sheaths glabrous on surface to pubescent. Ligule a ciliolate membrane, 1–1.2 mm long, pubescent on abaxial surface. Leaf-blades conduplicate, 30–60 cm long, 0.7–0.8 mm wide. Leaf-blade venation with 9 inner ridges. Leaf-blade surface ribbed, scabrous, rough abaxially, puberulous. Leaf-blade apex hairy.

**Inflorescence.** Inflorescence a panicle. Panicle open, bearing few spikelets. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 30–50 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus evident, pubescent, acute.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 1 length of upper glume, membranous, without keels. Lower glume apex acuminate. Upper glume lanceolate, 30–50 mm long, membranous, without keels. Upper glume apex acuminate.

**Florets.** Fertile lemma lanceolate, subterete, 17–18 mm long, coriaceous, without keel, 5 -veined, more than 3-veined. Lemma margins convolute, covering most of palea. Lemma apex dentate, 2 -fid, awned, 1 -awned. Principal lemma awn from a sinus, bigeniculate, 195–210 mm long overall, with twisted column, limb plumose, with 4 mm long hairs. Middle segment of lemma awn puberulous. Palea without keels.

**Flower and Fruit.** Lodicules 3. Anthers 3. Stigmas 2. Ovary glabrous. Caryopsis with adherent pericarp, fusiform. Hilum linear.

**Distribution (TDWG). Continent.** Europe.

**Region. Southeastern Europe.**

**Country /Province /State.** : Greece.

**Stipa regeliana** Hack. *Sitzb. Akad. Wien*, 1 ix. 130. (1884).

**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 Russia. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: ST: *W.O. Douglas s.n.*, 9 Aug. 1951, Kashmir: north of Toche Phirche, 16–17600 ft (K).

**Illustrations (Books):** S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 276).

**Derivation** (Clifford & Bostock 2007): L. -ana, indicating connection. In honor of Eduard August Regel (1815–1892) German-born Russian botanist.

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Culms 10–35 cm long. Ligule an eciliate membrane, 3.5–5 mm long. Leaf-blades filiform, involute, 5–10 cm long, 0.5–0.8 mm wide. Leaf-blade surface scabrous.

**Inflorescence.** Inflorescence a panicle. Panicle contracted, linear, 5.5–10 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, 9–12.5 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus elongated, curved, 0.8–1.5 mm long, pubescent, pungent.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 1 length of upper glume, membranous, purple, without keels, 3–5 -veined. Lower glume apex acute or acuminate. Upper glume lanceolate, 9–12.5 mm long, 1.5 length of adjacent fertile lemma, membranous, purple, without keels, 3–5 -veined. Upper glume apex acute or acuminate.

**Florets.** Fertile lemma elliptic, subterete, 6–8 mm long, coriaceous, without keel, more than 3-veined. Lemma surface pilose, hairy all along. Lemma margins convolute, covering most of palea. Lemma apex surmounted by a ring of hairs, awned, 1 -awned. Principal lemma awn bigeniculate, 16–23 mm long overall, with twisted column, limb pubescent, with 0.2–0.3 mm long hairs. Column of lemma awn 9 mm long, plumose, with 0.5–1 mm long hairs. Palea 2 -veined, without keels.

**Flower and Fruit.** Anthers 3. Stigmas 2. Ovary glabrous. Caryopsis with adherent pericarp. Hilum linear.

**Distribution (TDWG). Continent.** Temperate Asia, Tropical Asia.

**Country /Province /State. Middle Asia, China.** Kazakhstan, Kirgizistan, Turkmenistan, Tadzhikistan. China South Central, China North-Central, Qinghai, Tibet, Xinjiang. **Indian Subcontinent.** Pakistan, West Himalaya.

**TDWG4.** Gansu, Sichuan, Yunnan, Jammu Kashmir.

**Stipa richterana** Kar. & Kir. *Bull. Soc. Nat. Mosc.* 862. (1841).

**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: HT: *Karelin & Kirilow 907*, 1840, Kazakstan [eastern]: In lapidosis mont. Arganaty (LE: IT: LE, LE, LE).

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): L. -ana, indicating connection. In honor of Herman Eberhard Friedrich Richter (1808–1876) German botanist.

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial, caespitose, clumped densely. Basal innovations intravaginal. Culms 50–60 cm long, 3 -noded. Culm-internodes distally pubescent. Leaf-sheaths pubescent, outer margin hairy. Leaf-sheath oral hairs bearded. Ligule a ciliolate membrane, 0.2 mm long. Leaf-blades filiform, involute, 3–15 cm long, 0.3–0.5 mm wide. Leaf-blade surface pubescent, densely hairy, hairy adaxially.

**Inflorescence.** Inflorescence a panicle, exerted or embraced at base by subtending leaf. Panicle open, linear, 20–25 cm long, 2 cm wide. Primary panicle branches 1–2 -nate, bearing 1–5 fertile spikelets on each lower branch. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 10–15 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus evident, 0.6–0.8 mm long, pilose, acute, with circular scar. Floret callus hairs 0.7 mm long.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 1 length of upper glume, membranous, without keels, 3–5 -veined. Lower glume primary vein scabrous. Lower glume apex acuminate. Upper glume lanceolate, 10–15 mm long, membranous, without keels, 7 -veined. Upper glume primary vein scabrous. Upper glume apex acuminate.

**Florets.** Fertile lemma lanceolate, subterete, 6–7 mm long, coriaceous, without keel, 5 -veined, more than 3-veined. Lemma surface pubescent, hairy in lines. Lemma margins convolute, covering most of palea. Lemma hairs 0.5 mm long. Lemma apex surmounted by a ring of hairs, with this appendage 0.5–1.5 mm long, awned, 1 -awned. Principal lemma awn bigeniculate, 60–70 mm long overall, with twisted column, limb puberulous. Middle segment of lemma awn 11 mm long. Column of lemma awn 14–16 mm long, puberulous. Palea 1 length of lemma, without keels. Palea apex ciliate.

**Flower and Fruit.** Lodicules 3, 1.5 mm long. Anthers 3. Stigmas 2. Ovary glabrous. Caryopsis with adherent pericarp, fusiform. Hilum linear.

**Distribution (TDWG). Continent.** Temperate Asia.

**Country /Province /State. Middle Asia.** Kazakhstan, Kirgizistan.

**TDWG4.**

**Stipa roborowskyi** Roshev. *Not. Syst. Herb. Hort. Petrop.* i. No. 6, 1 (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).

**TYPE** from China. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: China: Xinjiang: Kunlun Shan, 3 July 1890, *Roborowsky* (HT: LE).

**Illustrations (Books):** H.J.Noltie, *The Grasses of Bhutan* (2000) (523, Fig.10), S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 275).

**Derivation** (Clifford & Bostock 2007): in honor of Vsevolod Ivanovi Roborowsky (1856–1910) Russian botanist.

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Culms 25–40 cm long. Ligule an eciliate membrane, 2–4 mm long. Leaf-blades filiform, involute, 1–1.5 mm wide.

**Inflorescence.** Inflorescence a panicle. Panicle contracted, linear, 14–18 cm long, bearing few spikelets. Primary panicle branches appressed. Panicle branches stiff, straight. 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, 12–16 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus elongated, 1–3 mm long, pubescent, pungent.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 1 length of upper glume, membranous, purple, without keels, 3 -veined. Lower glume apex acuminate. Upper glume lanceolate, 12–16 mm long, membranous, purple, without keels, 3 -veined. Upper glume apex acuminate.

**Florets.** Fertile lemma elliptic, subterete, 7–8 mm long, coriaceous, without keel, more than 3-veined. Lemma surface pubescent. Lemma margins convolute, covering most of palea. Lemma apex without appendage or surmounted by a ring of hairs, awned, 1 -awned. Principal lemma awn bigenulate, 35–60 mm long overall, with twisted column, deciduous, limb plumose, with 1–1.5 mm long hairs. Column of lemma awn plumose, with 1–1.5 mm long hairs. Palea 2 -veined, without keels.

**Flower and Fruit.** Anthers 3. Stigmas 2. Ovary glabrous. Caryopsis with adherent pericarp. Hilum linear.

**Distribution (TDWG), Continent.** Temperate Asia, Tropical Asia.

**Country /Province /State.** China. Qinghai, Tibet, Xinjiang. **Indian Subcontinent.** Eastern Himalaya, India, Pakistan, West Himalaya.

**TDWG4.** Sikkim.

**Stipa robusta** (Vasey) Scribn. *US Dept. Agric., Div. Agrost. Bull.* 5:23 (1897).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online.

**TYPE** from USA. **Basionym or Replaced Name:** *Stipa viridula* var. *robusta* Vasey, *Contr. U.S. Natl. Herb.* 1(2): 56 (1890). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: CT: *G.R. Vasey s.n.*, 1881, USA: New Mexico (US-993051). see also Barkworth, *Phytologia* 74: 12 (1993); *Taxon* 42: 711 (1993).

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): *L. robust.* Culms tall, or leaf-blades or spikelets large.

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Culms erect, robust, 100–150 cm long, 3–6 mm diam. Culm-internodes distally glabrous. Leaf-sheaths glabrous on surface, outer margin hairy. Leaf-sheath oral hairs ciliate. Ligule an eciliate membrane, 0.5–4 mm long. Collar pubescent. Leaf-blades flat or involute, 30–50 cm long, 5–8 mm wide.

**Inflorescence.** Inflorescence a panicle. Panicle contracted, linear, 25–50 cm long, 1–2 cm wide. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 8–13 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus evident, 1 mm long, pubescent, acute.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 8–13 mm long, 1 length of upper glume, hyaline, without keels, 3–5 -veined. Lower glume apex attenuate. Upper glume lanceolate, 8–13 mm long, 1.3–1.6 length of adjacent fertile lemma, hyaline, without keels, 3–5 -veined. Upper glume apex attenuate.

**Florets.** Fertile lemma linear, subterete, 6–8 mm long, coriaceous, without keel, 5 -veined, more than 3-veined. Lemma surface pilose. Lemma margins convolute, covering most of palea. Lemma hairs 1–2 mm long.

Lemma apex awned, 1 -awned. Principal lemma awn bigeniculate, 20–38 mm long overall, with 12–18 mm long limb, with twisted column. Column of lemma awn glabrous or puberulous. Palea without keels.

**Flower and Fruit.** Anthers 3. Stigmas 2. Ovary glabrous. Caryopsis with adherent pericarp. Hilum linear.

**Distribution (TDWG). Continent.** North America.

**Country /Province /State.** Northwest USA, Southwestern USA, and South-central USA. Colorado. Arizona. New Mexico, Texas.

**Stipa rohmooiana** H.J. Noltie. *Edinburgh J. Bot.*, 56(2): 287 (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: Sikkim, Chugya, 15,000 ft, 12 Sept 1912, *Rohmoo* 277 (HT: E; IT: K).

**Illustrations (Books):** H.J. Noltie, *The Grasses of Bhutan* (2000) (527, Fig. 10).

**Derivation** (Clifford & Bostock 2007): L. -ana, indicating connection. In honor of Rohmoo (fl. 1910) a Lepcha plant collector probably born in Sikkim State, India.

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Culms 15–25(–40) cm long. Ligule an eciliate membrane, 3.5–5 mm long. Leaf-blades filiform, involute, 0.5–1 mm wide.

**Inflorescence.** Inflorescence a panicle. Panicle open, lanceolate, 6–12 cm long, 1–2 cm wide, bearing few spikelets. Panicle branches capillary, flexuous. 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, 13–15 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus elongated, 1.2 mm long, bearded, pungent.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 1 length of upper glume, membranous, purple, without keels, 3 -veined. Lower glume apex acuminate. Upper glume lanceolate, 13–15 mm long, membranous, purple, without keels, 5 -veined. Upper glume apex acuminate.

**Florets.** Fertile lemma elliptic, subterete, 6.3 mm long, coriaceous, without keel, more than 3-veined. Lemma surface pubescent. Lemma margins convolute, covering most of palea. Lemma hairs 0.5 mm long. Lemma apex awned, 1 -awned. Principal lemma awn bigeniculate, 22–24 mm long overall, with twisted column, deciduous, limb glabrous. Column of lemma awn pubescent, with 0.8–1.2 mm long hairs. Palea 2 -veined, without keels.

**Flower and Fruit.** Anthers 3. Stigmas 2. Ovary glabrous. Caryopsis with adherent pericarp. Hilum linear.

**Distribution (TDWG). Continent.** Tropical Asia.

**Country /Province /State.** Indian Subcontinent. Eastern Himalaya.

**TDWG4.** Sikkim.

**Stipa roylei** (Nees) Duthie. *Grasses North-Western India*: 27 (1883).

**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:** *Orthoraphium roylei* Nees, *Proc. Linn. Soc. Lond.* 1: 94 (1841). T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: India: ("In the Indian Herbarium of Dr. Royle.").

**Illustrations (Books):** H.J. Noltie, *The Grasses of Bhutan* (2000) (523, Fig. 10), S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (as *Orthoraphium*).

**Derivation** (Clifford & Bostock 2007): in honor of John Forbes Royle (1799–1858) English physician in service of East India Company.

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial, caespitose, clumped densely. Culms 30–60 cm long. Leaf-sheaths glabrous on surface, outer margin hairy. Ligule an eciliate membrane, lacerate. Leaf-blades flat or convolute, 15–30 cm long, 2–4 mm wide. Leaf-blade surface scabrous.

**Inflorescence.** Inflorescence a panicle. Panicle open, linear, 15–25 cm long. Primary panicle branches appressed. Panicle branches smooth. 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, 10 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus evident, bearded, acute.

**Glumes.** Glumes persistent, similar, reaching apex of florets, thinner than fertile lemma. Lower glume oblong, 9 mm long, 0.9 length of upper glume, membranous, without keels, 3 -veined. Lower glume apex obtuse. Upper glume oblong, 10 mm long, 1 length of adjacent fertile lemma, membranous, 2-keeled, 5 -veined. Upper glume apex obtuse.

**Florets.** Fertile lemma elliptic, subterete, 10 mm long, coriaceous, without keel, more than 3-veined. Lemma margins convolute, covering most of palea. Lemma apex scabrous (retroscaly), awned, 1 -awned. Principal lemma awn flexuous, 15–25 mm long overall, deciduous. Palea 7 mm long, 2 -veined, without keels.

**Flower and Fruit.** Anthers 3. Stigmas 2. Ovary glabrous. Caryopsis with adherent pericarp. Hilum linear.

**Distribution (TDWG). Continent.** Temperate Asia, Tropical Asia.

**Country /Province /State.** **China.** China South Central, Tibet. **Indian Subcontinent, Indo-China.** Eastern Himalaya, Nepal, Pakistan. Myanmar.

**TDWG4.** Sichuan, Yunnan. Darjeeling, Bhutan, Sikkim. Nagaland. Uttah Pradesh.

**Stipa saikanica** Yu.A. Kotukhov. *Turczaninowia*, 1(2): 10 (1998).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online.

**TYPE** from Russia. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Russia, Altai, Saikan: Kotuchov (LE holo).

**Illustrations (Books):** No illustration found (BKS).

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Butt sheaths persistent and investing base of culm, with compacted dead sheaths. Culms 30–35 cm long. Leaf-sheaths glabrous on surface, outer margin hairy. Ligule a ciliolate membrane, 0.3–0.4 mm long, pubescent on abaxial surface. Leaf-blades filiform, conduplicate, 0.3–0.4 mm wide. Leaf-blade surface scabrous, rough abaxially, pubescent, densely hairy, hairy adaxially.

**Inflorescence.** Inflorescence a panicle, subtended by an inflated leaf-sheath. Panicle contracted, linear, 8–10 cm long, bearing few spikelets. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rachilla extension. Spikelets of 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, 15–20 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus elongated, 1.5–1.8 mm long, pubescent, pungent.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, membranous, without keels. Lower glume apex attenuate. Upper glume lanceolate, 15–20 mm long, membranous, without keels. Upper glume apex attenuate.

**Florets.** Fertile lemma elliptic, subterete, 7–9 mm long, coriaceous, without keel, more than 3-veined. Lemma surface pilose. Lemma margins convolute, covering most of palea. Lemma apex surmounted by a ring of hairs, awned, 1 -awned. Principal lemma awn bigeniculate, 120–140 mm long overall, with twisted column, limb hirsute, with 1.8–2.3 mm long hairs. Column of lemma awn 35–40 mm long, glabrous. Palea without keels.

**Flower and Fruit.** Anthers 3, 4.5–5 mm long.

**Distribution (TDWG). Continent.** Temperate Asia.

**Country /Province /State.** **Middle Asia.** Kazakhstan.

**Stipa sareptana** Beck. *Bull. Soc. Nat. Mosc.* lvii. 52 (1882).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), S-L Chen et al, *Flora of China* 22 (Poaceae) (2006), T.G.Tutin et al, *Flora Europaea* 5 (1980), N.Tsvelev, *Grasses of the Soviet Union* (1983).

**TYPE** from Russia. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: A. Becker, 1881, Russia: [Volgograd Distr.] Sarepta (LE; IT: LE, LE, LE, LE).

**Illustrations (Books):** S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 267 as var. *krylovii*).

**Derivation** (Clifford & Bostock 2007): L. -ana, indicating location. From Sarepta now Krasnoarmeysk, Saratov Oblast, Russia.

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial, caespitose, clumped densely. Culms slender, 30–70 cm long. Culm-internodes distally glabrous or pubescent. Leaf-sheaths glabrous on surface or puberulous. Ligule an eciliate membrane, 0.1–2 mm long. Leaf-blades filiform, involute, 0.8–1.1 mm wide. Leaf-blade surface ribbed, scabrous, rough abaxially.

**Inflorescence.** Inflorescence a panicle, embraced at base by subtending leaf. Panicle contracted, linear, 10–20 cm long. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.



**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 15–25 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus evident, acute.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 1 length of upper glume, membranous, without keels. Lower glume apex acuminate. Upper glume lanceolate, 15–25 mm long, membranous, without keels. Upper glume apex acuminate.

**Florets.** Fertile lemma lanceolate, subterete, 9–11 mm long, coriaceous, without keel, 5 -veined, more than 3-veined. Lemma surface pubescent, hairy below, hairy in lines. Lemma margins convolute, covering most of palea. Lemma apex without appendage or surmounted by a ring of hairs, awned, 1 -awned. Principal lemma awn bigenulate, 100–160 mm long overall, with twisted column. Palea without keels.

**Flower and Fruit.** Anthers 3. Stigmas 2. Ovary glabrous. Caryopsis with adherent pericarp, fusiform. Hilum linear.

**Distribution (TDWG). Continent.** Europe, Temperate Asia.

**Region.** Eastern Europe.

**Country /Province /State.** Central European Russia, East European Russia, South European Russia, Siberia, Middle Asia, Caucasus, China, Mongolia, Russia. Chita, Kazakhstan, Kirgizistan, Turkmenistan, Tadjikistan. North Caucasus. Inner Mongolia, China North-Central, Qinghai, Tibet, Xinjiang. Mongolia.

**TDWG4.** Gansu, Hebei, Shanxi. Nei Mongol, or Ningxia.

**Stipa saurica** Yu.A. Kotukhov. *Bot. Zhurn.*, 79(7): 103 (1994).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online.

**TYPE** from Russia. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: Russia, Altai, Saur: Kotuchov (LE holo).

**Illustrations (Books):** No illustration found (BKS).

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Butt sheaths persistent and investing base of culm, with compacted dead sheaths. Culms 50–60 cm long. Culm-internodes distally pubescent. Leaf-sheaths mostly shorter than adjacent culm internode, smooth or scaberulous. Ligule a ciliolate membrane, 1.5–2 mm long, 1–1.5 mm long on basal shoots, pubescent on abaxial surface. Leaf-blades filiform, conduplicate, 0.3–0.4 mm wide. Leaf-blade surface smooth, pubescent, densely hairy, hairy adaxially.

**Inflorescence.** Inflorescence a panicle, comprising 5–9 fertile spikelets. Panicle contracted, linear, 5–12 cm long, bearing few spikelets. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 30–35 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus elongated, 2–2.5 mm long, pubescent, pungent.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, membranous, without keels. Lower glume apex attenuate. Upper glume lanceolate, 30–35 mm long, membranous, without keels. Upper glume apex attenuate.

**Florets.** Fertile lemma elliptic, subterete, 10–11 mm long, coriaceous, without keel, more than 3-veined. Lemma surface pubescent, hairy in lines (6 lines). Lemma margins convolute, covering most of palea. Lemma apex awned, 1 -awned. Principal lemma awn geniculate or bigenulate, 120–140 mm long overall, with twisted column, limb plumose, with 4–4.5 mm long hairs. Column of lemma awn pubescent, hairy on upper part. Palea without keels.

**Flower and Fruit.** Anthers 3, 5–5.5 mm long.

**Distribution (TDWG). Continent.** Temperate Asia.

**Country /Province /State.** Siberia. Altay.

**Stipa sczerbakovii** Yu.A. Kotukhov. *Bot. Zhurn.*, 76(6): 872 (1991).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online.

**TYPE** from Russia. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: Russia, Altai, Agatau: Kotuchov (LE holo).

**Illustrations (Books):** No illustration found (BKS).

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Butt sheaths persistent and investing base of culm, with compacted dead sheaths. Culms 45–85 cm long. Culm-internodes distally pubescent. Leaf-sheaths mostly shorter than adjacent culm internode, glabrous on surface or puberulous. Ligule a ciliolate membrane, 2.2–4.2

mm long, 0.3–2 mm long on basal shoots, glabrous on abaxial surface or pubescent on abaxial surface. Leaf-blades filiform, conduplicate, 0.4–0.5 mm wide. Leaf-blade surface scaberulous, rough abaxially, puberulous, densely hairy, hairy adaxially.

**Inflorescence.** Inflorescence a panicle. Panicle open or contracted, lanceolate, 20–30 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, 12–25 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus elongated, 2 mm long, pubescent, pungent.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, membranous, without keels. Lower glume apex attenuate. Upper glume lanceolate, 15–25 mm long, membranous, without keels. Upper glume apex attenuate.

**Florets.** Fertile lemma elliptic, subterete, 8.5–9 mm long, coriaceous, without keel, more than 3-veined. Lemma surface pubescent, hairy in lines (7 lines). Lemma margins convolute, covering most of palea. Lemma apex surmounted by a ring of hairs, awned, 1 -awned. Principal lemma awn bigeniculate, 90–100 mm long overall, with twisted column, limb pubescent, with 0.5–0.8 mm long hairs. Column of lemma awn puberulous, with 0.2–0.3 mm long hairs. Palea without keels.

**Flower and Fruit.** Anthers 3, 3.5–4 mm long.

**Distribution (TDWG). Continent.** Temperate Asia.

**Country /Province /State.** Siberia. Altay, Buryatiya.

**Stipa sosnowskyi** Seregin. *Not. Syst. Herb. Inst. Bot. Acad. Sci. URSS*, xxi. 58 (1961).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online, N.Tsvelev, *Grasses of the Soviet Union* (1983).

**TYPE** from Caucasus. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *L. Chilikina s. n.*, 1939, [Caucasus]: Dagestan: Dist. Kurakhs kij: Kurakh (LE). Orig. label: Dagest. ASSR, Kurakhs kij r-n, v 2 km k v. ot s. Kurakh, po Yu-V shebnistomu slancev. skl. k r. Kura-chaj..

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): in honor of Dimitrii Ivanovich Sosnowsky (1885–1952) Russian botanist.

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Culms geniculately ascending, 15–30 cm long, 2-noded. Culm-internodes distally glabrous. Leaf-sheaths glabrous on surface, outer margin hairy. Ligule a ciliate membrane, 4.5–6 mm long, acute. Leaf-blades filiform, convolute, 4–8 cm long, 0.3 mm wide, glaucous. Leaf-blade surface ribbed.

**Inflorescence.** Inflorescence a panicle. Panicle open, bearing few spikelets. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, puberulous.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 18–22 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus brief, pubescent, acute.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 1 length of upper glume, membranous, without keels. Lower glume apex acuminate. Upper glume lanceolate, 18–22 mm long, membranous, without keels. Upper glume apex acuminate.

**Florets.** Fertile lemma lanceolate, subterete, 8–9 mm long, coriaceous, without keel, 5 -veined, more than 3-veined. Lemma margins convolute, covering most of palea. Lemma apex awned, 1 -awned. Principal lemma awn bigeniculate, 55–70 mm long overall, with twisted column, limb pubescent. Middle segment of lemma awn pubescent. Column of lemma awn pubescent. Palea without keels.

**Flower and Fruit.** Anthers 3. Stigmas 2. Ovary glabrous. Caryopsis with adherent pericarp, fusiform. Hilum linear.

**Distribution (TDWG). Continent.** Temperate Asia.

**Country /Province /State.** Caucasus. North Caucasus.

**TDWG4.**

**Stipa staintonii** Bor. *Bull. Bot. Surv. Ind.* vii. 133 (1965).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

**TYPE** from China. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: India Orientalis: Nepal, near Seng Khola, exposed cliffs, 12500 ft, 4 Oct 1954, *Stainton, Sykes & Williams 7352* (HT: K; IT: BM).

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): in honor of John David Adam Stainton (1921-) English botanist.

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Culms erect, 30–60 cm long. Leaf-sheaths tight, retrorsely scabrous, glabrous on surface, outer margin hairy. Leaf-sheath oral hairs bearded. Ligule an eciliate membrane, 0.75 mm long. Leaf-blades involute, 15–35 cm long, 2–3 mm wide. Leaf-blade surface pubescent, hairy adaxially.

**Inflorescence.** Inflorescence a panicle. Panicle open, nodding, 10–15 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, 11–13 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus evident, 0.75 mm long, pubescent, acute.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 11–13 mm long, 1.2–1.3 length of upper glume, hyaline, purple, without keels, 3 -veined. Lower glume apex acuminate. Upper glume elliptic, 8–11 mm long, hyaline, purple, without keels, 3 -veined. Upper glume apex acuminate.

**Florets.** Fertile lemma lanceolate, subterete, 5.5 mm long, coriaceous, without keel, 5 -veined, more than 3-veined. Lemma surface pilose. Lemma margins convolute, covering most of palea. Lemma hairs 2–3 mm long. Lemma apex dentate, 2 -fid, awned, 1 -awned. Principal lemma awn from a sinus, bigenulate, 30–40 mm long overall, with twisted column. Column of lemma awn glabrous. Palea 1 length of lemma, 2 -veined, without keels. Palea surface pilose, hairy on back.

**Flower and Fruit.** Lodicules 2. Anthers 3, 2.5 mm long, anther tip penicillate. Stigmas 2. Ovary glabrous. Caryopsis with adherent pericarp. Hilum linear.

**Distribution (TDWG), Continent.** Tropical Asia.

**Country /Province /State.** Indian Subcontinent. Nepal.

**Stipa styriaca** Martinovsky. *Osterr. Bot. Zeitschr.* cxviii. 179 (1970).

**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. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: Austria, Pils: Melzer (GZU holotype).

**Illustrations (Books):** No illustration found (BKS).

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Culms robust, 100–150 cm long. Leaf-sheaths smooth or scaberulous, pubescent, outer margin hairy. Ligule an eciliate membrane. Leaf-blades convolute, 1–2 mm wide. Leaf-blade venation with 9–10 inner ridges. Leaf-blade surface ribbed, scabrous, rough adaxially, glabrous. Leaf-blade apex smooth or hairy.

**Inflorescence.** Inflorescence a panicle. Panicle contracted, linear. 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, 60 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus evident, acute.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 1 length of upper glume, membranous, without keels. Lower glume apex acuminate. Upper glume lanceolate, 60 mm long, membranous, without keels. Upper glume apex acuminate.

**Florets.** Fertile lemma lanceolate, subterete, 18–20 mm long, coriaceous, without keel, 5 -veined, more than 3-veined. Lemma surface pubescent, hairy below, hairy in lines. Lemma margins convolute, covering most of palea. Lemma apex awned, 1 -awned. Principal lemma awn bigenulate, 370–410 mm long overall, with twisted column, limb plumose. Middle segment of lemma awn 22–25 mm long, glabrous. Column of lemma awn 60–72 mm long. Palea without keels.

**Flower and Fruit.** Lodicules 3. Anthers 3. Stigmas 2. Ovary glabrous. Caryopsis with adherent pericarp, fusiform. Hilum linear.

**Distribution (TDWG), Continent.** Europe.

**Region.** Middle Europe.

**Country /Province /State.** : Austria.

**Stipa subsessiliflora** (Rupr.) Roshev. *B. Fedtsch., Izv. Imp. Bot. Sada Petra Velikago* 14 (Suppl. 2): 50 (1915).

**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 *S. basiplumosa*), N.Tsvelev, *Grasses of the Soviet Union* (1983).

**TYPE** from Russia. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Kyrgyzstan: Tian Shan: Toyandyund Sunktu-Thal, 4800–5000 m, 30 July 1867, *F. Osten-Sacken s.n.* (HT: LE; IT: LE).

**Illustrations (Books):** No illustration found (BKS).

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Culms 10–35 cm long. Ligule an eciliate membrane, 2–4 mm long. Leaf-blades filiform, involute, 1 mm wide. Leaf-blade surface smooth or scaberulous, rough abaxially.

**Inflorescence.** Inflorescence a panicle. Panicle contracted, linear, 4–12 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, 8.5–11.5 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus elongated, 0.5–0.8 mm long, pubescent, pungent.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 8.5–11.5 mm long, 1.1–1.2 length of upper glume, membranous, purple, without keels, 3–5 -veined. Lower glume apex acute or acuminate. Upper glume lanceolate, 7.5–9.5 mm long, membranous, purple, without keels, 3–5 -veined. Upper glume apex acute or acuminate.

**Florets.** Fertile lemma elliptic, subterete, 4–5.5 mm long, coriaceous, without keel, more than 3-veined. Lemma surface pubescent, hairy all along. Lemma margins convolute, covering most of palea. Lemma apex awned, 1 -awned. Principal lemma awn bigenulate, 10–27 mm long overall, with twisted column, deciduous, limb glabrous. Column of lemma awn plumose, with 2.5–3.5 mm long hairs. Palea 2 -veined, without keels.

**Flower and Fruit.** Anthers 3. Stigmas 2. Ovary glabrous. Caryopsis with adherent pericarp. Hilum linear.

**Distribution (TDWG). Continent.** Temperate Asia, Tropical Asia.

**Country /Province /State.** Siberia, **Middle Asia, China, Russia.** Altay. Kazakhstan, Kirgizistan, Turkmenistan, Tadjikistan, Uzbekistan. China South Central, China North-Central, Qinghai, Tibet, Xinjiang. **Indian Subcontinent.** Pakistan, West Himalaya.

**TDWG4.** Gansu, Sichuan, Yunnan.

**Stipa syreitschikowii** P. Smirn. *Del. Sem. Hort. Bot. Univ. Mosquensis*, 36 (1948).

**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 Russia. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Russia, Theodosia: Junge (LE iso).

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): in honor of Dimitri Petrovich Syreishchikov (1868–1932) Russian botanist.

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Rhizomes short. Culms 40–60 cm long. Culm-internodes distally glabrous. Leaf-sheaths glabrous on surface, outer margin hairy. Ligule an eciliate membrane. Leaf-blades flat or involute, 2–4 mm wide. Leaf-blade surface ribbed, smooth or scaberulous.

**Inflorescence.** Inflorescence a panicle. Panicle contracted, linear, 10–12 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, 50–70 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus elongated, acute.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 1 length of upper glume, membranous, without keels. Lower glume apex acuminate. Upper glume lanceolate, 50–70 mm long, membranous, without keels. Upper glume apex acuminate.

**Florets.** Fertile lemma lanceolate, subterete, 17–22 mm long, coriaceous, without keel, 5 -veined, more than 3-veined. Lemma surface pubescent, hairy all along, hairy in lines. Lemma margins convolute, covering most of palea. Lemma apex awned, 1 -awned. Principal lemma awn bigeniculate, 250–400 mm long overall, with twisted column, limb plumose, with 4–5 mm long hairs. Column of lemma awn pubescent, with 1 mm long hairs. Palea without keels.

**Flower and Fruit.** Anthers 3. Stigmas 2. Ovary glabrous. Caryopsis with adherent pericarp, fusiform. Hilum linear.

**Distribution (TDWG).** Continent. Europe, Temperate Asia.

**Region.** Eastern Europe.

**Country /Province /State.** Krym. **Caucasus, Western Asia.** North Caucasus, Transcaucasus. Turkey.

**TDWG4.**

**Stipa talassica** Pazij. *Not. Syst. Herb. Inst. Bot. & Zool. Acad. Sci. Uzbekistan.* x. 21 (1948).

**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: Russia, Talaskii Alatau: Sovetkina & Uspenskaya 339 (TAK holo, LE).

**Illustrations (Books):** No illustration found (BKS).

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial, caespitose, clumped densely. Culms 45–50 cm long. Culm-internodes distally pubescent. Leaf-sheaths pubescent, outer margin hairy. Ligule a ciliolate membrane, 0.3–1.2 mm long. Leaf-blades filiform, convolute, 0.5–1 mm wide. Leaf-blade surface ribbed, scabrous, rough abaxially, puberulous, hairy adaxially.

**Inflorescence.** Inflorescence a panicle, subtended by an inflated leaf-sheath, embraced at base by subtending leaf. Panicle open, linear. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rachilla extension. Spikelets of 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, 40–50 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus evident, curved, 1 mm long, pilose, hairy in a ring above, acute.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 1 length of upper glume, membranous, without keels. Lower glume apex acuminate. Upper glume lanceolate, 40–50 mm long, membranous, without keels. Upper glume apex acuminate.

**Florets.** Fertile lemma lanceolate, subterete, 12.5–13 mm long, coriaceous, without keel, 5 -veined, more than 3-veined. Lemma surface pubescent, hairy below, hairy in lines. Lemma margins convolute, covering most of palea. Lemma apex awned, 1 -awned. Principal lemma awn geniculate, 140 mm long overall, with twisted column, limb plumose, with 4–5 mm long hairs. Column of lemma awn 35–40 mm long. Palea without keels.

**Flower and Fruit.** Anthers 3. Stigmas 2. Ovary glabrous. Caryopsis with adherent pericarp, fusiform. Hilum linear.

**Distribution (TDWG).** Continent. Temperate Asia.

**Country /Province /State.** Middle Asia. Kirgizistan.

**Stipa tianschanica** Roshev. *B. Fedtsch. Fl. Asiat. Ross.* xii. 149 (1916).

**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: "Turkestan: Prov. Semiretschje: distr. Prshewalsk, ad cursum inferiorem fl. Ak-Schiirjak in declivibus petrosis,...", *B. Schischkin, 31.VII.1913.*

**Recent Synonyms:** *Stipa gobica* Roshev., *Not. Syst. Herb. Hort. Petrop.* 5: 13 (1924). *Stipa klemenzii* Roshev., *Not. Syst. Herb. Hort. Petrop.* 5: 12 (1924).

**Illustrations (Books):** S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 268 and Fig. 269 as var. *gobica*).

**Illustrations (Journals):** *Bot. J. Linn. Soc.* (167:424, Fig.12 (2011) as subsp. *tianschanica*).

**Derivation** (Clifford & Bostock 2007): L. -ica, belonging to. From Tianshan, eastern Kazakhstan, former Soviet Union.

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Culms 17–23 cm long. Culm-internodes distally glabrous or pubescent. Leaf-sheaths glabrous on surface. Ligule a ciliolate membrane, 1 mm long. Leaf-blades filiform, involute, 0.5–1 mm wide. Leaf-blade surface ribbed.

**Inflorescence.** Inflorescence a panicle, embraced at base by subtending leaf. Panicle open, lanceolate, 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, 27 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus evident, pubescent, acute.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 1 length of upper glume, membranous, without keels. Lower glume apex acuminate. Upper glume lanceolate, 27 mm long, membranous, without keels. Upper glume apex acuminate.

**Florets.** Fertile lemma lanceolate, subterete, 7–8 mm long, coriaceous, without keel, 5 -veined, more than 3-veined. Lemma surface pubescent, hairy all along, hairy in lines. Lemma margins convolute, covering most of palea. Lemma apex surmounted by a ring of hairs, awned, 1 -awned. Principal lemma awn geniculate, 70 mm long overall, with twisted column, limb plumose. Palea without keels.

**Flower and Fruit.** Anthers 3. Stigmas 2. Ovary glabrous. Caryopsis with adherent pericarp, fusiform. Hilum linear.

**Distribution (TDWG). Continent.** Temperate Asia.

**Country /Province /State.** Middle Asia, China, Mongolia, Russia. Chita, Irkutsk, Tuva. Kazakhstan, Kirgizistan, Uzbekistan. Inner Mongolia, China North-Central, Qinghai, Tibet, Xinjiang. Mongolia.

**TDWG4.** Gansu, Hebei, Shaanxi, Shanxi.

**Stipa tigrensis** Chiov. *Ann. di Bot. Roma*, ii. 366. (1905).

**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: HT: *Pappi 1180*, Eritrea (K).

**Illustrations (Books):** S.Phillips, *Poaceae* (Gramineae) in I.Hedberg & S.Edwards, *Flora of Ethiopia and Eritrea* (1995) (14, Fig 7).

**Derivation** (Clifford & Bostock 2007): L. -ensis, denoting origin. From Tigre, north eastern Africa.

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Culms 30–50 cm long. Leaves mostly basal. Ligule an eciliate membrane, 1 mm long. Leaf-blades filiform, involute, 15–20 cm long, 1–1.5 mm wide. Leaf-blade surface ribbed, pubescent, hairy adaxially.

**Inflorescence.** Inflorescence a panicle. Panicle contracted, linear, 5–15 cm long. Panicle branches pubescent. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 8–12 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus elongated, curved, 1.5 mm long, bearded, pungent.

**Glumes.** Glumes persistent, similar, exceeding 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 acuminate. Upper glume lanceolate, 8–12 mm long, 1.3–1.7 length of adjacent fertile lemma, membranous, without keels, 3 -veined. Upper glume apex acuminate.

**Florets.** Fertile lemma lanceolate, subterete, 6–7 mm long, coriaceous, without keel, 5 -veined, more than 3-veined. Lemma surface scaberulous, rough above, pilose. Lemma margins convolute, covering most of palea. Lemma apex emarginate or truncate, awned, 1 -awned. Principal lemma awn bigeniculate, 50 mm long overall, with twisted column, deciduous. Column of lemma awn hirsute, with 1 mm long hairs. Palea oblong, 0.3 length of lemma, hyaline, 2 -veined, without keels. Palea surface glabrous.

**Flower and Fruit.** Lodicules 3, oblanceolate, membranous. Anthers 3. Stigmas 2. Ovary glabrous. Caryopsis with adherent pericarp, fusiform. Embryo 0.1–0.2 length of caryopsis. Hilum linear.

**Distribution (TDWG). Continent.** Africa, Temperate Asia.

**Country /Province /State.** Northeast tropical Africa, East tropical Africa. Eritrea, Sudan. Uganda. Arabian Peninsula. Saudi Arabia, Yemen.

**Stipa tirsia** Stev. *Bull. Soc. Nat. Mosc.* . II. 115 (1857).

**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 Russia. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: Russia, Kaltschik: Graff (H lecto).

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): vernacular name of the species on the southern Russian Steppe.

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Culms 40–100 cm long. Culm-internodes distally glabrous. Leaf-sheaths glabrous on surface. Ligule an eciliate membrane, 0.2–0.5 mm long. Leaf-blades filiform, involute, 1–2 mm wide. Leaf-blade surface puberulous, hairy abaxially. Leaf-blade apex attenuate, filiform.

**Inflorescence.** Inflorescence a panicle, embraced at base by subtending leaf. Panicle contracted, linear. 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, 50–65 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus elongated, curved, pubescent, pungent.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 1 length of upper glume, membranous, without keels. Lower glume apex acuminate. Upper glume lanceolate, 50–65 mm long, membranous, without keels. Upper glume apex acuminate.

**Florets.** Fertile lemma elliptic, subterete, 18–20 mm long, coriaceous, without keel, more than 3-veined. Lemma surface pubescent, hairy in lines. Lemma margins convolute, covering most of palea. Lemma apex awned, 1 -awned. Principal lemma awn bigeniculate, 350–500 mm long overall, with twisted column, limb plumose. Palea 2 -veined, without keels.

**Flower and Fruit.** Anthers 3. Stigmas 2. Ovary glabrous. Caryopsis with adherent pericarp. Hilum linear.

**Distribution (TDWG). Continent.** Europe, Temperate Asia.

**Region.** Middle Europe, Southwestern Europe, Southeastern Europe, Eastern Europe.

**Country /Province /State.** : Austria, Czechoslovakia, Germany, Hungary. : France, Spain. : Albania, Bulgaria, Greece, Italy, Romania, Yugoslavia. Krym, Central European Russia, East European Russia, South European Russia, Northwest European Russia, Ukraine. **Middle Asia, Caucasus.** Kazakhstan. North Caucasus, Transcaucasus.

**TDWG4.**

**Stipa transcarpatica** M.V. Klokov. *Novosti Sist. Vyssh. Nizsh. Rast.* (Kiev), 1975: 54 (1976).

**Accepted by:** W.D. Clayton & K. Harman, *GrassBase* (2008) and online.

**TYPE** from Russia. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: Russia, Ukraine, Vinogradov: Zaverucha (KW holotype).

**Illustrations (Books):** No illustration found (BKS).

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial, caespitose, clumped densely. Culms 50–100 cm long, (2–)3 -noded. Culm-internodes smooth, distally glabrous. Leaf-sheaths puberulous, outer margin hairy. Ligule a ciliolate membrane, 0.5–2.5 mm long, erose. Leaf-blades conduplicate, 75–85 cm long, 2.5–3.5 mm wide, glaucous. Leaf-blade surface puberulous, hairy on both sides. Leaf-blade apex attenuate.

**Inflorescence.** Inflorescence a panicle, comprising 7 fertile spikelets. Peduncle pilose above. Panicle open or contracted, linear or lanceolate, 11–13 cm long, bearing few spikelets. Panicle branches puberulous, bearded in axils (of lowest node). 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, 85–95 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus elongated.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 1 length of upper glume, membranous, without keels. Lower glume surface pilose, hairy at base. Lower glume apex acuminate. Upper glume lanceolate, 85–95 mm long, membranous, without keels. Upper glume apex acuminate.

**Florets.** Fertile lemma lanceolate, subterete, 22–25 mm long, coriaceous, without keel, 5 -veined, more than 3-veined. Lemma margins convolute, covering most of palea, pubescent. Lemma apex awned, 1 -awned. Principal lemma awn bigeniculate, 350–450 mm long overall, with 250–350 mm long limb, with twisted column, limb plumose, with 4–5 mm long hairs. Column of lemma awn 80–110 mm long, ciliate, hairy on upper part. Palea without keels.

**Flower and Fruit.** Hilum linear.

**Distribution (TDWG). Continent.** Europe.

**Region.** Eastern Europe.  
**Country /Province /State.** Ukraine.

**Stipa turkestanica** Hack. *Act. Hort. Petrop.* xxvi. 59 (1906).

**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: IT: *B.A. Fedtschenko s.n.*, 27 Jul 1904, Turkestan (US-3168610 (fragm. ex W)).

**Recent Synonyms:** *Stipa trichoides* Smirnow, *Fedde. Repert.* 21: 233 (1925).

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): L. -ica, belonging to. From Turkestan, former Soviet Union.

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Butt sheaths persistent and investing base of culm. Culms 30–70 cm long. Leaf-sheaths outer margin hairy. Ligule an eciliate membrane, 3–4 mm long. Leaf-blades filiform, involute, 2–4.5 cm long, 1–1.5 mm wide. Leaf-blade surface scabrous, rough abaxially.

**Inflorescence.** Inflorescence a panicle, exserted or embraced at base by subtending leaf. Panicle contracted, linear, 8–14 cm long, bearing few spikelets. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 27–45 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus elongated, 2.5 mm long, pubescent, pungent.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma, shiny. Lower glume lanceolate, 1 length of upper glume, membranous, without keels, 5 -veined. Lower glume apex attenuate. Upper glume lanceolate, 27–45 mm long, membranous, without keels, 5 -veined. Upper glume apex attenuate.

**Florets.** Fertile lemma elliptic, subterete, 11–13 mm long, coriaceous, without keel, more than 3-veined. Lemma surface pubescent, hairy below, hairy in lines. Lemma margins convolute, covering most of palea. Lemma apex awned, 1 -awned. Principal lemma awn bigeniculate, 11–16 mm long overall, with twisted column, deciduous, limb plumose, with 4–5 mm long hairs. Column of lemma awn glabrous. Palea 2 -veined, without keels.

**Flower and Fruit.** Anthers 3. Stigmas 2. Ovary glabrous. Caryopsis with adherent pericarp. Hilum linear.

**Distribution (TDWG). Continent.** Temperate Asia, Tropical Asia.

**Country /Province /State. Middle Asia, Western Asia.** Kirgizistan, Turkmenistan, Tadzhikistan. Iran.  
**Indian Subcontinent.** Pakistan.

**TDWG4.**

**Stipa zaissanica** Yu.A. Kotukhov. *Bot. Zhurn.*, 76(6): 873 (1991).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online.

**TYPE** from Russia. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Russia, Altai, Agutau: Kotuchov (LE holo).

**Illustrations (Books):** No illustration found (BKS).

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Butt sheaths persistent and investing base of culm, with compacted dead sheaths. Culms 60–80 cm long. Culm-internodes distally pubescent. Leaf-sheaths mostly shorter than adjacent culm internode, scaberulous, outer margin hairy. Ligule an eciliate membrane, 3–5 mm long, 6.5 mm long on basal shoots, glabrous on abaxial surface or pubescent on abaxial surface. Leaf-blades filiform, conduplicate, 0.5–0.6 mm wide. Leaf-blade surface scabrous, rough abaxially, puberulous, densely hairy, hairy adaxially.

**Inflorescence.** Inflorescence a panicle. Panicle contracted, linear, 30–50 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, 20–25 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus elongated, 1.5–2 mm long, pubescent, pungent.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 20–25 mm long, 1 length of upper glume, membranous, without keels. Lower glume apex attenuate. Upper glume lanceolate, 20–25 mm long, membranous, without keels. Upper glume apex attenuate.

**Florets.** Fertile lemma elliptic, subterete, 9–10 mm long, coriaceous, without keel, more than 3-veined. Lemma surface pubescent, hairy in lines (5 lines). Lemma margins convolute, covering most of palea. Lemma



apex surmounted by a ring of hairs, awned, 1 -awned. Principal lemma awn bigeniculate, 90–110 mm long overall, with twisted column, limb hirsute, with 2–2.5 mm long hairs. Column of lemma awn 15–17 mm long, puberulous. Palea without keels.

**Flower and Fruit.** Anthers 3, 3.5–4 mm long.

**Distribution (TDWG). Continent.** Temperate Asia.

**Country /Province /State.** Siberia. Altay.

**Stipa zalesskii** Wilensky. *Dnevn. Vseross. Sesda Russk. Bot.* 1:41 (1921).

**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) (& as *S. ucrainica*), N.Tsvelev, *Grasses of the Soviet Union* (1983).

**TYPE** from Russia. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Prov. Akmolinsk, Siberiae occidentalis, Turkestaniae septentrionalis et Rossiae orientalis, *S. Ganeschin s.n.*

**Recent Synonyms:** *Stipa ucrainica* P. Smirn., *Fedde, Repert.* 22: 374 (1926). *Stipa krascheninnikowii*.

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): in honor of Viatcheslav Konstantinovic Zalessky (1871–1936) Russian botanist.

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial, caespitose, clumped loosely. Culms erect, 30–75 cm long. Culm-internodes smooth, distally glabrous. Leaves basal and cauline. Leaf-sheaths longer than adjacent culm internode, pubescent. Ligule a ciliolate membrane, 2–5 mm long, 0.8–3 mm long on basal shoots, membranous, obtuse. Leaf-blades erect to ascending, filiform, conduplicate, 20–35 cm long, 0.6–1 mm wide. Leaf-blade surface pubescent.

**Inflorescence.** Inflorescence a panicle. Panicle open, oblong, 7–15 cm long. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, laterally compressed, compressed slightly, 55–60 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus elongated, pungent.

**Glumes.** Glumes persistent, similar, with lower narrower than upper, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 55–60 mm long, 1 length of upper glume, membranous, 1-keeled (very slightly), keeled below, 5–7 -veined. Lower glume apex setaceously acuminate. Upper glume lanceolate, 55–60 mm long, 1.7–2 length of adjacent fertile lemma, membranous, without keels, 5–7 -veined. Upper glume apex setaceously acuminate.

**Florets.** Fertile lemma linear, subterete, 17–19 mm long, coriaceous, 3(–5) -veined, 0–3 -veined. Lemma surface pubescent, hairy in lines. Lemma margins convolute, covering most of palea. Lemma apex awned, 1 -awned. Principal lemma awn bigeniculate, 200–350 mm long overall, with twisted column, deciduous, abscising from top of lemma, limb plumose, with 5 mm long hairs. Column of lemma awn glabrous. Palea linear, tightly convolute around flower, 0.8 length of lemma, coriaceous, 2 -veined, without keels.

**Flower and Fruit.** Lodicules 3, lanceolate, membranous, acute. Caryopsis with adherent pericarp, fusiform.

**Distribution (TDWG). Continent.** Europe, Temperate Asia.

**Region.** Middle Europe, Eastern Europe.

**Country /Province /State.** : Czechoslovakia. Krym, Central European Russia, East European Russia, South European Russia, Northwest European Russia, Ukraine. Siberia, **Middle Asia, Caucasus, Western Asia, Mongolia.** Altay, Irkutsk. Kirgizistan. Iran.

**TDWG4.**

**Stipa zuvantica** Tsvelev. *Novit. Syst. Pl. Vasc., Acad. Sci. URSS*, 1966, 18 (1966).

**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: Transcaucasia: Azerbajdzhanica: in campis et collibus aridis lapidosis prope pag. Swant, 20 Jun 1830, *C. Meyer s.n.* (HT: LE).

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): L. -ica, belong to. From Zuvant, Trancaucasia, former Soviet Union.

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial, caespitose, clumped densely. Culms erect, 40–75 cm long. Culm-internodes distally pubescent. Leaves basal and cauline. Leaf-sheaths pilose, outer margin hairy. Ligule an eciliate membrane, 8–14 mm long, 1.5–3 mm long on basal shoots, acute. Leaf-blades conduplicate, 2–4 mm wide. Leaf-blade surface scabrous, rough abaxially, pubescent, densely hairy, hairy adaxially.

**Inflorescence.** Inflorescence a panicle. Panicle contracted, linear. 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, 30–40 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus evident, acute.

**Glumes.** Glumes persistent, similar, subequal in width, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 1 length of upper glume, membranous. Lower glume apex attenuate. Upper glume lanceolate, 30–40 mm long, membranous, without keels. Upper glume apex attenuate.

**Florets.** Fertile lemma linear to lanceolate, subterete, 13–15 mm long, coriaceous, without keel, more than 3-veined. Lemma surface pilose, hairy above, hairy in lines. Lemma margins convolute, covering most of palea. Lemma apex awned, 1 -awned. Principal lemma awn bigeniculate, 190–220 mm long overall, with 140–160 mm long limb, with twisted column, limb pubescent, with 0.6–0.8 mm long hairs. Column of lemma awn scabrous. Palea 2 -veined, without keels.

**Flower and Fruit.** Lodicules 3. Anthers 3. Stigmas 2. Caryopsis with adherent pericarp.

**Distribution (TDWG). Continent.** Temperate Asia.

**Country /Province /State.** Caucasus. Transcaucasus.

**TDWG4.**

**Stipagrostis acutiflora** (Trin. & Rupr.) de Winter. *Kirkia*, iii. 133 (1963).

**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:** *Aristida acutiflora* Trin. & Rupr., *Sp. Gram. Stipac.* 167 (1842). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *Ehrenberg s.n.*, Dongala (LE; IT: B).

**Illustrations (Books):** L.Boulos, *Flora of Egypt* 4 (2005) (232, Pl. 67).

**Derivation** (Clifford & Bostock 2007): L. acuo, sharpen; flos, flower. Paleas, lemmas or glumes with sharp apices.

**Classification.** Subfamily Aristidoideae. Tribe: Aristideae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Stolons absent or present. Culms geniculately ascending, 20–40 cm long. Culm-internodes distally pubescent. Culm-nodes glabrous. Leaf-sheath oral hairs bearded. Ligule a fringe of hairs. Leaf-blades filiform, convolute, 4–7 cm long, 1 mm wide, stiff. Leaf-blade surface scabrous.

**Inflorescence.** Inflorescence a panicle, exerted or embraced at base by subtending leaf. Panicle open, lanceolate, 5–15 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, 9 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus elongated, 1.3 mm long, pubescent, pungent.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 8 mm long, 0.9 length of upper glume, membranous, without keels, 1 -veined. Lower glume primary vein scaberulous. Lower glume lateral veins absent. Lower glume apex acuminate. Upper glume lanceolate, 9 mm long, 1.8 length of adjacent fertile lemma, membranous, without keels, 3 -veined. Upper glume apex dentate, acute, mucronate.

**Florets.** Fertile lemma lanceolate, subterete, 5 mm long, coriaceous, without keel, 3 -veined, 0–3 -veined. Lemma margins convolute, covering most of palea. Lemma apex acute, awned, 3 -awned. Principal lemma awn 3-branched, with 10–15 mm long limb, with a straight or slightly twisted column, deciduous, abscissing from top of lemma, limb plumose, glabrescent towards tip and base of limb. Column of lemma awn 1 mm long, glabrous, without distinct apical hairs. Lateral lemma awns present, 5–7 mm long, shorter than principal, glabrous. Palea 0.3 length of lemma, without keels.

**Flower and Fruit.** Anthers 0.5 mm long. Caryopsis with adherent pericarp, fusiform, 3 mm long. Embryo 0.33 length of caryopsis. Hilum linear, 1 length of caryopsis.

**Distribution (TDWG). Continent.** Africa, Temperate Asia.

**Country /Province /State.** Northern Africa, West tropical Africa, Northeast tropical Africa. Algeria, Egypt, Libya, Tunisia. Mali, Mauritania, Niger. Chad, Sudan. **Arabian Peninsula.** Gulf States, Oman, Saudi Arabia.

**Stipagrostis amabilis** (Schweickerdt) de Winter. *Kirkia*, iii. 133 (1963).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

**TYPE** from Namibia. **Basionym or Replaced Name:** *Aristida amabilis* Schweick., *Bot. Jahrb. Syst.* 76(2): 217–218 (1954). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *Keet 1641*, Oct 1948, Namibia: Gibeon Distr.: Stampriet, Farm Jessica (PRE; IT: B, PRE).

**Illustrations (Books):** M.A.N.Muller, *Grasses of South West Africa/Namibia* (1984).

**Derivation** (Clifford & Bostock 2007): L. lovely. Of attractive appearance.

**Classification.** Subfamily Aristidoideae. Tribe: Aristideae.

**Habit, Vegetative Morphology.** Perennial, caespitose, clumped loosely. Cataphylls evident. Rhizomes elongated. Butt sheaths pubescent. Culms geniculately ascending or decumbent, 150–200 cm long. Culm-internodes smooth or scaberulous, distally glabrous. Lateral branches fastigiate or suffrutescent. Leaf-sheaths glabrous on surface or pilose. Ligule a fringe of hairs. Leaf-blades drooping, deciduous at the ligule, aciculate, convolute, 10–25 cm long, 1–2.5 mm wide, stiff. Leaf-blade surface scabrous, rough adaxially, glabrous. Leaf-blade apex muticous or pungent.

**Inflorescence.** Inflorescence a panicle. Panicle open or contracted, lanceolate, interrupted, 10–30 cm long. Panicle branches smooth or scaberulous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 10–15 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, thinner than fertile lemma. Lower glume lanceolate, 8–13 mm long, 0.8–0.9 length of upper glume, chartaceous, without keels, 3 -veined. Lower glume apex acuminate. Upper glume lanceolate, 10–15 mm long, 1.4–1.7 length of adjacent fertile lemma, chartaceous, without keels, 3 -veined. Upper glume apex acuminate.

**Florets.** Fertile lemma oblong, 7–9 mm long, coriaceous, without keel, 3 -veined, 0–3 -veined. Lemma margins convolute, covering most of palea. Lemma apex acute, awned, 3 -awned. Principal lemma awn 3-branched, with 25–35 mm long limb, with twisted column, deciduous, abscising across body of lemma, limb plumose, glabrescent towards base of limb. Column of lemma awn 1–2 mm long. Lateral lemma awns present, 10–30 mm long, shorter than principal, glabrous. Palea without keels.

**Flower and Fruit.** Caryopsis with adherent pericarp, oblong, 5 mm long.

**Distribution (TDWG).** Continent. Africa.

**Country /Province /State.** Southern Africa. Namibia, Northern Cape.

**Stipagrostis anomala** De Winter. *Kirkia*, iii. 133 (1963).

**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:** *Stipa namaquensis* Pilg., *Bot. Jahrb. Syst.* 51(3–4): 412 (1914). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: T: *Koepl ex Dinter 2602*, Namaland.

**Illustrations (Books):** L.K.A. Chippindall, *Grasses and Pastures of South Africa* (1955) (290, Fig 260as *Stipa namaquensis*), M.A.N.Muller, *Grasses of South West Africa/Namibia* (1984), G.E.Gibbs Russell et al, *Grasses of Southern Africa* (1990) (321, Fig 207).

**Derivation** (Clifford & Bostock 2007): Gk. anomalos, irregular. Diverging from the normal, often with respect to number of lemmas in the spikelet or otherwise unusual for the genus in some respect.

**Classification.** Subfamily Aristidoideae. Tribe: Aristideae.

**Habit, Vegetative Morphology.** Perennial, short-lived, caespitose. Culms erect or geniculately ascending, 10–60 cm long, 1–2 -noded. Culm-internodes distally glabrous. Culm-nodes glabrous. Leaves mostly basal. Leaf-sheaths glabrous on surface. Ligule a fringe of hairs. Leaf-blades curled, filiform, 1–20 cm long, 1–2 mm wide. Leaf-blade surface ribbed, scabrous, rough adaxially.

**Inflorescence.** Inflorescence a panicle. Panicle open, linear or lanceolate, interrupted, 3–17 cm long. Panicle axis scabrous. Panicle branches bearing congested spikelets, scabrous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 9–12 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus elongated, 1.5 mm long, pilose, pungent.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 7–10 mm long, 0.75–8 length of upper glume, chartaceous, without keels or 1-keeled, 3 -veined. Lower glume surface asperulous. Lower glume apex truncate or acute. Upper glume lanceolate, 9–12 mm long, 2.5–3 length of adjacent fertile lemma, chartaceous, without keels, 3 -veined. Upper glume apex truncate or acute.

**Florets.** Fertile lemma oblong, 4 mm long, coriaceous, without keel, 3 -veined, 0–3 -veined. Lemma surface papillose. Lemma margins convolute, covering most of palea. Lemma apex acute, awned, 1 -awned. Principal lemma awn geniculate, with 7–15 mm long limb, with twisted column, deciduous, abscising from top of lemma, limb glabrous. Column of lemma awn 4–7 mm long, ciliate, hairy on lower part. Lateral lemma awns absent. Palea oblong, 1 mm long, 0.25 length of lemma, 2 -veined, without keels.

**Flower and Fruit.** Lodicules 2, lanceolate, 1–1.5 mm long, membranous. Caryopsis with adherent pericarp, fusiform. Embryo 0.33 length of caryopsis.

**Distribution (TDWG). Continent.** Africa.

**Country /Province /State.** Southern Africa. Namibia, Northern Cape, Western Cape.

**Stipagrostis arachnoidea** (Litw.) de Winter. *Kirkia*, iii. 133 (1963).

**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:** *Aristida arachnoidea* Litw., *Trudy Bot. Muz. Imp. Akad. Nauk* 1: 21–22 (1902). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Habitat: Transkaspia (Turcomania). In arena mobili inter fl. Murgab et Amu-Darja, ad stationem viae ferreae Utsch, 25 Julii 1897, *Adshi* 211.

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): Gk *arachne*, spider; *-oides*, resembling. Densely hairy as of internodes or leaf-sheaths, or of awns.

**Classification.** Subfamily Aristidoideae. Tribe: Aristideae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Culms decumbent, 20–40 cm long. Culm-internodes distally woolly. Leaf-sheaths woolly. Ligule a fringe of hairs. Leaf-blades 9–18 cm long, 1 mm wide. Leaf-blade surface woolly, hairy abaxially.

**Inflorescence.** Inflorescence a panicle. Panicle open, lanceolate, 10–20 cm long, bearing few spikelets. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, ciliate.

**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, 40–50 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus elongated, 3 mm long, pilose, acute.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 40–50 mm long, 1.5 length of upper glume, membranous, much thinner above, without keels, 7–9 -veined. Lower glume surface pilose, hairy below. Lower glume apex acuminate. Upper glume lanceolate, 30 mm long, 3 length of adjacent fertile lemma, membranous, much thinner above, without keels, 7–9 -veined. Upper glume surface pilose, hairy below. Upper glume apex acuminate.

**Florets.** Fertile lemma oblong, 9.5–10.5 mm long, coriaceous, without keel, 3 -veined, 0–3 -veined. Lemma margins convolute, covering most of palea. Lemma apex acute, awned, 3 -awned. Principal lemma awn 3-branched, with 70–80 mm long limb, with twisted column, deciduous, abscising from top of lemma, limb plumose, glabrescent towards tip and base of limb. Column of lemma awn 10 mm long. Lateral lemma awns present, 60–70 mm long, shorter than principal, plumose. Palea 0.33 length of lemma, without keels.

**Distribution (TDWG). Continent.** Temperate Asia.

**Country /Province /State.** Middle Asia. Turkmenistan, Tadjikistan, Uzbekistan.

**TDWG4.**

**Stipagrostis brachyathera** (Coss. & Balansa) de Winter. *Kirkia*, iii. 133 (1963).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online.

**TYPE** from Algeria. **Basionym or Replaced Name:** *Aristida brachyathera* Coss. & Balansa, *Bull. Soc. Bot. France*, 5: 169 (brachyptera), 786 indice (1858). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Algeria, El Abiod Sidi Cheikh: Cosson ; Algeria, Guerrara to Hadjira: Reboud.

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): Gk *brachys*, short; *ather*, barb or spine. Lemma awn relatively short.

**Classification.** Subfamily Aristidoideae. Tribe: Aristideae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Rhizomes short. Culms geniculately ascending, 40–80 cm long. Culm-internodes striate, distally pubescent. Culm-nodes glabrous. Lateral branches lacking or sparse. Leaf-sheaths mostly shorter than adjacent culm internode, striately veined, scaberulous. Leaf-sheath oral hairs bearded. Ligule a fringe of hairs. Leaf-blades curved, filiform, convolute, 10–15 cm long, 1–2 mm wide, stiff, glaucous. Leaf-blade surface scaberulous, rough abaxially, puberulous, hairy adaxially. Leaf-blade apex attenuate.

**Inflorescence.** Inflorescence a panicle, exerted or embraced at base by subtending leaf. Peduncle antrorsely scabrous above. Panicle open, lanceolate, 10–25 cm long. Primary panicle branches appressed or ascending, 1-nate, rebranched near base, 3–7 cm long. Panicle axis scaberulous. Panicle branches bearded in axils. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 7.5 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus elongated, 2 mm long, pubescent and bearded, with longer hairs above, pungent.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 7 mm long, 0.9 length of upper glume, membranous, without keels, 1-veined. Lower glume lateral veins absent. Lower glume surface puberulous. Lower glume apex acuminate. Upper glume lanceolate, 7.5 mm long, membranous, without keels, 3-veined. Upper glume surface puberulous.

**Florets.** Fertile lemma lanceolate or oblong, subterete, 5 mm long, coriaceous, without keel, 3-veined, 0–3-veined. Lemma margins convolute, covering most of palea. Lemma apex acute, awned, 3-awned. Principal lemma awn 3-branched, with 8–12 mm long limb, with a straight or slightly twisted column, deciduous, abscising from top of lemma, limb plumose, glabrescent towards tip. Column of lemma awn 1–2 mm long, glabrous, without distinct apical hairs. Lateral lemma awns present, 8–12 mm long, subequal to principal, glabrous. Palea oblong, 0.3 length of lemma, 0-veined, without keels. Palea apex truncate.

**Flower and Fruit.** Lodicules 2. Anthers 3, 3.2 mm long. Caryopsis with adherent pericarp, fusiform, dorsally compressed, 3 mm long, light brown. Embryo 0.3–0.4 length of caryopsis. Hilum linear, 0.5 length of caryopsis.

**Distribution (TDWG). Continent.** Africa.

**Country /Province /State.** Northern Africa. Algeria.

**Stipagrostis brevifolia** (Nees) de Winter. *Kirkia*, iii. 133 (1963).

**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:** *Arthratherum brevifolium* Nees, *Fl. Afr. Austr.* 1: 183 (1841). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: South Africa, Namaqualand: Drege (K iso).

**Illustrations (Books):** L.K.A. Chippindall, *Grasses and Pastures of South Africa* (1955) (304, Fig. 270 as *Aristida*), M.A.N.Muller, *Grasses of South West Africa/Namibia* (1984).

**Derivation** (Clifford & Bostock 2007): L. *brevis*, short; *folium*, leaf. Leaf-blades shorter than those of some other species in the genus or relative to the length of the culm.

**Classification.** Subfamily Aristidoideae. Tribe: Aristideae.

**Habit, Vegetative Morphology.** Perennial. Rootstock evident. Rhizomes elongated. Glands wart-like. Culms 50–100 cm long. Culm-internodes glandular, antrorsely scabrous. Culm-nodes pubescent. Lateral branches suffrutescent. Leaves cauline. Leaf-sheaths glandular, outer margin hairy. Leaf-sheath oral hairs woolly. Ligule a fringe of hairs. Leaf-blades flat or convolute, 0.5–12 cm long, 1–3 mm wide. Leaf-blade surface scaberulous, rough on both sides.

**Inflorescence.** Inflorescence a panicle. Panicle contracted, linear, continuous or interrupted, 10–20 cm long. Primary panicle branches appressed. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 12–17 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus elongated, 2–2.5 mm long, pubescent, pungent.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 8–15 mm long, 0.66–0.9 length of upper glume, membranous, glandular, without keels, 3–5-veined. Lower glume margins ciliolate. Lower glume apex acuminate. Upper glume lanceolate, 12–17 mm long, 2–2.5

length of adjacent fertile lemma, membranous, glandular, without keels, 3–5 -veined. Upper glume margins ciliolate. Upper glume apex acuminate.

**Florets.** Fertile lemma oblong, 5.5–7 mm long, coriaceous, without keel, 3 -veined, 0–3 -veined. Lemma margins convolute, covering most of palea. Lemma apex acute, awned, 3 -awned. Principal lemma awn 3-branched, with 23–40 mm long limb, with twisted column, deciduous, abscissing from top of lemma, limb plumose, glabrescent towards tip and base of limb. Column of lemma awn 4–9 mm long. Lateral lemma awns present, 10–20 mm long, shorter than principal, glabrous. Palea without keels.

**Distribution (TDWG). Continent.** Africa.

**Country /Province /State.** Southern Africa. Namibia, Northern Cape.

### **Stipagrostis ciliata** (Desf.) de Winter. *Kirkia*, 3: 133 (1963).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

**TYPE** from Tunisia. **Basionym or Replaced Name:** *Aristida ciliata* Desf, *Schrad. N. Journ.* 3: 255 (1809). T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: HT: *Desfontaines s.n.*, Tunisia: in montibus prope Kerwan in regno Tunetano (P; IT: G-Del, US-2639931 (fragm. ex P)).

**Illustrations (Books):** L.K.A. Chippindall, *Grasses and Pastures of South Africa* (1955) (299, Fig 265as *Aristida ciliata* var. *capensis*), M.A.N.Muller, *Grasses of South West Africa/Namibia* (1984), N.Feinbrun-Dothan, *Flora Palaestina* 4 (1986) (Pl. 360), L.Boulos, *Flora of Egypt* 4 (2005) (226, Pl. 64), N.L.Bor, *Gramineae* in K.H.Rechinger, *Flora Iranica*. No. 70/30 (1970) (Tab. 55), N.L.Bor, *Gramineae in Flora of Iraq* (1968) (387, Pl. 147).

**Images:** L.Boulos, *Flora of Egypt* 4 (2005);, F.van Oudtshoorn, *Guide to Grasses of Southern Africa* (1999).

**Derivation** (Clifford & Bostock 2007): L. cilium, eyelid; -ata, possessing. Plant hairy overall or in part.

**Classification.** Subfamily Aristidoideae. Tribe: Aristideae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Culms erect, 30–85 cm long. Culm-nodes bearded. Ligule a fringe of hairs. Leaf-blades curled, filiform, convolute, 3–25 cm long, 1 mm wide. Leaf-blade surface scabrous, rough adaxially.

**Inflorescence.** Inflorescence a panicle. Panicle open, 10–30 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, 9–14 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus elongated, curved, 1.5–2.5 mm long, bearded, with longer hairs above, pungent.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, similar to fertile lemma in texture. Lower glume lanceolate, 8.5–11 mm long, 0.9 length of upper glume, chartaceous, without keels, 3 -veined. Lower glume surface glabrous. Lower glume apex acute. Upper glume lanceolate, 9–14 mm long, 1.2 length of adjacent fertile lemma, chartaceous, without keels, 3 -veined. Upper glume surface glabrous. Upper glume apex acute.

**Florets.** Fertile lemma oblong, subterete, 6–10 mm long, chartaceous, without keel, 3 -veined, 0–3 -veined. Lemma surface smooth. Lemma margins convolute, covering most of palea. Lemma apex acute, awned, 3 -awned. Principal lemma awn 3-branched, with 35–45 mm long limb, with a straight or slightly twisted column, deciduous, abscissing across body of lemma, limb plumose, glabrescent towards tip and base of limb. Column of lemma awn 9–10 mm long, glabrous, without distinct apical hairs. Lateral lemma awns present, ascending, 15–20 mm long, shorter than principal, glabrous. Palea without keels.

**Distribution (TDWG). Continent.** Africa, Temperate Asia, Tropical Asia.

**Country /Province /State.** Northern Africa, Macaronesia, West tropical Africa, Northeast tropical Africa, Southern Africa. Algeria, Egypt, Libya, Morocco, Tunisia. Canary Is, Madeira. Sudan. Namibia, Botswana, Limpopo, Free State, Northern Cape, Western Cape, Eastern Cape. **Western Asia, Arabian Peninsula.** Afghanistan, Iran, Iraq, Palestine, Israel & Jordan. Gulf States, Kuwait, Oman, Saudi Arabia. **Indian Subcontinent.** India, Pakistan.

### **Stipagrostis damarensis** (Mez) de Winter. *Kirkia*, iii. 134 (1963).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

**TYPE** from Namibia. **Basionym or Replaced Name:** *Aristida damarensis* Mez, Fedde, *Repert.* 17: 152 (1921). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Namibia, Haigamkhab: Galpin & Pearson 7577 (K iso).

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): L. -ensis, denoting origin. From Damaraland in Namibia.

**Classification.** Subfamily Aristidoideae. Tribe: Aristideae.

**Habit, Vegetative Morphology.** Perennial, caespitose, clumped loosely. Rhizomes elongated. Culms 60–120 cm long, 1.5–5 mm diam., 3–4 -noded. Culm-internodes distally glabrous. Culm-nodes glabrous. Lateral branches lacking. Leaves mostly basal. Leaf-sheaths glabrous on surface, outer margin glabrous or hairy. Ligule a fringe of hairs. Leaf-blades convolute, 15–30 cm long, 2–3 mm wide, stiff. Leaf-blade surface ribbed, scaberulous or scabrous, rough on both sides.

**Inflorescence.** Inflorescence a panicle, embraced at base by subtending leaf. Panicle contracted, linear, interrupted, 20–45 cm long. Primary panicle branches appressed, 1–3 -nate, bearing 10–12 fertile spikelets on each lower branch. Panicle branches smooth or scaberulous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 12–17 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus evident, 1 mm long, pubescent, obtuse.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 12–17 mm long, 1–1.1 length of upper glume, membranous, without keels, 3–5 -veined. Lower glume surface scabrous. Lower glume margins eciliate or ciliate. Lower glume apex acuminate. Upper glume lanceolate, 12–14 mm long, 2–2.5 length of adjacent fertile lemma, membranous, without keels, 3 -veined. Upper glume surface scabrous. Upper glume margins eciliate or ciliate. Upper glume apex acuminate.

**Florets.** Fertile lemma oblong, 5–6.5 mm long, coriaceous, without keel, 3 -veined, 0–3 -veined. Lemma margins convolute, covering most of palea. Lemma apex acute, awned, 3 -awned. Principal lemma awn 3-branched, with 15–22 mm long limb, with twisted column, deciduous, abscissing from top of lemma, limb plumose. Column of lemma awn 5–7 mm long. Lateral lemma awns present, 9–15 mm long, shorter than principal, plumose. Palea without keels.

**Distribution (TDWG). Continent.** Africa.

**Country /Province /State.** South tropical Africa, Southern Africa. Angola. Namibia.

**Stipagrostis dhofariensis** T.A. Cope. *Kew Bull.*, 47(4): 660 (1992).

**Accepted by:** W.D. Clayton & K. Harman, *GrassBase* (2008) and online.

**TYPE** from Oman. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Oman, Dhofar, Kuria Muria Is.: Miller 6437 (E holo, K).

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): L. -ensis, denoting origin. From Dhofar, Oman.

**Classification.** Subfamily Aristidoideae. Tribe: Aristideae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Culms 15–30 cm long. Culm-internodes distally glabrous. Ligule a fringe of hairs. Leaf-blades aciculate, involute, 1.5–5 cm long, 1–2 mm wide, glaucous. Leaf-blade apex pungent.

**Inflorescence.** Inflorescence a panicle. Panicle contracted, linear, 5–10 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, 20 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus elongated, curved, 2 mm long, pubescent, with longer hairs above, pungent.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 12 mm long, 0.6 length of upper glume, membranous, without keels, 5 -veined. Lower glume surface asperulous. Lower glume apex acuminate. Upper glume lanceolate, 20 mm long, 3.5 length of adjacent fertile lemma, membranous, without keels, 5 -veined. Upper glume surface asperulous. Upper glume apex acuminate.

**Florets.** Fertile lemma oblong, subterete, 5.5 mm long, coriaceous, without keel, 3 -veined, 0–3 -veined. Lemma margins convolute, covering most of palea. Lemma apex acute, awned, 3 -awned. Principal lemma awn 3-branched, with 50–60 mm long limb, with twisted column, deciduous, abscissing from top of lemma, limb plumose, hairy throughout limb. Column of lemma awn 9 mm long, glabrous, without distinct apical hairs. Lateral lemma awns present, 30–40 mm long, shorter than principal, plumose (with naked tip). Palea without keels.

**Distribution (TDWG). Continent.** Temperate Asia.

**Country /Province /State.** Arabian Peninsula. Oman.

**Stipagrostis dinteri** (Hack.) de Winter. *Kirkia*, iii. 134 (1963).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

**TYPE** from Namibia. **Basionym or Replaced Name:** *Aristida dinteri* Hack., *Bull. Herb. Boiss.* Ser. II. 1: 767 (1901). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Namibia, Kan: Dinter 1485.

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): in honor of Kurt Dinter (1868–1945) German botanist who collected widely in southern Africa.

**Classification.** Subfamily Aristidoideae. Tribe: Aristideae.

**Habit, Vegetative Morphology.** Perennial, caespitose, clumped densely. Culms 20–40 cm long, 2–4 -noded. Culm-internodes scaberulous, distally glabrous. Lateral branches lacking. Leaf-sheaths antrorsely scabrous, glabrous on surface. Ligule a fringe of hairs. Leaf-blades filiform, convolute, 7–15 cm long, 1–2 mm wide. Leaf-blade surface scabrous, rough on both sides, pilose, hairy adaxially.

**Inflorescence.** Inflorescence a panicle. Panicle open, lanceolate, interrupted, 10–20 cm long. Primary panicle branches 1–2 -nate, 5–10 cm long, bearing 1–3 fertile spikelets on each lower branch. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 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, 12–16 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus elongated, 2 mm long, pubescent, pungent.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume linear or lanceolate, 12–16 mm long, 1 length of upper glume, chartaceous, without keels, 3 -veined. Lower glume surface pilose. Lower glume margins ciliate. Lower glume apex acuminate. Upper glume linear or lanceolate, 12–16 mm long, 2–2.5 length of adjacent fertile lemma, chartaceous, without keels, 3 -veined. Upper glume surface pilose. Upper glume margins ciliate. Upper glume apex acuminate.

**Florets.** Fertile lemma oblong, 6 mm long, coriaceous, without keel, 3 -veined, 0–3 -veined. Lemma margins convolute, covering most of palea. Lemma apex acute, awned, 3 -awned. Principal lemma awn 3-branched, with 4–10 mm long limb, with a straight or slightly twisted column, deciduous, abscising across body of lemma, limb plumose, glabrescent towards base of limb. Column of lemma awn 1–2 mm long. Lateral lemma awns present, 1–3 mm long, shorter than principal, glabrous. Palea without keels.

**Flower and Fruit.** Caryopsis with adherent pericarp, ellipsoid, 3.5 mm long, truncate. Hilum linear, 1 length of caryopsis.

**Distribution (TDWG).** Continent. Africa.

**Country /Province /State.** South tropical Africa, Southern Africa. Angola. Namibia.

**Stipagrostis drarii** (Tackholm) de Winter. *Kirkia*, iii. 134 (1963).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online.

**TYPE** from Egypt. **Basionym or Replaced Name:** *Aristida drarii* Tackholm, *Svensk Bot. Tidskr.* 36: 244 (1942). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Egypt, El Tih: Drar.

**Illustrations (Books):** L.Boulos, *Flora of Egypt* 4 (2005) (230, Pl. 66).

**Derivation** (Clifford & Bostock 2007): in honor of Mohammed Drar (1894–1964) Sudanese taxonomist.

**Classification.** Subfamily Aristidoideae. Tribe: Aristideae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Culms 50–100 cm long. Culm-internodes distally woolly. Ligule a fringe of hairs. Leaf-blades curled, filiform, involute, 15–30 cm long, 1–1.5 mm wide, stiff, glaucous. Leaf-blade surface ribbed.

**Inflorescence.** Inflorescence a panicle. Panicle open, elliptic, 10–30 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, 9.5–10.5 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus elongated, 1 mm long, pubescent, with longer hairs above, pungent.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 7.5–9.5 mm long, 0.8–0.9 length of upper glume, membranous, without keels, 3 -veined. Lower glume surface asperulous. Lower glume apex acuminate. Upper glume lanceolate, 9.5–10.5 mm long, 2 length



of adjacent fertile lemma, membranous, without keels, 3 -veined. Upper glume surface asperulous. Upper glume apex acuminate, mucicous or mucronate.

**Florets.** Fertile lemma oblong, subterete, 4.5–5.5 mm long, chartaceous, without keel, 3 -veined, 0–3 -veined. Lemma margins convolute, covering most of palea. Lemma apex acute, awned, 3 -awned. Principal lemma awn 3-branched, with 13–25 mm long limb, with twisted column, deciduous, abscising from top of lemma, limb plumose, glabrescent towards tip. Column of lemma awn 1.5–2 mm long, glabrous, without distinct apical hairs. Lateral lemma awns present, 7–17 mm long, shorter than principal, glabrous. Palea without keels.

**Distribution (TDWG). Continent.** Africa, Temperate Asia.

**Country /Province /State.** Northern Africa. Egypt. Western Asia, Arabian Peninsula. Iraq, Palestine, Israel & Jordan, Sinai. Gulf States, Kuwait, Saudi Arabia.

### **Stipagrostis dregeana** Nees. *Fl. Afr. Austr.* 172 (1841).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

**TYPE** from South Africa. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: South Africa, Garip R.: Drege (K iso).

**Illustrations (Books):** No illustration found (BKS).

**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 Aristidoideae. Tribe: Aristideae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Cataphylls evident. Culms erect or geniculately ascending, slender, 15–30 cm long, 1–3 -noded. Culm-internodes distally glabrous. Culm-nodes glabrous. Lateral branches lacking. Leaves mostly basal. Leaf-sheaths scaberulous. Ligule a fringe of hairs. Leaf-blades filiform, convolute, 6–14 cm long, 1–2 mm wide. Leaf-blade surface pilose, hairy adaxially. Leaf-blade margins scabrous.

**Inflorescence.** Inflorescence a panicle. Panicle open, ovate, equilateral or nodding, 5–15 cm long. Primary panicle branches 2 -nate. Panicle branches capillary, flexuous. 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, 11–13 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus elongated, 1–3 mm long, pubescent, pungent.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 11–13 mm long, 0.9–1 length of upper glume, membranous, without keels, 3 -veined. Lower glume primary vein scaberulous. Lower glume surface glabrous or pilose. Lower glume apex acute. Upper glume lanceolate, 11–13 mm long, 3 length of adjacent fertile lemma, membranous, without keels, 3 -veined. Upper glume surface asperulous, rough above. Upper glume apex emarginate or obtuse, mucicous or mucronate.

**Florets.** Fertile lemma oblong, 4 mm long, coriaceous, without keel, 3 -veined, 0–3 -veined. Lemma margins convolute, covering most of palea. Lemma apex acute, awned, 3 -awned. Principal lemma awn 3-branched, with 30–40 mm long limb, with twisted column, deciduous, abscising from top of lemma, limb plumose, glabrescent towards base of limb. Column of lemma awn 4 mm long. Lateral lemma awns present, 10–19 mm long, shorter than principal, glabrous or ciliate. Palea without keels.

**Flower and Fruit.** Caryopsis with adherent pericarp.

**Distribution (TDWG). Continent.** Africa.

**Country /Province /State.** Southern Africa. Namibia, Northern Cape.

### **Stipagrostis fastigiata** (Hack.) de Winter. *Kirkia*, iii. 134 (1963).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

**TYPE** from Namibia. **Basionym or Replaced Name:** *Aristida fastigiata* Hack., *Bull. Herb. Boiss.* Ser. II. 1: 768 (1901). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Namibia, Inachab: Dinter 1192.

**Illustrations (Books):** M.A.N.Muller, *Grasses of South West Africa/Namibia* (1984).

**Derivation** (Clifford & Bostock 2007): L. fastigio, sharpen to a point. Panicle branches or culms held erect.

**Classification.** Subfamily Aristidoideae. Tribe: Aristideae.

**Habit, Vegetative Morphology.** Perennial. Rhizomes elongated. Culms 30–60 cm long, 4–5 -noded. Culm-internodes similar in length, scaberulous. Culm-nodes bearded. Lateral branches suffrutescent. Leaves cauline.

Leaf-sheaths scaberulous, outer margin hairy. Leaf-sheath oral hairs bearded. Ligule a fringe of hairs. Leaf-blades flat or convolute, 4–12 cm long, 2–3 mm wide. Leaf-blade surface scabrous, rough on both sides, glabrous or pubescent, hairy adaxially.

**Inflorescence.** Inflorescence a panicle. Panicle open, obovate, dense, 4–8 cm long, gathered into fascicles. Panicle branches scabrous, bearded in axils. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, ciliate.

**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, 14–18 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus elongated, 2 mm long, pubescent, pungent.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 10–14 mm long, 0.7–0.8 length of upper glume, membranous, without keels, 3 -veined. Lower glume surface pubescent. Lower glume apex acuminate. Upper glume lanceolate, 14–18 mm long, 3 length of adjacent fertile lemma, membranous, without keels, 3 -veined. Upper glume surface pubescent. Upper glume apex acuminate.

**Florets.** Fertile lemma oblong, 5–5.5 mm long, coriaceous, without keel, 3 -veined, 0–3 -veined. Lemma margins convolute, covering most of palea. Lemma apex acute, awned, 3 -awned. Principal lemma awn 3-branched, with 30–35 mm long limb, with a straight or slightly twisted column, deciduous, abscissing from top of lemma, limb plumose. Column of lemma awn 1–2 mm long. Lateral lemma awns present, 10–20 mm long, shorter than principal, plumose. Palea without keels.

**Distribution (TDWG). Continent.** Africa.

**Country /Province /State.** Southern Africa. Namibia, Northern Cape.

**Stipagrostis foexiana** (Maire & Wilczek) de Winter. *Kirkia*, iii. 134 (1963).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

**TYPE** from Morocco. **Basionym or Replaced Name:** *Aristida foexiana* Maire & Wilczek, *Bull. Soc. Hist. Nat. Afr. Nord*, 25: 322 (1934). T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: Morocco: Maire et al. (MPU syn).

**Illustrations (Books):** S.Phillips, *Poaceae* (Gramineae) in I.Hedberg & S.Edwards, *Flora of Ethiopia and Eritrea* (1995) (87, Fig 36).

**Derivation** (Clifford & Bostock 2007): L. -ana, indicating connection. In honor of Itienne Edmond Fohx (1876–1944) French plant pathologist or of Gustav Louis Emile Fohx (1844–1906) viticulturalist of Montpellier.

**Classification.** Subfamily Aristidoideae. Tribe: Aristideae.

**Habit, Vegetative Morphology.** Perennial, cushion forming. Culms 15–40 cm long. Leaf-sheath oral hairs bearded. Ligule a fringe of hairs. Leaf-blades curled, filiform, convolute, 5–11 cm long, 0.6 mm wide, stiff. Leaf-blade surface ribbed, hirsute, sparsely hairy. Leaf-blade apex obtuse.

**Inflorescence.** Inflorescence a panicle. Panicle contracted, linear, 4–16 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, 11–13 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus elongated, 0.8–1 mm long, pubescent, with longer hairs above, pungent.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 10–12.5 mm long, 0.9 length of upper glume, membranous, without keels, 3 -veined. Lower glume apex acuminate. Upper glume lanceolate, 11–13 mm long, 3.5–4.5 length of adjacent fertile lemma, membranous, without keels, 3 -veined. Upper glume apex acuminate, mucronate.

**Florets.** Fertile lemma elliptic, subterete, 3 mm long, coriaceous, without keel, 3 -veined, 0–3 -veined. Lemma margins convolute, covering most of palea. Lemma apex acute, awned, 3 -awned. Principal lemma awn 3-branched, with 25–40 mm long limb, with a straight or slightly twisted column, deciduous, abscissing from top of lemma, limb plumose, glabrescent towards base of limb (tip obtuse). Column of lemma awn 7–13 mm long, glabrous, without distinct apical hairs. Lateral lemma awns present, 14–17 mm long, shorter than principal, glabrous. Palea 0.1–0.2 length of lemma, without keels.

**Flower and Fruit.** Anthers 4–6 mm long.

**Distribution (TDWG). Continent.** Africa, Temperate Asia.

**Country /Province /State.** Northern Africa, Northeast tropical Africa. Algeria, Libya. Ethiopia (inc. Eritrea). Arabian Peninsula. Gulf States, Saudi Arabia, Yemen.

**Stipagrostis garubensis** (Pilger) de Winter. *Kirkia*, iii. 134 (1963).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

**TYPE** from Namibia. **Basionym or Replaced Name:** *Aristida garubensis* Pilger, *Engl. Jahrl.* 48: 314 (1912). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Namibia, Garub: Range 508 (K iso); Namibia, Garub: Range 536.

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): *L. -ensis*, denoting origin. From Garub, Namibia.

**Classification.** Subfamily Aristidoideae. Tribe: Aristideae.

**Habit, Vegetative Morphology.** Perennial. Cataphylls evident. Culms 30–60 cm long, 2–3 -noded. Culm-nodes glabrous. Lateral branches suffrutescent, arising from lower culm. Leaf-sheaths glabrous on surface. Ligule a fringe of hairs. Leaf-blades ascending, flexuous, filiform, 6–12 cm long, 1 mm wide. Leaf-blade surface ribbed, pilose, hairy adaxially. Leaf-blade apex pungent.

**Inflorescence.** Inflorescence a panicle. Panicle open or contracted, lanceolate or ovate, 10–20 cm long. Primary panicle branches 1–3 -nate. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 12–15 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus elongated, 1–1.5 mm long, pubescent, pungent.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 8–12 mm long, 0.66–0.8 length of upper glume, membranous, without keels, 3 -veined. Lower glume apex emarginate. Upper glume lanceolate, 12–15 mm long, 2–3 length of adjacent fertile lemma, membranous, without keels, 3 -veined. Upper glume apex acute.

**Florets.** Fertile lemma oblong, 5.5 mm long, coriaceous, without keel, 3 -veined, 0–3 -veined. Lemma margins convolute, covering most of palea. Lemma apex acute, tuberculate, awned, 3 -awned. Principal lemma awn 3-branched, with 40 mm long limb, with twisted column, deciduous, abscissing from top of lemma, limb plumose, hairy throughout limb or glabrescent towards tip. Column of lemma awn 9–10 mm long. Lateral lemma awns present, 10–15 mm long, shorter than principal, glabrous. Palea without keels.

**Distribution (TDWG). Continent.** Africa.

**Country /Province /State.** Southern Africa. Namibia.

**Stipagrostis geminifolia** Nees. *Fl. Afr. Austr.* 173 (1841).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

**TYPE** from South Africa. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: South Africa, Garip R.: Drege (K iso).

**Illustrations (Books):** L.K.A. Chippindall, *Grasses and Pastures of South Africa* (1955) (302, Fig 268 as *Aristida*).

**Derivation** (Clifford & Bostock 2007): *L. gemini*, twins; folium, leaf. Only two of the culm leaves have blades.

**Classification.** Subfamily Aristidoideae. Tribe: Aristideae.

**Habit, Vegetative Morphology.** Perennial. Culms erect or geniculately ascending, 10–25 cm long. Culm-internodes unequal, the upper longer, 4–12 cm long (upper). Culm-nodes pubescent. Lateral branches suffrutescent. Leaves cauline. Leaf-sheaths glabrous on surface, outer margin hairy. Leaf-sheath oral hairs bearded. Ligule a fringe of hairs. Leaf-blades spreading, deciduous at the ligule, acuminate, involute, 1(–2) cm long, 0.3–0.8 mm wide, stiff. Leaf-blade surface pubescent, hairy adaxially.

**Inflorescence.** Inflorescence a panicle, embraced at base by subtending leaf. Peduncle 0.5–2 cm long, glabrous or pubescent above. Panicle contracted, oblong or ovate, equilateral or secund, 2–4 cm long, 1–2.5 cm wide, gathered into fascicles. Panicle axis glabrous or pilose. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, ciliate.

**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, 10–12 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus elongated, 2 mm long, pubescent, pungent.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume linear or lanceolate, 8–12 mm long, 0.8–1 length of upper glume, membranous, without keels, 3 -veined. Lower glume surface pilose. Lower glume apex acuminate, awned, 1 -awned. Upper glume linear or lanceolate, 10–12 mm long, 2–2.5 length of adjacent fertile lemma, membranous, without keels, 1–3 -veined. Upper glume surface pilose. Upper glume apex acuminate, awned, 1 -awned.

**Florets.** Fertile lemma oblong, 4–6 mm long, coriaceous, without keel, 3 -veined, 0–3 -veined. Lemma margins convolute, covering most of palea. Lemma apex acute, awned, 3 -awned. Principal lemma awn 3-branched, with 20–30 mm long limb, with a straight or slightly twisted column, deciduous, abscissing from top of lemma, limb plumose. Column of lemma awn 1–2 mm long. Lateral lemma awns present, 15 mm long, shorter than principal, glabrous. Palea without keels.

**Flower and Fruit.** Caryopsis with adherent pericarp, ellipsoid, 2 mm long. Embryo 0.33–0.66 length of caryopsis. Hilum linear, 1 length of caryopsis.

**Distribution (TDWG). Continent.** Africa.

**Country /Province /State.** Southern Africa. Namibia, Northern Cape.

**Stipagrostis giessii** L.E. Kers. *Svensk Bot. Tidskr.* 65(2); 199 (1971).

**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, Orupembe: Kers 1736 (S holo).

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): in honor of Wills Giess (fl. 1971) State Herbarium Windhoek, Namibia.

**Classification.** Subfamily Aristidoideae. Tribe: Aristideae.

**Habit, Vegetative Morphology.** Perennial, caespitose, clumped densely. Butt sheaths persistent and investing base of culm, with soft dead sheaths. Glands elongated. Culms erect, 20–70(–80) cm long, 2–4 -noded. Culm-internodes ridged, smooth or scaberulous, distally glabrous. Lateral branches lacking. Leaf-sheaths scaberulous, glabrous on surface or pilose. Leaf-sheath oral hairs ciliate, 3–5 mm long. Ligule a fringe of hairs. Leaf-blades filiform, involute, 7–25 cm long, 1–2 mm wide. Leaf-blade surface scaberulous, rough on both sides, glabrous or pilose. Leaf-blade apex filiform.

**Inflorescence.** Inflorescence a panicle, exerted or embraced at base by subtending leaf. Panicle open, lanceolate or oblong, 6.5–20 cm long, 1–4.5 cm wide, contracted about primary branches. Primary panicle branches 7–20 in number, ascending, 0.5–7 cm long. Panicle axis smooth or scaberulous. Panicle branches stiff, scaberulous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, 1–7 mm long.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 13–20 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus elongated, 2 mm long, pilose, pungent.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 12–21 mm long, 0.95 length of upper glume, chartaceous, pallid or light green, without keels, 3 -veined. Lower glume surface asperulous. Lower glume apex attenuate. Upper glume lanceolate, 13–22 mm long, 3 length of adjacent fertile lemma, chartaceous, pallid or light green, without keels, 3 -veined. Upper glume surface asperulous. Upper glume apex attenuate.

**Florets.** Fertile lemma oblong, 5.5–6 mm long, coriaceous, yellow, without keel, 3 -veined, 0–3 -veined. Lemma surface punctate. Lemma margins convolute, covering most of palea. Lemma apex acute, awned, 3 -awned. Principal lemma awn 3-branched, with 36–105 mm long limb, with twisted column, deciduous, abscissing across body of lemma, limb plumose, glabrescent towards tip and base of limb. Column of lemma awn 7–23 mm long. Lateral lemma awns present, 20–35 mm long, shorter than principal, glabrous. Palea 2 mm long, without keels.

**Flower and Fruit.** Anthers 3, 5–6 mm long. Caryopsis with adherent pericarp, fusiform, 3.5 mm long. Embryo 0.66 length of caryopsis. Hilum linear, 1 length of caryopsis.

**Distribution (TDWG). Continent.** Africa.

**Country /Province /State.** South tropical Africa, Southern Africa. Angola. Namibia.

**Stipagrostis gonatostachys** (Pilger) de Winter. *Kirkia*, iii. 134 (1963).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

**TYPE** from Namibia. **Basionym or Replaced Name:** *Aristida gonatostachys* Pilger, *Engl. Jahrl.* 48: 343 (1912). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Namibia, Rote Kuppe: Dinter 1022 ; Namibia, Rote Kuppe: Range 188.

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): Gk. gony, knee; stachys, ear of corn. Culms short, geniculate at the base.

**Classification.** Subfamily Aristidoideae. Tribe: Aristideae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Cataphylls evident. Butt sheaths glabrous or pilose. Culms 2–10 cm long, 1 -noded. Culm-internodes distally glabrous or pubescent. Leaves mostly basal. Leaf-sheaths outer margin glabrous or hairy. Ligule a fringe of hairs. Leaf-blades involute, 1–4 cm long, 2–3 mm wide. Leaf-blade surface ribbed, scaberulous, rough adaxially, pilose, hairy abaxially. Leaf-blade apex obtuse.

**Inflorescence.** Inflorescence a panicle, comprising 3–6 fertile spikelets, embraced at base by subtending leaf. Panicle contracted, linear, 3–7 cm long, bearing few spikelets. Panicle axis pubescent. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 9–10 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus elongated, 1.4 mm long, pubescent, pungent.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 9–10 mm long, 0.9–1 length of upper glume, membranous, without keels, 3 -veined. Lower glume surface asperulous, rough generally. Lower glume apex acuminate. Upper glume lanceolate, 9–10 mm long, 2–2.5 length of adjacent fertile lemma, membranous, without keels, 3 -veined. Upper glume apex acuminate.

**Florets.** Fertile lemma oblong, 4 mm long, coriaceous, without keel, 3 -veined, 0–3 -veined. Lemma margins convolute, covering most of palea. Lemma apex acute, awned, 3 -awned. Principal lemma awn 3-branched, with 10–16 mm long limb, with twisted column, deciduous, abscissing from top of lemma, limb plumose, glabrescent towards base of limb. Column of lemma awn 2–4 mm long. Lateral lemma awns present, 6–9 mm long, shorter than principal, glabrous. Palea without keels.

**Flower and Fruit.** Caryopsis with adherent pericarp.

**Distribution (TDWG). Continent.** Africa.

**Country /Province /State. Southern Africa.** Namibia.

**Stipagrostis grandiglumis** (Roshev.) N.N. Tsvelev. *Zlaki SSSR*: 618 (1976).

**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 Russia. **Basionym or Replaced Name:** *Aristida grandiglumis* Roshev., *Not. Syst. Herb. Inst. Bot. Acad. Sci. URSS*, 11: 18 (1949). T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: Russia, Kuen-lun: Roborowski ; Russia, Sa-djao: Roborowski sn.

**Illustrations (Books):** S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 638).

**Derivation** (Clifford & Bostock 2007): *L. grandis*, large; *gluma*, husk. Glumes and/or lemmas large.

**Classification.** Subfamily Aristidoideae. Tribe: Aristideae.

**Habit, Vegetative Morphology.** Perennial, caespitose, clumped densely. Roots woolly. Culms erect, 40–50 cm long. Culm-internodes distally glabrous. Lateral branches lacking. Leaf-sheaths smooth, glabrous on surface. Ligule a fringe of hairs. Leaf-blades filiform, involute, 1 mm wide. Leaf-blade surface smooth, glabrous. Leaf-blade apex acuminate.

**Inflorescence.** Inflorescence a panicle. Panicle open, ovate, 15–20 cm long, bearing few spikelets. Primary panicle branches 1 -nate. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets linear, subterete, 30–35 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus elongated, 1 mm long, pilose, pungent.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 30–35 mm long, 1.5–1.6 length of upper glume, membranous, without keels, 3 -veined. Lower glume apex acuminate. Upper glume lanceolate, 20–22 mm long, 2.7–3.3 length of adjacent fertile lemma, membranous, without keels, 3 -veined. Upper glume apex acuminate.

**Florets.** Fertile lemma lanceolate, 6–8 mm long, coriaceous, without keel, 3 -veined, 0–3 -veined. Lemma margins convolute, covering most of palea. Lemma apex acute, awned, 3 -awned. Principal lemma awn 3-branched, with 20–25 mm long limb, with twisted column, deciduous, abscissing from top of lemma, limb plumose, with 4–5 mm long hairs, glabrescent towards tip. Column of lemma awn 2–3 mm long. Lateral lemma awns present, 20–25 mm long, subequal to principal, plumose.

**Distribution (TDWG). Continent.** Temperate Asia.

**Country /Province /State. Middle Asia, China, Mongolia.** China North-Central, Xinjiang. Mongolia.

**TDWG4.** Gansu.

**Stipagrostis griffithii** (Henrard) de Winter. *Kirkia*, iii. 134 (1963).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), N.L.Bor, *Grasses of Burma, Ceylon, India and Pakistan* (1960) (as *Aristida*).

**TYPE** from Afghanistan. **Basionym or Replaced Name:** *Aristida griffithii* Henrard, *Meded. Herb. Leid.* No. 54, 213 (1926). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Afghanistan: Griffith 6595 (K iso).

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): in honor of William Griffith (1810–1845), English-born surgeon-botanist in India and southeast Asia.

**Classification.** Subfamily Aristidoideae. Tribe: Aristideae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Butt sheaths coriaceous, persistent and investing base of culm, with compacted dead sheaths. Culms erect, 15–30 cm long. Culm-internodes distally woolly. Ligule a fringe of hairs. Leaf-blades curved, flat or conduplicate, 4–8 cm long, 1 mm wide, stiff. Leaf-blade surface woolly, hairy on both sides (towards base).

**Inflorescence.** Inflorescence a panicle. Panicle open, elliptic, 8–16 cm long. Panicle axis with scattered hairs. Panicle branches pubescent in axils (woolly). Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, glabrous.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 30–35 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus elongated, 3 mm long, bearded, acute.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 30–35 mm long, 1.5 length of upper glume, membranous, without keels, 3 -veined. Lower glume apex acuminate. Upper glume lanceolate, 20–25 mm long, 2.5 length of adjacent fertile lemma, membranous, without keels, 3 -veined. Upper glume apex acuminate.

**Florets.** Fertile lemma oblong, 10 mm long, coriaceous, without keel, 3 -veined, 0–3 -veined. Lemma margins convolute, covering most of palea. Lemma apex acute, awned, 3 -awned. Principal lemma awn 3-branched, with 70–75 mm long limb, with twisted column, deciduous, abscissing from top of lemma, limb plumose. Column of lemma awn 10–20 mm long. Lateral lemma awns present, 40–45 mm long, shorter than principal, plumose (above). Palea 0.33 length of lemma, without keels.

**Distribution (TDWG). Continent.** Temperate Asia.

**Country /Province /State.** Western Asia. Iran.

**Stipagrostis hermannii** (Mez) de Winter. *Kirkia*, iii. 134 (1963).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

**TYPE** from Namibia. **Basionym or Replaced Name:** *Aristida hermannii* Mez, Fedde, *Repert.* 17: 153 (1921). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Namibia, Luderitzbucht: Hermann 42.

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): in honor of Ernst Hermann (-1904) plant collector in S.W. Africa.

**Classification.** Subfamily Aristidoideae. Tribe: Aristideae.

**Habit, Vegetative Morphology.** Annual, caespitose, clumped loosely. Culms geniculately ascending, 5–15 cm long, 2–4 -noded. Culm-internodes distally pubescent. Leaf-sheaths antrorsely scabrous, outer margin hairy. Leaf-sheath oral hairs bearded. Ligule a fringe of hairs. Leaf-blades conduplicate or convolute, 1–2 cm long, 1–2 mm wide. Leaf-blade surface scabrous, rough on both sides.

**Inflorescence.** Inflorescence a panicle, embraced at base by subtending leaf. Panicle open, oblong or ovate, dense, 4–8 cm long. Panicle axis scabrous. Panicle branches scabrous, pubescent in axils. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 9–12 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus elongated, 1–1.25 mm long, bearded, pungent.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 9–12 mm long, 1.1–1.2 length of upper glume, membranous, without keels, 3 -veined. Lower glume surface asperulous. Lower glume apex setaceously acuminate. Upper glume lanceolate, 8–10 mm long, 2–2.5 length of adjacent fertile lemma, membranous, without keels, 3 -veined. Upper glume surface asperulous, rough above. Upper glume apex setaceously acuminate.

**Florets.** Fertile lemma oblong, 3.5–4 mm long, coriaceous, without keel, 3 -veined, 0–3 -veined. Lemma surface scaberulous. Lemma margins convolute, covering most of palea. Lemma apex acute, awned, 3 -awned. Principal lemma awn 3-branched, with 20–40 mm long limb, with twisted column, deciduous, abscissing from top of lemma, limb plumose, glabrescent towards base of limb. Column of lemma awn 1–10.5 mm long, ciliate, hairy on upper part. Lateral lemma awns present, 10–15 mm long, shorter than principal, glabrous. Palea without keels.

**Flower and Fruit.** Caryopsis with adherent pericarp, ellipsoid. Embryo 0.33 length of caryopsis. Hilum linear, 1 length of caryopsis.

**Distribution (TDWG). Continent.** Africa.

**Country /Province /State.** South tropical Africa, Southern Africa. Angola. Namibia.

**Stipagrostis hirtigluma** (Trin. & Rupr.) de Winter. *Kirkia*, iii. 134 (1963).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), N.L.Bor, *Grasses of Burma, Ceylon, India and Pakistan* (1960) (as *Aristida*).

**TYPE** from Arabia. **Basionym or Replaced Name:** *Aristida hirtigluma* Steud. ex Trin. & Rupr., *Mem. Acad. Petersb.* Ser. VI. 7: 171 (1842). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: LT: Schimper 165; ; (B) LT designated by Henrard, *Meded. Rijks-Herb.* 54: 232 (1927) ST: Ehrenberg s.n.; ; Ethiopia.

**Illustrations (Books):** G.V.Pope et al., *Flora Zambesiaca* 10 (1(1971):137, t. 35 as subsp. *patula*), M.A.N.Muller, *Grasses of South West Africa/Namibia* (1984) (as subsp. *pearsonii*), N.Feinbrun-Dothan, *Flora Palaestina* 4 (1986) (Pl. 365), S.Phillips, *Poaceae* (Gramineae) in I.Hedberg & S.Edwards, *Flora of Ethiopia and Eritrea* (1995) (87, Fig 36), L.Boulos, *Flora of Egypt* 4 (2005) (234, Pl. 68).

**Images:** F.van Oudtshoorn, *Guide to Grasses of Southern Africa* (1999).

**Derivation** (Clifford & Bostock 2007): *L. hirtus*, hairy; *gluma*, husk. Glumes hairy.

**Classification.** Subfamily Aristidoideae. Tribe: Aristideae.

**Habit, Vegetative Morphology.** Annual or perennial, short-lived, caespitose. Culms 30–80 cm long. Culm-nodes glabrous. Ligule a fringe of hairs. Leaf-blades filiform, convolute, 6–20 cm long, 1 mm wide. Leaf-blade surface scabrous, rough on both sides.

**Inflorescence.** Inflorescence a panicle. Panicle open, 10–15 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, 10–13 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus elongated, curved, 0.5–0.75 mm long, bearded, hairy in rings above and below, with longer hairs above and below, acute.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 6–11 mm long, 0.6–1 length of upper glume, membranous, without keels, 3 -veined. Lower glume surface pilose. Lower glume apex acute, mucronate. Upper glume lanceolate, 10–13 mm long, 3 length of adjacent fertile lemma, membranous, without keels, 3 -veined. Upper glume surface pilose. Upper glume apex acute, mucronate.

**Florets.** Fertile lemma oblong, subterete, 3.5–4 mm long, coriaceous, without keel, 3 -veined, 0–3 -veined. Lemma surface tuberculate, rough above. Lemma margins convolute, covering most of palea. Lemma apex acute, awned, 3 -awned. Principal lemma awn 3-branched, with 35–55 mm long limb, with twisted column, deciduous, abscissing from top of lemma, limb plumose. Column of lemma awn 7–13 mm long, plumose, hairy on upper part, without distinct apical hairs. Lateral lemma awns present, ascending, 10–25 mm long, shorter than principal, glabrous. Palea 0.5 length of lemma, without keels.

**Distribution (TDWG). Continent.** Africa, Temperate Asia, Tropical Asia.

**Country /Province /State.** Northern Africa, West tropical Africa, Northeast tropical Africa, East tropical Africa, South tropical Africa, Southern Africa. Algeria, Egypt. Mali, Niger. Eritrea, Ethiopia (inc. Eritrea), Somalia, Sudan. Kenya, Tanzania. Angola, Mozambique, Zimbabwe. Namibia, Botswana, Limpopo, North-West, Mpumalanga. **Western Asia, Arabian Peninsula.** Iran. Gulf States, Oman, Saudi Arabia. **Indian Subcontinent.** India, Pakistan.

**TDWG4.** Punjab, Rajasthan.

**Stipagrostis hochstetteriana** (G. Beck ex Hack.) de Winter. *Kirkia*, iii. 134 (1963).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

**TYPE** from Namibia. **Basionym or Replaced Name:** *Aristida hochstetteriana* G. Beck ex Hack., *Verh. Bot. Ver. Brand.* 30: 144 (1888). T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: Namibia, 100 km east of Walvis Bay: Wyley.

**Illustrations (Books):** L.K.A. Chippindall, *Grasses and Pastures of South Africa* (1955) (297, Fig 263 as *Aristida*), M.A.N. Muller, *Grasses of South West Africa/Namibia* (1984).

**Derivation** (Clifford & Bostock 2007): L. -ana, indicating connection. In honor of Christian Gottlob Ferdinand Hochstetter (1829–84) German anthropologist and geologist.

**Classification.** Subfamily Aristidoideae. Tribe: Aristideae.

**Habit, Vegetative Morphology.** Perennial, caespitose, clumped densely. Culms erect, 50–90 cm long, 2–4-noded. Culm-internodes smooth or scaberulous, distally glabrous. Culm-nodes glabrous. Lateral branches lacking. Leaves mostly basal. Leaf-sheaths glabrous on surface or pilose. Ligule a fringe of hairs. Leaf-blades filiform, convolute, 25–40 cm long, 2–2.5 mm wide. Leaf-blade surface scabrous, rough adaxially, glabrous or pilose, sparsely hairy, hairy abaxially.

**Inflorescence.** Inflorescence a panicle. Panicle contracted or spiciform, linear, 5–9 cm long, 0.5 cm wide. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 15–20 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus elongated, 2 mm long, pubescent, pungent.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume linear or lanceolate, 15–20 mm long, 1 length of upper glume, membranous, without keels, 3 -veined. Lower glume surface glabrous or pilose. Lower glume apex acuminate. Upper glume linear or lanceolate, 15–20 mm long, 3 length of adjacent fertile lemma, membranous, without keels, 3 -veined. Upper glume apex acuminate.

**Florets.** Fertile lemma oblong, 5–6 mm long, coriaceous, without keel, 3 -veined, 0–3 -veined. Lemma margins convolute, covering most of palea. Lemma apex acute, awned, 3 -awned. Principal lemma awn 3-branched, with 40–100 mm long limb, with a straight or slightly twisted column, deciduous, abscising across body of lemma, limb plumose, glabrescent towards base of limb. Column of lemma awn 1–2 mm long. Lateral lemma awns present, 20–40 mm long, shorter than principal, glabrous. Palea without keels.

**Flower and Fruit.** Caryopsis with adherent pericarp, fusiform, 3.5 mm long. Hilum linear, 1 length of caryopsis.

**Distribution (TDWG). Continent.** Africa.

**Country /Province /State.** South tropical Africa, Southern Africa. Angola. Namibia, Northern Cape.

**Stipagrostis karelinii** (Trin. & Rupr.) Scholz. *Willdenowia*, vi. 161, in adnot. (1970).

**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 Russia. **Basionym or Replaced Name:** *Aristida pennata* var. *karelinii* Trin. & Rupr., *Mem. Acad. Petersb.* ser. 6,7,2 Sci. Nat. 5:177 (1843). T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: Russia, Bjili Bugor: Karelin (LE lecto).

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): in honor of Grigorij Silych Karelin (1801–72) Russian botanist.

**Classification.** Subfamily Aristidoideae. Tribe: Aristideae.

**Habit, Vegetative Morphology.** Perennial. Roots woolly. Culms 80–150 cm long. Ligule a fringe of hairs. Leaf-blades 15–30 cm long, 2–4 mm wide, coriaceous. Leaf-blade surface ribbed.

**Inflorescence.** Inflorescence a panicle. Panicle open, elliptic, effuse, 20–40 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 linear, subterete, 15–20 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus elongated, 1 mm long, pubescent, hairy on the margins, with longer hairs above, acute.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 15–20 mm long, 1.1–1.2 length of upper glume, membranous, without keels, 3 -veined. Lower glume apex acuminate. Upper glume lanceolate, 14–18 mm long, 2 length of adjacent fertile lemma, membranous, without keels, 3 -veined. Upper glume apex acuminate.

**Florets.** Fertile lemma oblong, 7–10 mm long, coriaceous, without keel, 3 -veined, 0–3 -veined. Lemma margins convolute, covering most of palea. Lemma apex acute, awned, 3 -awned. Principal lemma awn 3-branched, with 15–20 mm long limb, with twisted column, deciduous, abscising from top of lemma, limb



plumose, glabrescent towards tip. Column of lemma awn 1–2 mm long. Lateral lemma awns present, 15–20 mm long, subequal to principal, plumose (except tip). Palea 0.33 length of lemma, without keels.

**Distribution (TDWG). Continent.** Europe, Temperate Asia.

**Region.** Eastern Europe.

**Country /Province /State.** East European Russia, South European Russia. **Middle Asia.** Kazakhstan, Turkmenistan, Tadjikistan, Uzbekistan.

**TDWG4.**

**Stipagrostis lanata** (Forsk.) de Winter. *Kirkia*, iii. 135 (1963).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

**TYPE** from Egypt. **Basionym or Replaced Name:** *Aristida lanata* Forsk., *Fl. Aegypt. Arab.* 25 (1775). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Egypt, Rosetta: Forsskal.

**Illustrations (Books):** N.Feinbrun-Dothan, *Flora Palaestina* 4 (1986) (Pl. 364), L.Boulos, *Flora of Egypt* 4 (2005) (228, Pl. 65).

**Derivation** (Clifford & Bostock 2007): L. lana, wool; -ata, possessing. Leaf-blades densely pubescent.

**Classification.** Subfamily Aristidoideae. Tribe: Aristideae.

**Habit, Vegetative Morphology.** Perennial. Rootstock evident. Culms geniculately ascending or decumbent, 10–15 cm long. Culm-internodes distally woolly. Lateral branches lacking or sparse. Leaf-sheaths glabrous on surface. Ligule a fringe of hairs. Leaf-blades curved or flexuous, convolute, 5–10 cm long, 1 mm wide. Leaf-blade surface pilose, densely hairy, hairy adaxially.

**Inflorescence.** Inflorescence a panicle, embraced at base by subtending leaf. Panicle open, lanceolate, 5–10 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, 13–14 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus elongated, 1.5–2 mm long, pubescent, pungent.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 11 mm long, 0.75–0.8 length of upper glume, membranous, without keels, 3 -veined. Lower glume apex acute. Upper glume lanceolate, 13–14 mm long, 3 length of adjacent fertile lemma, membranous, without keels, 3 -veined. Upper glume apex acute.

**Florets.** Fertile lemma oblong, 4–5 mm long, coriaceous, without keel, 3 -veined, 0–3 -veined. Lemma margins convolute, covering most of palea. Lemma apex acute, awned, 3 -awned. Principal lemma awn 3-branched, with 30–35 mm long limb, with twisted column, deciduous, abscissing from top of lemma, limb plumose, glabrescent towards base of limb. Column of lemma awn 4–5 mm long. Lateral lemma awns present, 20–25 mm long, shorter than principal, plumose. Palea without keels.

**Distribution (TDWG). Continent.** Africa, Temperate Asia.

**Country /Province /State.** Northern Africa. Egypt. **Western Asia, Arabian Peninsula.** Iraq, Lebanon-Syria, Palestine, Israel & Jordan. Gulf States.

**Stipagrostis lanipes** (Mez) de Winter. *Kirkia*, iii. 135 (1963).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

**TYPE** from Namibia. **Basionym or Replaced Name:** *Aristida lanipes* Mez, Fedde, *Repert.* 17: 153 (1921). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Namibia, Kiubis: Range 1822.

**Illustrations (Books):** No illustration found (BKS).

**Classification.** Subfamily Aristidoideae. Tribe: Aristideae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Culms erect, 30–60 cm long. Culm-internodes distally glabrous. Culm-nodes glabrous. Leaf-sheaths woolly. Leaf-sheath oral hairs bearded. Ligule a fringe of hairs. Leaf-blades filiform, convolute, 1.5–25 cm long, 0.5 mm wide, glaucous. Leaf-blade surface ribbed, grooved adaxially, smooth, pilose, hairy adaxially. Leaf-blade apex obtuse.

**Inflorescence.** Inflorescence a panicle. Panicle contracted, linear, continuous or interrupted, 2.5–20 cm long. Panicle branches scaberulous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 8.5–12 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus elongated, 1 mm long, bearded, acute.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 8.5–12 mm long, 1.1 length of upper glume, membranous, 1-keeled, 3 -veined. Lower glume surface asperulous. Lower glume apex obtuse. Upper glume lanceolate, 8–11 mm long, 4 length of adjacent fertile lemma, membranous, 1-keeled, 1–3 -veined. Upper glume surface asperulous, rough above. Upper glume apex acute.

**Florets.** Fertile lemma oblong, subterete, 2–2.5 mm long, coriaceous, without keel, 3 -veined, 0–3 -veined. Lemma surface scaberulous, rough above. Lemma margins convolute, covering most of palea. Lemma apex acute, awned, 3 -awned. Principal lemma awn 3-branched, with 20–30 mm long limb, with a straight or slightly twisted column, deciduous, abscissing from top of lemma, limb plumose, glabrescent towards base of limb. Column of lemma awn 4–10 mm long, glabrous, without distinct apical hairs. Lateral lemma awns present, 7–18 mm long, shorter than principal, glabrous. Palea without keels.

**Distribution (TDWG). Continent.** Africa.

**Country /Province /State.** Southern Africa. Namibia.

**Stipagrostis libyca** (Scholz) Scholz. *Osterr. Bot. Zeitschr.* cxvii. 289 (1969).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online.

**TYPE** from Libya. **Basionym or Replaced Name:** *Aristida libyca* Scholz, *Willdenowia*, 5: 121 (1968). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Wadi am Djebel al Namous, 18 km nordwestlich von Wau en-Namous, 18 Mar 1955.

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): L. -ica, belonging to. From Libya.

**Classification.** Subfamily Aristidoideae. Tribe: Aristideae.

**Habit, Vegetative Morphology.** Annual, caespitose, clumped densely. Basal innovations intravaginal. Culms erect, 15–30 cm long. Culm-internodes distally pubescent. Culm-nodes glabrous. Leaf-sheaths scaberulous, glabrous on surface. Leaf-sheath oral hairs ciliate. Ligule a fringe of hairs. Leaf-blades curled, filiform, conduplicate, 1–3 cm long, 1 mm wide. Leaf-blade surface scaberulous, rough abaxially. Leaf-blade apex acuminate.

**Inflorescence.** Inflorescence a panicle, embraced at base by subtending leaf. Panicle open, lanceolate, 6–10 cm long, bearing few spikelets. Primary panicle branches 1 -nate. Panicle axis scabrous. Panicle branches scabrous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, scabrous, ciliate, hairy at tip.

**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, 15 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus elongated, 2–2.5 mm long, acute.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 10–12 mm long, 0.7–0.9 length of upper glume, membranous, without keels, 3 -veined. Lower glume surface scabrous, glabrous or pilose. Lower glume apex attenuate. Upper glume lanceolate, 14 mm long, 3 length of adjacent fertile lemma, membranous, without keels, 3 -veined. Upper glume surface glabrous. Upper glume apex attenuate.

**Florets.** Fertile lemma oblong, subterete, 5–6 mm long, coriaceous, without keel, 3 -veined, 0–3 -veined. Lemma margins convolute, covering most of palea. Lemma apex acute, awned, 3 -awned. Principal lemma awn 3-branched, with 30–35 mm long limb, with twisted column, deciduous, abscissing from top of lemma, limb plumose, glabrescent towards tip and base of limb. Column of lemma awn 1–2 mm long, glabrous, without distinct apical hairs. Lateral lemma awns present, 10–17 mm long, shorter than principal. Palea absent or minute.

**Distribution (TDWG). Continent.** Africa.

**Country /Province /State.** Northern Africa. Libya.

**Stipagrostis lutescens** (Nees) de Winter. *Kirkia*, iii. 135 (1963).

**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:** *Arthratherum lutescens* Nees, *Fl. Afr. Austr.* 1: 179 (1841). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: Drège 2040; ; South Africa: cape: ad Zilverfonteyn in terra Buschmanorum (B).

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): L. lutesco, become yellow. Panicles yellowish-green.

**Classification.** Subfamily Aristidoideae. Tribe: Aristideae.

**Habit, Vegetative Morphology.** Perennial. Rhizomes elongated. Culms 70–100 cm long, woody. Culm-internodes distally glabrous. Culm-nodes glabrous. Lateral branches suffrutescent. Leaves cauline. Leaf-sheaths glabrous on surface. Ligule a fringe of hairs. Leaf-blades spreading, curved, acuminate, flat or conduplicate, 5–10 cm long, 1–2 mm wide, stiff. Leaf-blade surface scabrous, rough adaxially. Leaf-blade apex pungent.

**Inflorescence.** Inflorescence a panicle. Panicle open, pyramidal, effuse, 10–25 cm long. Primary panicle branches 1–5-nate. Panicle branches glabrous in axils or bearded in axils. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 12–14 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus elongated, 2–2.5 mm long, pubescent, pungent.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 9–11 mm long, 0.75 length of upper glume, membranous, without keels, 3 -veined. Lower glume apex obtuse or acuminate, muticous or awned, 1 -awned. Upper glume lanceolate, 12–14 mm long, 2 length of adjacent fertile lemma, membranous, without keels, 3 -veined. Upper glume apex obtuse or acuminate, muticous or awned, 1 -awned.

**Florets.** Fertile lemma oblong, 6 mm long, coriaceous, without keel, 3 -veined, 0–3 -veined. Lemma margins convolute, covering most of palea. Lemma apex acute, awned, 3 -awned. Principal lemma awn 3-branched, with 20–27 mm long limb, with twisted column, deciduous, abscissing from top of lemma, limb plumose, glabrescent towards base of limb. Column of lemma awn 0.5–5 mm long. Lateral lemma awns present, 6–8 mm long, shorter than principal, ciliate or plumose. Palea without keels.

**Distribution (TDWG). Continent.** Africa.

**Country /Province /State.** Southern Africa. Namibia, Northern Cape.

**Stipagrostis masirahensis** H. Scholz. *Willdenowia*, 13(2): 389 (1983).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online.

**TYPE** from Oman. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Oman, Masira Is.: Weisgerber (B holo, K).

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): L. -ensis, denoting origin. From Masirah Island, Persian Gulf.

**Classification.** Subfamily Aristidoideae. Tribe: Aristideae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Culms 5–10 cm long. Culm-internodes smooth or antrorsely scabrous, distally glabrous. Ligule a fringe of hairs. Leaf-blades curled, convolute, 2–5 cm long, 0.5–0.7 mm wide, coriaceous, stiff. Leaf-blade surface pilose, hairy adaxially. Leaf-blade apex pungent.

**Inflorescence.** Inflorescence a panicle, comprising 5–6 fertile spikelets, embraced at base by subtending leaf. Panicle contracted, linear, 2 cm long, bearing few spikelets. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 17 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus elongated, 2 mm long, pubescent, with longer hairs above, pungent.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 12 mm long, 0.7 length of upper glume, membranous, without keels, 3 -veined. Lower glume apex acute. Upper glume lanceolate, 17 mm long, 4 length of adjacent fertile lemma, membranous, without keels, 5 -veined. Upper glume apex acute.

**Florets.** Fertile lemma oblong, subterete, 4 mm long, coriaceous, without keel, 3 -veined, 0–3 -veined. Lemma margins convolute, covering most of palea. Lemma apex acute, awned, 3 -awned. Principal lemma awn 3-branched, with 40 mm long limb, with twisted column, deciduous, abscissing from top of lemma, limb plumose, glabrescent towards base of limb (pubescent there). Column of lemma awn 2–3 mm long, pubescent, without distinct apical hairs. Lateral lemma awns present, 30 mm long, shorter than principal, plumose (pubescent above and below). Palea without keels.

**Distribution (TDWG). Continent.** Temperate Asia.

**Country /Province /State.** Arabian Peninsula. Oman.

**Stipagrostis multinerva** Scholz. *Osterr. Bot. Zeitschr.* cxvii. 289 (1969).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online.

**TYPE** from Arabia. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: Phille[b]y 22; 29 Sep 1936; Southern Arabia: Arain (BM).

**Illustrations (Books):** L.Boulos, *Flora of Egypt* 4 (2005) (232, Pl. 67).

**Derivation** (Clifford & Bostock 2007): *L. multus*, many; *nervus*, nerve. Glumes or lemmas many-nerved.

**Classification.** Subfamily Aristidoideae. Tribe: Aristideae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Culms 15–30 cm long. Culm-internodes distally woolly. Ligule a fringe of hairs. Leaf-blades filiform, involute, 5–10 cm long, 1 mm wide, glaucous.

**Inflorescence.** Inflorescence a panicle, embraced at base by subtending leaf. Panicle contracted, linear, 2–8 cm long. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rachilla extension. Spikelets of 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, 14–16 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus elongated, 2.5 mm long, pubescent, with longer hairs above, pungent.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 14 mm long, 0.9–1 length of upper glume, membranous, without keels, 5–7 -veined. Lower glume surface pilose. Lower glume apex acuminate. Upper glume lanceolate, 14–16 mm long, 2.3 length of adjacent fertile lemma, membranous, without keels, 3–5 -veined. Upper glume surface pilose. Upper glume apex acuminate.

**Florets.** Fertile lemma oblong, subterete, 6–7 mm long, coriaceous, without keel, 3 -veined, 0–3 -veined. Lemma margins convolute, covering most of palea. Lemma apex acute, awned, 3 -awned. Principal lemma awn 3-branched, with 35–45 mm long limb, with twisted column, deciduous, abscising from top of lemma, limb plumose, glabrescent towards tip and base of limb. Column of lemma awn 5 mm long, glabrous, without distinct apical hairs. Lateral lemma awns present, 14 mm long, shorter than principal, glabrous. Palea 0.5 length of lemma, without keels.

**Distribution (TDWG). Continent.** Africa, Temperate Asia.

**Country /Province /State. Northern Africa.** Egypt, Libya. **Western Asia, Arabian Peninsula.** Iran, Sinai. Oman, Saudi Arabia.

**Stipagrostis namaquensis** (Nees) de Winter. *Kirkia*, iii. 135 (1963).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

**TYPE** from Namibia. **Basionym or Replaced Name:** *Arthratherum namaquense* Nees, *Fl. Afr. Austr.* 1: 185 (1841). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: LT: Ecklon s.n.; Nov-Dec; Namibia: Namaqualand, sandige Erde, 2e Höhe (B) LT designated by Henrard, *Meded. Rijks-Herb.* 54(A): 370 (1927).

**Illustrations (Books):** L.K.A. Chippindall, *Grasses and Pastures of South Africa* (1955) (298, Fig 264 as *Aristida*), M.A.N.Muller, *Grasses of South West Africa/Namibia* (1984), G.E.Gibbs Russell et al, *Grasses of Southern Africa* (1990) (325, Fig 208).

**Images:** F.van Oudtshoorn, *Guide to Grasses of Southern Africa* (1999).

**Derivation** (Clifford & Bostock 2007): *L. -ense*, denoting origin. From Namaqualand, South Africa.

**Classification.** Subfamily Aristidoideae. Tribe: Aristideae.

**Habit, Vegetative Morphology.** Perennial, caespitose, clumped loosely. Cataphylls evident. Rhizomes elongated. Butt sheaths pubescent. Culms geniculately ascending or decumbent, 100–200 cm long. Culm-internodes smooth or scaberulous, distally glabrous. Lateral branches fastigiate or suffrutescent. Leaf-sheaths glabrous on surface or pilose. Ligule a fringe of hairs. Leaf-blades erect, deciduous at the ligule, aciculate, convolute, 6–10 cm long, 1–2 mm wide, stiff. Leaf-blade surface scabrous, rough adaxially, glabrous. Leaf-blade apex pungent.

**Inflorescence.** Inflorescence a panicle. Panicle open or contracted, lanceolate, interrupted, 10–30 cm long. Panicle branches smooth or scaberulous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rachilla extension. Spikelets of 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, 10–15 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, thinner than fertile lemma. Lower glume lanceolate, 8–13 mm long, 0.8–0.9 length of upper glume, chartaceous, without keels, 3 -veined. Lower glume apex acuminate. Upper glume lanceolate, 10–15 mm long, 1.4–1.7 length of adjacent fertile lemma, chartaceous, without keels, 3 -veined. Upper glume apex acuminate.

**Florets.** Fertile lemma oblong, 7–9 mm long, coriaceous, without keel, 3 -veined, 0–3 -veined. Lemma margins convolute, covering most of palea. Lemma apex acute, awned, 3 -awned. Principal lemma awn 3-branched, with 11–25 mm long limb, with twisted column, deciduous, abscissing across body of lemma, limb

plumose, hairy throughout limb. Column of lemma awn 1–2 mm long. Lateral lemma awns present, 7–20 mm long, shorter than principal, plumose. Palea without keels.

**Flower and Fruit.** Caryopsis with adherent pericarp, oblong, 5 mm long.

**Distribution (TDWG). Continent.** Africa.

**Country /Province /State. Southern Africa.** Namibia, Botswana, Free State, Lesotho, Northern Cape, Western Cape.

### **Stipagrostis namibensis** De Winter. *Bothalia*, viii. 173 (1964).

**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: B. De Winter & D.S. Hardy 8119; ; Namibia: 11 mi E of Omaruru River mouth (PRE; IT: US-2576225).

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): L. -ensis, denoting origin. From Namibia.

**Classification.** Subfamily Aristidoideae. Tribe: Aristideae.

**Habit, Vegetative Morphology.** Annual, caespitose, clumped loosely. Culms decumbent, 10–20 cm long, 2–3 -noded. Culm-internodes antrorsely scabrous. Culm-nodes glabrous. Lateral branches lacking. Leaves mostly basal. Leaf-sheaths antrorsely scabrous. Ligule a fringe of hairs. Leaf-blades flat or conduplicate, 1–3 cm long, 0.5–1 mm wide. Leaf-blade surface ribbed, scabrous.

**Inflorescence.** Inflorescence a panicle. Panicle open, lanceolate, 3–8 cm long. Primary panicle branches 2-nate. Panicle axis scabrous. Panicle branches scabrous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 8–9 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus elongated, 1–1.6 mm long, pilose, pungent.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 8–9 mm long, 1.2–1.3 length of upper glume, chartaceous, without keels, 3(–5) -veined. Lower glume surface pilose, hairy at apex. Lower glume apex emarginate or obtuse. Upper glume lanceolate, 6–7 mm long, 1.5–2 length of adjacent fertile lemma, chartaceous, without keels, 3 -veined. Upper glume apex acute.

**Florets.** Fertile lemma oblong, 3–3.5 mm long, coriaceous, without keel, 3 -veined, 0–3 -veined. Lemma surface granulose. Lemma margins convolute, covering most of palea. Lemma apex acute, awned, 3 -awned. Principal lemma awn 3-branched, with 14–25 mm long limb, with twisted column, deciduous, abscising from top of lemma, limb plumose, glabrescent towards base of limb. Column of lemma awn 2.5–5 mm long, ciliate. Lateral lemma awns present, spreading more than principal, 7–12 mm long, shorter than principal, plumose. Palea without keels.

**Flower and Fruit.** Caryopsis with adherent pericarp, ellipsoid, 2–2.5 mm long. Embryo 0.66 length of caryopsis.

**Distribution (TDWG). Continent.** Africa.

**Country /Province /State. Southern Africa.** Namibia.

### **Stipagrostis obtusa** (Del.) Nees. *Linnaea*, vii. 293 (1832).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), N.L.Bor, *Grasses of Burma, Ceylon, India and Pakistan* (1960) (as *Aristida*).

**TYPE** from Egypt. **Basionym or Replaced Name:** *Aristida obtusa* Delile, *Fl. Egypte*, 175. t. 13. f. 2 (1813). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: ST: K.H. Rechinger 29853; ; Pakistan: Zhob distr.: 30 km N of Fort Sandeman towards Wana (K).

**Illustrations (Books):** L.K.A. Chippindall, *Grasses and Pastures of South Africa* (1955) (303, Fig 269 as *Aristida*), M.A.N.Muller, *Grasses of South West Africa/Namibia* (1984), G.E.Gibbs Russell et al, *Grasses of Southern Africa* (1990) (326, Fig 209), N.Feinbrun-Dothan, *Flora Palaestina* 4 (1986) (Pl. 361), L.Boulos, *Flora of Egypt* 4 (2005) (236, Pl. 69).

**Images:** F.van Oudtshoorn, *Guide to Grasses of Southern Africa* (1999).

**Derivation** (Clifford & Bostock 2007): L. blunt. Glumes or lemmas apically rounded.

**Classification.** Subfamily Aristidoideae. Tribe: Aristideae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Culms erect, 30–60 cm long. Culm-internodes distally glabrous. Culm-nodes glabrous. Leaf-sheath oral hairs bearded. Ligule a fringe of hairs. Leaf-blades filiform, convolute, 1.5–25 cm long, 0.5 mm wide, glaucous. Leaf-blade surface smooth or scaberulous, rough abaxially, pubescent, hairy adaxially. Leaf-blade apex obtuse.

**Inflorescence.** Inflorescence a panicle. Panicle contracted, linear, continuous or interrupted, 2.5–20 cm long. Panicle branches scaberulous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 8.5–12 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus elongated, 1 mm long, bearded, acute.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 8.5–12 mm long, 1.1 length of upper glume, membranous, 1-keeled, 3 -veined. Lower glume surface asperulous. Lower glume apex obtuse. Upper glume lanceolate, 8–11 mm long, 4 length of adjacent fertile lemma, membranous, 1-keeled, 1–3 -veined. Upper glume surface asperulous, rough above. Upper glume apex acute.

**Florets.** Fertile lemma oblong, subterete, 2–2.5 mm long, coriaceous, without keel, 3 -veined, 0–3 -veined. Lemma surface scaberulous, rough above. Lemma margins convolute, covering most of palea. Lemma apex acute, awned, 3 -awned. Principal lemma awn 3-branched, with 20–30 mm long limb, with a straight or slightly twisted column, deciduous, abscissing from top of lemma, limb plumose, glabrescent towards base of limb. Column of lemma awn 4–10 mm long, glabrous, without distinct apical hairs. Lateral lemma awns present, 7–18 mm long, shorter than principal, glabrous. Palea without keels.

**Flower and Fruit.**  $N = 22$  (1 ref TROPICOS).  $2n = 36$  (1 ref TROPICOS).

**Distribution (TDWG). Continent.** Africa, Temperate Asia, Tropical Asia.

**Country /Province /State.** **Northern Africa, West tropical Africa, Northeast tropical Africa, Southern Africa.** Egypt, Libya, Morocco. Ethiopia (inc. Eritrea). Namibia, Botswana, North-West, Free State, Northern Cape, Western Cape, Eastern Cape. **Western Asia, Arabian Peninsula.** Iran, Iraq, Palestine, Israel & Jordan. Gulf States, Kuwait, Saudi Arabia. **Indian Subcontinent.** India, Pakistan.

**TDWG4.** Jammu Kashmir.

**Stipagrostis paradisea** (Edgew.) de Winter. *Kirkia*, iii. 135 (1963).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), N.L.Bor, *Grasses of Burma, Ceylon, India and Pakistan* (1960) (as *Aristida*).

**TYPE** from Arabia. **Basionym or Replaced Name:** *Aristida paradisea* Edgew., *Journ. As. Soc. Beng.* 16: II. 1219 (1847). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Arabia, Aden: Coll? (K iso).

**Illustrations (Books):** L.Boulos, *Flora of Egypt* 4 (2005) (236, Pl. 69).

**Derivation** (Clifford & Bostock 2007): Gk. *paradeisos*, pleasure park. An oblique reference to the Garden of Eden, the species coming from the east, that is Aden in the Yemen. An alternate transliteration of Aden from the Arabic is Eden.

**Classification.** Subfamily Aristidoideae. Tribe: Aristideae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Butt sheaths coriaceous, glabrous, persistent and investing base of culm, with compacted dead sheaths. Culms 20–45 cm long. Culm-internodes distally glabrous. Ligule a fringe of hairs. Leaf-blades straight or curled, filiform, convolute, 3–20 cm long, 0.5–1 mm wide. Leaf-blade apex pungent.

**Inflorescence.** Inflorescence a panicle. Panicle contracted, lanceolate, 10–15 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, 16–19 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus elongated, 0.5–0.75 mm long, bearded, with longer hairs above, acute.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 16–19 mm long, 1.2 length of upper glume, membranous, pallid, without keels, 3 -veined. Lower glume apex acute. Upper glume lanceolate, 13–16 mm long, 3–3.5 length of adjacent fertile lemma, membranous, pallid, without keels, 3 -veined. Upper glume apex acute.

**Florets.** Fertile lemma oblong, subterete, 3.5–5 mm long, coriaceous, without keel, 3 -veined, 0–3 -veined. Lemma margins convolute, covering most of palea. Lemma apex acute, awned, 3 -awned. Principal lemma awn 3-branched, with 45–70 mm long limb, with twisted column, deciduous, abscissing from top of lemma, limb plumose, glabrescent towards tip. Column of lemma awn 12–16 mm long, glabrous, without distinct apical hairs. Lateral lemma awns present, 20–30 mm long, shorter than principal, glabrous. Palea without keels.

**Distribution (TDWG). Continent.** Africa, Temperate Asia, Tropical Asia.

**Country /Province /State.** **Northern Africa, Northeast tropical Africa.** Egypt. Somalia. **Western Asia, Arabian Peninsula.** Afghanistan, Iran, Gulf States, Oman, Saudi Arabia. **Indian Subcontinent.** India, Pakistan.

**TDWG4.** Jammu Kashmir.

**Stipagrostis pellytronis** B.de Winter. *Bothalia*, 20(1): 85 (1990).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online.

**TYPE** from Namibia. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: IT: M.K. Jensen - 11519. (MO)

**HT:** Jensen (Seely) s.n. in Herb. Giess 11519; 28 Apr 1971; Namibia: 2415 (Sossuvlei): (-AB) Walvisbaai, Tsondab Vlei, on south-facing scree slope, plants in drainage course, well spread (PRE; IT: G, K, M, MO-5042048, NBG, WIND).

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): The woolly leaf-sheath resembles a sock.

**Classification.** Subfamily Aristidoideae. Tribe: Aristideae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Butt sheaths woolly, persistent and investing base of culm. Culms 30–40 cm long, 3–5 -noded. Culm-internodes 1–7 cm long, yellow, distally pubescent. Culm-nodes pubescent. Lateral branches lacking or sparse. Leaves mostly basal. Leaf-sheaths mostly shorter than adjacent culm internode, ribbed, smooth. Ligule a fringe of hairs. Collar pubescent. Leaf-blades lanceolate, 1–11 cm long, 3–5 mm wide. Leaf-blade midrib indistinct. Leaf-blade surface glabrous.

**Inflorescence.** Inflorescence a panicle, comprising 7–10 fertile spikelets, subtended by an inflated leaf-sheath. Panicle contracted or spiciform, 2–4 cm long. Primary panicle branches indistinct the panicle almost racemose. 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, 12–16 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus elongated (spirally twisted), 2.5 mm long, pubescent, with longer hairs below, 2-toothed. Floret callus hairs 0.5–1 mm long.

**Glumes.** Glumes persistent, similar. Lower glume 12–16 mm long, 1.2–1.3 length of upper glume, chartaceous, pallid, 3–5 -veined. Upper glume 10–12 mm long, chartaceous, pallid, 3 -veined. Upper glume apex dentate, 2 -fid.

**Florets.** Fertile lemma lanceolate, 9–10 mm long, coriaceous. Lemma apex awned, 3 -awned. Principal lemma awn 25–70 mm long overall, deciduous, abscissing across body of lemma, limb plumose, glabrescent towards base of limb. Lateral lemma awns present, 13–25 mm long, glabrous. Palea 1.5 mm long, chartaceous, 2 -veined, without keels. Palea apex truncate.

**Flower and Fruit.** Lodicules 2, 1.5 mm long, membranous. Anthers 3, 7 mm long, yellow. Ovary glabrous. Caryopsis oblanceolate, 3–3.5 mm long, light brown. Embryo 0.33 length of caryopsis. Hilum linear, 1 length of caryopsis.

**Distribution (TDWG). Continent.** Africa.

**Country /Province /State.** Southern Africa. Namibia.

**Stipagrostis pennata** (Trin.) de Winter. *Kirkia*, iii. 135 (1963).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), S-L Chen et al, *Flora of China* 22 (Poaceae) (2006), T.G.Tutin et al, *Flora Europaea* 5 (1980), N.Tsvelev, *Grasses of the Soviet Union* (1983).

**TYPE** from Russia. **Basionym or Replaced Name:** *Aristida pennata* Trin., *Mem. Acad. Petersb.* 6: 488 (1815). T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: Russia, Volga R. to Ural R.: Pallas (LE holotype).

**Illustrations (Books):** S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 638).

**Derivation** (Clifford & Bostock 2007): L. penna, feather; -ata, possessing. Awns villous.

**Classification.** Subfamily Aristidoideae. Tribe: Aristideae.

**Habit, Vegetative Morphology.** Perennial. Rhizomes elongated. Culms erect, 20–45 cm long. Lateral branches lacking. Leaf-sheaths antrorsely scabrous. Ligule a fringe of hairs. Leaf-blades filiform or linear, flat or involute, 5–30 cm long, 1–5 mm wide, glaucous. Leaf-blade surface scaberulous, rough adaxially. Leaf-blade apex acuminate, pungent.

**Inflorescence.** Inflorescence a panicle, exerted or embraced at base by subtending leaf. Panicle open, ovate, effuse, 10–20 cm long, 8–15 cm wide. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 16 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus elongated, 1–1.5 mm long, bearded, hairy on the margins, acute.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 16 mm long, 1.1–1.2 length of upper glume, membranous, without keels, 3 -veined. Lower glume

apex acuminate. Upper glume lanceolate, 13–14 mm long, 2.5 length of adjacent fertile lemma, membranous, without keels, 3 -veined. Upper glume apex acuminate.

**Florets.** Fertile lemma oblong, 5–6 mm long, coriaceous, without keel, 3 -veined, 0–3 -veined. Lemma margins convolute, covering most of palea. Lemma apex acute, awned, 3 -awned. Principal lemma awn 3-branched, with 10–15 mm long limb, with twisted column, deciduous, abscissing from top of lemma, limb plumose. Column of lemma awn 1–2 mm long. Lateral lemma awns present, 10–15 mm long, subequal to principal, plumose. Palea 0.33 length of lemma, without keels.

**Distribution (TDWG).** **Continent.** Europe, Temperate Asia, Tropical Asia.

**Region.** Eastern Europe.

**Country /Province /State.** East European Russia, South European Russia. Siberia, **Middle Asia, Western Asia, China, Russia.** Altay. Kazakhstan, Kirgizistan, Turkmenistan, Tadzhikistan, Uzbekistan. Iran. China South Central, Xinjiang. **Indian Subcontinent.** India.

**TDWG4.** Yunnan.

**Stipagrostis plumosa** (L.) Munro ex T. Anders. *Journ. Linn. Soc.* v. Suppl. i. 40 (1860).

**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), N.L.Bor, *Grasses of Burma, Ceylon, India and Pakistan* (1960) (as *Aristida*).

**TYPE** from Russia. **Basionym or Replaced Name:** *Aristida plumosa* L., *Sp. Pl.* ed. II. 1666 (1763). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: ST: D.D. Schreber s.n.; ; Armenia (LINN-98.6) ST: ; ; (LINN-98.7).

**Illustrations (Books):** N.N.Tsvelev, *Grasses of the Soviet Union* (1983) (927 (613), Pl.12), N.Feinbrun-Dothan, *Flora Palaestina* 4 (1986) (Pl. 362), L.Boulos, *Flora of Egypt* 4 (2005) (232, Pl. 67), N.L.Bor, *Gramineae in Flora of Iraq* (1968) (390, Pl. 148), T.A.Cope, *Flora of Pakistan* 143: *Poaceae* (1982) (52, Fig 7).

**Derivation** (Clifford & Bostock 2007): L. feathery. With the awn or one of its members densely hairy.

**Classification.** Subfamily Aristidoideae. Tribe: Aristideae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Butt sheaths woolly. Culms erect or geniculately ascending, 15–30 cm long. Culm-internodes distally woolly. Culm-nodes glabrous. Ligule a fringe of hairs. Leaf-blades curled, filiform, convolute, 4–12 cm long, 0.3–0.8 mm wide. Leaf-blade apex pungent.

**Inflorescence.** Inflorescence a panicle, exserted or embraced at base by subtending leaf. Panicle contracted, lanceolate, 6–15 cm long. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rachilla extension. Spikelets of 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, 11–15 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus elongated, 1–1.7 mm long, bearded, with longer hairs above, acute.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 9–14 mm long, 0.8–0.9 length of upper glume, membranous, pallid, without keels, 3 -veined. Lower glume apex attenuate. Upper glume lanceolate, 11–15 mm long, 3 length of adjacent fertile lemma, membranous, pallid, without keels, 3 -veined. Upper glume apex attenuate.

**Florets.** Fertile lemma oblong, subterete, 3.5–5.5 mm long, coriaceous, without keel, 3 -veined, 0–3 -veined. Lemma margins convolute, covering most of palea. Lemma apex acute, awned, 3 -awned. Principal lemma awn 3-branched, with 25–60 mm long limb, with twisted column, deciduous, abscissing from top of lemma, limb plumose, glabrescent towards tip and base of limb. Column of lemma awn 5–10(–15) mm long, glabrous, without distinct apical hairs. Lateral lemma awns present, 10–25 mm long, shorter than principal, glabrous. Palea 0.33 length of lemma, without keels.

**Flower and Fruit.** *N* = 22 (1 ref TROPICOS).

**Distribution (TDWG).** **Continent.** Africa, Temperate Asia, Tropical Asia.

**Country /Province /State.** **Northern Africa, Macaronesia, West tropical Africa, Northeast tropical Africa.** Algeria, Egypt, Libya, Morocco, Tunisia. Mauritania, Senegal, Niger. Sudan. **Middle Asia, Caucasus, Western Asia, Arabian Peninsula.** Kirgizistan, Turkmenistan, Tadzhikistan, Uzbekistan. Iran, Iraq, Palestine, Israel & Jordan, Turkey. Gulf States, Kuwait, Oman, Saudi Arabia. **Indian Subcontinent.** India, Pakistan, West Himalaya.

**TDWG4.**

**Stipagrostis prodigiosa** (Welw.) de Winter. *Kirkia*, iii. 135 (1963).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online.



**TYPE** from Angola. **Basionym or Replaced Name:** *Aristida prodigiosa* Welw., *Trans. Linn. Soc.* 27: 80 (1871). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Angola, Mossamedes: Welwitsch 2000 (K iso).

**Illustrations (Books):** No illustration found (BKS).

**Classification.** Subfamily Aristidoideae. Tribe: Aristideae.

**Habit, Vegetative Morphology.** Perennial, caespitose, clumped densely. Rootstock evident. Culms erect, 30–50 cm long, 2–4 -noded. Culm-nodes glabrous. Leaf-sheaths glabrous on surface or puberulous. Ligule a fringe of hairs. Leaf-blades straight or curled, filiform, involute, 3–5 cm long, 1 mm wide. Leaf-blade surface scabrous, rough on both sides.

**Inflorescence.** Inflorescence a panicle. Panicle open, linear, 10–30 cm long. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, filiform.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 7–8 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus elongated, 2 mm long, pubescent, pungent.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 7–8 mm long, 0.9–1 length of upper glume, membranous, without keels, 3 -veined. Lower glume apex acuminate. Upper glume lanceolate, 7–8 mm long, 1.1–1.2 length of adjacent fertile lemma, membranous, without keels, 3 -veined. Upper glume apex acuminate.

**Florets.** Fertile lemma oblong, 6–7 mm long, coriaceous, without keel, 3 -veined, 0–3 -veined. Lemma margins convolute, covering most of palea. Lemma apex acute, awned, 3 -awned. Principal lemma awn 3-branched, with 15–20 mm long limb, with a straight or slightly twisted column, deciduous, abscising across body of lemma, limb plumose, glabrescent towards base of limb. Column of lemma awn 1 mm long. Lateral lemma awns present, 7–10 mm long, longer than principal, plumose. Palea present, without keels.

**Flower and Fruit.** Caryopsis with adherent pericarp.

**Distribution (TDWG). Continent.** Africa.

**Country /Province /State.** South tropical Africa. Angola.

**Stipagrostis proxima** (Steud.) de Winter. *Kirkia*, iii. 135 (1963).

**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:** *Aristida proxima* Steud., *Syn. Pl. Gram.* 145 (1855). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: Zeyher 194; ; South Africa: Cape of Good Hope (c. b. spei) (P; IT: B, K, P, W, Z).

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): L. near to. Readily confused with another species.

**Classification.** Subfamily Aristidoideae. Tribe: Aristideae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Rhizomes elongated. Culms 20–60 cm long, 2–6 -noded. Culm-internodes distally pubescent or woolly. Lateral branches suffrutescent. Leaf-sheaths pubescent. Ligule a fringe of hairs. Leaf-blades filiform, convolute, 5–10 cm long, 1–2 mm wide, stiff. Leaf-blade surface scabrous, rough adaxially, pilose, hairy abaxially.

**Inflorescence.** Inflorescence a panicle. Peduncle pubescent above. Panicle open, lanceolate, 10–15 cm long. Primary panicle branches bearing 2–5 fertile spikelets on each lower branch. Panicle branches pubescent, pubescent in axils. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 8–11 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus elongated, 1.5–2 mm long, pubescent, acute.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 6.5–10 mm long, 0.8–0.9 length of upper glume, membranous, without keels, 3 -veined. Lower glume apex acuminate. Upper glume lanceolate, 8–11 mm long, 1.5 length of adjacent fertile lemma, membranous, without keels, 3 -veined. Upper glume primary vein scaberulous. Upper glume apex acuminate.

**Florets.** Fertile lemma oblong, 5.5–7 mm long, coriaceous, without keel, 3 -veined, 0–3 -veined. Lemma margins convolute, covering most of palea. Lemma apex acute, awned, 3 -awned. Principal lemma awn 3-branched, with 8–12 mm long limb, with a straight or slightly twisted column, deciduous, abscising across body of lemma, limb plumose, hairy throughout limb. Column of lemma awn 1 mm long. Lateral lemma awns present, 4–5 mm long, subequal to principal, plumose. Palea without keels.

**Distribution (TDWG). Continent.** Africa.

**Country /Province /State.** Southern Africa. Free State, Eastern Cape.

**Stipagrostis pungens** (Desf.) de Winter. *Kirkia*, iii. 135 (1963).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), N.L.Bor, *Grasses of Burma, Ceylon, India and Pakistan* (1960) (as *Aristida*).

**TYPE** from Tunisia. **Basionym or Replaced Name:** *Aristida pungens* Desf., *Fl. Atlant.* 1: 109. t. 35 (1798). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Tunisia, Sfax: Desfontaines (P holo).

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): *L. pungo*, prick. Leaf-blades sharp-pointed.

**Classification.** Subfamily Aristidoideae. Tribe: Aristideae.

**Habit, Vegetative Morphology.** Perennial. Roots woolly. Rhizomes elongated. Culms 50–100 cm long. Lateral branches suffrutescent. Leaf-sheaths scaberulous. Ligule a fringe of hairs. Leaf-blades aciculate, 15–30 cm long, 2–3 mm wide, coriaceous, stiff, glaucous. Leaf-blade surface pilose, hairy adaxially. Leaf-blade apex pungent.

**Inflorescence.** Inflorescence a panicle. Panicle contracted, linear or lanceolate, 10–20 cm long, 2–3 cm wide. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 14–15 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus elongated, 1 mm long, bearded, acute, disarticulating obliquely.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 13 mm long, 0.8–0.9 length of upper glume, membranous, without keels, 3 -veined. Lower glume apex acuminate. Upper glume lanceolate, 14–15 mm long, 3 length of adjacent fertile lemma, membranous, without keels, 3 -veined. Upper glume apex acuminate.

**Florets.** Fertile lemma oblong, 5 mm long, coriaceous, without keel, 3 -veined, 0–3 -veined. Lemma margins convolute, covering most of palea. Lemma apex acute, awned, 3 -awned. Principal lemma awn 3-branched, with 12–15 mm long limb, with twisted column, deciduous, abscissing from top of lemma, limb plumose. Column of lemma awn 1–2 mm long. Lateral lemma awns present, 12–15 mm long, subequal to principal, plumose. Palea 0.33 length of lemma, without keels.

**Flower and Fruit.** *N* = 22 (1 ref TROPICOS).

**Distribution (TDWG).** **Continent.** Africa, Temperate Asia.

**Country /Province /State.** Northern Africa, West tropical Africa. Algeria, Libya, Morocco, Tunisia. Western Asia, Arabian Peninsula. Iran.

**Stipagrostis raddiana** (Savi) de Winter. *Kirkia*, iii. 135 (1963).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online.

**TYPE** from Egypt. **Basionym or Replaced Name:** *Aristida raddiana* Savi, *Mem. Moden.* 198 (1837). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Egypt: Savi.

**Illustrations (Books):** N.Feinbrun-Dothan, *Flora Palaestina* 4 (1986) (Pl. 363), L.Boulos, *Flora of Egypt* 4 (2005) (230, Pl. 66), N.L.Bor, *Gramineae in Flora of Iraq* (1968) (393, Pl. 149).

**Derivation** (Clifford & Bostock 2007): *L. -ana*, indicating connection. As for Raddia, in honor of Guiseppe Raddi (1770–1829) Italian botanist.

**Classification.** Subfamily Aristidoideae. Tribe: Aristideae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Rhizomes elongated. Butt sheaths glabrous. Culms erect or geniculately ascending, 20–40 cm long. Culm-internodes distally pubescent. Lateral branches suffrutescent. Ligule a fringe of hairs. Leaf-blades filiform, convolute, 10–15 cm long, 0.5 mm wide. Leaf-blade surface pubescent, hairy adaxially.

**Inflorescence.** Inflorescence a panicle. Panicle contracted, lanceolate, 10–20 cm long. Panicle branches bearded in axils. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 13–16 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus elongated, 1 mm long, bearded, acute.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 13–16 mm long, 1 length of upper glume, membranous, without keels, 3 -veined. Lower glume surface glabrous or puberulous. Lower glume apex acute. Upper glume lanceolate, 13–15 mm long, 3–4 length of adjacent fertile lemma, membranous, without keels, 3 -veined. Upper glume surface glabrous or puberulous. Upper glume apex acute.

**Florets.** Fertile lemma oblong, subterete, 4 mm long, coriaceous, without keel, 3 -veined, 0–3 -veined. Lemma surface scabrous, rough above. Lemma margins convolute, covering most of palea. Lemma apex acute,

awned, 3 -awned. Principal lemma awn 3-branched, with 50 mm long limb, with a straight or slightly twisted column, deciduous, abscissing from top of lemma, limb plumose, hairy throughout limb. Column of lemma awn 10 mm long, glabrous, without distinct apical hairs. Lateral lemma awns present, 15–16 mm long, shorter than principal, glabrous. Palea without keels.

**Distribution (TDWG). Continent.** Africa, Temperate Asia.

**Country /Province /State.** Northern Africa. Egypt. Western Asia, Arabian Peninsula. Afghanistan, Iran, Iraq, Palestine, Israel & Jordan. Gulf States, Oman, Saudi Arabia.

### **Stipagrostis ramulosa** De Winter. *Bothalia*, viii. 173 (1964).

**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: B. De Winter & D.S. Hardy 8197; ; Namibia: Unjab River Mouth, 12.9 mi N of Torra Bay on coast road (PRE; IT: US-2579603, US-2576224, WAG).

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): *L. ramulus*, small branch; -osa, abundance. Culms branching.

**Classification.** Subfamily Aristidoideae. Tribe: Aristideae.

**Habit, Vegetative Morphology.** Perennial, caespitose, clumped densely. Culms 15–30 cm long, 0.5–1.5 mm diam., wiry. Culm-internodes distally glabrous. Culm-nodes glabrous. Lateral branches fastigiate. Leaf-sheaths smooth or scaberulous. Ligule a fringe of hairs. Leaf-blades erect, filiform, 5–10 cm long, 1 mm wide. Leaf-blade surface ribbed, scabrous, rough abaxially. Leaf-blade apex pungent.

**Inflorescence.** Inflorescence a panicle, comprising 6–20 fertile spikelets, aerial or shorter than basal leaves. Panicle open, linear, 7–15 cm long, bearing few spikelets. Panicle axis scabrous. Panicle branches scabrous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, bearing a few hairs, hairy at tip, tip widened.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 8–9 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus elongated, 2 mm long, pubescent, pungent.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 8–9 mm long, 0.8–0.9 length of upper glume, membranous, without keels, 3 -veined. Lower glume primary vein scaberulous. Lower glume apex acuminate. Upper glume lanceolate, 7–8 mm long, 2 length of adjacent fertile lemma, membranous, without keels, 3 -veined. Upper glume primary vein scaberulous. Upper glume apex acuminate.

**Florets.** Fertile lemma oblong, 3.5 mm long, chartaceous, without keel, 3 -veined, 0–3 -veined. Lemma margins convolute, covering most of palea. Lemma apex acute, awned, 3 -awned. Principal lemma awn 3-branched, with 12–15 mm long limb, with a straight or slightly twisted column, deciduous, abscissing from top of lemma, limb plumose, glabrescent towards tip. Column of lemma awn 1 mm long. Lateral lemma awns present, 10–13 mm long, shorter than principal, plumose. Palea without keels.

**Flower and Fruit.** Caryopsis with adherent pericarp, ellipsoid, 2–2.5 mm long. Embryo 0.6 length of caryopsis. Hilum linear, 1 length of caryopsis.

**Distribution (TDWG). Continent.** Africa.

**Country /Province /State.** Southern Africa. Namibia.

### **Stipagrostis rigidifolia** H. Scholz. *Willdenowia*, 6(2): 295 (1971).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online.

**TYPE** from Chad. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: H. Scholz 340; ; Chad: Tibesti (B).

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): *L. rigidus*, stiff; folium, leaf. Leaf-blades rigid.

**Classification.** Subfamily Aristidoideae. Tribe: Aristideae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Culms geniculately ascending, 5–15 cm long. Culm-internodes distally woolly. Ligule a fringe of hairs. Leaf-blades curved, filiform, involute, 2–3 cm long, 0.5 mm wide, stiff.

**Inflorescence.** Inflorescence a panicle. Panicle open, linear or lanceolate, 5–7 cm long. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile

or the upper sterile. Spikelets lanceolate, subterete, 12 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus elongated, 2–2.2 mm long, pubescent, pungent.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 10 mm long, 0.75–0.8 length of upper glume, membranous, without keels, 3 -veined. Lower glume apex acuminate. Upper glume lanceolate, 12 mm long, 3 length of adjacent fertile lemma, membranous, without keels, 3 -veined. Upper glume apex acuminate.

**Florets.** Fertile lemma oblong, 4–5 mm long, coriaceous, without keel, 3 -veined, 0–3 -veined. Lemma margins convolute, covering most of palea. Lemma apex acute, awned, 3 -awned. Principal lemma awn 3-branched, with 30–40 mm long limb, with a straight or slightly twisted column, deciduous, abscissing from top of lemma, limb plumose, glabrescent towards tip and base of limb. Column of lemma awn 5–10 mm long. Lateral lemma awns present, 17 mm long, shorter than principal, glabrous. Palea without keels.

**Flower and Fruit.** Caryopsis with adherent pericarp, 3 mm long.

**Distribution (TDWG). Continent.** Africa.

**Country /Province /State.** Northern Africa. Libya.

### **Stipagrostis sabulicola** (Pilger) de Winter. *Kirkia*, iii. 135 (1963).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

**TYPE** from Namibia. **Basionym or Replaced Name:** *Aristida sabulicola* Pilger, *Engl. Jahrb.* 40: 81 (1907). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: ST: Schultze 379; Apr 1905; Namibia: Dünen bei Roebank hinter Walfischbai (B)

ST: Gürich 119; Jul 1888; Namibia: Dünen am Kuiseb (B)

ST: Gürich 122; Jul 1888; Namibia: Dünen am Kuiseb (B).

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): *L. sabulum*, coarse sand; -cola, dweller. Growing in damp, sandy places.

**Classification.** Subfamily Aristidoideae. Tribe: Aristideae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Cataphylls evident. Rhizomes elongated. Culms erect, reed-like, 100–200 cm long, 1.2–5 mm diam. Culm-internodes distally glabrous. Lateral branches fastigiate. Leaves cauline. Leaf-sheaths glabrous on surface. Ligule a fringe of hairs. Leaf-blades erect, filiform, convolute, 25–60 cm long, 2–3 mm wide, stiff. Leaf-blade surface scabrous, rough adaxially. Leaf-blade apex pungent.

**Inflorescence.** Inflorescence a panicle, shorter than basal leaves, embraced at base by subtending leaf. Panicle spiciform, linear, 10–30 cm long, 1–2 cm wide. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 9–12 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus elongated, curved, 1.5–2 mm long, bearded, pungent.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 8–11 mm long, 0.8–0.9 length of upper glume, membranous, without keels, 3 -veined. Lower glume apex obtuse or acute. Upper glume lanceolate, 9–12 mm long, 2 length of adjacent fertile lemma, membranous, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume apex obtuse or acute.

**Florets.** Fertile lemma oblong, 4.75–6 mm long, coriaceous, without keel, 3 -veined, 0–3 -veined. Lemma surface smooth or punctate. Lemma margins convolute, covering most of palea. Lemma apex acute, awned, 3 -awned. Principal lemma awn 3-branched, with 6.5–10 mm long limb, with a straight or slightly twisted column, deciduous, abscissing from top of lemma, limb plumose, hairy throughout limb. Column of lemma awn 1–1.5 mm long, with bearded apex (2 hair-like appendages). Lateral lemma awns present, 6.5–10 mm long, subequal to principal, plumose. Palea without keels.

**Flower and Fruit.** Caryopsis with adherent pericarp, obovoid, 3–3.5 mm long. Embryo 0.5 length of caryopsis. Hilum linear, 1 length of caryopsis.

**Distribution (TDWG). Continent.** Africa.

**Country /Province /State.** South tropical Africa, Southern Africa. Angola. Namibia.

### **Stipagrostis sahelica** (Trabut) de Winter. *Kirkia*, iii. 136 (1963).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online.

**TYPE** from Algeria. **Basionym or Replaced Name:** *Aristida sahelica* Trabut, *Bull. Soc. Bot. Fr.* 34: 392 (1887). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Algeria: Battandier & Trabut 295.

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): L. -ica, belonging to. From the Sahel, a region of North Africa.

**Classification.** Subfamily Aristidoideae. Tribe: Aristideae.

**Habit, Vegetative Morphology.** Perennial. Roots woolly. Rhizomes short. Culms geniculately ascending, 25–50 cm long. Culm-internodes distally glabrous or pubescent. Ligule a fringe of hairs. Leaf-blades convolute, 5–15 cm long, 1–1.5 mm wide, glaucous. Leaf-blade apex acuminate.

**Inflorescence.** Inflorescence a panicle. Panicle open, lanceolate, 10–20 cm long. Primary panicle branches 2–7 cm long. Panicle branches glabrous. 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, 18–19 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus elongated, 2 mm long, pilose, acute. Floret callus hairs 0.7 mm long.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 10–13 mm long, 0.5–0.7 length of upper glume, membranous, without keels, 3 -veined. Lower glume apex emarginate, mucronate. Upper glume linear, 4–5 mm long, 4–5 length of adjacent fertile lemma, membranous, without keels, 3 -veined. Upper glume apex attenuate.

**Florets.** Fertile lemma oblong, 4 mm long, coriaceous, without keel, 3 -veined, 0–3 -veined. Lemma surface scabrous, rough above. Lemma margins convolute, covering most of palea. Lemma apex acute, awned, 3 -awned. Principal lemma awn 3-branched, with 40 mm long limb, with a straight or slightly twisted column, deciduous, abscissing from top of lemma, limb plumose. Column of lemma awn 5–7.5 mm long. Lateral lemma awns present, 10–15 mm long, shorter than principal, glabrous. Palea without keels.

**Flower and Fruit.** Anthers 3, 3–4 mm long. Caryopsis with adherent pericarp, fusiform, 3.5 mm long. Embryo 0.33 length of caryopsis. Hilum linear, 1 length of caryopsis.

**Distribution (TDWG). Continent.** Africa.

**Country /Province /State.** Northern Africa. Algeria, Morocco.

**Stipagrostis schaeferi** (Mez) de Winter. *Kirkia*, iii. 136 (1963).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

**TYPE** from Namibia. **Basionym or Replaced Name:** *Aristida schaeferi* Mez, Fedde, *Repert.* 17: 152 (1921). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: Schäfer 549; Oct 1913; Namibia: bei Pomona (B; IT: PRE, US-81262 (fragm. ex B)).

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): in honor of Fritz Schaefer ( -1911) medical practitioner and plant collector in South Africa.

**Classification.** Subfamily Aristidoideae. Tribe: Aristideae.

**Habit, Vegetative Morphology.** Perennial, caespitose, clumped densely. Rootstock evident. Rhizomes absent or short, knotty. Butt sheaths woolly. Culms 35–70 cm long, 2–3 -noded. Culm-nodes glabrous. Leaves mostly basal. Leaf-sheaths glabrous on surface or woolly. Ligule a fringe of hairs. Leaf-blades curved, aciculate, 5–10 cm long, 1–2 mm wide. Leaf-blade surface hirsute, hairy adaxially.

**Inflorescence.** Inflorescence a panicle. Panicle contracted, lanceolate, 30–60 cm long. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, flexuous.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 8–12 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus elongated, pubescent, pungent.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume oblong, 8–12.5 mm long, 1 length of upper glume, cartilaginous, without keels, 3 -veined. Lower glume surface glabrous or pilose. Lower glume apex truncate or obtuse. Upper glume oblong, 8–12.5 mm long, 2 length of adjacent fertile lemma, cartilaginous, without keels, 3 -veined. Upper glume surface glabrous or pilose. Upper glume apex truncate or obtuse.

**Florets.** Fertile lemma oblong, 6–7 mm long, coriaceous, without keel, 3 -veined, 0–3 -veined. Lemma margins convolute, covering most of palea. Lemma apex acute, awned, 3 -awned. Principal lemma awn 3-branched, with 40–45 mm long limb, with a straight or slightly twisted column, deciduous, abscissing across body of lemma, limb plumose (yellow). Column of lemma awn 1–2 mm long. Lateral lemma awns present, 10–15 mm long, shorter than principal, glabrous. Palea without keels.

**Flower and Fruit.** Caryopsis with adherent pericarp, fusiform, 4 mm long. Hilum linear, 1 length of caryopsis.

**Distribution (TDWG). Continent.** Africa.

**Country /Province /State.** Southern Africa. Namibia.

**Stipagrostis scoparia** (Trin. & Rupr.) de Winter. *Kirkia*, iii. 136 (1963).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

**TYPE** from Egypt. **Basionym or Replaced Name:** *Aristida scoparia* Trin. & Rupr., *Mem. Acad. Petersb.* Ser. VI. 7: 176 (1849). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: LT: Schimper 36; Jan; Egypt: in deserto prope Abu Zabel LT designated by Henrard, *Meded. Rijks-Herb.* 54(B): 550 (1928, but without specifying the specific sheet ST: Aucher-Eloy 2988; ; Egypt: in deserts ad Pyramides (LE).

**Illustrations (Books):** N.Feinbrun-Dothan, *Flora Palaestina* 4 (1986) (Pl. 366), L.Boulos, *Flora of Egypt* 4 (2005) (228, Pl. 65).

**Images:** L.Boulos, *Flora of Egypt* 4 (2005);.

**Derivation** (Clifford & Bostock 2007): *L. scopae*, broom; -aria, pertaining to. Inflorescences condensed resembling a broom.

**Classification.** Subfamily Aristidoideae. Tribe: Aristideae.

**Habit, Vegetative Morphology.** Perennial. Culms 50–70 cm long, woody. Culm-internodes distally glabrous. Lateral branches suffrutescent. Ligule a fringe of hairs. Leaf-blades curved, aciculate, 10–25 cm long, 1–1.5 mm wide, stiff. Leaf-blade apex pungent.

**Inflorescence.** Inflorescence a panicle. Panicle open, elliptic, effuse, 20–40 cm long, 15 cm wide. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, 10–20 mm long.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 18–22 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus evident, pubescent, acute.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 18–22 mm long, 1.2–1.4 length of upper glume, membranous, without keels, 3 -veined. Lower glume apex acuminate. Upper glume lanceolate, 15–16 mm long, 3 length of adjacent fertile lemma, membranous, without keels, 3 -veined. Upper glume apex acuminate.

**Florets.** Fertile lemma oblong, 5–6 mm long, coriaceous, without keel, 3 -veined, 0–3 -veined. Lemma margins convolute, covering most of palea. Lemma apex acute, awned, 3 -awned. Principal lemma awn 3-branched, with 7–9 mm long limb, not or scarcely exerted from spikelet, with a straight or slightly twisted column, deciduous, abscissing from top of lemma, limb plumose. Column of lemma awn 1 mm long. Lateral lemma awns present, 7–9 mm long, equalling glumes, subequal to principal, plumose. Palea without keels.

**Distribution (TDWG). Continent.** Africa, Temperate Asia.

**Country /Province /State.** Northern Africa, West tropical Africa. Egypt, Libya. Niger. Western Asia, Arabian Peninsula. Lebanon-Syria, Palestine, Israel & Jordan.

**Stipagrostis seelyae** B.de Winter. *Bothalia*, 20(1): 82 (1990).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online.

**TYPE** from Namibia. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Namibia, Namib Naukluft Park: Seely 2156 (PRE holo, K).

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): in honor of M.K. Seely (fl. 1991) South African plant ecologist.

**Classification.** Subfamily Aristidoideae. Tribe: Aristideae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Rhizomes short, woody. Culms erect, 50–100 cm long, 2–5 mm diam., woody. Culm-internodes distally glabrous. Lateral branches suffrutescent. Leaf-sheaths smooth, glabrous on surface. Ligule a fringe of hairs. Leaf-blades erect, curved, filiform, 4–7 cm long, 1–2 mm wide, stiff. Leaf-blade surface ribbed, grooved adaxially, pubescent, hairy adaxially. Leaf-blade apex pungent.

**Inflorescence.** Inflorescence a panicle, aerial. Panicle ovate, 2–5 cm long, 2–3 cm wide. Primary panicle branches 6–10 in number. Panicle branches with prominent pulvini. 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, 8–9 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus evident, 1.5 mm long, pubescent, with longer hairs below, pungent.

**Glumes.** Glumes persistent, similar. Lower glume lanceolate, 4–4.5 mm long, 0.5 length of upper glume, chartaceous, much thinner on margins, 3 -veined. Lower glume apex obtuse. Upper glume lanceolate, 8–9 mm long, chartaceous, thinner along midline, 1 -veined. Upper glume lateral veins absent. Upper glume apex acute.

**Florets.** Fertile lemma lanceolate, 3–6 mm long, coriaceous. Lemma margins convolute. Lemma apex awned, 3 -awned. Principal lemma awn spreading or reflexed, 5 mm long overall, deciduous, abscising across body of lemma, limb ciliate, hairy throughout limb. Lateral lemma awns present, subequal to principal, plumose. Palea involute, 1.4 mm long, chartaceous, 2 -veined, without keels. Palea apex emarginate or obtuse.

**Flower and Fruit.** Lodicules 2, obovate, 1.3–1.5 mm long, membranous, veined. Anthers 3. Stigmas yellow. Styles 4.5 mm long. Caryopsis oblanceolate, isodiametric, 2–3 mm long. Embryo 0.33 length of caryopsis. Hilum linear, 0.33 length of caryopsis.

**Distribution (TDWG). Continent.** Africa.

**Country /Province /State.** Southern Africa. Namibia.

**Stipagrostis shawii** (Scholz) Scholz. *Osterr. Bot. Zeitschr.* cxvii. 290 (1969).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online.

**TYPE** from Libya. **Basionym or Replaced Name:** *Aristida shawii* Scholz, *Willdenowia*, 5: 475 (1969) . T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: Shaw s.n.; ; Libya (K; IT: B).

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): in honor of W.B. Kennedy Shaw (1901-) English-born forester in the Sudan.

**Classification.** Subfamily Aristidoideae. Tribe: Aristideae.

**Habit, Vegetative Morphology.** Annual. Culms 10–15 cm long. Culm-internodes distally pubescent. Lateral branches ample. Leaf-sheaths glabrous on surface or woolly. Ligule a fringe of hairs. Leaf-blades filiform, 5–10 cm long, 0.5 mm wide.

**Inflorescence.** Inflorescence a panicle. Panicle open, lanceolate, 5–10 cm long. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, ciliate, hairy at tip.

**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, 15–16 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus elongated, 2–2.5 mm long, pubescent, with longer hairs above, pungent.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 11–14 mm long, 0.75–0.9 length of upper glume, membranous, without keels, 7(–9) -veined. Lower glume lateral veins ribbed. Lower glume surface puberulous. Lower glume apex acuminate. Upper glume lanceolate, 15–16 mm long, 4–5 length of adjacent fertile lemma, membranous, without keels, 5 -veined. Upper glume surface puberulous, with basal tufts of hair (two). Upper glume apex acuminate.

**Florets.** Fertile lemma oblong, 3–4 mm long, coriaceous, without keel, 3 -veined, 0–3 -veined. Lemma margins convolute, covering most of palea. Lemma apex acute, awned, 3 -awned. Principal lemma awn 3-branched, with 45–47 mm long limb, with a straight or slightly twisted column, deciduous, abscising from top of lemma, limb plumose, glabrescent towards base of limb. Column of lemma awn 3–5 mm long. Lateral lemma awns present, 12–15 mm long, shorter than principal, glabrous. Palea without keels.

**Distribution (TDWG). Continent.** Africa.

**Country /Province /State.** Northern Africa, Northeast tropical Africa. Egypt, Libya. Sudan.

**Stipagrostis sokotrana** (Vierh.) de Winter. *Kirkia*, iii. 136 (1963).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online.

**TYPE** from Socotra. **Basionym or Replaced Name:** *Aristida plumosa* var. *sokotrana* Vierh., *Oest. Bot. Zeitschr.* 53:431 (1903). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: ST: Paulay 27; 27 Jan 1899; Socotra: Kustengebiet von Gubbet ni an steinigen Stellen (W) ST: Paulay s.n.; 19 Jan 1899; Abdal Kuri: ebene nordöstlich vom Hafen (W).

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): L. -anum, indicating location. From Socotra.

**Classification.** Subfamily Aristidoideae. Tribe: Aristideae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Culms 6–30 cm long. Culm-internodes distally glabrous. Ligule a fringe of hairs. Leaf-blades aciculate, involute, 1–6 cm long, 1–1.5 mm wide, stiff, glaucous. Leaf-blade apex pungent.

**Inflorescence.** Inflorescence a panicle. Panicle contracted, linear, 5–10 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, 18.5–26 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus elongated, curved, 1.5–2 mm long, pubescent, with longer hairs above, pungent.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 8.5–14 mm long, 0.5 length of upper glume, membranous, without keels, 5–9 -veined. Lower glume lateral veins ribbed. Lower glume surface scabrous (on veins), puberulous. Lower glume apex acuminate. Upper glume lanceolate, 18.5–26 mm long, 3.5–4 length of adjacent fertile lemma, membranous, without keels, 3–5 -veined. Upper glume lateral veins ribbed. Upper glume surface scabrous, rough on veins, puberulous. Upper glume apex acuminate.

**Florets.** Fertile lemma oblong, subterete, 5–6.5 mm long, coriaceous, without keel, 3 -veined, 0–3 -veined. Lemma margins convolute, covering most of palea. Lemma apex acute, awned, 3 -awned. Principal lemma awn 3-branched, with 55–70 mm long limb, with twisted column, deciduous, abscissing from top of lemma, limb plumose (the plume obtuse), glabrescent towards base of limb (pubescent there). Column of lemma awn 8.5–13 mm long, glabrous, without distinct apical hairs. Lateral lemma awns present, 8.5–13 mm long, shorter than principal, glabrous. Palea without keels.

**Flower and Fruit.** Caryopsis with adherent pericarp, linear, 3 mm long.

**Distribution (TDWG). Continent.** Africa, Temperate Asia.

**Country /Province /State.** Northeast tropical Africa. Socotra. Arabian Peninsula. Gulf States, Oman.

### **Stipagrostis subacaulis** (Nees) de Winter. *Kirkia*, iii. 136 (1963).

**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:** *Arthratherum subacaulis* Nees, *Fl. Afr. Austr.* 180 (1841). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: Drège [2541]; Sep 1830; South Africa; Cape: Verleptam (B; IT: BM, G, K, OXF, P, PRE, SAM, W).

**Illustrations (Books):** L.K.A. Chippindall, *Grasses and Pastures of South Africa* (1955) (301, Fig 267 as *Aristida*).

**Derivation** (Clifford & Bostock 2007): L. sub, approaching; a-, without; caulis, stem. Dwarf plants. Culms short.

**Classification.** Subfamily Aristidoideae. Tribe: Aristideae.

**Habit, Vegetative Morphology.** Annual, caespitose. Culms 5–10 cm long. Culm-internodes distally pubescent. Culm-nodes glabrous. Leaves mostly basal. Leaf-sheaths antrorsely scabrous. Leaf-sheath oral hairs bearded. Ligule a fringe of hairs. Leaf-blades aciculate, conduplicate or convolute, 1–3 cm long, 1 mm wide. Leaf-blade surface scabrous, rough abaxially, hispid, hairy adaxially.

**Inflorescence.** Inflorescence a panicle, shorter than basal leaves, embraced at base by subtending leaf. Panicle contracted, linear, 1–3 cm long. Panicle axis scabrous. Panicle branches scabrous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 10–13 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus elongated, 0.8–1 mm long, pubescent, pungent.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume linear or lanceolate, 10–13 mm long, 1.2–1.3 length of upper glume, membranous, without keels, 3 -veined. Lower glume apex acuminate. Upper glume linear or lanceolate, 8–10 mm long, 2.5 length of adjacent fertile lemma, membranous, without keels, 3 -veined. Upper glume apex acuminate.

**Florets.** Fertile lemma oblong, 3–4 mm long, coriaceous, without keel, 3 -veined, 0–3 -veined. Lemma margins convolute, covering most of palea. Lemma apex acute, awned, 3 -awned. Principal lemma awn 3-branched, with 30–43 mm long limb, with twisted column, deciduous, abscissing from top of lemma, limb plumose, glabrescent towards base of limb. Column of lemma awn 1–13 mm long. Lateral lemma awns present, 10–18 mm long, shorter than principal, glabrous. Palea without keels.

**Flower and Fruit.** Caryopsis with adherent pericarp, fusiform. Embryo 0.5 length of caryopsis. Hilum linear, 1 length of caryopsis.

**Distribution (TDWG). Continent.** Africa.

**Country /Province /State.** Southern Africa. Namibia, Northern Cape.



**Stipagrostis uniplumis** (Licht.) de Winter. *Kirkia*, iii. 136 (1963).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), N.L.Bor, *Grasses of Burma, Ceylon, India and Pakistan* (1960) (as *A. pogonophila*).

**TYPE** from South Africa. **Basionym or Replaced Name:** *Stipagrostis pogonoptila*, *Aristida uniplumis* Licht., *Roem. & Schult. Syst.* 2: 401 (1817). T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: South Africa, Cape: Lichtenstein.

**Illustrations (Books):** H.Jacques-Felix, *Les Graminees d'Afrique tropicale* (1962) (166, Fig. 90 as *Aristida papposa*), F.N.Hepper, *F.W.T.A.* 3(2) (1972) (377, Fig.426), R.M.Pohill, F.T.E.A., *Gramineae* (1(1970):139, Fig.46), G.V.Pope et al., *Flora Zambesiaca* 10 (1(1971):135, t. 34), L.K.A. Chippindall, *Grasses and Pastures of South Africa* (1955) (305, Fig 271 as *Aristida*), M.A.N.Muller, *Grasses of South West Africa/Namibia* (1984) (as var. *uniplumis*), G.E.Gibbs Russell et al, *Grasses of Southern Africa* (1990) (318, Fig 206), S.Phillips, *Poaceae* (Gramineae) in I.Hedberg & S.Edwards, *Flora of Ethiopia and Eritrea* (1995) (87, Fig 36), L.Boulos, *Flora of Egypt* 4 (2005) (234, Pl. 68), T.A.Cope, in M.Thulin, *Poaceae* (Gramineae). *Flora of Somalia* (1995) (160, Fig 80).

**Images:** F.van Oudtshoorn, *Guide to Grasses of Southern Africa* (1999).

**Derivation** (Clifford & Bostock 2007): *L. unus*, one; *pluma*, feather. Central arm of trifold awn of lemma plumose.

**Classification.** Subfamily Aristidoideae. Tribe: Aristideae.

**Habit, Vegetative Morphology.** Perennial, persisting or short-lived, caespitose. Culms 30–80 cm long. Culm-nodes glabrous. Ligule a fringe of hairs. Leaf-blades filiform, convolute, 5–15 cm long, 1 mm wide. Leaf-blade surface scabrous, rough adaxially.

**Inflorescence.** Inflorescence a panicle. Panicle open, 10–15 cm long. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rachilla extension. Spikelets of 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, 9–10 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus elongated, curved, 1 mm long, bearded, with longer hairs above, acute.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 8 mm long, 0.8 length of upper glume, membranous, without keels, 3 -veined. Lower glume surface glabrous or pilose. Lower glume apex acute, mucronate. Upper glume lanceolate, 9–10 mm long, 3–4 length of adjacent fertile lemma, membranous, without keels, 3 -veined. Upper glume surface glabrous or pilose. Upper glume apex acute, mucronate.

**Florets.** Fertile lemma oblong, subterete, 2–3.5 mm long, coriaceous, without keel, 3 -veined, 0–3 -veined. Lemma surface tuberculate (finely), rough above. Lemma margins convolute, covering most of palea. Lemma apex emarginate, awned, 3 -awned. Principal lemma awn 3-branched, with 20–35 mm long limb, with twisted column, deciduous, abscissing from top of lemma, limb plumose, glabrescent towards base of limb. Column of lemma awn 5 mm long, glabrous, with bearded apex. Lateral lemma awns present, ascending, 10–12 mm long, shorter than principal, glabrous. Palea 0.5 length of lemma, without keels.

**Distribution (TDWG). Continent.** Africa, Temperate Asia, Tropical Asia.

**Country /Province /State.** Northern Africa, Macaronesia, West tropical Africa, Northeast tropical Africa, East tropical Africa, South tropical Africa, Southern Africa. Algeria, Egypt. Cape Verde. Mali, Senegal. Chad, Eritrea, Ethiopia (inc. Eritrea), Somalia, Sudan. Kenya, Tanzania, Uganda. Angola, Zimbabwe. Namibia, Botswana, Limpopo, North-West, Gauteng, Mpumalanga, Swaziland, Free State, Northern Cape. Western Asia, Arabian Peninsula. Afghanistan, Iran. Oman, Saudi Arabia. Indian Subcontinent. India, Pakistan.

**TDWG4.** Rajasthan.

**Stipagrostis vexillifeta** Kers. *Bot. Notiser* 124(1): 16 (1971).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online.

**TYPE** from Angola. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: Angola, Mocamedes to San Nicolau: Kers 3663 (S holo).

**Illustrations (Books):** No illustration found (BKS).

**Classification.** Subfamily Aristidoideae. Tribe: Aristideae.

**Habit, Vegetative Morphology.** Perennial, caespitose, clumped densely. Culms geniculately ascending or decumbent, 20–40 cm long, 0.5–1 mm diam., 5–7 -noded, without nodal roots or rooting from lower nodes. Culm-internodes terete, 2.5–5 cm long, scaberulous. Culm-nodes glabrous. Lateral branches ample. Leaf-sheaths tight, 1–4 cm long, mostly shorter than adjacent culm internode, striately veined, scaberulous. Leaf-sheath oral hairs ciliate. Ligule a fringe of hairs. Leaf-blades filiform, convolute, 5–15 cm long, 1 mm wide.

**Inflorescence.** Inflorescence a panicle. Panicle open, ovate, 4–7 cm long. Panicle branches scabrous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 9–10 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus evident, 0.5 mm long, pilose.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 9–10 mm long, 1 length of upper glume, membranous, without keels, 3 -veined. Lower glume surface asperulous. Lower glume apex attenuate. Upper glume lanceolate, 9–10 mm long, 3–4 length of adjacent fertile lemma, membranous, without keels, 3 -veined. Upper glume surface asperulous. Upper glume apex attenuate.

**Florets.** Fertile lemma oblong, subterete, 2–3 mm long, coriaceous, without keel, 3 -veined, 0–3 -veined. Lemma surface scaberulous. Lemma margins convolute, covering most of palea. Lemma apex awned, 3 -awned. Principal lemma awn 3-branched, with 30–40 mm long limb, with twisted column, deciduous, abscissing from top of lemma, limb plumose, glabrescent towards tip and base of limb. Column of lemma awn 9 mm long, glabrous, with bearded apex. Lateral lemma awns present, ascending, 10 mm long, shorter than principal, glabrous.

**Distribution (TDWG). Continent.** Africa.

**Country /Province /State.** South tropical Africa. Angola.

**Stipagrostis vulnerans** (Trin. & Rupr.) de Winter. *Kirkia*, iii. 136 (1963).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

**TYPE** from Egypt. **Basionym or Replaced Name:** *Aristida vulnerans* Trin. & Rupr., *Mem. Acad. Petersb.* Ser. VI. 7: 175 (1849). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Egypt, Syene: Sieber (K iso).

**Illustrations (Books):** L.Boulos, *Flora of Egypt* 4 (2005) (228, Pl. 65).

**Derivation** (Clifford & Bostock 2007): *L. vulnero*, wound. The mature spikelet has a sharp callus capable of wounding.

**Classification.** Subfamily Aristidoideae. Tribe: Aristideae.

**Habit, Vegetative Morphology.** Perennial. Roots woolly. Rhizomes elongated. Culms 30–70 cm long, woody. Lateral branches suffrutescent. Ligule a fringe of hairs. Leaf-blades aciculate, 5–25 cm long, 1–1.5 mm wide. Leaf-blade apex pungent.

**Inflorescence.** Inflorescence a panicle. Panicle open, elliptic, 10–20 cm long. Panicle branches bearded in axils. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, pubescent.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 10 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus evident, 0.5 mm long, pubescent, acute.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 10 mm long, 1 length of upper glume, membranous, without keels, 3 -veined. Lower glume apex acuminate. Upper glume lanceolate, 10 mm long, 2 length of adjacent fertile lemma, membranous, without keels, 3 -veined. Upper glume apex acuminate.

**Florets.** Fertile lemma oblong, 5 mm long, coriaceous, without keel, 3 -veined, 0–3 -veined. Lemma margins convolute, covering most of palea. Lemma apex acute, awned, 3 -awned. Principal lemma awn 3-branched, with 8–10 mm long limb, without a column or with a straight or slightly twisted column, deciduous, abscissing from top of lemma, limb plumose, glabrescent towards tip. Column of lemma awn 0–1 mm long. Lateral lemma awns present, 8–10 mm long, subequal to principal, plumose. Palea without keels.

**Distribution (TDWG). Continent.** Africa.

**Country /Province /State.** Northern Africa, Northeast tropical Africa. Egypt, Libya. Chad.

**Stipagrostis xylosa** T.A. Cope. *Kew Bull.*, 47(4): 660 (1992).

**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, Hubera: McKinnon 110 (K hol).

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): *Gk. xylon*, wood; *L. -osa*, abundance. Culms woody at the base.

**Classification.** Subfamily Aristidoideae. Tribe: Aristideae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Rootstock evident. Culms 6–25 cm long. Culm-internodes distally glabrous. Ligule a fringe of hairs. Leaf-blades curled, deciduous at the ligule, involute, 0.5–2 cm long, 1 mm wide, coriaceous, stiff. Leaf-blade apex pungent.

**Inflorescence.** Inflorescence a panicle. Panicle contracted, linear, 3–5 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, 12–15 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus elongated, 1 mm long, pubescent, with longer hairs above, pungent.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 12–15 mm long, 1.2–1.3 length of upper glume, membranous, without keels, 3 -veined. Lower glume surface asperulous. Lower glume apex acuminate. Upper glume lanceolate, 9–12 mm long, 2.5–3.5 length of adjacent fertile lemma, membranous, without keels, 3 -veined. Upper glume surface asperulous. Upper glume apex acuminate.

**Florets.** Fertile lemma oblong, subterete, 3.5 mm long, coriaceous, without keel, 3 -veined, 0–3 -veined. Lemma margins convolute, covering most of palea. Lemma apex acute, awned, 3 -awned. Principal lemma awn 3-branched, with 35–45 mm long limb, with twisted column, deciduous, abscissing from top of lemma, limb plumose (the plume obtuse), glabrescent towards tip and base of limb. Column of lemma awn 4–8 mm long, glabrous, without distinct apical hairs. Lateral lemma awns present, 10–15 mm long, shorter than principal, glabrous. Palea without keels.

**Distribution (TDWG). Continent.** Africa, Temperate Asia.

**Country /Province /State.** Northeast tropical Africa. Somalia. Arabian Peninsula. Oman.

**Stipagrostis zeyheri** (Nees) de Winter. *Kirkia*, iii. 136 (1963).

**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:** *Arthratherum zeyheri* Nees, *Fl. Afr. Austr.* 177 (1841). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: South Africa, Tulbaghskloof: Ecklon ; South Africa, Wittenberg: Ecklon s.n.

**Illustrations (Books):** G.E.Gibbs Russell et al, *Grasses of Southern Africa* (1990) (328, Fig 210 as var. *sericans*).

**Images:** F.van Oudtshoorn, *Guide to Grasses of Southern Africa* (1999).

**Derivation** (Clifford & Bostock 2007): in honor of Carl Ludwig Philipp Zeyher (1799–1858) German-born South African plant collector.

**Classification.** Subfamily Aristidoideae. Tribe: Aristideae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Rhizomes absent or short. Culms 30–75 cm long, 1.2–5 mm diam., wiry. Lateral branches lacking. Leaves mostly basal. Leaf-sheaths glabrous on surface. Leaf-sheath oral hairs lacking or bearded. Ligule a fringe of hairs. Leaf-blades filiform, conduplicate, 20–40 cm long, 1–2 mm wide. Leaf-blade surface scaberulous, rough adaxially.

**Inflorescence.** Inflorescence a panicle. Panicle open or contracted, lanceolate or ovate, equilateral or nodding, 8–20 cm long. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 11–20 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus elongated, 2.5 mm long, pubescent, pungent.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 10–19 mm long, 0.9–1 length of upper glume, membranous, without keels, 3 -veined. Lower glume surface glabrous or pilose. Lower glume apex acuminate. Upper glume lanceolate, 11–20 mm long, 2 length of adjacent fertile lemma, membranous, without keels, 3 -veined. Upper glume surface glabrous or pilose. Upper glume apex acuminate.

**Florets.** Fertile lemma oblong, 5–8.5 mm long, coriaceous, without keel, 3 -veined, 0–3 -veined. Lemma surface smooth or papillose. Lemma margins convolute, covering most of palea. Lemma apex acute, awned, 3 -awned. Principal lemma awn 3-branched, with 16–40 mm long limb, with twisted column, deciduous, abscissing from top of lemma, limb plumose, glabrescent towards tip. Column of lemma awn 1–14 mm long, glabrous or ciliate. Lateral lemma awns present, 13–35 mm long, shorter than principal, plumose. Palea without keels.

**Flower and Fruit.** Caryopsis with adherent pericarp, fusiform, 5 mm long. Hilum linear, 1 length of caryopsis.

**Distribution (TDWG). Continent.** Africa.

**Country /Province /State. Southern Africa.** Gauteng, Mpumalanga, Free State, Kwazulu-Natal, Lesotho, Northern Cape, Western Cape, Eastern Cape.

**Streblochaete longiarista** (A.Rich.) Pilger. *Notizbl. Bot. Gart. Berlin*, ix. 516 (1926).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), J.F.Veldkamp, *Poaceae ms (Flora Malesiana)*.

**TYPE** from Ethiopia. **Basionym or Replaced Name:** *Trisetum longiaristum* A. Rich., *Tent. Fl. Abyss.* 2: 417 (1850). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *Schimper* 683, [12 Feb 1840], Ethiopia (P; IT: K, L, MO, US-92338 (fragm. ex P)).

**Illustrations (Books):** H.Jacques-Felix, *Les Graminees d'Afrique tropicale* (1962) (172, Fig. 95), R.M.Polhill, F.T.E.A., *Gramineae* (1(1970):75, Fig.25), G.V.Pope et al., *Flora Zambesiaca* 10 (1(1971):68, t. 19), L.K.A. Chippindall, *Grasses and Pastures of South Africa* (1955) (82, Fig 53), G.E.Gibbs Russell et al, *Grasses of Southern Africa* (1990) (329, Fig 211), S.Phillips, *Poaceae* (Gramineae) in I.Hedberg & S.Edwards, *Flora of Ethiopia and Eritrea* (1995) (29, Fig 14).

**Illustrations (Journals):** *Blumea* (Supp.3, 34, fig.5 (1946)).

**Derivation** (Clifford & Bostock 2007): *L. longus*, long; arista, bristle. Lemmas or glumes long awned.

**Classification.** Subfamily Pooideae. Tribe: Meliceae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Culms decumbent, 30–90 cm long. Leaf-sheaths smooth or retrorsely scabrous. Leaf-sheath auricles erect. Ligule an eciliate membrane, 6–12 mm long. Leaf-blades drooping, 7–27 cm long, 5–12 mm wide, glaucous. Leaf-blade apex attenuate.

**Inflorescence.** Inflorescence a panicle. Panicle contracted, linear, nodding, 10–25 cm long. Primary panicle branches simple, 5–10 cm long. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, filiform.

**Fertile Spikelets.** Spikelets comprising 2–6 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate or oblong, laterally compressed, 16–30 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes 2–3 mm long, eventually visible between lemmas. Floret callus elongated, 2–3 mm long, pubescent, pungent, disarticulating obliquely.

**Glumes.** Glumes persistent, similar, shorter than spikelet, thinner than fertile lemma. Lower glume linear, 6–10 mm long, 0.6–0.8 length of upper glume, membranous, without keels, 3 -veined. Lower glume apex acute. Upper glume linear, 10–13 mm long, 0.8–1 length of adjacent fertile lemma, membranous, without keels, 5 -veined. Upper glume apex acute.

**Florets.** Fertile lemma lanceolate, 10–17 mm long, chartaceous, without keel, 7 -veined, more than 3-veined. Lemma apex entire or dentate, 2 -fid, awned, 1 -awned. Principal lemma awn dorsal, arising 0.7–0.8 way up back of lemma, coiled, 20–43 mm long overall. Apical sterile florets 1–2 in number, abscising from fertile floret, in a clump, linear, 2–4 mm long. Apical sterile lemmas awned, 1 -awned.

**Flower and Fruit.** Lodicules 2, free, cuneate, fleshy, truncate. Anthers 3, 2.5–3 mm long. Stigmas 2. Ovary glabrous. Caryopsis with adherent pericarp. Embryo 0.1 length of caryopsis. Hilum punctiform.

**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.** Nigeria. Cameroon, Annobon, Principe & Sao Tome, Bioko. Ethiopia (inc. Eritrea). Kenya, Tanzania, Uganda. Malawi, Zimbabwe. Kwazulu-Natal, Eastern Cape. **Malesia.** Java, Lesser Sunda Is, Philippines.

**Streblochaete sanjappae** Kabeer & V.J.Nair. *Bull. Bot. Surv. India* 47(1–4): 137 (2006).

**TYPE** from India. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: India, Tamil Nadu, Dodabetta: Kabeer 114021 (MH holotype, CAL).

**Illustrations (Books):** No illustration found (BKS).

**Classification.** Subfamily Pooideae. Tribe: Meliceae.

**Habit, Vegetative Morphology.** Perennial. Stolons present. Culms decumbent, 30–65 cm long. Leaf-sheaths tubular for much of their length, 4.5–6 cm long, striately veined. Leaf-sheath auricles erect. Ligule an eciliate membrane, 3–5 mm long, lacerate. Leaf-blades linear or lanceolate, 8–15 cm long, 6 mm wide. Leaf-blade midrib conspicuous. Leaf-blade surface pubescent, sparsely hairy, hairy on both sides. Leaf-blade apex acuminate.

**Inflorescence.** Inflorescence a panicle. Panicle contracted, linear, nodding, 11 cm long, 2 cm wide. Primary panicle branches simple, bearing 4–8 fertile spikelets on each lower branch. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, filiform, 9–18 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 lanceolate or oblong, laterally compressed, 15–20 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes 2 mm long, eventually visible between lemmas, glabrous. Floret callus elongated, 2 mm long, pubescent, pungent, disarticulating obliquely.

**Glumes.** Glumes persistent, similar, shorter than spikelet, thinner than fertile lemma. Lower glume lanceolate, 9.5 mm long, 0.75 length of upper glume, membranous, much thinner on margins, without keels, 3 -veined. Lower glume primary vein scabrous. Lower glume apex acuminate. Upper glume lanceolate, 13.5 mm long, 1.2 length of adjacent fertile lemma, membranous, without keels, 5 -veined. Upper glume primary vein scabrous. Upper glume apex acuminate.

**Florets.** Fertile lemma lanceolate or oblong, 10.5 mm long, 0.8–1.2 mm wide, chartaceous, without keel, 7–9 -veined, more than 3-veined. Lemma lateral veins prominent. Lemma apex dentate, 2 -fid, with lobes 3–4 mm long, awned, 1 -awned. Principal lemma awn dorsal, arising 0.7–0.8 way up back of lemma, coiled, twisted together, 29–35 mm long overall. Palea lanceolate or oblong, 7.8 mm long. Palea surface pubescent, hairy on margins. Apical sterile florets resembling fertile though underdeveloped.

**Flower and Fruit.** Lodicules 2, free, 0.3 mm long, fleshy, truncate. Anthers 3, 1–2 mm long, yellow. Ovary glabrous. Caryopsis with adherent pericarp, linear or oblong, sulcate on hilar side, 3.4 mm long.

**Distribution (TDWG). Continent.** Tropical Asia.

**Country /Province /State.** Indian Subcontinent. India.  
Tamilnadu.

**Streptochaeta angustifolia** T.R. Soderstrom. *Ann. Missouri Bot. Gard.*, 68(1): 30 (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 Brazil. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: T.R. Soderstrom & D.B. Sucre 1969, 25 Apr 1972, Brazil: Espírito Santo (RB; IT: CEPEC, F, INPA, K, L, LE, MO, NY, P, US-2725405, US-2725406).

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): *L. angustus*, narrow; folium, leaf. Leaf-blades narrow.

**Classification.** Subfamily Anomochlooideae. Tribe Streptochaeteae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Rootstock evident. Cataphylls evident. Culms erect, 40–70 cm long, 2–2.5 mm diam. Culm-internodes thin-walled, distally with pubescent line. Culm-nodes pubescent. Lateral branches lacking or sparse. Leaves cauline, 4–8 per branch. Leaf-sheaths glabrous on surface, outer margin hairy. Ligule a fringe of hairs. Leaf-blades lanceolate, 12–15 cm long, 13–17 mm wide. Leaf-blade surface scaberulous, rough adaxially, pilose, hairy abaxially. Leaf-blade apex acuminate.

**Inflorescence.** Inflorescence composed of racemes. Peduncle 10–13 cm long. Racemes 1, single, erect, paucilateral, 8–11 cm long, bearing 6–9 fertile spikelets on each. Rhachis angular, pubescent on surface. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, 0.7 mm long, ciliate.

**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, 12–14 mm long, falling entire.

**Glumes.** Glumes several, 5 empty glumes, whorled, similar. Lower glume oblong, 2–3 mm long.

**Florets.** Fertile lemma lanceolate, 10–14 mm long, coriaceous, without keel, 12 -veined, more than 3-veined. Lemma apex attenuate, awned, 1 -awned. Principal lemma awn coiled, flat below, 30–50 mm long overall. Palea present, reflexed at apex, tightly convolute around flower, 8.5–10.5 mm long, coriaceous, 8–9 -veined, without keels. Palea apex divided to base, acuminate.

**Flower and Fruit.** Lodicules 3, lanceolate, 12–14.5 mm long, coriaceous, veined (12–15 veins), acute. Anthers 6, 5.4 mm long. Filaments united in a tube. Stigmas 3. Caryopsis with adherent pericarp.

**Distribution (TDWG). Continent.** South America.

**Country /Province /State.** Western South America, Brazil. Colombia. Brazil Northeast, Brazil Southeast. Minas Gerais, Rio de Janeiro, Espírito Santo.

**Streptochaeta sodiroana** Hack. ex Sodiro. *Oest. Bot. Zeitschr.* xl: 111. (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).

**TYPE** from Ecuador. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *Sodiro 911*, 1883, Ecuador: Pichincha: 400 m (W(fragm., US-79428); IT: W).

**Illustrations (Books):** W.Burger, *Flora Costaricensis* 15, Gramineae: *Fieldiana Botany New Series* 4 (1980) (556, Fig 208), E.J.Judziewicz et al, *American Bamboos* (1999) (327, Fig. 199).

**Illustrations (Journals):** *Smithsonian Contributions to Botany* (No. 68 : 31 (1989)).

**Images:** E.J.Judziewicz, E.J., *American Bamboos* (1999); (*Smith. Contr. Bot.* No. 68 : 7 (1989)).

**Derivation** (Clifford & Bostock 2007): L. -ana, indicating connection. In honor of Luigi Sodiro (1836–1909) Italian-born Ecuadorean cleric and amateur botanist.

**Classification.** Subfamily Anomochlooideae. Tribe Streptochaeteae.

**Habit, Vegetative Morphology.** Perennial. Rootstock evident. Culms 50–80 cm long. Ligule a fringe of hairs. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades elliptic, 17–30 cm long, 50–95 mm wide. Leaf-blade venation with distinct cross veins. Leaf-blade apex acuminate.

**Inflorescence.** Inflorescence composed of racemes. Racemes 1, single, paucilateral, 15–27 cm long, bearing 42–100 fertile spikelets on each. Rhachis angular, ciliate on margins. Spikelet packing 0.05–0.25 their length apart (1–4mm). Spikelets appressed, solitary. Fertile spikelets sessile.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets cuneate (conical), subterete, 13–17 mm long, falling entire. Spikelet callus pubescent, base truncate.

**Glumes.** Glumes several, 5 empty glumes, whorled, similar, shorter than spikelet, thinner than fertile lemma. Lower glume oblong, 1 mm long, membranous, without keels. Lower glume apex lobed, 2-fid, truncate.

**Florets.** Fertile lemma lanceolate, 13–17 mm long, coriaceous, without keel, 11 -veined, more than 3-veined. Lemma apex acuminate, awned, 1 -awned. Principal lemma awn coiled, 30–40 mm long overall. Palea reflexed at apex, lanceolate, 0.75 length of lemma, coriaceous, 10 -veined, without keels. Palea apex divided to base, acuminate.

**Flower and Fruit.** Lodicules 3, lanceolate, 11 mm long, scarious, veined, obtuse or acute. Anthers 6, 4–5 mm long. Filaments united in a tube. Stigmas 3, papillose. Caryopsis with adherent pericarp, linear, biconvex.

$N = 11$  (1 ref TROPICOS).  $2n = 20$  (1 ref TROPICOS).

**Distribution (TDWG). Continent.** North America, South America.

**Country /Province /State.** Mexico. Mesoamerica, Northern South America, Western South America. Belize, Costa Rica, Guatemala, Honduras, Nicaragua, Panama. Venezuela. Ecuador, Peru. Chiapas, Tabasco.

### **Streptochaeta spicata** Schrad. ex Nees. *Agrost. Bras.* 537. (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: HT: *Maximilian s.n.*, Dec 1816, Brazil: Bahia: im Urwald an der Estrada de Minas, Capitain Filisberto [Fazenda of Felisberto Caldeira Brant, Marques de Barbacena, near Ilheus], (B (fragm., US); IT: BR, LE).

**Illustrations (Books):** A.S.Hitchcock, *Manual of the Grasses of the West Indies* (1936) (24, Fig. 4), S.A.Renouze, *The Grasses of Bahia*, 1984 (37, Fig.11), E.G.Nicora, *Los Generos de Gramineas de America Austral* (1987) (122, Fig. 25), L.B. Smith, D.C. Wasshausen, R.M. Klein *Flora Illustrada Catarinensis Gramineas* (1981–1982) (163, Fig. 34), W.Burger, *Flora Costaricensis* 15, Gramineae: *Fieldiana Botany New Series* 4 (1980) (556, Fig. 208), E.Judziewicz, *Flora of the Guianas*, 187. *Poaceae* (1990) (620, Fig. 107).

**Illustrations (Journals):** *Smithsonian Contributions to Botany* (No. 68 : 31 (1989)), *Ruizia* (13:50, Fig.5d-e (1993)).

**Images:** *Smith. Contr. Bot.* No. 68 : 6 (1989) as ssp. *spicata*.

**Derivation** (Clifford & Bostock 2007): L. *spica*, thorn; -ata, possessing; Inflorescence a spike or spicate panicle.

**Classification.** Subfamily Anomochlooideae. Tribe Streptochaeteae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Cataphylls evident. Rhizomes short, pachymorph. Butt sheaths papery, distinctly ribbed, glabrous or pilose. Culms scandent, 35–105 cm long, 2–4 mm diam., without nodal roots or rooting from lower nodes (sometimes). Culm-internodes thin-walled. Culm-nodes glabrous to pubescent. Lateral branches lacking or sparse. Leaves cauline. Leaf-sheaths ribbed, glabrous on surface or pubescent (sometimes), outer margin glabrous or hairy (near summit). Leaf-sheath oral hairs bearded to setose. Leaf-sheath auricles absent or erect, 1–9 mm long. Ligule a fringe of hairs. Leaf-blade base simple to broadly rounded, with a brief petiole-like connection to sheath. Leaf-blades lanceolate to ovate, 11–16(–20) cm long, 3–5(–6) mm wide. Leaf-blade venation with distinct cross veins. Leaf-blade apex acuminate.

**Inflorescence.** Inflorescence composed of racemes, terminal and axillary. Racemes 1, single, erect, paucilateral, 9–16 cm long, bearing 5–19 fertile spikelets on each. Rhachis angular, pubescent on surface. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, 0.9–1.3 mm long.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 10–23 mm long, falling entire.

**Glumes.** Glumes several, 5 empty glumes, whorled, similar.

**Florets.** Fertile lemma lanceolate, 17–28 mm long, herbaceous or indurate, without keel, 7–13 -veined, more than 3-veined. Lemma apex attenuate, awned, 1 -awned. Principal lemma awn coiled, flat below, 30–90 mm long overall. Palea present, reflexed at apex, tightly convolute around flower, 0.6 length of lemma, coriaceous, without keels. Palea apex divided to base, acuminate.

**Flower and Fruit.** Lodicules 3, lanceolate, 14–23(–30) mm long, scarious, veined, acute. Anthers 6. Filaments united in a tube (at the base). Stigmas 3. Caryopsis with adherent pericarp, linear or lanceolate, biconvex. Hilum linear, 0.7 length of caryopsis.

**Distribution (TDWG). Continent.** North America, South America.

**Country /Province /State.** Mexico. Gulf (Mexico), Southwest Mexico, Southeast Mexico. **Mesoamerica, Caribbean, Northern South America, Western South America, Brazil.** Belize, Costa Rica, Guatemala, Honduras, Nicaragua, Panama. Trinidad-Tobago. Venezuela. Bolivia, Colombia, Ecuador, Peru. Brazil West Central, Brazil Northeast, Brazil South.

**TDWG4.** Amazonas, Acre, Rondonia, Mato Grosso, Bahia, Ceara, Rio Grande do Norte, Paraiba, Penambuco, Alagoas, Sergipe, Minas Gerais, Rio de Janeiro, Espirito Santo, Sao Paulo Parana, Catarina, Rio Grande do Sul. Misiones. Veracruz. Oaxaca. Chiapas.

### **Streptogyna americana** C.E.Hubb. *Hook. Ic. Pl.* vi. 1. 3572, p. 5 (1956).

**Accepted by:** R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

**TYPE** from Surinam. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *B. Maguire* 23975, 26 Jun 1944, Surinam: Saramacca River headwaters, frequent, forest floor, along trail to Coppenam River, rear of village Pakka Pakka (K; IT: F, MO-1313129, NY, U).

**Illustrations (Books):** S.A.Renvoize, *Gramineas de Bolivia* (1998) (63, Fig 11), S.A.Renvoize, *The Grasses of Bahia*, 1984 (34, Fig.10), J.A.Steyermark et al, *Flora of the Venezuelan Guayana* Vol. 8 (2004) (281, Fig. 227), W.Burger, *Flora Costaricensis* 15, Gramineae: *Fieldiana Botany New Series* 4 (1980) (557, Fig 209), E.Judziewicz, *Flora of the Guianas*, 187. *Poaceae* (1990) (623, Fig 108).

**Illustrations (Journals):** *Ruizia* (13:50, Fig.5f-h (1993)).

**Derivation** (Clifford & Bostock 2007): L. -ana, indicating location. From North or South America.

**Classification.** Subfamily Ehrhartoideae. Tribe: Streptogyneae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Rhizomes absent. Culms erect, 60–150 cm long. Ligule an ciliate membrane, 1–2 mm long, pubescent on abaxial surface, erose. Leaf-blade base with a false petiole. Leaf-blades lanceolate, 30–60 cm long, 8–16(–24) mm wide. Leaf-blade venation with distinct cross veins. Leaf-blade apex acuminate.

**Inflorescence.** Inflorescence composed of racemes. Racemes 1, single, unilateral, 15–50 cm long. Rhachis semiterete, pubescent on surface. Spikelet packing broadside to rhachis, regular, 1 -rowed. Spikelets appressed, solitary. Fertile spikelets pedicelled. Pedicels present, 1–2 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 linear or oblong, laterally compressed, 20–30 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes terete, springy and forming a hair trap, 3–5 mm long, eventually visible between lemmas. Floret callus elongated, glabrous, obtuse.

**Glumes.** Glumes persistent, similar, shorter than spikelet, thinner than fertile lemma. Lower glume lanceolate, 3–10 mm long, 0.2–0.5 length of upper glume, scarious, dark brown, 1-keeled, 3 -veined. Lower glume apex acute. Upper glume lanceolate, 17–23 mm long, 1 length of adjacent fertile lemma, scarious, dark brown, 1-keeled, 9 -veined. Upper glume lateral veins with cross-veins. Upper glume apex acute, mucronate.

**Florets.** Fertile lemma oblong, subterete, 18–22 mm long, coriaceous, dark brown, without keel, 9 -veined, more than 3-veined. Lemma surface glabrous. Lemma margins convolute, covering most of palea. Lemma apex dentate, truncate, awned, 1 -awned. Principal lemma awn from a sinus, 15–25 mm long overall, limb scaberulous. Palea keels contiguous above a sulcus. Apical sterile florets resembling fertile though underdeveloped.

**Flower and Fruit.** Lodicules 3, oblanceolate, 1.5–2.5 mm long, membranous, veined, ciliate, obtuse. Anthers 2. Stigmas 3, terminally exerted and tangled, papillose. Ovary glabrous. Caryopsis with adherent pericarp, linear, isodiametric, biconvex, 15 mm long, glabrous, apex rostrate. Embryo 0.1 length of caryopsis. Hilum linear, 1 length of caryopsis.

**Distribution (TDWG). Continent.** North America, South America.

**Country /Province /State.** Mexico. Gulf (Mexico), Southeast Mexico. **Mesoamerica, Caribbean, Northern South America, Western South America, Brazil.** Belize, Costa Rica, Guatemala, Nicaragua, Panama. Trinidad-Tobago. French Guiana, Guyana, Surinam, Venezuela. Bolivia, Colombia, Peru. Brazil West Central, Brazil Northeast, Brazil North.

**TDWG4.** Roraima, Para, Amapa, Amazonas, Acre, Rondonia, Mato Grosso, Bahia. Veracruz. Chiapas.

**Streptogyna crinita** Beauv. *Agrost.* 80. t. 16. f. 8. (1812).

**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 Nigeria. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *Beauvois s.n.*, 1786–1788, Nigeria (G; IT: P, US-79429). Only "beuv. 9" and "cayenne" appear on the US fragment specimen. This is possibly type fragment material.

**Illustrations (Books):** H.Jacques-Felix, *Les Graminees d'Afrique tropicale* (1962) (121, Fig. 46), F.N.Hepper, *F.W.T.A.* 3(2) (1972) (366, Fig.421), R.M.Polhill, F.T.E.A., *Gramineae*, S.Phillips, *Poaceae* (Gramineae) in I.Hedberg & S.Edwards, *Flora of Ethiopia and Eritrea* (1995) (9, Fig 4), A.S.Hitchcock, *Manual of the Grasses of the West Indies* (1936) (56, Fig. 30), G.Harling & C.Persson, *Flora of Ecuador* (2006) (1(1970):22, Fig. 8 as *Streptogyne*).

**Derivation** (Clifford & Bostock 2007): L. with long hair. Hairy as of leaf-blades or awns invested in long weak hairs.

**Classification.** Subfamily Ehrhartoideae. Tribe: Streptogyneae.

**Habit, Vegetative Morphology.** Perennial. Rhizomes elongated, scaly. Culms erect, 30–150 cm long. Ligule an eciliate membrane, 1–2 mm long, pubescent on abaxial surface, erose. Leaf-blade base with a false petiole. Leaf-blades lanceolate, 10–40 cm long, 10–35 mm wide. Leaf-blade venation with distinct cross veins. Leaf-blade apex acuminate.

**Inflorescence.** Inflorescence composed of racemes. Racemes 1, single, unilateral, 11–30 cm long. Rhachis semiterete, pubescent on surface. Spikelet packing broadside to rhachis, regular, 1 -rowed. Spikelets appressed, solitary. Fertile spikelets pedicelled. Pedicels present, 1–2 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 linear or oblong, laterally compressed, 20–30 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes terete, springy and forming a hair trap, 1.5–2.5 mm long, eventually visible between lemmas. Floret callus elongated, pubescent, obtuse.

**Glumes.** Glumes persistent, similar, shorter than spikelet, thinner than fertile lemma. Lower glume lanceolate, 3–10 mm long, 0.2–0.5 length of upper glume, scarious, dark brown, 1-keeled, 3 -veined. Lower glume apex acute. Upper glume lanceolate, 17–23 mm long, 1 length of adjacent fertile lemma, scarious, dark brown, 1-keeled, 17 -veined. Upper glume lateral veins with cross-veins. Upper glume apex acute, mucronate.

**Florets.** Fertile lemma oblong, subterete, 18–22 mm long, coriaceous, dark brown, without keel, 9 -veined, more than 3-veined. Lemma surface pilose, hairy below. Lemma margins convolute, covering most of palea. Lemma apex dentate, truncate, awned, 1 -awned. Principal lemma awn from a sinus, 15–25 mm long overall, limb scaberulous. Palea keels contiguous above a sulcus. Apical sterile florets resembling fertile though underdeveloped.

**Flower and Fruit.** Lodicules 3, oblanceolate, 1.5–2.5 mm long, membranous, veined, ciliate, obtuse. Anthers 2. Stigmas 2, terminally exerted and tangled, retrorsely barbellate. Ovary pubescent on apex. Caryopsis with adherent pericarp, linear, isodiametric, biconvex, 15 mm long, hairy at apex, apex rostrate. Embryo 0.1 length of caryopsis. Hilum linear, 1 length of caryopsis.

**Distribution (TDWG). Continent.** Africa, Tropical Asia, South America.

**Country /Province /State.** **West tropical Africa, West-central tropical Africa, Northeast tropical Africa, East tropical Africa, South tropical Africa.** Ghana, Guinea-Bissau, Ivory Coast, Liberia, Nigeria, Senegal, Sierre Leone. Cabinda, Gabon, Annobon, Principe & Sao Tome, Bioko, DRC. Ethiopia (inc. Eritrea), Sudan. Tanzania, Uganda. Angola. **Indian Subcontinent.** India, Sri Lanka. **Caribbean.** Trinidad-Tobago.

**TDWG4.** Kerala.

**Streptolophus sagittifolius** D.K.Hughes. *Kew Bull.* 1923, 178. (1923).

**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: HT: *J. Gossweiler s.n.*, 12 Jun 1923, Angola (K; IT: US-1161832).

**Illustrations (Books):** No illustration found (BKS).



**Derivation** (Clifford & Bostock 2007): *L. sagittus*, shaped like an arrow-head; folium, leaf. With leaf-blades resembling an arrow-head.

**Classification.** Subfamily Panicoideae. Tribe: Paniceae. Subtribe SETARIINAE.

**Habit, Vegetative Morphology.** Annual. Culms decumbent, 100–200 cm long, rooting from lower nodes. Ligule a ciliolate membrane. Leaf-blade base sagittate, with a false petiole. Leaf-blades lanceolate, 9–10 cm long, 15–20 mm wide. Leaf-blade apex acuminate.

**Inflorescence.** Inflorescence a panicle. Panicle spiciform, linear, interrupted (clusters distant), tapering above, 12 cm long, 2–3 cm wide. Primary panicle branches accrescent to a central axis, with sessile scars on axis. Panicle axis angular, bearing deciduous spikelet clusters. Spikelets subtended by an involucre. Fertile spikelets sessile, 3–7 in the cluster. Involucre composed of bristles, cuneate, 10–20 mm long, base bluntly stipitate. Involucral bristles deciduous with the fertile spikelets, branched, numerous, flattened, rigid, spinose.

**Fertile Spikelets.** Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets lanceolate, dorsally compressed, 3.5 mm long, falling entire, deciduous with accessory branch structures.

**Glumes.** Glumes similar, shorter than spikelet, thinner than fertile lemma. Lower glume oblate, 0.6 mm long, 0.2 length of spikelet, hyaline, without keels, 0 -veined. Lower glume lateral veins absent. Lower glume apex obtuse. Upper glume oblate, 1 mm long, 0.4 length of adjacent fertile lemma, hyaline, without keels, 3 -veined. Upper glume apex obtuse.

**Florets.** Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret ovate, 1 length of spikelet, membranous, 5 -veined, scabrous, acute. Fertile lemma elliptic, 2.5 mm long, cartilaginous, without keel, 5 -veined, more than 3-veined. Lemma margins flat. Lemma apex acute. Palea cartilaginous.

**Distribution (TDWG). Continent.** Africa.

**Country /Province /State.** South tropical Africa. Angola.

### **Streptostachys asperifolia** Desv. *Nouv. Bull. Soc. Philom.* ii. 190 (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).

**TYPE** from French Guiana. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: HT: *Desvaux s.n.*, French Guiana (P; IT: US (fragm.)).

**Illustrations (Books):** S.A.Renvoize, *The Grasses of Bahia*, 1984 (110, Fig. 39), J.A.Steyermark et al, *Flora of the Venezuelan Guayana* Vol. 8 (2004) (282, Fig. 228), E.Judziewicz, *Flora of the Guianas*, 187. *Poaceae* (1990) (626, Fig. 109).

**Derivation** (Clifford & Bostock 2007): *L. asper*, rough; folium, leaf. Leaf-blades rough.

**Classification.** Subfamily Panicoideae. Tribe: Paspaleae. Subtribe PASPALINAE.

**Habit, Vegetative Morphology.** Perennial, caespitose. Culms 35–80 cm long. Ligule a fringe of hairs. Leaf-blade base cordate or amplexicaul. Leaf-blades lanceolate, 14–25 cm long, 10–14 mm wide. Leaf-blade surface pilose, hairy abaxially. Leaf-blade margins tuberculate-ciliate. Leaf-blade apex acute or acuminate.

**Inflorescence.** Inflorescence a panicle. Panicle open, oblong or obovate, 5–13 cm long, contracted about primary branches. Primary panicle branches ascending or spreading, simple. Panicle branches stiff, straight, pubescent in axils. Spikelets in pairs. Fertile spikelets pedicelled, 2 in the cluster. Pedicels present, linear or oblong, 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 oblong, with truncate base, dorsally compressed, obtuse, 3.5–4.5(–5) mm long, falling entire. Spikelet callus toroidal, incorporating lowest rhachilla internode with adnate lower glume or supplemented by thickened base of upper glume. Rhachilla internodes elongated between glumes or elongated below basal sterile floret. Rhachilla elongation stout.

**Glumes.** Glumes dissimilar, exceeding apex of florets, thinner than fertile lemma. Lower glume ovate, 0.66–0.8 length of spikelet, membranous, without keels, 5 -veined. Lower glume surface pubescent. Lower glume apex acute. Upper glume ovate, 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, obtuse. Fertile lemma ovate, 3.5–4.5 mm long, indurate, without keel. Lemma margins involute. Lemma apex obtuse, pubescent. Palea 1 length of lemma, indurate, without keels.

**Flower and Fruit.** Lodicules 2, cuneate, fleshy. Caryopsis with adherent pericarp, ellipsoid, dorsally compressed, 2.5–3 mm long. Embryo 0.4 length of caryopsis. Hilum linear, 1 length of caryopsis.

*N* = 10.

**Distribution (TDWG). Continent.** South America.

**Country /Province /State.** Caribbean, Northern South America, Brazil. Trinidad-Tobago. French Guiana, Guyana, Surinam, Venezuela. Brazil Northeast.

**TDWG4.** Roraima, Para, Amapa, Goias, Bahia, Maranhao, Piaui.

**Streptostachys lanciflora** Oliveira & Longhi-Wagner. *Kew Bull.* 62: 494 (2007).

**TYPE** from Brazil. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Brazil: Bahia: Morro do Chapéu, 31 Mar 1996, H.P. Bautista & A.C. Sarmiento 1115 (HT: HUEFS; IT: HRB).

**Illustrations (Books):** No illustration found (BKS).

**Classification.** Subfamily Panicoideae. Tribe: Paspaleae. Subtribe PASPALINAE.

**Habit, Vegetative Morphology.** Perennial. Rhizomes short. Butt sheaths persistent and investing base of culm, with compacted dead sheaths. Culms 40–65 cm long, without nodal roots or rooting from lower nodes. Culm-internodes elliptical in section, 0.7–1.5 cm long, distally pilose. Culm-nodes pubescent. Leaf-sheaths mostly shorter than adjacent culm internode, pilose or hirsute. Ligule a fringe of hairs, 0.2–0.4 mm long. Collar pilose. Leaf-blade base cordate or amplexicaul. Leaf-blades lanceolate, 3–6.5 cm long, 4–7 mm wide. Leaf-blade midrib indistinct. Leaf-blade surface hirsute, hairy on both sides. Leaf-blade apex acute.

**Inflorescence.** Inflorescence a panicle. Panicle open, linear, 4–20 cm long, contracted about primary branches. Primary panicle branches ascending, indistinct the panicle almost racemose. Spikelets in pairs. Fertile spikelets pedicelled, 2 in the cluster. Pedicels present, clavate, unequal, 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 lanceolate, with truncate base, dorsally compressed, 6–8 mm long, 1–2 mm wide, falling entire. Spikelet callus toroidal, incorporating lowest rhachilla internode with adnate lower glume and supplemented by thickened base of upper glume. Rhachilla internodes elongated between glumes and elongated below basal sterile floret. Rhachilla elongation stout.

**Glumes.** Glumes dissimilar, reaching apex of florets, thinner than fertile lemma. Lower glume lanceolate, 6.2–7.1 mm long, 0.9 length of spikelet, membranous, without keels, 3–5 -veined. Lower glume lateral veins without connecting veins. Lower glume surface pilose. Lower glume apex acute. Upper glume lanceolate, 6–7.8 mm long, 1 length of spikelet, membranous, without keels, 5–7 -veined. Upper glume lateral veins parallel at apex. Upper glume surface pilose. Upper glume apex acute or acuminate.

**Florets.** Basal sterile florets 1, male or barren, with palea. Lemma of lower sterile floret similar to fertile lemma, ovate, 6–8 mm long, 1 length of spikelet, membranous, 5–7 -veined, without cross-veins, pilose, acute. Fertile lemma ovate, 4.7–5.8 mm long, indurate, shiny, without keel, 5 -veined, more than 3-veined. Lemma surface papillose. Lemma margins involute. Lemma apex pubescent. Palea indurate, without keels.

**Flower and Fruit.** Lodicules 2. Caryopsis with adherent pericarp, oblong, 3 mm long. Hilum linear, 1 length of caryopsis.

**Distribution (TDWG). Continent.** South America.

**Country /Province /State.** Brazil. Brazil Southeast.

**Streptostachys robusta** S.A. Renvoize. *Kew Bull.*, 39(1): 182 (1984).

**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: HT: *Calderón et al.* 2443, 21 May 1976, Brazil: Bahia: Mun. Ilheus, 16 km SW of Olivença, toward Vila Brasil (CEPEC; IT: US).

**Illustrations (Books):** S.A. Renvoize, *The Grasses of Bahia*, 1984.

**Derivation** (Clifford & Bostock 2007): *L. robust.* Culms tall, or leaf-blades or spikelets large.

**Classification.** Subfamily Panicoideae. Tribe: Paspaleae. Subtribe PASPALINAE.

**Habit, Vegetative Morphology.** Perennial. Culms erect, robust, 180–200 cm long. Culm-nodes black. Ligule a fringe of hairs or absent. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades lanceolate, 23–38 cm long, 20–40 mm wide. Leaf-blade apex acute.

**Inflorescence.** Inflorescence composed of racemes. Racemes 10–15, borne along a central axis, in several whorls, straight, 14–24 cm long. Central inflorescence axis 10 cm long. Rhachis angular, scabrous on surface. Spikelet packing distant. Spikelets in pairs. Fertile spikelets sessile and pedicelled. Pedicels present, 2–3 mm long, scabrous.

**Fertile Spikelets.** Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret

male or barren, the upper fertile. Spikelets ovate, dorsally compressed, 5–6 mm long, falling entire. Spikelet callus square.

**Glumes.** Glumes one the lower absent or obscure, shorter than spikelet, thinner than fertile lemma. Upper glume ovate, 0.66–0.75 length of spikelet, membranous, without keels, 5 -veined. Upper glume surface puberulous.

**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, puberulous. Palea of lower sterile floret hyaline. Fertile lemma elliptic, 5–6 mm long, indurate, without keel. Lemma margins involute. Palea 1 length of lemma, indurate, without keels.

**Flower and Fruit.** Caryopsis with adherent pericarp.

**Distribution (TDWG). Continent.** South America.

**Country /Province /State. Brazil.** Brazil Northeast.

**TDWG4.** Bahia.

### **Stypeiochloa catherineana** Cope & Ryves. *Kew Bull.* 58(3): 739 . (2003).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online.

**TYPE** from Angola. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Angola: place and date of collection unknown, *Gossweiler s.n.* (HT: BM).

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): L. *-ana*, indicating connection. In honor of Ann Catherine Ryves (1929-) English painter.

**Classification.** Subfamily Arundinoideae. Tribe: Arundineae.

**Habit, Vegetative Morphology.** Perennial, caespitose, clumped densely. Culms erect, 30–60 cm long. Ligule a fringe of hairs. Leaf-blades filiform, involute, 1.5–14 cm long, 1.5–2 mm wide, stiff.

**Inflorescence.** Inflorescence a panicle. Panicle open, elliptic or oblong, dense, 5–6 cm long. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, filiform.

**Fertile Spikelets.** Spikelets comprising 5–6 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets ovate, laterally compressed, 10 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus bearded, obtuse.

**Glumes.** Glumes persistent, similar, shorter than spikelet, similar to fertile lemma in texture. Lower glume lanceolate, 7–8.5 mm long, 0.9 length of upper glume, 1-keeled, 1 -veined. Lower glume lateral veins absent. Lower glume apex acute or acuminate. Upper glume lanceolate, 8–9.5 mm long, 1.1–1.3 length of adjacent fertile lemma, 1-keeled, 1 -veined. Upper glume lateral veins absent. Upper glume apex acuminate.

**Florets.** Fertile florets decreasing in size upwards. Fertile lemma oblong, 7–7.5 mm long, membranous, keeled. Lemma midvein ciliate, hairy below. Lemma margins ciliate, hairy below. Lemma apex dentate, 2 -fid, awned, 1 -awned. Principal lemma awn from a sinus, 2 mm long overall. Apical sterile florets resembling fertile though underdeveloped.

**Distribution (TDWG). Continent.** Africa.

**Country /Province /State. South tropical Africa.** Angola.

### **Stypeiochloa gynoglossa** (Goossens) de Winter. *Bothalia*, ix. 136 (1966).

**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:** *Crinipes gynoglossa* Gooss., *Kew Bull.* 1934: 200 (1934). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: South Africa, Kaapsche Hoop: *Pole-Evans 1022* (K iso).

**Illustrations (Books):** G.V.Pope et al., *Flora Zambesiaca* 10 (2(1999):5, t.2), L.K.A. Chippindall, *Grasses and Pastures of South Africa* (1955) (124, Fig 96 as *Crinipes*), G.E.Gibbs Russell et al, *Grasses of Southern Africa* (1990) (330, Fig 212).

**Derivation** (Clifford & Bostock 2007): Gk. *gyne*, woman; *glossa*, tongue. In addition to the two styles the apex of the gynoeceum bears a deltoid appendage that may be likened to a tongue.

**Classification.** Subfamily Arundinoideae. Tribe: Arundineae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Butt sheaths woolly, persistent and investing base of culm, with fibrous dead sheaths. Culms erect, 10–70 cm long. Leaves mostly basal. Ligule a fringe of hairs. Leaf-blades filiform, involute, 10–15 cm long, 1.5–2 mm wide. Leaf-blade surface ribbed. Leaf-blade apex pungent.

**Inflorescence.** Inflorescence a panicle. Panicle contracted, elliptic, 2–8.5 cm long. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, filiform.

**Fertile Spikelets.** Spikelets comprising 3–6 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets ovate, laterally compressed, 5–7 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus bearded, obtuse. Floret callus hairs 0.25 length of lemma.

**Glumes.** Glumes persistent, similar, shorter than spikelet, similar to fertile lemma in texture. Lower glume lanceolate, 0.75 length of upper glume, 1-keeled, 1 -veined. Lower glume lateral veins absent. Lower glume apex acuminate, awned, 1 -awned, awn 1 mm long. Upper glume ovate, 0.75 length of adjacent fertile lemma, 1-keeled, 1–3 -veined. Upper glume apex acuminate, awned, 1 -awned, awn 1 mm long.

**Florets.** Fertile lemma oblong, 3.5–4.5 mm long, membranous, keeled, 3–5 -veined, 0–3 -veined or more than 3-veined. Lemma apex dentate, 2 -fid, with lanceolate lobes, awned, 1 -awned. Principal lemma awn from a sinus, 1–1.5 mm long overall. Palea 1 length of lemma, 2 -veined. Palea apex with excurrent keel veins. Apical sterile florets resembling fertile though underdeveloped.

**Flower and Fruit.** Lodicules 2, cuneate, fleshy, glabrous.

**Distribution (TDWG).** Continent. Africa.

**Country /Province /State.** South tropical Africa, Southern Africa. Mozambique, Zimbabwe. Mpumalanga, Swaziland, Free State, Kwazulu-Natal, Eastern Cape.

**Stypeiochloa hitchcockii** (A.Camus) Cope. *Kew Bull.* 58(3): 741 (2003).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

**TYPE** from Madagascar. **Basionym or Replaced Name:** *Redfieldia hitchcockii* A. Camus, *Bull. Soc. Bot. France* 73: 1024 (1926). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: LT: *Perrier 12942*, 8, Madagascar (K; ILT: P). LT designated by Cope, *Kew Bull.* 58: 741 (2003).

**Recent Synonyms:** *Redfieldia hitchcockii* A.Camus, *Bull. Soc. Bot. France* 63: 1024 (1926).

**Illustrations (Books):** J.Bosser, *Graminees des Paturage et des Cultures a Madagascar* (1969) (135, Fig 44 as *Redfieldia*).

**Illustrations (Journals):** *Kew Bulletin* (58: Fig.1 (2003)).

**Derivation** (Clifford & Bostock 2007): in honor of Albert Spear Hitchcock (1865–1935), United States agrostologist.

**Classification.** Subfamily Arundinoideae. Tribe: Arundineae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Butt sheaths woolly, persistent and investing base of culm, with fibrous dead sheaths. Culms erect, 10–70 cm long. Leaves mostly basal. Ligule a fringe of hairs. Leaf-blades filiform, involute, 10–15 cm long, 1.5–2 mm wide. Leaf-blade surface ribbed. Leaf-blade apex pungent.

**Inflorescence.** Inflorescence a panicle. Panicle open, ovate, 6–12 cm long. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, filiform.

**Fertile Spikelets.** Spikelets comprising 2 fertile florets, without 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 ovate, laterally compressed, 5–6 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus bearded, obtuse. Floret callus hairs 0.25 length of lemma.

**Glumes.** Glumes persistent, similar, shorter than spikelet, similar to fertile lemma in texture. Lower glume lanceolate, 0.75 length of upper glume, 1-keeled, 1 -veined. Lower glume lateral veins absent. Lower glume apex acuminate, awned, 1 -awned, awn 1 mm long. Upper glume ovate, 0.5–0.75 length of adjacent fertile lemma, 1-keeled, 1–3 -veined. Upper glume apex acuminate, awned, 1 -awned, awn 1 mm long.

**Florets.** Fertile lemma oblong, 3.5–4 mm long, membranous, keeled, 3 -veined, 0–3 -veined. Lemma apex dentate, 2 -fid, with triangular lobes, awned, 1 -awned. Principal lemma awn from a sinus, 1–2.5 mm long overall. Palea 1 length of lemma, 2 -veined. Palea apex with excurrent keel veins. Apical sterile florets resembling fertile though underdeveloped.

**Flower and Fruit.** Lodicules 2, cuneate, fleshy, glabrous.

**Distribution (TDWG).** Continent. Africa.

**Country /Province /State.** Western Indian ocean. Madagascar.

**Sucrea maculata** T.R. Soderstrom. *Brittonia*, 33(2): 205 (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 Brazil. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Brazil: Rio de Janeiro: rio de Janeiro; Serra de Bica prope Cascadura, 1886, *Schwacke s.n.* (HT: RB-46717).

**Illustrations (Books):** No illustration found (BKS).

**Images:** E.J.Judziewicz, E.J., *American Bamboos* (1999);

**Derivation** (Clifford & Bostock 2007): *L. macula*, spot; -atum, possessing. Culms and leaf-sheaths spotted.

**Classification.** Subfamily Bambusoideae. Tribe: Olyreae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Cataphylls evident. Rhizomes short. Culms erect, 35 cm long, without nodal roots. Culm-internodes ridged. Culm-nodes constricted, brown or black, glabrous to pubescent. Leaves cauline, 4–8 per branch. Leaf-sheaths narrower than blade at the collar, ribbed, papillose, pilose. Ligule a ciliate membrane, 0.2 mm long. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades ascending to drooping, triangular or ovate, 6–7 cm long, 2–2.5 mm wide. Leaf-blade venation with distinct cross veins. Leaf-blade apex acute. Monoecious, with male and female spikelets in the same inflorescence.

**Inflorescence.** Synflorescence on a specialized culm bearing a single leaf-blade or on a separate leafless culm.

Inflorescence a panicle. Peduncle pubescent above. Panicle open, pyramidal, loose, 15 cm long, 5 cm wide. Primary panicle branches whorled at lower nodes, 7–8 cm long. Panicle branches hispid. Sexes segregated, on bisexual branches, with male below. Spikelets solitary to in pairs. Fertile spikelets pedicelled. Male spikelets pedicelled. Pedicels present, ciliate (short).

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets ovate, dorsally compressed, 10 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes deciduous, similar, exceeding apex of florets, thinner than fertile lemma to similar to fertile lemma in texture. Lower glume ovate, 9–10 mm long, 1 length of upper glume, firmer on margins (cartilaginous), without keels, 5 -veined. Lower glume lateral veins with cross-veins. Lower glume surface pubescent. Lower glume margins eciliate. Lower glume apex acuminate, awned (awn tip), 1 -awned. Upper glume ovate, 1 mm long, 1.2 length of adjacent fertile lemma, with cartilaginous margins, without keels, 3 -veined. Upper glume lateral veins with cross-veins. Upper glume surface pubescent. Upper glume apex attenuate.

**Florets.** Fertile florets bisexual. Fertile lemma elliptic to ovate, 7 mm long, herbaceous to indurate, without keel, 5 -veined, more than 3-veined. Lemma lateral veins with cross-veins. Lemma surface pitted. Lemma margins covering most of palea. Palea 0.9–1 length of lemma, membranous or indurate, 2 -veined, without keels.

**Flower and Fruit.** Lodicules 3, cuneate. Stigmas 2. Hilum linear.

Male spikelets distinct from female, linear, 7–10 mm long, glabrous. Male spikelet glumes absent. Male spikelet lemma 3 -veined, muticous to awned.

**Distribution (TDWG). Continent.** South America.

**Country /Province /State. Brazil.** Brazil Northeast, Brazil Southeast.

Minas Gerais, Rio de Janeiro, Espirito Santo.

**Sucrea monophylla** T.R. Soderstrom. *Brittonia*, 33(2): 200 (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 Brazil. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *Cleofé E. Calderón* 2045, 16 Jan 1968, Brazil: Bahia: Município Itabuna: Ferradas, Fazenda Aberta Grande (ca. 14°47'21"S, 39°16'36"W), planta de 30–80 cm, abundante en lugares un poco abiertas del bosque, la mayoría de las plantas con dos inflorescencias, hojas discoloras, envés blanco-ceríceo, de posición casi horizontal, floración muy abundante (CEPEC; IT: B (photo, USJ), K, LE, MO-2816641, NY, P, RB, US).

**Illustrations (Books):** S.A.Renvoize, *The Grasses of Bahia*, 1984 (28, Fig.7), E.J.Judziewicz et al, *American Bamboos* (1999) (317, Fig. 194).

**Derivation** (Clifford & Bostock 2007): Gk. monos, one; phyllon, leaf. Mature culm producing a single leaf.

**Classification.** Subfamily Bambusoideae. Tribe: Olyreae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Rhizomes short. Culms 50–100 cm long, without nodal roots. Culm-nodes black. Lateral branches lacking. Leaves cauline, 1 per branch. Ligule absent. Leaf-blade base with a false petiole. Leaf-blades elliptic, 20–38 cm long, 40–100 mm wide. Leaf-blade venation with distinct cross veins. Leaf-blade apex acute. Monoecious, with male and female spikelets in the same inflorescence.

**Inflorescence.** Synflorescence on a specialized culm bearing a single leaf-blade or on a separate leafless culm.

Inflorescence a panicle. Peduncle pilose above. Panicle open, pyramidal, 8–17 cm long, 8–10 cm wide. Primary panicle branches whorled at lower nodes, 5–10 cm long. Panicle branches pubescent. Sexes segregated, on bisexual branches, with male below. Spikelets solitary. Fertile spikelets pedicelled. Male spikelets pedicelled. Pedicels present, linear, tip pyriform.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets ovate, dorsally compressed, 6.5–8.5 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes deciduous, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume ovate, 1 length of upper glume, membranous, firmer on margins, without keels, 5 -veined. Lower glume lateral veins with cross-veins. Lower glume surface concave. Lower glume apex acuminate, awned, awn 2 mm long. Upper glume ovate, 1.25 length of adjacent fertile lemma, membranous, with cartilaginous margins, without keels, 3 -veined. Upper glume lateral veins with cross-veins. Upper glume surface pubescent. Upper glume apex acuminate.

**Florets.** Fertile florets female. Fertile lemma elliptic, 5.7 mm long, indurate, pallid, without keel, 5 -veined, more than 3-veined. Lemma surface punctate. Lemma margins covering most of palea. Lemma apex acute. Palea 1.1 length of lemma, indurate, without keels.

**Flower and Fruit.** Lodicules 3, cuneate, 1 mm long, veined. Anthers 3, 4 mm long. Caryopsis with adherent pericarp. Hilum linear. Endosperm farinose.

Male spikelets distinct from female, 1 flowered, separately deciduous, linear, 5–7 mm long. Male spikelet glumes absent. Male spikelet lemma 3 -veined, awned.

*N* = 11 (1 ref TROPICOS).

**Distribution (TDWG). Continent.** South America.

**Country /Province /State. Brazil.** Brazil Northeast.

**TDWG4.** Bahia.

**Sucrea sampaiana** (Hitchcock) T.R. Soderstrom. *Brittonia*, 33(2): 208 (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 Brazil. **Basionym or Replaced Name:** *Olyra sampaiana* Hitchc., *J. Wash. Acad. Sci.* 17(9): 215, f. 1 (1927). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *J. Vidal* 44, 6 Dec 1924, Brazil: Espirito Santo (US-1297351).

**Illustrations (Books):** No illustration found (BKS).

**Derivation** (Clifford & Bostock 2007): L. -ana, indicating connection. In honor of Alberto Josi de Sampaio (1881–1946) Brazilian botanist.

**Classification.** Subfamily Bambusoideae. Tribe: Olyreae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Roots bearing tubers. Cataphylls evident. Rhizomes short. Culms erect, 35 cm long, without nodal roots. Culm-internodes ridged. Culm-nodes constricted, pubescent. Leaves cauline, 2 per branch. Leaf-sheaths narrower than blade at the collar, ribbed, papillose. Ligule a ciliolate membrane, 1–2 mm long. Leaf-blade base broadly rounded, with a brief petiole-like connection to sheath. Leaf-blades ascending to drooping, lanceolate to oblong, 13–15 cm long, 4.5–5 mm wide. Leaf-blade venation with distinct cross veins. Monoecious, with male and female spikelets in the same inflorescence.

**Inflorescence.** Synflorescence on a specialized culm bearing a single leaf-blade or on a separate leafless culm.

Inflorescence a panicle. Peduncle pilose above. Panicle spiciform, oblong, continuous or interrupted, tapering above, 6 cm long, 1 cm wide. Primary panicle branches 0.9–1.2 cm long. Panicle branches hispid. Sexes segregated, on unisexual branches, with male below. Spikelets solitary to in pairs. Fertile spikelets pedicelled. Male spikelets pedicelled. Pedicels present, short.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets ovate, dorsally compressed, 1–7 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes deciduous, similar, exceeding apex of florets, thinner than fertile lemma to similar to fertile lemma in texture. Lower glume elliptic to ovate, 6–7 mm long, 1 length of upper glume, firmer on margins (cartilaginous), without keels, 5 -veined. Lower glume lateral veins with cross-veins. Lower glume surface puberulous to pubescent. Lower glume margins ciliate. Lower glume apex acuminate. Upper glume elliptic to ovate, 6–7 mm long, 1.1 length of adjacent fertile lemma, with cartilaginous margins, without keels, 3

-veined. Upper glume lateral veins with cross-veins. Upper glume surface glabrous to pubescent. Upper glume margins eciliate to ciliate. Upper glume apex attenuate.

**Florets.** Fertile florets bisexual. Fertile lemma elliptic, 5–6 mm long, herbaceous to indurate, pallid, without keel, 5 -veined, more than 3-veined. Lemma lateral veins with cross-veins. Lemma margins covering most of palea, pubescent, hairy above. Palea 1 length of lemma, membranous or indurate, 2 -veined, without keels.

**Flower and Fruit.** Lodicules 3, cuneate. Stigmas 2. Caryopsis 6 mm long, pitted (obscurely). Hilum linear.

Male spikelets distinct from female, lanceolate to elliptic, 3–4 mm long, glabrous. Male spikelet glumes absent. Male spikelet lemma 3 -veined, muticous.

**Distribution (TDWG). Continent.** South America.

**Country /Province /State. Brazil.** Brazil Southeast.

Minas Gerais, Rio de Janeiro, Espirito Santo.

**Suddia sagittifolia** S.A. Renvoize. *Kew Bull.*, 39(3): 455 (1984).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

**TYPE** from Sudan. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *J.M. Lock 82/21*, 21 May 1982, Sudan: Jonglei Prov., Jonglei, Southern Sudan, 360 m, tall perennial grass with rhizomes, forming large monospecific patches among *Cyperus papyrus* and *Vossia cuspidata* in permanently moist and seasonally flooded sites with peaty soils overlying sandy clay, to 3 m tall, *Zehneria minutiflora* is only associated species (K; IT: MO-3439332).

**Illustrations (Books):** N.Feinbrun-Dothan, *Flora Palaestina* 4 (1986) (Pl. 464 as *Cyperus papyrus*).

**Derivation** (Clifford & Bostock 2007): *L. sagittus*, shaped like an arrow-head; folium, leaf. With leaf-blades resembling an arrow-head.

**Classification.** Subfamily Pharoideae. Tribe: Phareae. Tribe: Arundineae.

**Habit, Vegetative Morphology.** Perennial. Cataphylls evident. Rhizomes elongated. Culms erect, 140–300 cm long, 25 mm diam., spongy. Culm-internodes terete. Ligule an eciliate membrane, 3.5–8 mm long, scarious. Leaf-blade base sagittate, with a false petiole, petiole 16–100 cm long. Leaf-blades lanceolate, 22–112 cm long, 35–105 mm wide. Leaf-blade venation slanting obliquely from midrib, with distinct cross veins. Leaf-blade surface scaberulous. Leaf-blade apex acute.

**Inflorescence.** Inflorescence a panicle. Panicle oblong, 24–35 cm long, 4–8 cm wide. Primary panicle branches whorled at lower nodes. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets ovate, laterally compressed, 3.5–4.3 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Lower glume ovate, 3.5–4.3 mm long, 5–7 -veined. Upper glume ovate, 3.5–4.3 mm long, 7–9 -veined.

**Florets.** Fertile lemma 3 -veined, 0–3 -veined.

**Distribution (TDWG). Continent.** Africa.

**Country /Province /State. Northeast tropical Africa.** Sudan.

**Swallenia alexandrae** (Swallen) Soderstr. & H. P. Decker. *Madrono*, xvii. 88 (1963).

**Accepted by:** R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

**TYPE** from USA. **Basionym or Replaced Name:** *Ectosperma alexandrae* Swallen, *J. Wash. Acad. Sci.* 40(1): 19, f. 1 (1950). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *M. Alexander & L. Kellogg 5655*, 24 May 1949, USA: California: Inyo Co.: Eureka Valley (US-1963637). IT: *A.M. Alexander & L. Kellogg 5655*, 24 May 1949, USA: California (MO!).

**Illustrations (Books):** M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 25 *Poaceae*, part 2 (2003) (26).

**Derivation** (Clifford & Bostock 2007): in honor of Annie Montague Alexander (1867–1950), Hawaiian-born United States collector.

**Classification.** Subfamily Chloridoideae. Tribe: Cynodonteae.

**Habit, Vegetative Morphology.** Perennial. Rhizomes elongated. Culms erect, 20–40 cm long. Leaves distichous. Leaf-sheaths longer than adjacent culm internode. Ligule a fringe of hairs, 1 mm long. Leaf-blades 4–14 cm long, 3–6 mm wide, coriaceous, stiff, glaucous. Leaf-blade surface ribbed. Leaf-blade apex pungent.

**Inflorescence.** Inflorescence a panicle. Panicle contracted, linear, 4–10 cm long. Primary panicle branches bearing 1–3 fertile spikelets on each lower branch. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 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 ovate, laterally compressed, 10–15 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes persistent, similar, shorter than spikelet, thinner than fertile lemma. Lower glume elliptic, 9–14 mm long, 1 length of upper glume, membranous, without keels, 7–11 -veined. Lower glume apex acuminate. Upper glume elliptic, 9–14 mm long, 1.1–1.75 length of adjacent fertile lemma, membranous, without keels, 7–11 -veined. Upper glume apex acuminate.

**Florets.** Fertile lemma elliptic, 8 mm long, chartaceous, without keel, 5–7 -veined, more than 3-veined. Lemma midvein ciliate, hairy below. Lemma surface villous, hairy on veins. Lemma apex acute, mucronate. Palea 2 -veined. Palea surface villous, hairy on flanks. Palea apex with excurrent keel veins. Apical sterile florets resembling fertile though underdeveloped.

**Flower and Fruit.** Anthers 3, 3.5 mm long. Caryopsis with adherent pericarp, ellipsoid, 4 mm long. Embryo 0.66 length of caryopsis. Hilum punctiform.

**Distribution (TDWG). Continent.** North America.

**Country /Province /State.** Southwestern USA. California.

**Sylvipoa queenslandica** (C.E.Hubb.) Soreng, Gillespie & Jacobs. *Australian Systematic Botany* 22: 404 (2009).

**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:** *Poa queenslandica* C.E.Hubb., *Kew Bull.* 1934, 449. (1934). T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: Australia: Queensland: ... Spring Cr., near Killarney, on mt. slope, in rain forest, at foot of water-fall amongst basaltic boulders: Mar 1931, *Hubbard 5783* (HT: K; II: BRI).

**Illustrations (Books):** S.W.L.Jacobs, R.D.B.Whalley & D.J.B.Wheeler., *Grasses of New South Wales*, 4th edn (2008) (353), A.Wilson (ed.), *Flora of Australia*, Vol 44A. *Poaceae* (2009) (333, Fig 44).

**Images:** D.Sharp & B.K.Simon, *AusGrass*. Grasses of Australia. CD-Rom Version 1.0. (2002);.

**Derivation** (Clifford & Bostock 2007): L. -ica, belonging to. From Queensland, Australia.

**Classification.** Subfamily Pooideae. Tribe: Poeae.

**Habit, Vegetative Morphology.** Perennial, caespitose, clumped loosely. Rootstock evident. Cataphylls evident. Butt sheaths herbaceous. Basal innovations extravaginal. Culms erect or geniculately ascending, 50–150 cm long, 5–9 -noded. Culm-internodes terete, smooth. Culm-nodes glabrous. Lateral branches lacking or sparse. Leaves cauline. Leaf-sheaths loose, striately veined, smooth, glabrous on surface. Ligule an eciliate membrane, 2–4 mm long, glabrous on abaxial surface, entire or lacerate, truncate. Leaf-blades 20–40 cm long, 4–15 mm wide. Leaf-blade surface smooth or scaberulous, glabrous. Leaf-blade apex acuminate.

**Inflorescence.** Inflorescence a panicle. Peduncle smooth. Panicle open, ovate, 12–30 cm long, 8–16 cm wide. Primary panicle branches spreading, 5–8 -nate, 10–28 cm long. Panicle branches smooth or scaberulous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, 4–8 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 or oblong, laterally compressed, 3–5 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes smooth. Floret callus glabrous.

**Glumes.** Glumes persistent, similar, shorter than spikelet. Lower glume lanceolate or ovate, 1.5–2 mm long, 0.9 length of upper glume, membranous, 1-keeled, 1–3 -veined. Lower glume primary vein scaberulous. Lower glume lateral veins absent or obscure. Lower glume apex obtuse or acute. Upper glume ovate, 2–2.2 mm long, 0.66 length of adjacent fertile lemma, membranous, 1-keeled, 3 -veined. Upper glume primary vein scaberulous. Upper glume apex obtuse or acute.

**Florets.** Fertile lemma oblong, oblong in profile, 2.5–3 mm long, membranous, keeled, 5 -veined, more than 3-veined. Lemma lateral veins prominent. Lemma surface scaberulous, rough on veins, pilose, hairy at base. Lemma apex obtuse or acute. Palea 0.9 length of lemma. Palea keels scaberulous, adorned above. Palea surface scaberulous. Apical sterile florets resembling fertile though underdeveloped.

**Flower and Fruit.** Lodicules 2, membranous. Anthers 3, 1–1.3 mm long. Caryopsis with adherent pericarp, 1.8 mm long. Hilum punctiform.

**Distribution (TDWG). Continent.** Australasia.

**Country /Province /State.** Australia. Queensland, New South Wales.



**TDWG4.** South East. Coast, Tablelands.

**Symplectrodia gracilis** M. Lazarides. *Nuytsia*, 5(2): 276 (1985).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), D.Sharp, D. & B.K.Simon, *AusGrass* (2002).

**TYPE** from Australia. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Australia: Northern Territory: Darwin & Gulf District; c. 7.5 miles SE of Mt. Gilruth; 133.09'E,13.07'S; 28 Feb 1973, *Lazarides 7919* (HT: CANB; IT: BRI, DNA, K, L, MO, US).

**Illustrations (Books):** K.O.Mallett (ed.), *Flora of Australia*, Vol 44B. *Poaceae* (2004) (258, Fig 39).

**Images:** D.Sharp & B.K.Simon, *AusGrass*. Grasses of Australia. CD-Rom Version 1.0. (2002);

**Derivation** (Clifford & Bostock 2007): L. slender. Culms or inflorescences slender.

**Classification.** Subfamily Chloridoideae. Tribe: Cynodonteae.

**Habit, Vegetative Morphology.** Perennial, caespitose, clumped densely. Rhizomes absent. Butt sheaths green, glabrous or pubescent. Culms 75–100 cm long, 3 -noded. Culm-nodes pubescent. Leaf-sheaths pilose. Ligule a fringe of hairs, 0.5–1 mm long. Leaf-blades conduplicate, 7–15 cm long, 1–2 mm wide, coriaceous, stiff. Leaf-blade surface scabrous, rough adaxially. Leaf-blade apex pungent.

**Inflorescence.** Inflorescence a panicle. Panicle open, lanceolate, dense or loose, 7–17 cm long, 1–3 cm wide. Primary panicle branches 1 -nate, simple, 3–5.5 cm long, bearing spikelets almost to the base. Panicle branches angular, pubescent. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, 5–12 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 lanceolate, laterally compressed, 13–15 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus elongated, curved, 1.8–2.5 mm long, pubescent, pungent.

**Glumes.** Glumes persistent, similar, shorter than spikelet, similar to fertile lemma in texture. Lower glume lanceolate, 10–12 mm long, 0.8 length of upper glume, cartilaginous, without keels, 1–3 -veined. Lower glume primary vein scaberulous. Lower glume apex attenuate or setaceously acuminate. Upper glume lanceolate, 12.5–15 mm long, 1.2 length of adjacent fertile lemma, cartilaginous, without keels, 3–5 -veined. Upper glume primary vein scaberulous. Upper glume apex attenuate or setaceously acuminate.

**Florets.** Fertile lemma lanceolate, 10–12 mm long, cartilaginous, without keel, 3 -veined, 0–3 -veined. Lemma midvein eciliate or ciliate, hairy below. Lemma margins eciliate or ciliate. Lemma apex acuminate, awned, 1 -awned. Principal lemma awn 5–8 mm long overall. Palea fused below to rachilla internode, 0.8 length of lemma, cartilaginous, thinner above, 2 -veined. Palea keels scaberulous, adorned above. Palea apex acute. Apical sterile florets 4–5 in number, abscissing from fertile floret, barren, in a clump, lanceolate, 3–6 mm long. Apical sterile lemmas pilose, adorned on margins, lobed, 3 -fid, awned, 3 -awned. Apical sterile lemma awns 8–9 mm long (laterals 5–6mm).

**Flower and Fruit.** Lodicules 2, cuneate, 0.8–1 mm long, fleshy. Anthers 3, 3.5 mm long. Caryopsis with tardily free pericarp, linear, sulcate on hilar side, 4–4.5 mm long. Embryo 0.25 length of caryopsis. Hilum elliptic.

**Distribution (TDWG). Continent.** Australasia.

**Country /Province /State.** Australia. Northern Territory.

**TDWG4.** Darwin & Gulf.

**Symplectrodia lanosa** M. Lazarides. *Nuytsia*, 5(2): 275 (1985).

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), D.Sharp, D. & B.K.Simon, *AusGrass* (2002).

**TYPE** from Australia. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Australia: Northern Territory: Darwin & Gulf District; Mt. Gilruth area; 12.58'S,133.10'E; 2 Jun 1978, *Dunlop 4874* (HT: NT; IT: BRI, CANB, DNA, K, NSW).

**Illustrations (Books):** K.O.Mallett (ed.), *Flora of Australia*, Vol 44B. *Poaceae* (2004) (258, Fig 39).

**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. lana, wool; -osa, abundance. Leaf-sheath woolly.

**Classification.** Subfamily Chloridoideae. Tribe: Cynodonteae.

**Habit, Vegetative Morphology.** Perennial, caespitose, clumped densely. Rhizomes short. Butt sheaths dark brown or red, glabrous or woolly. Culms 180–300 cm long. Culm-nodes pubescent or bearded. Leaf-sheaths glabrous on surface or woolly. Ligule a fringe of hairs, 0.8–1 mm long. Leaf-blades conduplicate, 60–90 cm long, 1–2 mm wide, coriaceous, stiff. Leaf-blade surface scabrous, rough adaxially. Leaf-blade apex pungent.

**Inflorescence.** Inflorescence a panicle. Panicle open, lanceolate, dense or loose, 44–54 cm long, 5 cm wide. Primary panicle branches 1-nate, simple, 5–15 cm long, bearing spikelets almost to the base. Panicle branches angular, pubescent. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, with diminished florets at the apex. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, laterally compressed, 11–15 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus elongated, curved, 2 mm long, pubescent, pungent.

**Glumes.** Glumes persistent, similar, shorter than spikelet, similar to fertile lemma in texture. Lower glume lanceolate, 9–11 mm long, 0.9 length of upper glume, cartilaginous, without keels, 3–5 -veined. Lower glume apex attenuate or setaceously acuminate. Upper glume lanceolate, 10–13 mm long, 1–1.3 length of adjacent fertile lemma, cartilaginous, without keels, 3–5 -veined. Upper glume apex attenuate or setaceously acuminate.

**Florets.** Fertile lemma lanceolate, 10 mm long, cartilaginous, without keel, 3 -veined, 0–3 -veined. Lemma midvein ciliate, hairy below. Lemma surface asperulous, rough above or on veins. Lemma margins ciliate. Lemma apex acuminate, awned, 1 -awned. Principal lemma awn 1–3 mm long overall. Palea fused below to rhachilla internode, 1 length of lemma, cartilaginous, thinner above, 2 -veined. Palea keels scaberulous. Palea apex acute. Apical sterile florets 2–5 in number, abscissing from fertile floret, barren, in a clump, lanceolate, 5–6 mm long. Apical sterile lemmas glabrous or pilose, adorned on margins, lobed, 3 -fid, awned, 3 -awned. Apical sterile lemma awns 6–7 mm long (laterals 3–4mm).

**Flower and Fruit.** Lodicules 2, cuneate, 1.2–2.5 mm long, fleshy. Anthers 3, 4.8 mm long. Caryopsis with tardily free pericarp, linear, sulcate on hilar side, 4 mm long. Embryo 0.25 length of caryopsis. Hilum elliptic.

**Distribution (TDWG). Continent.** Australasia.

**Country /Province /State.** Australia. Northern Territory.

**TDWG4.** Darwin & Gulf.