Lachnagrostis adamsonii (Vickery) S.W.L.Jacobs. Telopea 9(3): 445 (2002).
Accepted by: W.D.Clayton \& K.Harman, GrassBase (2008) and online (as Agrostis), U.Quattrocchi, CRC World Dictionary of Grasses (2006) (as Agrostis), D.Sharp, D. \& B.K.Simon, AusGrass (2002).

TYPE from Australia. Basionym or Replaced Name: Agrostis adamsonii Vickery, Contr. New South Wales Natl. Herb. 1: 107 (1941). T:<Type of Basionym>: fide TROPICOS and Kew Synonomy Database: HT: Adamson 226, 12 Nov 1853, Australia: Victoria: Melbourne (K).

Illustrations: None found.
Images: D.Sharp \& B.K.Simon, AusGrass. Grasses of Australia. CD-Rom Version 1.0. (2002);.
Derivation (Clifford \& Bostock 2007): in honor of Frederick M. Adamson (1836-1858) Australian farmer.

Classification. Subfamily Pooideae. Tribe: Poeae.
Habit, Vegetative Morphology. Annual, caespitose. Culms erect or geniculately ascending, $45-70 \mathrm{~cm}$ long, 5 -noded. Culm-internodes smooth or scaberulous. Culm-nodes glabrous. Leaf-sheaths loose, scaberulous. Ligule an eciliate membrane, 3-5 mm long, scaberulous on abaxial surface, lacerate. Leafblades 8-25 cm long, $1-3.5 \mathrm{~mm}$ wide. Leaf-blade surface ribbed, scaberulous. Leaf-blade apex acuminate.

Inflorescence. Inflorescence a panicle, exserted or embraced at base by subtending leaf. Peduncle retrorsely scabrous above. Panicle open, pyramidal, $20-25 \mathrm{~cm}$ long. Primary panicle branches spreading, whorled at most nodes. Panicle branches capillary, scabrous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, clavate, $2-8 \mathrm{~mm}$ long, scabrous.

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 or elliptic, laterally compressed, $3-3.5 \mathrm{~mm}$ long, breaking up at maturity, disarticulating below each fertile floret. Floret callus pubescent.

Glumes. Glumes persistent, similar, exceeding apex of florets, firmer than fertile lemma, gaping. Lower glume lanceolate, $3-3.5 \mathrm{~mm}$ long, 1 length of upper glume, membranous, 1 -keeled, 1 -veined. Lower glume primary vein scabrous. Lower glume lateral veins absent. Lower glume apex acute or acuminate. Upper glume lanceolate, $3-3.5 \mathrm{~mm}$ long, membranous, 1 -keeled, keeled above, 1 -veined. Upper glume primary vein scabrous. Upper glume lateral veins absent. Upper glume surface scabrous. Upper glume apex acute or acuminate.

Florets. Fertile lemma lanceolate, 2.5 mm long, hyaline, without keel, 5 -veined, more than 3 -veined. Lemma lateral veins obscure, extending close to apex. Lemma apex dentate, 4 -fid, truncate, awned, 1 awned. Principal lemma awn subapical, straight, 2 mm long overall. Palea 1 length of lemma, hyaline. Rhachilla extension $0.2-0.5 \mathrm{~mm}$ long, pilose.

Flower and Fruit. Lodicules 2, membranous. Anthers 3, 0.4-0.6 mm long. Caryopsis with adherent pericarp. Hilum linear.

Distribution (TDWG). Continent. Australasia.
Country/Province /State. Australia. Victoria.

Lachnagrostis aemula (R.Br.) Trin. Fund. Agrost. :128 (1820).
Accepted by: W.D.Clayton \& K.Harman, GrassBase (2008) and online (as Agrostis), U.Quattrocchi, CRC World Dictionary of Grasses (2006) (as Agrostis), D.Sharp, D. \& B.K.Simon, AusGrass (2002).

TYPE from Australia. Basionym or Replaced Name: Agrostis aemula R. Br., Prodr. 172 (1810). $\mathrm{T}:<$ Type of Basionym>: fide TROPICOS and Kew Synonomy Database: LT: R. Brown 6219 (pro parte), Australia: New South Wales: Port Jackson and Port Dalrymple (BM). LT designated by Vickery, Contr. New South Wales Herb 1: 101-119 (1941).

Illustrations (Books): J.P.Jessop, G.R.M. Dashorst \& F.M.James, Grasses of South Australia (2006) (227, Fig 171), N.Walsh \& T.Entwistle, Flora of Victoria Vol 2 (1994) (473, Fig 92 as Agrostis), A.Wilson (ed.), Flora of Australia, Vol 44A. Poaceae (2009) (182, Fig 26), S.W.L.Jacobs, R.D.B.Whalley \& D.J.B.Wheeler,, Grasses of New South Wales, 4th edn (2008) (289), D.Sharp \& B.K.Simon, AusGrass. Grasses of Australia. CD-Rom Version 1.0. (2002).

Images: K.O.Mallett (ed.). Flora of Australia, Vol 44 A (2002) \& Vol 44B (2004). Poaceae; (as Agrostis aemula).

Derivation (Clifford \& Bostock 2007): L. , more or less equalling. Subtending glumes more or less equal.

Classification. Subfamily Pooideae. Tribe: Poeae.
Habit, Vegetative Morphology. Annual, caespitose. Culms erect, 25-60 cm long, 2-4 -noded. Culminternodes smooth or scaberulous. Culm-nodes glabrous. Leaf-sheaths scaberulous. Ligule an eciliate membrane, scaberulous on abaxial surface, lacerate, obtuse. Leaf-blades $8-20 \mathrm{~cm}$ long, 2-7 mm wide. Leaf-blade surface scaberulous, rough adaxially. Leaf-blade apex acute or acuminate.

Inflorescence. Inflorescence a panicle, embraced at base by subtending leaf. Peduncle antrorsely scabrous above. Panicle open, pyramidal. Primary panicle branches ascending or spreading, whorled at most nodes, branching divaricately. Panicle branches scabrous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, clavate, $2-8 \mathrm{~mm}$ long, scabrous.

Fertile Spikelets. Spikelets comprising 1 fertile florets, with a barren rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, laterally compressed, $3.5-6 \mathrm{~mm}$ long, breaking up at maturity, disarticulating below each fertile floret. Floret callus pubescent. Floret callus hairs $0.2-0.6 \mathrm{~mm}$ long, 0.05-0.1 length of lemma.

Glumes. Glumes persistent, similar, exceeding apex of florets, firmer than fertile lemma, gaping. Lower glume lanceolate, $3.5-6 \mathrm{~mm}$ long, 1.1 length of upper glume, membranous, purple, 1-keeled, 1 veined. Lower glume primary vein scabrous. Lower glume lateral veins absent. Lower glume apex acuminate. Upper glume lanceolate, 3-5 mm long, membranous, purple, 1-keeled, 1 -veined. Upper glume primary vein scabrous. Upper glume lateral veins absent. Upper glume surface scabrous. Upper glume apex acuminate.

Florets. Fertile lemma lanceolate, $1.8-3.5 \mathrm{~mm}$ long, hyaline, without keel, 5 -veined, more than 3veined. Lemma lateral veins extending close to apex. Lemma surface pilose. Lemma apex dentate, 4 -fid, with outer lobes longer, truncate, awned, 1 -awned. Principal lemma awn dorsal, arising 0.5 way up back of lemma, geniculate, $5-6 \mathrm{~mm}$ long overall, with twisted column. Palea 0.9 length of lemma, hyaline. Rhachilla extension 0.5 mm long, pilose.

Flower and Fruit. Lodicules 2, membranous. Anthers 3, $0.6-1.2 \mathrm{~mm}$ long. Caryopsis with adherent pericarp. Hilum linear.

Distribution (TDWG). Continent. Europe, Australasia.
Region. Northern Europe (*).
Country /Province /State. : GB Aliens (Ryves et al). Australia. Western Australia, South Australia, Queensland, New South Wales, A.C.T., Victoria, Tasmania.

South-West. Southern. South East. Coast, Tablelands, Western Slopes, Western Plains.

## Lachnagrostis aequata (Nees) S.W.L.Jacobs. Telopea 9(3): 445 (2002).

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

TYPE from Australia. Basionym or Replaced Name: Agrostis aequata Nees, Hooker's J. Bot. Kew Gard. Misc. 2: 412 (1843). T:<Type of Basionym>: fide TROPICOS and Kew Synonomy Database: HT: R.C. Gunn 1005, 18 Jan 1838, Australia: Tasmania (C; IT: L).

Illustrations: None found.
Images: D.Sharp \& B.K.Simon, AusGrass. Grasses of Australia. CD-Rom Version 1.0. (2002);,
Derivation (Clifford \& Bostock 2007): L. aequo, make equal. Glumes similar.
Classification. Subfamily Pooideae. Tribe: Poeae.
Habit, Vegetative Morphology. Annual, caespitose. Culms geniculately ascending, 60-70 cm long, 4 -noded. Culm-nodes glabrous. Leaf-sheaths loose, longer than adjacent culm internode, antrorsely scabrous. Ligule an eciliate membrane, $2-3 \mathrm{~mm}$ long, lacerate, obtuse. Leaf-blades $6-12 \mathrm{~cm}$ long, $1.5-2.5 \mathrm{~mm}$ wide. Leaf-blade surface ribbed, scabrous.

Inflorescence. Inflorescence a panicle. Panicle open, pyramidal, $12-25 \mathrm{~cm}$ long. Primary panicle branches whorled at most nodes. Panicle branches capillary, scabrous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, scabrous.

Fertile Spikelets. Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, laterally compressed, 2 mm long, breaking up at
maturity, disarticulating below each fertile floret. Floret callus pubescent. Floret callus hairs $0.2-0.5 \mathrm{~mm}$ long, $0.1-0.25$ length of lemma.

Glumes. Glumes persistent, similar, exceeding apex of florets, firmer than fertile lemma, gaping. Lower glume ovate, 2 mm long, 1 length of upper glume, membranous, much thinner on margins, 1-keeled, 1 -veined. Lower glume primary vein scabrous. Lower glume lateral veins absent. Lower glume surface asperulous. Lower glume margins ciliolate. Lower glume apex acute. Upper glume ovate, 2 mm long, 1.1 length of adjacent fertile lemma, membranous, with hyaline margins, 1-keeled, 1 -veined. Upper glume primary vein scabrous. Upper glume lateral veins absent. Upper glume surface asperulous. Upper glume margins ciliolate. Upper glume apex acute.

Florets. Fertile lemma lanceolate, $1.4-1.7 \mathrm{~mm}$ long, hyaline, shiny, without keel, 5 -veined, more than 3 -veined. Lemma lateral veins extending close to apex. Lemma apex dentate, 5 -fid, truncate, muticous. Palea 1 length of lemma, hyaline.

Flower and Fruit. Lodicules 2, membranous. Anthers 3, 0.5 mm long. Caryopsis with adherent pericarp, oblong. Hilum linear.

Distribution (TDWG). Continent. Australasia.
Country /Province /State. Australia. South Australia, New South Wales, Victoria, Tasmania.
Southern. Tablelands.

Lachnagrostis ammobia Edgar. New Zealand J. Bot., 33(1): 14 (1995).
Accepted by: W.D.Clayton \& K.Harman, GrassBase (2008) and online.
TYPE from New Zealand. Basionym or Replaced Name: Lachnagrostis ammobia E.Edgar,. T:<Type of Basionym>: fide TROPICOS and Kew Synonomy Database: New Zealand, Omaui: Rance (CHR holo).

Illustrations: None found.
Derivation (Clifford \& Bostock 2007): L. ammobia, sand dweller. Growing in damp sand.
Classification. Subfamily Pooideae. Tribe: Poeae.
Habit, Vegetative Morphology. Annual, caespitose. Basal innovations extravaginal. Culms 15-35 cm long. Culm-internodes smooth. Leaf-sheaths striately veined, smooth or scaberulous. Ligule an eciliate membrane, $2.5-4.5 \mathrm{~mm}$ long, scaberulous on abaxial surface, acute. Leaf-blades filiform, involute, 6-16 cm long, $0.4-0.8 \mathrm{~mm}$ wide. Leaf-blade surface scaberulous, rough abaxially or on both sides. Leaf-blade margins scabrous. Leaf-blade apex obtuse.

Inflorescence. Inflorescence a panicle, deciduous as a whole. Panicle open, elliptic, 10-16 cm long, $1.5-12 \mathrm{~cm}$ wide. Panicle branches capillary, scaberulous. 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, laterally compressed, $5-7 \mathrm{~mm}$ long, breaking up at maturity, disarticulating below each fertile floret. Floret callus bearded. Floret callus hairs $1.5-2 \mathrm{~mm}$ long, 0.66 length of lemma.

Glumes. Glumes persistent, similar, exceeding apex of florets, firmer than fertile lemma, gaping. Lower glume elliptic, 1 length of upper glume, membranous, much thinner on margins, 1 -keeled, 1 -veined. Lower glume primary vein scabrous. Lower glume lateral veins absent. Lower glume surface smooth or asperulous. Lower glume apex acute. Upper glume elliptic, 5-7 mm long, 2 length of adjacent fertile lemma, membranous, with hyaline margins, 1-keeled, 1 -veined. Upper glume primary vein scabrous. Upper glume lateral veins absent. Upper glume surface smooth or scabrous. Upper glume apex acute.

Florets. Fertile lemma oblong, $3.2-3.7 \mathrm{~mm}$ long, hyaline, without keel, 5 -veined, more than 3-veined. Lemma lateral veins excurrent. Lemma surface villous. Lemma apex truncate, awned. Principal lemma awn dorsal, arising 0.5 way up back of lemma, straight or curved, $4-5.5 \mathrm{~mm}$ long overall. Palea $0.66-0.75$ length of lemma, hyaline, 2 -veined. Rhachilla extension $0.5-0.8 \mathrm{~mm}$ long, pilose, with $1-2 \mathrm{~mm}$ long hairs.

Flower and Fruit. Lodicules 2, $0.9-1.2 \mathrm{~mm}$ long, membranous. Anthers 3, $0.9-1.3 \mathrm{~mm}$ long. Caryopsis with adherent pericarp, 2 mm long.

Distribution (TDWG). Continent. Australasia.
Country /Province/State. New Zealand. New Zealand South I, Stewart Is.

Lachnagrostis batesii A.J.Brown. Muelleria 26(2): 31 (2008).
TYPE from Australia. T:<Type of Basionym>: fide TROPICOS and Kew Synonomy Database: Australia, South Australia, Scott Creek Conservation Park: Bates 55750 (AD holo).

Illustrations: None found.
Classification. Subfamily Pooideae. Tribe: Poeae.
Habit, Vegetative Morphology. Annual or perennial, short-lived, caespitose. Culms geniculately ascending, $15-40 \mathrm{~cm}$ long, 1 mm diam. Culm-nodes brown or purple, glabrous. Lateral branches lacking or sparse. Leaf-sheaths mostly shorter than adjacent culm internode, smooth. Ligule an eciliate membrane, $2-$ 5 mm long, lacerate, acute. Leaf-blades spreading, $8-12 \mathrm{~cm}$ long, ( $1-$ ) 2 mm wide. Leaf-blade surface smooth. Leaf-blade margins scaberulous.

Inflorescence. Inflorescence a panicle. Panicle open, oblong, effuse, $12-25 \mathrm{~cm}$ long. Primary panicle branches spreading. Panicle branches capillary, flexuous, scaberulous. 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 or elliptic, laterally compressed, (1.8-)2-2.5 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus pubescent. Floret callus hairs $0.4-0.6 \mathrm{~mm}$ long.

Glumes. Glumes persistent, similar, exceeding apex of florets, firmer than fertile lemma, gaping. Lower glume lanceolate, (1.8-)2-2.5 mm long, 1 length of upper glume, membranous, 1 -keeled. Lower glume primary vein scabrous. Lower glume surface smooth or asperulous. Lower glume apex acute. Upper glume lanceolate, (1.8-)2-2.5 mm long, 1.2-1.4 length of adjacent fertile lemma, membranous, 1-keeled. Upper glume primary vein scabrous. Upper glume surface smooth or asperulous.

Florets. Fertile lemma oblong, $1.4-2 \mathrm{~mm}$ long, hyaline, without keel, 5 -veined, more than 3-veined. Lemma surface pilose. Lemma hairs $0.4-0.6 \mathrm{~mm}$ long. Lemma apex dentate, 4 -fid, with lobes $0.1-0.2 \mathrm{~mm}$ long, awned, 1 -awned. Principal lemma awn dorsal, arising 0.75 way up back of lemma, straight, 1.2-2 mm long overall. Palea 0.75 length of lemma, hyaline. Rhachilla extension $0.5-1.3 \mathrm{~mm}$ long, pilose.

Flower and Fruit. Anthers 3, 0.2-0.3(-0.4) mm long.
Distribution (TDWG). Continent. Australasia.
Country /Province /State. Australia. South Australia.

Lachnagrostis billardieri (R. Br.) Trin. Fund. Agrost. 128 (1820).
Accepted by: W.D.Clayton \& K.Harman, GrassBase (2008) and online (as Agrostis), U.Quattrocchi, CRC World Dictionary of Grasses (2006) (as Agrostis), D.Sharp, D. \& B.K.Simon, AusGrass (2002), E.Edgar, \& H.Connor, Flora of New Zealand Gramineae 5 (2000).

TYPE from Australia. Basionym or Replaced Name: Agrostis billardieri R. Br., Prodr. 171 (1810). T:<Type of Basionym>: fide TROPICOS and Kew Synonomy Database: HT: R. Brown 6218, 1802-1805, Australia: New South Wales: Port Jackson (BM). LT designated by Vickery, Contr. New South Wales Herb 1: 101-119 (1941).

Illustrations (Books): J.P.Jessop, G.R.M. Dashorst \& F.M.James, Grasses of South Australia (2006) (228, Fig 172 as subsp. billardieri), N.Walsh \& T.Entwistle, Flora of Victoria Vol 2 (1994) (473, Fig 92 as Agrostis), N.Walsh \& T.Entwistle, Flora of Victoria Vol 2 (1994) (as Agrostis), S.W.L.Jacobs, R.D.B.Whalley \& D.J.B.Wheeler,, Grasses of New South Wales, 4th edn (2008) (289 as subsp. billardieri), A.Wilson (ed.), Flora of Australia, Vol 44A. Poaceae (2009) (182, Fig 26 as subsp. billardieri), D.Sharp \& B.K.Simon, AusGrass. Grasses of Australia. CD-Rom Version 1.0. (2002).

Derivation (Clifford \& Bostock 2007): in honor of Jacques Julienne Houtou La Billardiere (17551834), French botanist.

Classification. Subfamily Pooideae. Tribe: Poeae.
Habit, Vegetative Morphology. Annual or perennial, caespitose. Culms erect or geniculately ascending, $15-45 \mathrm{~cm}$ long, 3 -noded. Culm-internodes antrorsely scabrous. Culm-nodes glabrous. Leaves cauline. Leaf-sheaths loose, antrorsely scabrous. Ligule an eciliate membrane, $4-8 \mathrm{~mm}$ long, scaberulous on abaxial surface, lacerate, obtuse. Leaf-blades $5-40 \mathrm{~cm}$ long, $2-8 \mathrm{~mm}$ wide. Leaf-blade surface ribbed, papillose. Leaf-blade apex acuminate.

Inflorescence. Inflorescence a panicle, embraced at base by subtending leaf. Peduncle antrorsely scabrous above. Panicle open, pyramidal. Primary panicle branches whorled at lower nodes, branching divaricately. Panicle branches scabrous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, 210 mm long, scabrous.

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, $4.5-7.5 \mathrm{~mm}$ long, breaking up at maturity, disarticulating below each fertile floret. Floret callus pubescent. Floret callus hairs $0.2-0.8 \mathrm{~mm}$ long, 0.04-0.1 length of lemma.

Glumes. Glumes persistent, similar, exceeding apex of florets, firmer than fertile lemma, gaping. Lower glume lanceolate, $4.5-7.5 \mathrm{~mm}$ long, 1.1 length of upper glume, membranous, 1 -keeled, 1 -veined. Lower glume primary vein scabrous. Lower glume lateral veins absent. Lower glume margins ciliolate. Lower glume apex acuminate. Upper glume lanceolate, 4-7 mm long, membranous, 1 -keeled, 1 -veined. Upper glume primary vein scabrous. Upper glume lateral veins absent. Upper glume surface scabrous. Upper glume margins ciliolate. Upper glume apex acuminate.

Florets. Fertile lemma lanceolate, 3-4.5 mm long, hyaline, shiny, without keel, 5 -veined, more than 3veined. Lemma lateral veins obscure, extending close to apex. Lemma surface smooth or asperulous. Lemma apex dentate, 4 -fid, with outer lobes longer, truncate, awned, 1 -awned. Principal lemma awn dorsal, arising 0.5 way up back of lemma, geniculate, $6-8 \mathrm{~mm}$ long overall, with twisted column. Palea 0.66 length of lemma, hyaline. Rhachilla extension $0.8-2.5 \mathrm{~mm}$ long, pilose, with 1.5 mm long hairs.

Flower and Fruit. Lodicules 2, membranous. Anthers 3, $0.8-1 \mathrm{~mm}$ long. Caryopsis with adherent pericarp. Hilum linear.

Distribution (TDWG). Continent. Europe (*), Australasia.
Region. Northern Europe (*).
Country /Province /State. : GB Aliens (Ryves et al). Australia, New Zealand. South Australia, New South Wales, Victoria, Tasmania. Chatham Is, New Zealand North I, New Zealand South I, Stewart Is.

Southern. Coast.

Lachnagrostis collicola (D.I.Morris) S.W.L.Jacobs. Telopea 9(3): 445 (2002).
Accepted by: W.D.Clayton \& K.Harman, GrassBase (2008) and online (as Agrostis billardieri), D.Sharp, D. \& B.K.Simon, AusGrass (2002).

TYPE from Australia. Basionym or Replaced Name: Agrostis billardieri var. collicola D.I. Morris. $\mathrm{T}:<$ Type of Basionym>: fide TROPICOS and Kew Synonomy Database: HT: Collier 309, 10 Feb 1985, Australia: Tasmania: Saddle between The Hippo and Moonlight Ridge Hill 3 (HO-93165).

Illustrations: None found.
Derivation (Clifford \& Bostock 2007): L. collis, hill; -cola, dweller. Confined to mountainous areas.
Classification. Subfamily Pooideae. Tribe: Poeae.
Habit, Vegetative Morphology. Annual or perennial, short-lived, caespitose. Culms erect, 10-20 cm long, 2-3 -noded. Culm-nodes glabrous. Leaf-sheaths antrorsely scabrous. Ligule an eciliate membrane, $1.5-4 \mathrm{~mm}$ long, entire or lacerate, obtuse. Leaf-blades flat or conduplicate, $10-20 \mathrm{~cm}$ long, $1-2(-8) \mathrm{mm}$ wide.

Inflorescence. Inflorescence a panicle, deciduous as a whole. Peduncle smooth or scaberulous above or antrorsely scabrous above, fracturing. Panicle open, pyramidal, $15-25 \mathrm{~cm}$ long. Primary panicle branches whorled at lower nodes. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, clavate, 4 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, $2.5-4 \mathrm{~mm}$ long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, similar, exceeding apex of florets, firmer than fertile lemma, gaping. Lower glume lanceolate, $2.5-4 \mathrm{~mm}$ long, 1 length of upper glume, membranous, 1 -keeled, 1 -veined. Lower glume lateral veins absent. Lower glume apex acuminate, muticous or mucronate. Upper glume lanceolate, $2.5-4 \mathrm{~mm}$ long, 1.2-2.5 length of adjacent fertile lemma, membranous, 1 -keeled, 1 -veined. Upper glume lateral veins absent. Upper glume apex acuminate, muticous or mucronate.

Florets. Fertile lemma lanceolate, $1-3.5 \mathrm{~mm}$ long, hyaline, shiny, without keel, 5 -veined, more than 3veined. Lemma lateral veins excurrent. Lemma surface glabrous. Lemma apex dentate, 2-4 -fid, awned, 1 awned. Principal lemma awn dorsal, arising $0.05-0.1$ way up back of lemma, straight, $2-4 \mathrm{~mm}$ long overall. Palea $0.8-0.85$ length of lemma, hyaline. Palea apex entire or dentate, 2 -fid. Rhachilla extension 0.2-2.5 mm long, pilose.

Flower and Fruit. Anthers 3, $0.4-0.8 \mathrm{~mm}$ long.
Distribution (TDWG). Continent. Australasia.
Country /Province /State. Australia. Tasmania.

## Lachnagrostis deflexa A.J.Brown. Muelleria 26(2): 42 (2008).

TYPE from Australia. T:<Type of Basionym>: fide TROPICOS and Kew Synonomy Database: Australia, Victoria, Lake Bolac: A. J. Brown 1722 (MEL holo, AD, HO, NSW).

Illustrations: None found.
Classification. Subfamily Pooideae. Tribe: Poeae.
Habit, Vegetative Morphology. Annual or perennial, short-lived, caespitose. Culms erect or geniculately ascending, $20-70 \mathrm{~cm}$ long, $1-1.5 \mathrm{~mm}$ diam. Leaf-sheaths loose or inflated, longer than adjacent culm internode, smooth, glabrous on surface. Ligule an eciliate membrane, (5-)7-9 mm long, scaberulous on abaxial surface, lacerate, acute. Leaf-blades $3-12 \mathrm{~cm}$ long, $1.5-3 \mathrm{~mm}$ wide. Leaf-blade surface scaberulous.

Inflorescence. Inflorescence a panicle. Panicle open, oblong, $10-20 \mathrm{~cm}$ long. Primary panicle branches spreading or reflexed. Panicle branches stiff, scabrous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, $1-5 \mathrm{~mm}$ 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 or elliptic, laterally compressed, (3-)3.3-4 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus pubescent. Floret callus hairs $0.5-0.6 \mathrm{~mm}$ long.

Glumes. Glumes persistent, similar, exceeding apex of florets, firmer than fertile lemma, gaping. Lower glume lanceolate, (3-)3.3-4 mm long, 1-1.1 length of upper glume, membranous, 1-keeled. Lower glume primary vein scabrous. Lower glume surface asperulous. Lower glume margins ciliate. Lower glume apex acuminate, awned, 1 -awned, awn $1-1.7 \mathrm{~mm}$ long. Upper glume lanceolate, $2.9-3.7 \mathrm{~mm}$ long, $1.3-1.4$ length of adjacent fertile lemma, membranous, 1-keeled. Upper glume primary vein scabrous. Upper glume surface asperulous. Upper glume margins ciliate. Upper glume apex acuminate, awned, 1 -awned, awn 11.7 mm long.

Florets. Fertile lemma oblong, 2.2-2.7(-3) mm long, hyaline, without keel, 5 -veined, more than 3veined. Lemma lateral veins excurrent ( $0.3-0.7 \mathrm{~mm}$ ). Lemma surface glabrous. Lemma apex dentate, 4 -fid, awned, 1 -awned. Principal lemma awn dorsal, arising 0.5 way up back of lemma, geniculate, $4.5-6.5 \mathrm{~mm}$ long overall, with twisted column. Column of lemma awn 0.3-0.4 length of limb. Palea 1.9-2.2 mm long, $0.8-0.9$ length of lemma, hyaline. Rhachilla extension $1.5-2 \mathrm{~mm}$ long, pilose.

Flower and Fruit. Anthers 3, 0.5-0.7(-0.8) mm long.
Distribution (TDWG). Continent. Australasia.
Country /Province/State. Australia. Victoria.

Lachnagrostis drummondiana (Steud.) S.W.L.Jacobs. Telopea 9(3): 445 (2002).
Accepted by: W.D.Clayton \& K.Harman, GrassBase (2008) and online (as Agrostis), U.Quattrocchi, CRC World Dictionary of Grasses (2006) (as Agrostis), D.Sharp, D. \& B.K.Simon, AusGrass (2002).

TYPE from Australia. Basionym or Replaced Name: Dichelachne drummondiana Steud., Syn. Pl. Glumac. 1: 120 (1854). T:<Type of Basionym>: fide TROPICOS and Kew Synonomy Database: HT: J. Drummond IV, 371, Australia: Western Australia: fl. Cygnorum (P; IT: K (photo, SI), L, LE). L lists their specimen as HT.

Recent Synonyms: Agrostis drummondiana (Steud.) Vickery, Contrib. N. S. Wales Nat. Herb. 1: 111 (1941).

Illustrations: None found.

Derivation (Clifford \& Bostock 2007): L. -ana, indicating connection. In honor of James Drummond (c. 1784-1863) Scots-born Australian botanist.

Classification. Subfamily Pooideae. Tribe: Poeae.
Habit, Vegetative Morphology. Annual, caespitose. Culms erect, $40-60 \mathrm{~cm}$ long. Culm-internodes smooth. Leaf-sheaths scaberulous, glabrous on surface. Ligule an eciliate membrane, 3-7 mm long. Leafblades convolute, $1-3 \mathrm{~mm}$ wide. Leaf-blade surface scaberulous.

Inflorescence. Inflorescence a panicle. Peduncle retrorsely scabrous above. Panicle open, lanceolate, $15-25 \mathrm{~cm}$ long. Primary panicle branches ascending or spreading, whorled at most nodes. Panicle axis scabrous. Panicle branches scabrous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, scabrous.

Fertile Spikelets. Spikelets comprising 1 fertile florets, with a barren rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets elliptic, laterally compressed, 5-6 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, similar, exceeding apex of florets, firmer than fertile lemma, shiny, parallel to lemmas. Lower glume lanceolate, 5-6 mm long, 1.1 length of upper glume, membranous, 1keeled, 1 -veined. Lower glume primary vein scabrous. Lower glume lateral veins absent. Lower glume apex acute. Upper glume lanceolate, $4.5-5.5 \mathrm{~mm}$ long, 1.1-1.2 length of adjacent fertile lemma, membranous, with hyaline margins, 1 -keeled, 1 -veined. Upper glume primary vein scabrous. Upper glume lateral veins absent. Upper glume apex acute.

Florets. Fertile lemma elliptic, 3 mm long, hyaline, without keel, 5 -veined, more than 3 -veined. Lemma surface pilose. Lemma apex dentate, 4 -fid, awned, 1 -awned. Principal lemma awn dorsal, arising 0.5 way up back of lemma, geniculate, $7-10 \mathrm{~mm}$ long overall, with twisted column. Palea 0.75 length of lemma, hyaline. Rhachilla extension pilose.

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

Distribution (TDWG). Continent. Australasia.
Country/Province /State. Australia. Western Australia.
South-West.
Lachnagrostis elata E.Edgar. New Zealand J. Bot., 33(1): 18 (1995).
Accepted by: 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 Synonomy Database: New Zealand, Nelson: Druce (CHR holo).

Illustrations: None found.
Derivation (Clifford \& Bostock 2007): L. tall. Culms taller than those of most species of the genus.
Classification. Subfamily Pooideae. Tribe: Poeae.
Distribution (TDWG). Continent. Australasia.
Country /Province/State. New Zealand. New Zealand North I, New Zealand South I, Stewart Is.
Lachnagrostis filiformis (Forst.) Trin. Fund. Agrost. 128 (1820).
Accepted by: R.J.Soreng et al., Catalogue of New World Grasses (2000-2003) and online, U.Quattrocchi, CRC World Dictionary of Grasses (2006) (as Agrostis avenacea), D.Sharp, D. \& B.K.Simon, AusGrass (2002), E.Edgar, \& H.Connor, Flora of New Zealand Gramineae 5 (2000), J.F.Veldkamp, Poaceae ms (Flora Malesiana) (as Agrostis avenacea), W.D.Clayton \& N.Snow, Key to Pacific Grasses (2010) (as Agrostis avenacea).

TYPE from New Zealand. Basionym or Replaced Name: Avena filiformis G. Forst., Fl. Ins. Austr. 9 (1786). T:<Type of Basionym>: fide TROPICOS and Kew Synonomy Database: LT: J.R. \& G. Forster s.n., 1779, New Zeeland (B-W-2208 (misit Sprengel); IT: BM, GOET, K, KIEL, LE, LINN-Sm.-135.32, MW77, P, UPS). LT designated by Edgar, New Zealand J. Bot. 33: 19 (1995) based on the New Zealand specimen B-W-2208. Zizka, Palm. Hort. Franc. 3: 71 (1991) cited the same specimen but did not clarify whether it was from New Zealand or Easter Island. See Nicolson (2002)..

Recent Synonyms: Agrostis forsteri Rich. ex Roem. \& Schult., nom superfl., Syst. 2: 359 (1817). Agrostis avenacea J. F. Gmel., Syst. i. 171 (1791).

Agrostis debilis Poir., Encyc. Suppl. 1: 249 (1810).
Lachnagrostis avenacea (J.F. Gmel.) J.F. Veldkamp, Blumea, 37(1): 230: (1992).
Illustrations (Books): F.O.Zuloaga, Z.E.Rugolo \& A.M. Anton, Flora Argentina 3 - 2 Pooideae (2012) (263), T. Cope \& A. Gray, Grasses of the British Isles (97 as Agrostis avenacea), H.J.Noltie, The Grasses of Bhutan (2000) (611, Fig. 27 as Calamagrostis filiformis), J.P.Jessop, G.R.M. Dashorst \& F.M.James, Grasses of South Australia (2006) (229, Fig 173), S.W.L.Jacobs, R.D.B.Whalley \& D.J.B.Wheeler,, Grasses of New South Wales, 4th edn (2008) (290), J.C.Tothill,\& J.B.Hacker. The grasses of southern Queensland (1983) (82 as Agrostis avenacea), A.Wilson (ed.), Flora of Australia, Vol 44A. Poaceae (2009) (168, Fig 25), D.Sharp \& B.K.Simon, AusGrass. Grasses of Australia. CD-Rom Version 1.0. (2002), E.G.Nicora, Los Generos de Gramineas de America Austral (1987) (193, Fig. 55), M.E.Barkworth et al, Flora of North America north of Mexico Vol 24 Poaceae, part 1 (2007) (695).

Illustrations (Journals): Darwiniana (24: 198, Fig. 6 (1982)).
Images: D.Sharp \& B.K.Simon, AusGrass. Grasses of Australia. CD-Rom Version 1.0. (2002);,
Derivation (Clifford \& Bostock 2007): in honor of Johann Georg Adam Forster (1754-1794) German explorer and botanist.

Classification. Subfamily Pooideae. Tribe: Poeae.
Habit, Vegetative Morphology. Annual, caespitose. Culms erect or geniculately ascending, 15-60 cm long, 2-4 -noded. Leaf-sheaths smooth. Ligule an eciliate membrane. Leaf-blades flat or involute, $2-10 \mathrm{~cm}$ long, $0.5-1.5 \mathrm{~mm}$ wide. Leaf-blade surface smooth or scaberulous.

Inflorescence. Inflorescence a panicle. Panicle open, ovate, effuse, $5-30 \mathrm{~cm}$ long. Primary panicle branches whorled at most nodes, $5-15 \mathrm{~cm}$ long. Panicle branches capillary, scaberulous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 1 fertile florets, with a barren rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets elliptic, laterally compressed, 5 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus pubescent.

Glumes. Glumes persistent, similar, exceeding apex of florets, firmer than fertile lemma. Lower glume lanceolate, 1 length of upper glume, membranous, 1 -keeled, 1 -veined. Lower glume primary vein scabrous. Lower glume lateral veins absent. Lower glume apex acuminate. Upper glume lanceolate, 5 mm long, 1.4 length of adjacent fertile lemma, membranous, 1-keeled, 1 -veined. Upper glume primary vein scabrous. Upper glume lateral veins absent. Upper glume apex acuminate.

Florets. Fertile lemma oblong, 4 mm long, hyaline, without keel, 5 -veined, more than 3 -veined. Lemma apex dentate, 4 -fid, truncate, awned, 1 -awned. Principal lemma awn dorsal, arising 0.5 way up back of lemma, geniculate, $3-4 \mathrm{~mm}$ long overall, with twisted column. Palea $0.25-0.33$ length of lemma, hyaline. Rhachilla extension pilose.

Flower and Fruit. Lodicules 2, membranous. Anthers 3, 0.75-1.5 mm long. Caryopsis with adherent pericarp. Hilum linear.

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

## Region. Northern Europe.

Country /Province /State. : Great Britain (*). Southern Africa. Mpumalanga, Free State, KwazuluNatal, Northern Cape, Western Cape, Eastern Cape. Malesia, Papuasia. Borneo, Lesser Sunda Is, Sumatra. New Guinea PNG, or West Papua (Irian Jaya). New Guinea. Australia, New Zealand. Western Australia, Northern Territory, South Australia, Queensland, New South Wales, A.C.T., Victoria, Tasmania, Lord Howe-Norfolk Is. Chatham Is, Kermadec Is, New Zealand North I, New Zealand South I, Stewart Is. Southwestern Pacific, South-central Pacific, North-central Pacific. Easter Is. Hawaii. Northeast USA, Southwestern USA, South-central USA, Mexico. Ohio. California. Texas. Southeast Mexico. Caribbean, Southern South America. Argentina Northeast, Chile Central.

Bhutan, Sikkim. Eremean, South-West. Central Australia. NW \& Lake Eyre, Southern. Central, South East, Inland. Coast, Tablelands, Western Slopes, Western Plains. Buenos Aires, Entre Rios, La Pampa, Santa Fe. Valparaiso, Maule, La Araucania. Chiapas.

Lachnagrostis glabra (Petrie) E.Edgar. New Zealand J. Bot., 33(1): 20 (1995).
Accepted by: W.D.Clayton \& K.Harman, GrassBase (2008) and online (as Agrostis), 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: Deyeuxia glabra Petrie, Trans. N.Z. Inst. 46: 36 (1914). T:<Type of Basionym>: fide TROPICOS and Kew Synonomy Database: New Zealand, Bluff: Petrie (WELT ledto).

Illustrations: None found.
Derivation (Clifford \& Bostock 2007): L. smooth. Leaf-blades lacking hairs.
Classification. Subfamily Pooideae. Tribe: Poeae.
Distribution (TDWG). Continent. Australasia.
Country /Province /State. New Zealand. New Zealand South I.

Lachnagrostis lacunis (D.I.Morris) S.W.L.Jacobs. Telopea 9(3): 446 (2002).
Accepted by: W.D.Clayton \& K.Harman, GrassBase (2008) and online (as Agrostis), D.Sharp, D. \& B.K.Simon, AusGrass (2002) (as L. lacunarum).

TYPE from Australia. Basionym or Replaced Name: Agrostis lacunis D.I. Morris, Muelleria 7(2): 149, 151-153, f. 4, 5a (1989). T:<Type of Basionym>: fide TROPICOS and Kew Synonomy Database: Australia: Tasmania: Twisted Tarn, Mt Field National Park, 1110 m, aquatic, shallow water with mud bottom; 1 Mar 1983, A.M. Buchanan 1187 (HT: HO-93290; IT: AD, CANB, CHR, MEL, NSW).

Illustrations: None found.
Images: D.Sharp \& B.K.Simon, AusGrass. Grasses of Australia. CD-Rom Version 1.0. (2002);.
Classification. Subfamily Pooideae. Tribe: Poeae.
Habit, Vegetative Morphology. Annual. Butt sheaths papery, glabrous. Culms erect or geniculately ascending, $20-40 \mathrm{~cm}$ long, without nodal roots or rooting from lower nodes. Leaf-sheaths loose, longer than adjacent culm internode, ribbed. Ligule an eciliate membrane, 3-6 mm long, acute. Leaf-blades 10-20 cm long, $1.5-2.5 \mathrm{~mm}$ wide. Leaf-blade surface ribbed, grooved adaxially and abaxially, scaberulous, rough adaxially.

Inflorescence. Inflorescence a panicle. Peduncle scaberulous above. Panicle open, pyramidal, 6-12 cm long, $4-7 \mathrm{~cm}$ wide. Primary panicle branches 2-4 -nate. Panicle axis scabrous. Panicle branches scabrous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, scabrous.

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, $2.75-4 \mathrm{~mm}$ long, breaking up at maturity, disarticulating below each fertile floret. Floret callus pilose.

Glumes. Glumes persistent, similar, exceeding apex of florets, firmer than fertile lemma, gaping. Lower glume lanceolate or elliptic, 1 length of upper glume, membranous, purple, 1 -keeled, 1 -veined. Lower glume primary vein scabrous. Lower glume lateral veins absent. Lower glume surface scabrous. Lower glume apex acute. Upper glume lanceolate or elliptic, 2.75-4 mm long, membranous, purple, 1keeled, 1 -veined. Upper glume primary vein scabrous. Upper glume lateral veins absent. Upper glume surface scabrous. Upper glume apex acute.

Florets. Fertile lemma oblong, $2-2.5 \mathrm{~mm}$ long, hyaline, without keel, 5 -veined, more than 3-veined. Lemma surface pubescent. Lemma apex dentate, 4 -fid, truncate, awned. Principal lemma awn dorsal, arising 0.5 way up back of lemma, straight or geniculate, $1.5-3.25 \mathrm{~mm}$ long overall, with a straight or slightly twisted column. Column of lemma awn 1.5 mm long. Palea 0.9 length of lemma, hyaline, 2 -veined. Rhachilla extension 0.5 mm long, pubescent, with 0.5 mm long hairs.

Flower and Fruit. Lodicules 2, membranous. Anthers 3, 0.6-0.8 mm long. Caryopsis with adherent pericarp.

Distribution (TDWG). Continent. Australasia.
Country /Province /State. Australia. Tasmania.

Lachnagrostis leptostachys (Hook. f.) Zotov. Rec. Domin. Mus., N. Zeal. 5: 143 (1965).
Accepted by: W.D.Clayton \& K.Harman, GrassBase (2008) and online (as Agrostis).

TYPE from New Zealand. Basionym or Replaced Name: Agrostis leptostachys Hook.f., Fl. Antarct. 94. (1845). T:<Type of Basionym>: fide TROPICOS and Kew Synonomy Database: New Zealand, Campbell Il., Beeman: Zotov (CHR neo).

Illustrations: None found.
Derivation (Clifford \& Bostock 2007): Gk. leptos, narrow; stachys, ear of corn. Inflorescences narrow. Classification. Subfamily Pooideae. Tribe: Poeae.
Habit, Vegetative Morphology. Annual, caespitose. Basal innovations intravaginal. Culms erect, 1535 cm long. Leaf-sheaths smooth or scaberulous. Ligule an eciliate membrane, $2-4.5 \mathrm{~mm}$ long, glabrous on abaxial surface or scaberulous on abaxial surface, erose, truncate. Leaf-blades flat or involute, $3.5-10 \mathrm{~cm}$ long, $1-2 \mathrm{~mm}$ wide. Leaf-blade surface ribbed, grooved adaxially, scabrous, rough on both sides. Leafblade margins scaberulous. Leaf-blade apex acute.

Inflorescence. Inflorescence a panicle, deciduous as a whole. Peduncle antrorsely scabrous above. Panicle open, ovate, effuse, $7-16 \mathrm{~cm}$ long, $2-12 \mathrm{~cm}$ wide. Panicle axis scabrous. Panicle branches capillary, scabrous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 1 fertile florets, without rhachilla extension or with a barren rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, laterally compressed, $4.5-5.5 \mathrm{~mm}$ long, breaking up at maturity, disarticulating below each fertile floret. Floret callus pilose. Floret callus hairs 1 mm long, $0.25-0.33$ length of lemma.

Glumes. Glumes persistent, similar, exceeding apex of florets, firmer than fertile lemma, gaping. Lower glume lanceolate, 1 length of upper glume, membranous, much thinner on margins, light green, 1keeled, 1 -veined. Lower glume primary vein scabrous. Lower glume lateral veins absent. Lower glume surface asperulous, rough above. Lower glume apex acute or acuminate. Upper glume lanceolate, 4.5-5.5 mm long, 2 length of adjacent fertile lemma, membranous, with hyaline margins, light green, 1-keeled, 1 veined. Upper glume primary vein scabrous. Upper glume lateral veins absent. Upper glume surface asperulous, rough above. Upper glume apex acute or acuminate.

Florets. Fertile lemma elliptic, $2.5-3 \mathrm{~mm}$ long, hyaline, without keel, 5 -veined, more than 3 -veined. Lemma lateral veins excurrent. Lemma surface pubescent. Lemma apex truncate, awned. Principal lemma awn dorsal, arising $0.5-0.66$ way up back of lemma, straight or curved, $4-6 \mathrm{~mm}$ long overall. Palea elliptic, $0.5-0.66$ length of lemma, hyaline, 2 -veined. Rhachilla extension 0.5 mm long, pilose, with $0.5-1 \mathrm{~mm}$ long hairs.

Flower and Fruit. Lodicules 2, lanceolate, 1 mm long, membranous, acute. Anthers 3, $0.8-1.2 \mathrm{~mm}$ long. Caryopsis with adherent pericarp, 1.5 mm long.

Distribution (TDWG). Continent. Australasia.
Country /Province/State. New Zealand. Antipodes Is, Campbell Is, Auckland Is.

Lachnagrostis leviseta A.J.Brown. Muelleria 26(2): 40 (2008).
TYPE from Australia. T:<Type of Basionym>: fide TROPICOS and Kew Synonomy Database: Australia, Victoria, Grampians: Peel (MEL holo).

Illustrations: None found.
Classification. Subfamily Pooideae. Tribe: Poeae.
Habit, Vegetative Morphology. Perennial, caespitose. Culms erect, $50-65 \mathrm{~cm}$ long, $1-2 \mathrm{~mm}$ diam. Leaf-sheaths longer than adjacent culm internode, smooth or scaberulous, glabrous on surface. Ligule an eciliate membrane, (3-)5-6 mm long, acute. Leaf-blades erect, filiform, involute, $5-20 \mathrm{~cm}$ long, 0.5 mm wide, glaucous. Leaf-blade surface scaberulous.

Inflorescence. Inflorescence a panicle. Peduncle $10-15 \mathrm{~cm}$ long. Panicle open, oblong, effuse, 10-25 cm long. Primary panicle branches spreading. Panicle branches stiff, scabrous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, 3-16 mm long, scabrous.

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 or elliptic, laterally compressed, (3.3-)3.5-4 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus pilose. Floret callus hairs $0.6-$ 1 mm long.

Glumes. Glumes persistent, similar, exceeding apex of florets, firmer than fertile lemma, gaping. Lower glume lanceolate, (3.3-)3.5-4 mm long, 1.1 length of upper glume, membranous, 1 -keeled. Lower
glume primary vein scabrous. Lower glume surface smooth or asperulous. Lower glume apex acuminate. Upper glume lanceolate, $3.1-3.7 \mathrm{~mm}$ long, 1.8 length of adjacent fertile lemma, membranous, 1-keeled. Upper glume primary vein scabrous. Upper glume surface smooth or asperulous. Upper glume apex acuminate.

Florets. Fertile lemma oblong, 1.7-2.1 mm long, hyaline, without keel, 5 -veined, more than 3-veined. Lemma surface pilose. Lemma hairs $0.5-0.7 \mathrm{~mm}$ long. Lemma apex entire or dentate, 4 -fid, with lobes 0.1 mm long, truncate or acute, muticous or mucronate. Principal lemma awn subapical, 0.5 mm long overall. Palea 1.4-1.7(-2) mm long, 0.8 length of lemma, hyaline. Rhachilla extension (1.5-)1.7-2 mm long, pilose.

Flower and Fruit. Anthers 3, $0.7-0.9 \mathrm{~mm}$ long.
Distribution (TDWG). Continent. Australasia.
Country /Province /State. Australia. Victoria.

## Lachnagrostis limitanea (J.M.Black) S.W.L.Jacobs. Telopea 9(3): 446 (2002).

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

TYPE from Australia. Basionym or Replaced Name: Agrostis limitanea J.M. Black, Trans. \& Proc. Roy. Soc. South Australia 55: 137, f. 5 (1931). T:<Type of Basionym>: fide TROPICOS and Kew Synonomy Database: HT: W.C. Johnston s.n., Mar 1931, Australia: South Australia, near Riverton (AD; IT: US-1761920 (ex hb. Black)).

Illustrations (Books): J.P.Jessop, G.R.M. Dashorst \& F.M.James, Grasses of South Australia (2006) (230, Fig 174).

Images: D.Sharp \& B.K.Simon, AusGrass. Grasses of Australia. CD-Rom Version 1.0. (2002);
Derivation (Clifford \& Bostock 2007): L. limes, pathway; -anea, relating to. Growing in railway reserves, South Australia.

Classification. Subfamily Pooideae. Tribe: Poeae.
Habit, Vegetative Morphology. Perennial, caespitose. Culms erect, $30-45 \mathrm{~cm}$ long, 5 -noded. Culminternodes antrorsely scabrous. Culm-nodes glabrous. Leaf-sheaths loose, scaberulous. Ligule an eciliate membrane, 3 mm long, scaberulous on abaxial surface, acute. Leaf-blades involute, 3-12 cm long, 1.5-2.5 mm wide. Leaf-blade surface ribbed, scabrous, rough on both sides. Leaf-blade apex acuminate.

Inflorescence. Inflorescence a panicle, embraced at base by subtending leaf. Panicle open, pyramidal, effuse, $8-20 \mathrm{~cm}$ long. Primary panicle branches whorled at most nodes. Panicle branches capillary, scabrous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, clavate, 3-6 mm long, scabrous.

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, subacute, $2.5-5.5 \mathrm{~mm}$ long, breaking up at maturity, disarticulating below each fertile floret. Floret callus glabrous.

Glumes. Glumes persistent, similar, exceeding apex of florets, firmer than fertile lemma, gaping. Lower glume lanceolate, 3 mm long, 1.2 length of upper glume, membranous, 1 -keeled, 1 -veined. Lower glume primary vein scaberulous. Lower glume lateral veins absent. Lower glume surface smooth or asperulous. Lower glume apex acute. Upper glume lanceolate, 2.7 mm long, membranous, 1-keeled, 1 veined. Upper glume primary vein scaberulous. Upper glume lateral veins absent. Upper glume surface smooth or asperulous. Upper glume apex acute.

Florets. Fertile lemma lanceolate, 1.7 mm long, hyaline, shiny, without keel, 5 -veined, more than 3veined. Lemma lateral veins obscure, extending close to apex. Lemma apex erose, truncate, muticous. Palea 1 length of lemma, hyaline. Rhachilla extension 0.5 mm long, glabrous or pilose.

Flower and Fruit. Lodicules 2, membranous. Anthers 3, 0.6 mm long. Caryopsis with adherent pericarp. Hilum linear.

Distribution (TDWG). Continent. Australasia.
Country /Province /State. Australia. South Australia.
Southern.

Lachnagrostis littoralis (Hack.) E.Edgar. New Zealand J. Bot., 33(1): 23 (1995).
Accepted by: U.Quattrocchi, CRC World Dictionary of Grasses (2006), E.Edgar, \& H.Connor, Flora of New Zealand Gramineae 5 (2000).

TYPE from Kermadec Island, NZ. Basionym or Replaced Name: Deyeuxia forsteri var. littoralis Hack., Cheeseman, Man. New Zeal. Fl. :869 (1906). T:<Type of Basionym>: fide TROPICOS and Kew Synonomy Database: Kermadec Is.: Shakespear (W lecto).

Illustrations: None found.
Derivation (Clifford \& Bostock 2007): L. lit(t)us, sea shore; -ale, pertaining to. Sand dune, salt marsh species or river-banks.

Classification. Subfamily Pooideae. Tribe: Poeae.
Habit, Vegetative Morphology. Annual, caespitose, clumped densely. Basal innovations intravaginal. Culms $5-20 \mathrm{~cm}$ long. Ligule an eciliate membrane, $0.5-3 \mathrm{~mm}$ long, scaberulous on abaxial surface, erose or lacerate, obtuse. Leaf-blades flat or involute, $1-8 \mathrm{~cm}$ long, $1.5-3 \mathrm{~mm}$ wide. Leaf-blade surface smooth or scabrous or papillose. Leaf-blade margins scaberulous. Leaf-blade apex abruptly acute.

Inflorescence. Inflorescence a panicle, deciduous as a whole, embraced at base by subtending leaf. Peduncle scaberulous above. Panicle open, elliptic, $3-12 \mathrm{~cm}$ long, $0.5-8.5 \mathrm{~cm}$ wide. Primary panicle branches appressed. Panicle branches scabrous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 1 fertile florets, without rhachilla extension or with a barren rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, laterally compressed, (2.5-)3-4(-6) mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus pubescent. Floret callus hairs $0.3-0.5 \mathrm{~mm}$ long, 0.2 length of lemma.

Glumes. Glumes persistent, similar, exceeding apex of florets, firmer than fertile lemma, gaping. Lower glume lanceolate or elliptic, 1 length of upper glume, membranous, much thinner on margins, 1keeled, 1 -veined. Lower glume primary vein scabrous. Lower glume lateral veins absent. Lower glume apex acute or acuminate. Upper glume lanceolate or elliptic, (2.5-)3-4(-6) mm long, 1.3 length of adjacent fertile lemma, membranous, with hyaline margins, 1-keeled, 1 -veined. Upper glume primary vein scabrous. Upper glume lateral veins absent. Upper glume apex acute or acuminate.

Florets. Fertile lemma oblong or ovate, $1.8-2.5 \mathrm{~mm}$ long, hyaline, without keel, 5 -veined, more than 3-veined. Lemma lateral veins excurrent. Lemma surface pubescent. Lemma apex truncate, awned. Principal lemma awn dorsal, arising 0.5 way up back of lemma, geniculate, $3-6 \mathrm{~mm}$ long overall, with a straight or slightly twisted column. Palea 1 length of lemma, hyaline, 2 -veined. Palea apex with excurrent keel veins. Rhachilla extension $0.2-1 \mathrm{~mm}$ long, pilose, with $0.5-1.5 \mathrm{~mm}$ long hairs.

Flower and Fruit. Lodicules 2, linear, 0.7 mm long, membranous, acute. Anthers 3, $0.4-0.7 \mathrm{~mm}$ long. Caryopsis with adherent pericarp, $1-1.5 \mathrm{~mm}$ long.

Distribution (TDWG). Continent. Australasia.
Country /Province /State. New Zealand. New Zealand South I.

Lachnagrostis lyallii (Hook. f.) Zotov. Rec. Domin. Mus. 5: 142 (1965).
Accepted by: W.D.Clayton \& K.Harman, GrassBase (2008) and online, U.Quattrocchi, CRC World Dictionary of Grasses (2006).

TYPE from New Zealand. Basionym or Replaced Name: Agrostis lyalii Hook. f. Fl. N. Zeal. 297 (1853). T:<Type of Basionym>: fide TROPICOS and Kew Synonomy Database: New Zealand, Milford Sound: Lyall (K holo).

Illustrations: None found.
Images: E.Edgar \& H.E.Connor, Flora of New Zealand 5, Gramineae (2000); (as Lachnagrostis).
Derivation (Clifford \& Bostock 2007): in honor of David Lyall (1817-1895) Scots-born botanist who collected in New Zealand.

Classification. Subfamily Pooideae. Tribe: Poeae.
Habit, Vegetative Morphology. Annual, caespitose, clumped loosely. Stolons absent or present. Basal innovations extravaginal. Culms erect or geniculately ascending, $10-50 \mathrm{~cm}$ long. Leaf-sheaths smooth or scaberulous. Ligule an eciliate membrane, 0.6-4 mm long, scaberulous on abaxial surface, erose or lacerate, truncate. Leaf-blades flat or conduplicate, $2-15 \mathrm{~cm}$ long, $0.3-3.5 \mathrm{~mm}$ wide. Leaf-blade surface scabrous, rough adaxially or on both sides. Leaf-blade margins scaberulous. Leaf-blade apex abruptly acute.

Inflorescence. Inflorescence a panicle, deciduous as a whole. Peduncle scaberulous above. Panicle open, elliptic, effuse, $4-25 \mathrm{~cm}$ long, $1-16 \mathrm{~cm}$ wide. Primary panicle branches spreading. Panicle branches scaberulous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 1 fertile florets, without rhachilla extension or with a barren rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, laterally compressed, 2.3-4.5 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus pilose. Floret callus hairs $0.5-1 \mathrm{~mm}$ long, 0.33 length of lemma.

Glumes. Glumes persistent, similar, exceeding apex of florets, firmer than fertile lemma, gaping. Lower glume elliptic or ovate, 1 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume primary vein scabrous. Lower glume lateral veins absent. Lower glume surface scabrous, rough above. Lower glume apex acute. Upper glume elliptic or ovate, 2.3-4.5 mm long, 1.3-2 length of adjacent fertile lemma, membranous, 1 -keeled, 1 -veined. Upper glume primary vein scabrous. Upper glume lateral veins absent. Upper glume surface scabrous, rough above. Upper glume apex acute.

Florets. Fertile lemma elliptic or oblong, $2-2.5 \mathrm{~mm}$ long, hyaline, without keel, 5 -veined, more than 3-veined. Lemma lateral veins excurrent. Lemma surface puberulous, hairy all along or below. Lemma apex truncate, awned. Principal lemma awn dorsal, arising 0.5 way up back of lemma, geniculate, $2-6 \mathrm{~mm}$ long overall, with twisted column. Palea $0.5-1$ length of lemma, hyaline, 2 -veined. Rhachilla extension $0.5-1 \mathrm{~mm}$ long, sparsely hairy, with $0.5-1 \mathrm{~mm}$ long hairs.

Flower and Fruit. Lodicules 2, linear, 0.7-0.9 mm long, membranous, acute. Anthers 3, 0.6-1.2 mm long. Caryopsis with adherent pericarp, $1.2-2 \mathrm{~mm}$ long.

Distribution (TDWG). Continent. Australasia.
Country /Province /State. New Zealand. Chatham Is, New Zealand North I, New Zealand South I.

Lachnagrostis meionectes Vickery. Telopea 9(3): 446 (2002).
Accepted by: W.D.Clayton \& K.Harman, GrassBase (2008) and online (as Agrostis meionectes), U.Quattrocchi, CRC World Dictionary of Grasses (2006) (as Agrostis), D.Sharp, D. \& B.K.Simon, AusGrass (2002).

TYPE from Australia. Basionym or Replaced Name: Agrostis meionectes Vickery, Contr. New South Wales Natl. Herb. 4(1): 12 (1966). T:<Type of Basionym>: fide TROPICOS and Kew Synonomy Database: Australia, Mt. Kosciusko: Johnson \& Constable (NSW holo).

Illustrations (Books): S.W.L.Jacobs, R.D.B.Whalley \& D.J.B.Wheeler,, Grasses of New South Wales, 4th edn (2008) (290).

Images: D.Sharp \& B.K.Simon, AusGrass. Grasses of Australia. CD-Rom Version 1.0. (2002);.
Derivation (Clifford \& Bostock 2007): Gk meinektes, one who has less. At first regarded as depaupaerate species of another species.

Classification. Subfamily Pooideae. Tribe: Poeae.
Habit, Vegetative Morphology. Annual, caespitose, clumped densely. Basal innovations intravaginal. Culms erect, $10-30 \mathrm{~cm}$ long, 3 -noded. Culm-internodes terete, scaberulous. Culm-nodes glabrous. Leafsheaths tight, striately veined, scaberulous. Ligule an eciliate membrane, $3-5 \mathrm{~mm}$ long, lacerate, acute or acuminate. Leaf-blades flat or conduplicate, $1-7 \mathrm{~cm}$ long, $0.75-2.5 \mathrm{~mm}$ wide. Leaf-blade venation with 2-6 secondary veins. Leaf-blade surface smooth or scaberulous. Leaf-blade apex acuminate.

Inflorescence. Inflorescence a panicle. Peduncle antrorsely scabrous above. Panicle open, pyramidal, $5-10 \mathrm{~cm}$ long, $5-10 \mathrm{~cm}$ wide. Primary panicle branches spreading, $2-5$-nate, whorled at most nodes, branching divaricately. Panicle branches scabrous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, clavate, 0.5 mm long, scabrous.

Fertile Spikelets. Spikelets comprising 1 fertile florets, with a barren rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, laterally compressed, $3-3.5 \mathrm{~mm}$ long, breaking up at maturity, disarticulating below each fertile floret. Floret callus pubescent.

Glumes. Glumes persistent, similar, exceeding apex of florets, firmer than fertile lemma, gaping. Lower glume lanceolate, $3-3.5 \mathrm{~mm}$ long, 1 length of upper glume, membranous, much thinner on margins, 1-keeled, keeled above, 1 -veined. Lower glume primary vein scaberulous. Lower glume lateral veins absent. Lower glume apex acute or acuminate. Upper glume lanceolate, $3-3.5 \mathrm{~mm}$ long, 1.5 length of adjacent fertile lemma, membranous, with hyaline margins, 1 -keeled, keeled above, 1 -veined. Upper glume primary vein scaberulous. Upper glume lateral veins absent. Upper glume apex acute or acuminate.

Florets. Fertile lemma lanceolate or oblong, 2-2.5 mm long, hyaline, without keel, 5 -veined, more than 3-veined. Lemma lateral veins obscure. Lemma surface puberulous. Lemma apex dentate, 4 -fid,
truncate, awned, 1 -awned. Principal lemma awn dorsal, arising 0.7-0.8 way up back of lemma, straight or geniculate, $2-4 \mathrm{~mm}$ long overall, without a column or with a straight or slightly twisted column. Palea 0.8 length of lemma, hyaline. Rhachilla extension pilose.

Flower and Fruit. Lodicules 2, membranous. Anthers 3, 0.75 mm long. Caryopsis with adherent pericarp, oblong. Embryo 0.25 length of caryopsis. Hilum linear.

Distribution (TDWG). Continent. Australasia.
Country /Province/State. Australia. New South Wales, Victoria.
Tablelands.

## Lachnagrostis morrisii A.J.Brown. Muelleria 24: 127 (2006).

TYPE from Australia. T:<Type of Basionym>: fide TROPICOS and Kew Synonomy Database: Australia, Tasmania, Russell Falls: Curtis (HO holo, MEL, AD, AK, RSA).

Illustrations: None found.
Classification. Subfamily Pooideae. Tribe: Poeae.
Habit, Vegetative Morphology. Annual or perennial, short-lived, caespitose, clumped loosely. Stolons absent or present. Culms geniculately ascending, $25-50 \mathrm{~cm}$ long. Leaf-sheaths scaberulous. Ligule an eciliate membrane, $2.5-3 \mathrm{~mm}$ long, erose, obtuse. Leaf-blades $5-15 \mathrm{~cm}$ long, $1-4.5 \mathrm{~mm}$ wide. Leaf-blade surface smooth or scaberulous, rough abaxially. Leaf-blade margins smooth or scaberulous.

Inflorescence. Inflorescence a panicle, exserted or embraced at base by subtending leaf. Panicle open, obovate, effuse, $10-25 \mathrm{~cm}$ long, bearing few spikelets. Primary panicle branches spreading or reflexed. Panicle branches stiff, straight. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, clavate, unequal, $5-40 \mathrm{~mm}$ 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, 2-3(-3.2) mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus sparsely hairy.

Glumes. Glumes persistent, similar, exceeding apex of florets, firmer than fertile lemma, gaping. Lower glume lanceolate, $2-3 \mathrm{~mm}$ long, 1 length of upper glume, membranous, 1 -keeled, 1 -veined. Lower glume primary vein scabrous. Lower glume lateral veins absent. Lower glume surface smooth or asperulous. Lower glume apex acute. Upper glume lanceolate, $2-3 \mathrm{~mm}$ long, membranous, 1-keeled, 1 veined. Upper glume primary vein scabrous. Upper glume lateral veins absent. Upper glume surface smooth or asperulous. Upper glume apex acute.

Florets. Fertile lemma lanceolate, $1.7-2.6 \mathrm{~mm}$ long, hyaline, without keel, 5 -veined, more than 3veined. Lemma apex dentate, 4 -fid, truncate, awned, 1 -awned. Principal lemma awn subapical, straight, $0.2-1.5 \mathrm{~mm}$ long overall. Palea $1.6-2.1 \mathrm{~mm}$ long, hyaline. Rhachilla extension $0.3-1.5 \mathrm{~mm}$ long, pilose.

Flower and Fruit. Anthers $3,0.4-0.6 \mathrm{~mm}$ long. Caryopsis with adherent pericarp.
Distribution (TDWG). Continent. Australasia.
Country /Province /State. Australia. Tasmania.

## Lachnagrostis nesomytica A.J.Brown. Muelleria 24: 130-134 (2006).

TYPE from Australia. T:<Type of Basionym>: fide TROPICOS and Kew Synonomy Database: T: Lake baghdad, Rottnest Is., W.A., 22 Nov 1998, E.Fox 005; holo:PERTH.

Illustrations: None found.
Classification. Subfamily Pooideae. Tribe: Poeae.
Habit, Vegetative Morphology. Annual or perennial, short-lived, caespitose, clumped loosely. Culms geniculately ascending, $16-46 \mathrm{~cm}$ long. Culm-internodes distally glabrous. Ligule an eciliate membrane, 45 mm long. Leaf-blades $10-15 \mathrm{~cm}$ long, $1-1.5 \mathrm{~mm}$ wide.

Inflorescence. Inflorescence a panicle. Panicle open, ovate, effuse, $10-20 \mathrm{~cm}$ long, bearing few spikelets. Primary panicle branches spreading. Panicle branches stiff, straight. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, clavate, unequal, 4-24 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, 2-2.8 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus sparsely hairy.

Glumes. Glumes persistent, similar, exceeding apex of florets, firmer than fertile lemma, gaping. Lower glume lanceolate, $2-2.8 \mathrm{~mm}$ long, 1 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume primary vein scabrous. Lower glume lateral veins absent. Lower glume surface smooth or asperulous. Lower glume margins ciliolate. Lower glume apex acute. Upper glume lanceolate, 2-2.8 mm long, membranous, 1 -keeled, 1 -veined. Upper glume primary vein scabrous. Upper glume lateral veins absent. Upper glume surface smooth or asperulous. Upper glume margins ciliolate. Upper glume apex acute.

Florets. Fertile lemma lanceolate, $1.5-1.8 \mathrm{~mm}$ long, hyaline, without keel, 5 -veined, more than 3veined. Lemma surface glabrous or pilose. Lemma apex dentate, 4 -fid, truncate, muticous. Palea hyaline. Palea apex entire or dentate, 2 -fid. Rhachilla extension $0.6-1.4 \mathrm{~mm}$ long, glabrous or pilose.

Flower and Fruit. Anthers 3, 0.5-0.6 mm long. Caryopsis with adherent pericarp.
Distribution (TDWG). Continent. Australasia.
Country /Province /State. Australia. Western Australia.
South-West.

Lachnagrostis palustris A.J.Brown. Muelleria 26: 39 (2008).
TYPE from Australia. T:<Type of Basionym>: fide TROPICOS and Kew Synonomy Database: T: Nangwarry, S.A., 3 Jan 1996, R.Bates 41870; holo: AD.

Illustrations: None found.
Classification. Subfamily Pooideae. Tribe: Poeae.
Habit, Vegetative Morphology. Perennial, caespitose. Butt sheaths purple. Culms erect or geniculately ascending, $25-80 \mathrm{~cm}$ long, $1-2 \mathrm{~mm}$ diam. Culm-internodes distally glabrous. Lateral branches lacking or sparse. Leaf-sheaths longer than adjacent culm internode, smooth. Ligule an eciliate membrane, (4-)6-8 mm long, lacerate, acute. Leaf-blades erect, filiform, involute, $5-15(-20) \mathrm{cm}$ long, $0.2-1.5 \mathrm{~mm}$ wide. Leaf-blade surface smooth or scaberulous.

Inflorescence. Inflorescence a panicle. Panicle open, oblong, effuse, $10-35 \mathrm{~cm}$ long. Primary panicle branches spreading, $2-8 \mathrm{~cm}$ long. Panicle branches scabrous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, scabrous.

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 or elliptic, laterally compressed, (3.2-)3.4-3.7(-4) mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus pubescent. Floret callus hairs $0.5-0.7 \mathrm{~mm}$ long.

Glumes. Glumes persistent, similar, exceeding apex of florets, firmer than fertile lemma, gaping. Lower glume lanceolate, (3.2-)3.4-3.7(-4) mm long, 1.1 length of upper glume, membranous, purple, 1keeled. Lower glume primary vein scabrous. Lower glume surface smooth or asperulous. Lower glume apex acuminate. Upper glume lanceolate, 3-3.5 mm long, 1.9-2 length of adjacent fertile lemma, membranous, purple, 1 -keeled. Upper glume primary vein scabrous. Upper glume surface smooth or papillose. Upper glume apex acuminate.

Florets. Fertile lemma oblong, $1.5-1.8 \mathrm{~mm}$ long, hyaline, without keel, 5 -veined, more than 3 -veined. Lemma lateral veins excurrent ( $0.5-0.7 \mathrm{~mm}$ ) or extending close to apex. Lemma surface pilose. Lemma hairs $0.3-0.4 \mathrm{~mm}$ long. Lemma apex dentate, 4 -fid, with lobes $0.1-0.3 \mathrm{~mm}$ long, awned, 1 -awned. Principal lemma awn dorsal, arising 0.5 way up back of lemma, geniculate, (4.3-)5-6(-6.5) mm long overall, with twisted column. Column of lemma awn $0.5-0.66$ length of limb. Palea $1.2-1.6 \mathrm{~mm}$ long, $0.8-$ 0.9 length of lemma, hyaline. Rhachilla extension $1.2-1.6 \mathrm{~mm}$ long, pilose.

Flower and Fruit. Anthers 3, 0.4-0.5(-0.6) mm long.
Distribution (TDWG). Continent. Australasia.
Country /Province /State. Australia. South Australia.
Southern.

Lachnagrostis pilosa (Buchanan) Edgar. New Zealand J. Bot. 33(1): 27-28 (1995).
Accepted by: W.D.Clayton \& K.Harman, GrassBase (2008) and online.
TYPE from New Zealand. Basionym or Replaced Name: Agrostis pilosa Lens \& A. Rich., Voy. Astrolabe Botanique 134, t. 23 (1832)
. T:<Type of Basionym>: fide TROPICOS and Kew Synonomy Database: HT: d'Urville s.n. [herb. Richard], New Zealand: Hâvre de l'Astrolabe (P; IT: CHR-236598 (fragm.)).

Illustrations (Books): E.Edgar. \& H.E.Connor, Flora of New Zealand 5, Gramineae (2000) (268, Fig. 9 as Lachnagrostis pilosa).

Derivation (Clifford \& Bostock 2007): in honor of Achille Richard (1794-1852) French botanist.
Classification. Subfamily Pooideae. Tribe: Poeae.
Habit, Vegetative Morphology. Annual, caespitose. Basal innovations intravaginal. Culms 30-90 cm long. Leaf-sheaths smooth or scaberulous. Ligule an eciliate membrane, $1.3-6 \mathrm{~mm}$ long, scaberulous on abaxial surface, erose, obtuse. Leaf-blades $6-28 \mathrm{~cm}$ long, $2-6.5 \mathrm{~mm}$ wide. Leaf-blade surface ribbed, scaberulous, rough on both sides. Leaf-blade margins scaberulous, glabrous.

Inflorescence. Inflorescence a panicle, deciduous as a whole. Peduncle fracturing. Panicle open, elliptic or ovate, 12-28 cm long, 6-20 cm wide. Panicle axis scabrous. Panicle branches capillary, scaberulous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 1 fertile florets, without rhachilla extension or with a barren rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, laterally compressed, $3.5-5.5 \mathrm{~mm}$ long, breaking up at maturity, disarticulating below each fertile floret. Floret callus bearded. Floret callus hairs 1.5 mm long, 0.5 length of lemma.

Glumes. Glumes persistent, similar, exceeding apex of florets, firmer than fertile lemma, gaping. Lower glume lanceolate or elliptic, 1 length of upper glume, membranous, 1 -keeled, 1 -veined. Lower glume primary vein scabrous. Lower glume lateral veins absent. Lower glume surface smooth or asperulous, rough above. Lower glume apex acute or acuminate. Upper glume linear or lanceolate, 3.5-5.5 mm long, 1.5 length of adjacent fertile lemma, membranous, 1 -keeled, 1 -veined. Upper glume primary vein scabrous. Upper glume lateral veins absent. Upper glume surface smooth or asperulous, rough above. Upper glume apex acute or acuminate.

Florets. Fertile lemma elliptic or oblong, 2-2.8 mm long, hyaline, without keel, 5 -veined, more than 3-veined. Lemma lateral veins excurrent. Lemma surface pilose, hairy below. Lemma apex truncate, awned. Principal lemma awn dorsal, arising 0.5 way up back of lemma, straight or geniculate, $1-8.5 \mathrm{~mm}$ long overall, with a straight or slightly twisted column. Palea elliptic or oblong, $0.5-1$ length of lemma, hyaline, 2 -veined. Rhachilla extension $0.2-0.5 \mathrm{~mm}$ long, pilose, with 1 mm long hairs.

Flower and Fruit. Lodicules 2, lanceolate, 0.5 mm long, membranous, acute. Anthers 3, 0.6-1.2 mm long. Caryopsis with adherent pericarp, 1.3-1.8 mm long.

Distribution (TDWG). Continent. Australasia.
Country /Province /State. New Zealand. Chatham Is, New Zealand North I, New Zealand South I.

## Lachnagrostis perennis Vickery) A.J.Brown. Muelleria 26: 35 (2008).

TYPE from Australia. Basionym or Replaced Name: Lachnagrostis avenacea var. perennis Vickery, Contr. N.S.W.Nat.Herb. 1:114 (1941). T:<Type of Basionym>: fide TROPICOS and Kew Synonomy Database: T: Encounter Bay, S.A., Jan 1925, J.B.Cleland H.242; holo: K.

Illustrations: None found.
Classification. Subfamily Pooideae. Tribe: Poeae.
Habit, Vegetative Morphology. Perennial, caespitose. Culms erect, 50-100 cm long, 4-5 -noded. Culm-nodes glabrous. Leaf-sheaths longer than adjacent culm internode, smooth or scaberulous, glabrous on surface. Ligule an eciliate membrane, $5-10 \mathrm{~mm}$ long, entire or lacerate, acute. Leaf-blades (5-)15-25 cm long, (2-)3-5 mm wide.

Inflorescence. Inflorescence a panicle, deciduous as a whole. Peduncle smooth, fracturing. Panicle open, effuse, $15-35 \mathrm{~cm}$ long. Primary panicle branches appressed or spreading (at maturity), whorled at most nodes. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, scabrous.

Fertile Spikelets. Spikelets comprising 1 fertile florets, with a barren rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets cuneate, laterally compressed, (2.3-)2.5-3(-3.5) mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, similar, exceeding apex of florets, firmer than fertile lemma, shiny, parallel to lemmas. Lower glume lanceolate, 2.3-3.5 mm long, 0.9 length of upper glume, membranous, 1-
keeled, 1 -veined. Lower glume lateral veins absent. Lower glume apex acute. Upper glume lanceolate, $2.3-3.5 \mathrm{~mm}$ long, $1.7-2$ length of adjacent fertile lemma, membranous, 1 -keeled, 1 -veined. Upper glume lateral veins absent. Upper glume apex acute.

Florets. Fertile lemma oblong, $1.3-1.8 \mathrm{~mm}$ long, hyaline, without keel, 5 -veined, more than 3 -veined. Lemma surface pubescent. Lemma apex dentate, 4 -fid, awned. Principal lemma awn dorsal, arising 0.50.75 way up back of lemma, geniculate, $3.5-6 \mathrm{~mm}$ long overall, with twisted column. Palea 0.9 length of lemma, hyaline, 2 -veined. Palea apex entire. Rhachilla extension $0.8-1.8 \mathrm{~mm}$ long, villous.

Flower and Fruit. Anthers 3, 0.5-0.6(-0.7) mm long.
Distribution (TDWG). Continent. Australasia.
Country /Province /State. Australia. South Australia.
Southern.

Lachnagrostis plebeia (R.Br.) Trin. Gram. Unifl. 217 (1824).
Accepted by: W.D.Clayton \& K.Harman, GrassBase (2008) and online (as Agrostis plebeia), U.Quattrocchi, CRC World Dictionary of Grasses (2006) (as Agrostis), D.Sharp, D. \& B.K.Simon, AusGrass (2002), J.F.Veldkamp, Poaceae ms (Flora Malesiana) (as Deyeuxia australis).

TYPE from Australia. Basionym or Replaced Name: Agrostis plebeia R. Br., Prodr. 1: 172 (1810). $\mathrm{T}:<$ Type of Basionym>: fide TROPICOS and Kew Synonomy Database: HT: R. Brown 6220, Australia: New South Wales: Port Jackson (BM). Vickery, Contr. New South Wales Natl. Herb. 1: 101-119, notes that this is the only specimen of this species not from Western Australia, and this probably indicates a problem with the locality data on the type specimen.

Illustrations: None found.
Images: D.Sharp \& B.K.Simon, AusGrass. Grasses of Australia. CD-Rom Version 1.0. (2002);.
Derivation (Clifford \& Bostock 2007): L. plebius, common. Abundant and often widespread.
Classification. Subfamily Pooideae. Tribe: Poeae.
Habit, Vegetative Morphology. Annual, caespitose. Culms slender, $20-30 \mathrm{~cm}$ long. Culm-internodes smooth. Leaf-sheaths glabrous on surface. Ligule an eciliate membrane, $2-3 \mathrm{~mm}$ long, obtuse. Leaf-blades flat or convolute, $0.5-1 \mathrm{~mm}$ wide.

Inflorescence. Inflorescence a panicle. Peduncle smooth. Panicle contracted, linear, 4-12 cm long. Primary panicle branches appressed, 1-3 -nate. Panicle axis smooth. Panicle branches capillary, scaberulous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, 2-5 mm long, scaberulous.

Fertile Spikelets. Spikelets comprising 1 fertile florets, without rhachilla extension or with a barren rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets elliptic, laterally compressed, 3-4 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, similar, exceeding apex of florets, firmer than fertile lemma, shiny, gaping. Lower glume lanceolate, 2.7-5.5 mm long, 1.1 length of upper glume, membranous, 1 -keeled, 1 -veined. Lower glume primary vein scabrous. Lower glume lateral veins absent. Lower glume apex acute. Upper glume lanceolate, 3-3.7 mm long, 1.1-1.2 length of adjacent fertile lemma, membranous, 1-keeled, 1 veined. Upper glume primary vein scabrous. Upper glume lateral veins absent. Upper glume apex acute.

Florets. Fertile lemma elliptic, 3 mm long, hyaline, without keel, 5 -veined, more than 3-veined. Lemma surface pilose. Lemma apex dentate, 4 -fid, with outer lobes longer, incised 0.5 of lemma length, awned, 1 -awned. Principal lemma awn dorsal, arising $0.1-0.2$ way up back of lemma, geniculate, $6-8 \mathrm{~mm}$ long overall, with twisted column. Palea 0.75 length of lemma, hyaline.

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

Distribution (TDWG). Continent. Australasia.
Country /Province /State. Australia. Western Australia.
South-West.

Lachnagrostis preissii Nees. Lehm. Pl. Preiss. ii. 97 (1847).
Accepted by: W.D.Clayton \& K.Harman, GrassBase (2008) and online (as Agrostis), D.Sharp, D. \& B.K.Simon, AusGrass (2002).

TYPE from Australia. T:<Type of Basionym>: fide TROPICOS and Kew Synonomy Database: IT: J.A.L. Preiss 1896, Oct 1840, Australia: Western Australia: in regionibus interioribus Australiae meridionali-occidentalis (BM, K, L).

Recent Synonyms: Agrostis preissii (Nees) Vickery, Contrib. N. S. Wales Nat. Herb. 1: 111 (1941).
Illustrations: None found.
Images: D.Sharp \& B.K.Simon, AusGrass. Grasses of Australia. CD-Rom Version 1.0. (2002);
Derivation (Clifford \& Bostock 2007): in honor of Johann August Ludwig Preiss (1811-1883) German botanist.

Classification. Subfamily Pooideae. Tribe: Poeae.
Habit, Vegetative Morphology. Annual, caespitose. Culms erect or geniculately ascending, 12-45 cm long. Culm-internodes smooth. Leaf-sheaths smooth, glabrous on surface. Ligule an eciliate membrane. Leaf-blades filiform, conduplicate, 0.5 mm wide. Leaf-blade surface smooth.

Inflorescence. Inflorescence a panicle. Peduncle smooth. Panicle open, linear, $4-15 \mathrm{~cm}$ long. Primary panicle branches appressed. Panicle axis scabrous. Panicle branches capillary, scabrous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, scabrous.

Fertile Spikelets. Spikelets comprising 1 fertile florets, with a barren rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets elliptic, laterally compressed, $4-4.5 \mathrm{~mm}$ long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, similar, exceeding apex of florets, firmer than fertile lemma, shiny, gaping. Lower glume lanceolate, $2.7-5.5 \mathrm{~mm}$ long, 1.1 length of upper glume, membranous, much thinner on margins, 1 -keeled, 1 -veined. Lower glume primary vein scabrous. Lower glume lateral veins absent. Lower glume apex acuminate. Upper glume lanceolate, 3.6-4.2 mm long, 1.1-1.2 length of adjacent fertile lemma, membranous, with hyaline margins, 1 -keeled, 1 -veined. Upper glume primary vein scabrous. Upper glume lateral veins absent. Upper glume apex acuminate.

Florets. Fertile lemma elliptic, 4 mm long, hyaline, without keel, 5 -veined, more than 3-veined. Lemma surface pilose. Lemma apex dentate, 4 -fid, with simple equal lobes, truncate, awned, 1 -awned. Principal lemma awn dorsal, arising 0.5 way up back of lemma, geniculate, $8-9 \mathrm{~mm}$ long overall, with twisted column. Palea 0.75 length of lemma, hyaline. Rhachilla extension pilose.

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

Distribution (TDWG). Continent. Australasia.
Country /Province /State. Australia. Western Australia.
Eremean, South-West.

## Lachnagrostis punicea (A.J.Br. \& N.G.Walsh) S.W.L.Jacobs. Telopea 9(4): 837 (2002).

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

TYPE from Australia. Basionym or Replaced Name: Agrostis punicea A.J. Brown \& N.G. Walsh, Muelleria 14: 83-84 (2000). T:<Type of Basionym>: fide TROPICOS and Kew Synonomy Database: HT: Ballantine 1446, 15 Nov 1840, Australia: Tasmania: New Norfolk (K; IT: HO).

Recent Synonyms: Agrostis billardieri var. setifolia Hook. f., Fl. Tasman. 2: 115 (1858). Agrostis aemula R.Br., Prod. 172 (1810).

Illustrations (Books): J.P.Jessop, G.R.M. Dashorst \& F.M.James, Grasses of South Australia (2006) (231, Fig 175 as var. punicea \& var. filifolia).

Derivation (Clifford \& Bostock 2007): L. puniceus, red. Panicle branches red.
Classification. Subfamily Pooideae. Tribe: Poeae.
Habit, Vegetative Morphology. Perennial, short-lived, caespitose. Culms erect, 35-65 cm long, 2-3 noded. Culm-internodes antrorsely scabrous. Culm-nodes glabrous. Leaf-sheaths smooth or scaberulous. Ligule an eciliate membrane, $2-8 \mathrm{~mm}$ long, entire or lacerate, obtuse. Leaf-blades filiform, conduplicate, $20-35 \mathrm{~cm}$ long, $1(-2) \mathrm{mm}$ wide.

Inflorescence. Inflorescence a panicle, deciduous as a whole. Peduncle retrorsely scabrous above, fracturing. Panicle open, pyramidal, $20-30 \mathrm{~cm}$ long. Primary panicle branches $2-5$-nate, whorled at lower nodes. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, clavate, scabrous.

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 laterally compressed, $4.5-7.5 \mathrm{~mm}$ long, breaking up at maturity, disarticulating below each fertile floret. Floret callus pilose.

Glumes. Glumes persistent, similar, exceeding apex of florets, firmer than fertile lemma, gaping. Lower glume lanceolate, $4.5-7.5 \mathrm{~mm}$ long, 1 length of upper glume, membranous, 1 -keeled, 1 -veined. Lower glume lateral veins absent. Lower glume apex acuminate, muticous or mucronate. Upper glume lanceolate, $4.5-7.5 \mathrm{~mm}$ long, $1.3-1.5$ length of adjacent fertile lemma, membranous, 1 -keeled, 1 -veined. Upper glume lateral veins absent. Upper glume apex acuminate, muticous or mucronate.

Florets. Fertile lemma lanceolate, $3-5.5 \mathrm{~mm}$ long, hyaline, shiny, without keel, 5 -veined, more than 3veined. Lemma lateral veins excurrent. Lemma surface smooth or asperulous, glabrous or pilose. Lemma apex dentate, 4 -fid, truncate, awned, 1 -awned. Principal lemma awn dorsal, arising 0.25 way up back of lemma, geniculate, $6-12.5 \mathrm{~mm}$ long overall, with twisted column. Palea 0.8 length of lemma, hyaline. Palea apex dentate, 2 -fid, with excurrent keel veins. Rhachilla extension $0.8-2.5 \mathrm{~mm}$ long, pilose.

Flower and Fruit. Anthers $3,1.5 \mathrm{~mm}$ long.
Distribution (TDWG). Continent. Australasia.
Country /Province /State. Australia. South Australia, Victoria, Tasmania.
Southern.

Lachnagrostis robusta (Vickery) S.W.L.Jacobs. Telopea 9(3): 447 (2002).
Accepted by: W.D.Clayton \& K.Harman, GrassBase (2008) and online (as Agrostis billardieri), D.Sharp, D. \& B.K.Simon, AusGrass (2002).

TYPE from Australia. Basionym or Replaced Name: Agrostis billardieri var. robusta Vickery, Contr. New South Wales Natl. Herb. 1: 110 (1941). T:<Type of Basionym>: fide TROPICOS and Kew Synonomy Database: Australia: Victoria: Melbourne, 27 Nov 1853, Adamson 224 (HT: K).

Illustrations (Books): J.P.Jessop, G.R.M. Dashorst \& F.M.James, Grasses of South Australia (2006) (232, Fig 177).

Derivation (Clifford \& Bostock 2007): L. robust. Culms tall, or leaf-blades or spikelets large.
Classification. Subfamily Pooideae. Tribe: Poeae.
Habit, Vegetative Morphology. Annual or perennial, caespitose. Culms erect, 25-80 cm long, 2-3noded. Culm-internodes smooth. Culm-nodes glabrous. Leaf-sheaths smooth or scaberulous. Ligule an eciliate membrane, $2-7 \mathrm{~mm}$ long, entire or lacerate, obtuse. Leaf-blades involute or convolute, $25-50 \mathrm{~cm}$ long, $1-8 \mathrm{~mm}$ wide.

Inflorescence. Inflorescence a panicle, deciduous as a whole, embraced at base by subtending leaf. Peduncle smooth, fracturing. Panicle open, pyramidal, 12-25 cm long. Primary panicle branches whorled at lower nodes. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, clavate, scabrous.

Fertile Spikelets. Spikelets comprising 1 fertile florets, with a barren rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, laterally compressed, $3.5-5.5 \mathrm{~mm}$ long, breaking up at maturity, disarticulating below each fertile floret. Spikelet callus base obtuse. Floret callus pilose.

Glumes. Glumes persistent, similar, exceeding apex of florets, firmer than fertile lemma, gaping. Lower glume lanceolate, $3.5-5.5 \mathrm{~mm}$ long, 1 length of upper glume, membranous, 1 -keeled, 1 -veined. Lower glume lateral veins absent. Lower glume apex acuminate. Upper glume lanceolate, $3.5-5.5 \mathrm{~mm}$ long, 1-1.4 length of adjacent fertile lemma, membranous, 1-keeled, 1 -veined. Upper glume lateral veins absent. Upper glume apex acuminate, mucronate.

Florets. Fertile lemma lanceolate, $2.5-5.5 \mathrm{~mm}$ long, hyaline, without keel, 5 -veined, more than 3veined. Lemma lateral veins obscure. Lemma surface scaberulous, rough above, glabrous. Lemma apex dentate, 2-4 -fid, with lobes $0.3-1 \mathrm{~mm}$ long, truncate, awned, 1 -awned. Principal lemma awn dorsal, arising $0.25-0.5$ way up back of lemma, geniculate, $3.5-8 \mathrm{~mm}$ long overall, with twisted column. Palea 2-4 mm long, 0.9 length of lemma, hyaline. Palea apex dentate, 2 -fid. Rhachilla extension $2-3.5 \mathrm{~mm}$ long, pilose.

Flower and Fruit. Anthers 3, $0.4-1(-1.2) \mathrm{mm}$ long.
Distribution (TDWG). Continent. Australasia.
Country /Province /State. Australia. South Australia, Victoria, Tasmania.
Southern.

Lachnagrostis rudis (Roem. \& Schult.) Trin. Fund. Agrost. :128 (1820)
Accepted by: W.D.Clayton \& K.Harman, GrassBase (2008) and online (as Agrostis), D.Sharp, D. \& B.K.Simon, AusGrass (2002).

TYPE from Australia. Basionym or Replaced Name: Agrostis rudis Roem. \& Schult., Syst. Veg. 2: 360 (1817). T:<Type of Basionym>: fide TROPICOS and Kew Synonomy Database: HT: R. Brown s.n., Without locality (BM). Australia, Port Jackson: Coll? ; Australia, Tasmania: Coll??.

Illustrations: None found.
Images: D.Sharp \& B.K.Simon, AusGrass. Grasses of Australia. CD-Rom Version 1.0. (2002);
Derivation (Clifford \& Bostock 2007): L. uncultivated. Species whose relatives are often cultivated.
Classification. Subfamily Pooideae. Tribe: Poeae.
Habit, Vegetative Morphology. Annual, caespitose, clumped loosely. Culms geniculately ascending, $60-80 \mathrm{~cm}$ long, 3-4 -noded. Culm-internodes antrorsely scabrous. Leaf-sheaths loose, antrorsely scabrous. Ligule an eciliate membrane, $1-3 \mathrm{~mm}$ long, obtuse. Leaf-blades $10-15 \mathrm{~cm}$ long, $3.5-5 \mathrm{~mm}$ wide. Leafblade surface scabrous, rough on both sides. Leaf-blade apex acuminate.

Inflorescence. Inflorescence a panicle. Panicle open, pyramidal, $20-25 \mathrm{~cm}$ long. Primary panicle branches spreading, whorled at most nodes. Panicle branches capillary. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, clavate.

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 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus glabrous or sparsely hairy.

Glumes. Glumes persistent, similar, exceeding apex of florets, firmer than fertile lemma, gaping. Lower glume lanceolate, 2.5 mm long, 1.2 length of upper glume, membranous, 1 -keeled, 1 -veined. Lower glume lateral veins absent. Lower glume surface scabrous. Lower glume margins ciliolate. Lower glume apex acute. Upper glume lanceolate, 2 mm long, membranous, 1 -keeled, 1 -veined. Upper glume lateral veins absent. Upper glume surface scabrous. Upper glume margins ciliolate. Upper glume apex acute.

Florets. Fertile lemma lanceolate, 1.5 mm long, hyaline, shiny, without keel, 5 -veined, more than 3veined. Lemma lateral veins obscure, extending close to apex. Lemma apex dentate, 4 -fid, truncate, awned, 1 -awned. Principal lemma awn subapical, straight, $0.5-1 \mathrm{~mm}$ long overall. Palea 0.9 length of lemma, hyaline. Rhachilla extension 0.6 mm long, pilose, with 0.7 mm long hairs.

Flower and Fruit. Lodicules 2, membranous. Anthers 3, 0.4 mm long. Caryopsis with adherent pericarp. Hilum linear.

Distribution (TDWG). Continent. Australasia.
Country /Province /State. Australia. South Australia, Victoria, Tasmania.
Southern.

Lachnagrostis sodiroana (Hack.) Rugolo \& Molina. Bot. Nuevo Milenio :26 (2002).
Accepted by: R.J.Soreng et al., Catalogue of New World Grasses (2000-2003) and online, W.D.Clayton \& K.Harman, GrassBase (2008) and online (as Agrostis), U.Quattrocchi, CRC World Dictionary of Grasses (2006).

TYPE from Ecuador. Basionym or Replaced Name: Agrostis sodiroana Hack., Oesterr. Bot. Zeitschr :61 (1902). T:<Type of Basionym>: fide TROPICOS and Kew Synonomy Database: Ecuador, Pichincha: Sodiro 23/3 (W holo, QPLS, S).

Illustrations: None found.
Derivation (Clifford \& Bostock 2007): L. -ana, indicating connection. In honor of Luigi Sodiro (1836-1909) Italian-born Ecuadorean cleric and amateur botanist.

Classification. Subfamily Pooideae. Tribe: Poeae.
Habit, Vegetative Morphology. Perennial, caespitose. Culms 30-60 cm long. Culm-internodes distally glabrous. Ligule an eciliate membrane, $4-5 \mathrm{~mm}$ long. Leaf-blades $10-20 \mathrm{~cm}$ long, $2-5 \mathrm{~mm}$ wide.

Inflorescence. Inflorescence a panicle. Panicle open, elliptic, effuse, $10-20 \mathrm{~cm}$ long, with spikelets clustered towards branch tips. Primary panicle branches drooping. 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, laterally compressed, 3 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, similar, exceeding apex of florets, firmer than fertile lemma, shiny, gaping. Lower glume lanceolate, 1 length of upper glume, membranous, 1 -keeled, 1 -veined. Lower glume lateral veins absent. Lower glume apex acuminate. Upper glume lanceolate, 3 mm long, $1.5-1.7$ length of adjacent fertile lemma, membranous, 1-keeled, 1 -veined. Upper glume lateral veins absent. Upper glume apex acuminate.

Florets. Fertile lemma elliptic, $1.8-2 \mathrm{~mm}$ long, hyaline, without keel, 5 -veined, more than 3 -veined. Lemma apex dentate, 2 -fid, truncate, awned, 1 -awned. Principal lemma awn dorsal, arising 0.75 way up back of lemma, straight, 2 mm long overall. Palea 1 mm long, 0.5 length of lemma, hyaline.

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

Distribution (TDWG). Continent. South America.
Country /Province /State. Western South America. Bolivia, Ecuador, Peru.

Lachnagrostis tenuis (Cheeseman) E. Edgar. New Zealand J. Bot., 33(1): 30: (1995).
Accepted by: 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: Deyeuxia billardieri var. tenuis Petrie ex Cheeseman, Man. New Zeal. Fl. :870 (1906). T:<Type of Basionym>: fide TROPICOS and Kew Synonomy Database: New Zealand, Catlins R.: Mathews (WELT holo).

Illustrations: None found.
Derivation (Clifford \& Bostock 2007): L. thin. Culms, leaf-blades or pedicels, slender.
Classification. Subfamily Pooideae. Tribe: Poeae.
Habit, Vegetative Morphology. Annual, caespitose. Butt sheaths coriaceous, light brown. Basal innovations intravaginal. Culms $18-36 \mathrm{~cm}$ long. Leaf-sheaths smooth. Ligule a ciliolate membrane, $1-3.2$ mm long, scaberulous on abaxial surface, erose, truncate. Leaf-blades involute, 2-12 cm long, $0.3-0.9 \mathrm{~mm}$ wide. Leaf-blade surface ribbed, grooved adaxially, scabrous, rough adaxially. Leaf-blade margins smooth. Leaf-blade apex obtuse.

Inflorescence. Inflorescence a panicle, deciduous as a whole, embraced at base by subtending leaf. Peduncle antrorsely scabrous above. Panicle open, elliptic, effuse, $6-12 \mathrm{~cm}$ long, $2-8 \mathrm{~cm}$ wide, with spikelets clustered towards branch tips. Primary panicle branches ascending or spreading. Panicle branches capillary, scabrous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 1 fertile florets, with a barren rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, laterally compressed, $3-5 \mathrm{~mm}$ long, breaking up at maturity, disarticulating below each fertile floret. Floret callus pubescent. Floret callus hairs $0.3-0.8 \mathrm{~mm}$ long, 0.25 length of lemma.

Glumes. Glumes persistent, similar, exceeding apex of florets, firmer than fertile lemma, gaping. Lower glume lanceolate or elliptic, 1 length of upper glume, membranous, 1 -keeled, 1(-3) -veined. Lower glume primary vein scabrous. Lower glume lateral veins absent or obscure. Lower glume apex acuminate. Upper glume lanceolate or elliptic, 3-5 mm long, 1.1 length of adjacent fertile lemma, membranous, 1keeled, $1(-3)$-veined. Upper glume primary vein scabrous. Upper glume lateral veins absent or obscure. Upper glume apex acuminate.

Florets. Fertile lemma lanceolate or elliptic, $3-4.2 \mathrm{~mm}$ long, hyaline, without keel, 5 -veined, more than 3-veined. Lemma lateral veins excurrent. Lemma surface asperulous, glabrous. Lemma apex truncate, awned. Principal lemma awn dorsal, arising 0.33 way up back of lemma, geniculate, 3.5-6.5 mm long overall, with twisted column. Palea lanceolate, $2.5-3 \mathrm{~mm}$ long, 0.66 length of lemma, hyaline, 2 -veined. Palea keels scabrous. Rhachilla extension $1.5-2.5 \mathrm{~mm}$ long, pubescent, hairy throughout.

Flower and Fruit. Lodicules 2, lanceolate, $0.7-1 \mathrm{~mm}$ long, membranous, acute. Anthers 3, 0.7-0.9 mm long. Caryopsis with adherent pericarp, $1.4-1.6 \mathrm{~mm}$ long.

Distribution (TDWG). Continent. Australasia.
Country /Province/State. New Zealand. New Zealand South I, Stewart Is.

Lachnagrostis uda E.Edgar. New Zealand J. Bot., 33 (1): 32 (1995).
Accepted by: W.D.Clayton \& K.Harman, GrassBase (2008) and online (as Agrostis).
TYPE from New Zealand. T:<Type of Basionym>: fide TROPICOS and Kew Synonomy Database: New Zealand, Garvie Mts.: Druce (CHR holo).

Illustrations: None found.
Derivation (Clifford \& Bostock 2007): L. damp. Growing in swampy areas.
Classification. Subfamily Pooideae. Tribe: Poeae.
Habit, Vegetative Morphology. Annual, caespitose. Basal innovations extravaginal. Culms 9-35 cm long. Culm-internodes antrorsely scabrous. Leaf-sheaths smooth, glabrous on surface. Ligule an eciliate membrane, $1-2.5 \mathrm{~mm}$ long, scaberulous on abaxial surface, erose, truncate. Leaf-blades flat or conduplicate, $3-10 \mathrm{~cm}$ long, $1-2 \mathrm{~mm}$ wide. Leaf-blade surface scaberulous, rough adaxially. Leaf-blade margins scaberulous. Leaf-blade apex obtuse.

Inflorescence. Inflorescence a panicle, deciduous as a whole. Peduncle antrorsely scabrous above. Panicle open, elliptic, 3-14 cm long, $1.5-8 \mathrm{~cm}$ wide. Panicle axis scaberulous. Panicle branches capillary, scaberulous. 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, laterally compressed, 3-3.5 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus pilose. Floret callus hairs 1 mm long, 0.33 length of lemma.

Glumes. Glumes persistent, similar, exceeding apex of florets, firmer than fertile lemma, gaping. Lower glume lanceolate or elliptic, 1 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume primary vein scabrous. Lower glume lateral veins absent. Lower glume surface scabrous, rough on flanks. Lower glume apex acute. Upper glume lanceolate or elliptic, $3-3.5 \mathrm{~mm}$ long, 1.3 length of adjacent fertile lemma, membranous, 1-keeled, 1 -veined. Upper glume primary vein scabrous. Upper glume lateral veins absent. Upper glume margins scabrous. Upper glume apex acute.

Florets. Fertile lemma oblong or ovate, $2-2.5 \mathrm{~mm}$ long, hyaline, without keel, 5 -veined, more than 3veined. Lemma surface glabrous or pubescent. Lemma apex truncate, mucronate or awned. Principal lemma awn subapical, straight, $0.5-2.5 \mathrm{~mm}$ long overall. Palea $0.5-0.66$ length of lemma, hyaline, 2 veined. Rhachilla extension 0.2 mm long, glabrous, with 0.8 mm long hairs.

Flower and Fruit. Lodicules 2, $0.5-0.8 \mathrm{~mm}$ long, membranous. Anthers 3, $0.7-1.3 \mathrm{~mm}$ long. Caryopsis with adherent pericarp, $1.2-1.8 \mathrm{~mm}$ long.

Distribution (TDWG). Continent. Australasia.
Country /Province /State. New Zealand. New Zealand South I.

Lagurus ovatus Linn. Sp. Pl. 81. (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), 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 southern Europe. T:<Type of Basionym>: fide TROPICOS and Kew Synonomy Database: LT: (LINN-96.1). LT designated by Cope in Jarvis et al., Regnum Veg. 59 (1993).

Illustrations (Books): F.O.Zuloaga, Z.E.Rugolo \& A.M. Anton, Flora Argentina 3 - 2 Pooideae (2012) (264), C.E.Hubbard, Grasses (1968) (314), T. Cope \& A. Gray, Grasses of the British Isles (110), L.K.A. Chippindall, Grasses and Pastures of South Africa (1955) (97, Fig. 68), G.E.Gibbs Russell el al, Grasses of Southern Africa (1990) (195, Fig. 116), N.Feinbrun-Dothan, Flora Palaestina 4 (1986) (Pl. 271), L.Boulos, Flora of Egypt 4 (2005) (175, Pl. 49), J.P.Jessop, G.R.M. Dashorst \& F.M.James, Grasses of South Australia (2006) (234, Fig. 179), C.A.Gardner, Flora of Western Australia, Vol 1, Part 1, Gramineae (1952) (148, Pl 44), J.R.Wheeler et al, Flora of the Kimberley Region (1992), N.Walsh \& T.Entwistle, Flora of Victoria Vol 2 (1994) (499, Fig. 97), S.W.L.Jacobs, R.D.B.Whalley \& D.J.B.Wheeler,, Grasses of New South Wales, 4th edn (2008) (291), J.C.Tothill,\& J.B.Hacker. The grasses of southern Queensland (1983) (290), T.D.Stanley \& E.Ross, Flora of South East Queensland, Gramineae (1989) (133, Fig. 20), A.Wilson (ed.), Flora of Australia, Vol 44A. Poaceae (2009) (241, Fig. 34), 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), M.E.Barkworth et al, Flora of North America north of Mexico Vol 24 Poaceae, part 1 (2007) (669), S.A.Renvoize, The Grasses of Bahia, 1984, E.G.Nicora, Los Generos de Gramineas de America Austral (1987) (183, Fig. 49), A.L.Cabrera, Flora de la Provincia de Buenos Aires, IV Pt 2 Gramineas (1970) (216, Fig. 56), E.Hafliger \& E.Schultz, Grass Weeds, CIBA-GEIGY (2:90(1980)).

Images: D.Sharp \& B.K.Simon, AusGrass. Grasses of Australia. CD-Rom Version 1.0. (2002);, E.Edgar \& H.E.Connor, Flora of New Zealand 5, Gramineae (2000);, F.van Oudtshoorn, Guide to Grasses of Southern Africa (1999).

Derivation (Clifford \& Bostock 2007): L. ovum, egg; -ata, possessing. Inflorescences, spikelets, or leaf-blades ovate in outline.

Classification. Subfamily Pooideae. Tribe: Poeae.
Habit, Vegetative Morphology. Annual, culms solitary or caespitose. Culms erect or geniculately ascending, $5-60 \mathrm{~cm}$ long. Leaf-sheaths pubescent. Ligule an eciliate membrane, $2-4 \mathrm{~mm}$ long, pubescent on abaxial surface, lacerate, truncate or obtuse. Leaf-blades linear or lanceolate, $1-20 \mathrm{~cm}$ long, 2-14 mm wide. Leaf-blade surface pubescent, hairy on both sides.

Inflorescence. Inflorescence a panicle. Panicle capitate, oblong or ovate or globose, $1-7 \mathrm{~cm}$ long, $0.6-$ 2 cm wide. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, $0.5-2 \mathrm{~mm}$ 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, $8-10 \mathrm{~mm}$ long, breaking up at maturity, disarticulating below each fertile floret. Floret callus pubescent.

Glumes. Glumes persistent, similar, exceeding apex of florets. Lower glume lanceolate, $8-10 \mathrm{~mm}$ long, 1 length of upper glume, membranous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume surface villous. Lower glume apex setaceously acuminate. Upper glume lanceolate, 8-10 mm long, 2 length of adjacent fertile lemma, membranous, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume surface villous. Upper glume apex setaceously acuminate.

Florets. Fertile lemma elliptic, $4-5 \mathrm{~mm}$ long, scarious, without keel, 5 -veined, more than 3 -veined. Lemma surface pubescent, hairy below. Lemma apex dentate, 2 -fid, awned, 3 -awned. Principal lemma awn dorsal, arising $0.6-0.8$ way up back of lemma, geniculate, $8-18 \mathrm{~mm}$ long overall, with twisted column. Lateral lemma awns present, arising on apex of lobes, $3-5 \mathrm{~mm}$ long, shorter than principal. Palea linear, 0.75 length of lemma.

Flower and Fruit. Anthers 3, $1.5-2 \mathrm{~mm}$ long. Caryopsis with adherent pericarp, fusiform. Embryo $0.15-0.2$ length of caryopsis. Hilum punctiform. Endosperm soft.
$n=7$ ( 6 refs TROPICOS). $2 n=14$ ( 2 refs TROPICOS).
Distribution (TDWG). Continent. Europe, Africa, Temperate Asia, Tropical Asia, Australasia (*), North America, South America.

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

Country /Province /State. : Great Britain (*). : Baleares, Corsica, France, Portugal, Sardinia, Spain. : Albania, Bulgaria, Greece, Italy, Crete, Sicily, Turkey Europe, Yugoslavia. Krym. Northern Africa, Macaronesia, Southern Africa (*). Algeria, Egypt, Libya, Morocco, Tunisia. Azores, Canary Is, Madeira. Gauteng, Western Cape, Eastern Cape. Caucasus, Western Asia, Arabian Peninsula. Iran. Indian Subcontinent, Malesia. Pakistan, West Himalaya. Java. Australia (*), New Zealand (*). Western Australia (*), South Australia (*), Queensland (*), New South Wales (*), A.C.T. (*), Victoria (*), Tasmania (*), Lord Howe-Norfolk Is (*). Chatham Is, New Zealand North I, New Zealand South I, Stewart Is. Southwestern USA, Southeastern USA, Mexico. California. Southwest Mexico. Western South America, Brazil, Southern South America. Ecuador. Brazil South. Argentina Northeast, Chile Central, Chile South, Uruguay.

South-West. Southern. Central, South East, Inland. Coast, Tablelands. Rio Grande do Sul, Santa Catarina. Buenos Aires, La Pampa. Coquimbo, Valparaiso, O’Higgins, Maule, Biobio, La Araucania. Los Lagos, Magellanes. Jalisco.

Lamarckia aurea (L.) Moench. Meth. 201 (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), N.L.Bor, Grasses of Burma, Ceylon, India and Pakistan (1960), T.G.Tutin et al, Flora Europaea 5 (1980), W.D.Clayton \& N.Snow, Key to Pacific Grasses (2010).

TYPE from Europe. Basionym or Replaced Name: Cynosurus aureus L., Sp. Pl. 1: 73 (1753). $\mathrm{T}:<\mathrm{Type}$ of Basionym>: fide TROPICOS and Kew Synonomy Database: LT: Anon., Europe (LINN-91.19). LT designated by MeikleFl. Cyprus 2: 1727 (1985), but specific sheet not indicated; specific sheet indicated by Scholz in Cafferty et al., Taxon 49(2): 249 (2000).

Illustrations (Books): F.O.Zuloaga, Z.E.Rugolo \& A.M. Anton, Flora Argentina 3 - 2 Pooideae (2012) (264), G.E.Gibbs Russell el al, Grasses of Southern Africa (1990) (195, Fig. 117), N.Feinbrun-Dothan, Flora Palaestina 4 (1986) (Pl. 331), S.Phillips, Poaceae (Gramineae) in I.Hedberg \& S.Edwards, Flora of Ethiopia and Eritrea (1995) (16, Fig 8), L.Boulos, Flora of Egypt 4 (2005) (144, Fig. 40), J.P.Jessop, G.R.M. Dashorst \& F.M.James, Grasses of South Australia (2006) (130, Fig. 85), C.A.Gardner, Flora of Western Australia, Vol 1, Part 1, Gramineae (1952) (43, Pl. 11), N.Walsh \& T.Entwistle, Flora of Victoria Vol 2 (1994) (413, Fig. 82), S.W.L.Jacobs, R.D.B.Whalley \& D.J.B.Wheeler,, Grasses of New South Wales, 4th edn (2008) (291), J.C.Tothill,\& J.B.Hacker. The grasses of southern Queensland (1983) (292), T.D.Stanley \& E.Ross, Flora of South East Queensland, Gramineae (1989) (115, Fig. 18), A.Wilson (ed.), Flora of Australia, Vol 44A. Poaceae (2009) (345, Fig. 46), 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) (485), E.G.Nicora, Los Generos de Gramineas de America Austral (1987) (272, Fig. 86), A.L.Cabrera, Flora de la Provincia de Buenos Aires, IV Pt 2 Gramineas (1970) (71, Fig. 18), E.Hafliger \& E.Schultz, Grass Weeds, CIBA-GEIGY (2:91(1980)).

Illustrations (Journals): Ruizia (13:113, Fig12b-c (1993)).
Derivation (Clifford \& Bostock 2007): L. golden-yellow. With spikelets or pedicels or other parts invested in golden-yellow hairs.

Classification. Subfamily Pooideae. Tribe: Poeae.
Habit, Vegetative Morphology. Annual. Culms geniculately ascending, 10-15(-40) cm long. Ligule an eciliate membrane, $5-8 \mathrm{~mm}$ long. Leaf-blades $5-20 \mathrm{~cm}$ long, $3-7 \mathrm{~mm}$ wide.

Inflorescence. Inflorescence a panicle. Panicle contracted, ovate, secund, 3-6 cm long, gathered into fascicles. Panicle axis bearing deciduous spikelet clusters. Panicle branches pilose. Spikelets subtended by an involucre. Fertile spikelets pedicelled, 1 in the cluster. Companion sterile spikelets pedicelled, 3 in the cluster (and a rudiment). Involucre composed of imperfect spikelets, cuneate, base truncate. Pedicels present, filiform, pubescent.

Sterile Spikelets. Companion sterile spikelets well-developed, containing empty lemmas, linear, laterally compressed, $4-8 \mathrm{~mm}$ long, longer than fertile, deciduous with the fertile. Companion sterile spikelet glumes membranous, glabrous, entire, acuminate, mucronate or awned, both glumes awned, with $0.5-1 \mathrm{~mm}$ long awn. Companion sterile spikelet lemmas $8-15$, exserted from glumes, muticous.

Fertile Spikelets. Spikelets comprising 1 fertile florets, with diminished florets at the apex. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets ovate, laterally compressed, $3-5 \mathrm{~mm}$ long, falling entire, deciduous with accessory branch structures.

Glumes. Glumes similar, exceeding apex of florets, similar to fertile lemma in texture. Lower glume lanceolate, $3-5 \mathrm{~mm}$ long, 1 length of upper glume, membranous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume apex acuminate, mucronate or awned, 1 -awned, awn 1 mm long. Upper glume lanceolate, $3-5 \mathrm{~mm}$ long, 1.6 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 1 mm long.

Florets. Fertile lemma elliptic, 2.5 mm long, without keel, 5 -veined, more than 3 -veined. Lemma surface scabrous, rough above. Lemma apex dentate, 2 -fid, incised 0.2 of lemma length, awned. Principal lemma awn from a sinus, 6 mm long overall. Palea 1 length of lemma. Apical sterile florets 1 in number, barren, ovate, 0.5 mm long. Apical sterile lemmas awned, 1 -awned. Apical sterile lemma awns 6 mm long.

Flower and Fruit. Anthers $3,0.5 \mathrm{~mm}$ long. Caryopsis with adherent pericarp. Hilum elliptic.
$n=7$ ( 1 ref TROPICOS). $2 n=14$ ( 2 refs TROPICOS).
Distribution (TDWG). Continent. Europe, Africa, Temperate Asia, Tropical Asia, Australasia (*), Pacific, North America, South America.

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

Country /Province /State. : GB Aliens (Ryves et al). : Baleares, Corsica, Portugal, Sardinia, Spain. : Greece, Italy, Sicily, Yugoslavia. Northern Africa, Macaronesia, Northeast Tropical Africa, Southern Africa $\left(^{*}\right.$ ). Algeria, Egypt, Libya, Morocco, Tunisia. Canary Is, Madeira. Eritrea, Ethiopia (inc. Eritrea), Sudan. Western Cape. Western Asia, Arabian Peninsula. Afghanistan, Iran, Sinai. Oman. Indian Subcontinent. Pakistan. Australia (*). Western Australia (*), South Australia (*), Queensland (*), New South Wales (*), Victoria (*). North-central Pacific. Hawaii. Southwestern USA, South-central USA, Mexico. Arizona, California. Texas. Pacific Is (Mexico), Northwest Mexico. Mesoamerica, Western South America, Brazil, Southern South America. Guatemala. Colombia, Peru. Argentina Northeast, Chile North, Chile Central.

Uttah Pradesh. Eremean, South-West. NW \& Lake Eyre, Southern. South East, Inland. Coast, Tablelands, Western Slopes, Western Plains. Mendoza. Buenos Aires, La Pampa. Atacama. Coquimbo, Valparaiso, Santiago. Baja California, Baja California Sur.

Lasiacis anomala Hitchcock. Journ. Wash. Acad. Sc. ix. 37. (1919).
Accepted by: R.J.Soreng et al., Catalogue of New World Grasses (2000-2003) and online, W.D.Clayton \& K.Harman, GrassBase (2008) and online, U.Quattrocchi, CRC World Dictionary of Grasses (2006).

TYPE from Trinidad. T:<Type of Basionym>: fide TROPICOS and Kew Synonomy Database: HT: A.S. Hitchcock Amer. Gr. Nat. Herb. no. 595, 27 Nov 1912, Trinidad: Fort George Road, Port of Spain, edge of jungle, high climbing, with strong central cane, the branches not fascicled (US-865557; IT: F, GH, MO-848755, NY, P, US-865558, USF).

Illustrations (Books): S.A.Renvoize, Gramineas de Bolivia (1998) (156, Fig. 87), S.A.Renvoize, The Grasses of Bahia, 1984 (112, Fig. 40), J.A.Steyermark et al, Flora of the Venezuelan Guayana Vol. 8 (2004) (140, Fig. 97), E.Judziewicz, Flora of the Guianas, 187. Poaceae (1990) (304, Fig. 53).

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 Panicoideae. Tribe: Paniceae. Subtribe Boivinellinae.
Habit, Vegetative Morphology. Perennial, caespitose. Culms scandent or erect, 400-500 cm long, 3-9 mm diam., woody. Culm-internodes thin-walled, distally glabrous. Culm-nodes glabrous. Leaf-sheaths pubescent or hirsute, outer margin hairy. Ligule an eciliate membrane, 0.3-0.8(-1.8) mm long. Leaf-blade base asymmetrical. Leaf-blades elliptic or oblong, (2.5-)5-12(-15) cm long, $8-30(-40) \mathrm{mm}$ wide. Leafblade surface pubescent, hairy on both sides. Leaf-blade margins scabrous. Leaf-blade apex abruptly acute.

Inflorescence. Inflorescence a panicle. Panicle open, ovate, $2-15 \mathrm{~cm}$ long. Primary panicle branches ascending or spreading or reflexed, $1-4 \mathrm{~cm}$ long. Panicle branches scabrous, pubescent, glabrous in axils or pubescent in axils. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 2 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-manyflowered - if two-flowered then both fertile or the upper sterile. Spikelets orbicular, dorsally compressed, (2.8-)3.1-3.5(-3.8) mm long, falling entire.

Glumes. Glumes dissimilar, shorter than spikelet, thinner than fertile lemma. Lower glume ovate, gibbous, $1.2-1.8 \mathrm{~mm}$ long, $0.33-0.5$ length of spikelet, membranous, pallid or black (at maturity), without keels, 7 -veined. Lower glume apex acute. Upper glume orbicular, (2-)2.3-2.7 mm long, 0.75 length of spikelet, cartilaginous, pallid or black (at maturity), without keels, 9 -veined. Upper glume apex obtuse.

Florets. Basal sterile florets 2 or more, similar, barren (lower) or barren (upper), without significant palea. Lemma of lower sterile floret similar to upper glume, orbicular, 1 length of spikelet, cartilaginous, 9 -veined, obtuse. Fertile lemma orbicular, dorsally compressed, $2.6-2.9 \mathrm{~mm}$ long, indurate, dark brown or black, shiny, without keel. Lemma margins involute. Lemma apex obtuse, with a shallow excavation or woolly. Palea indurate.

Flower and Fruit. Anthers 3, 1.6-1.7 mm long. Caryopsis with adherent pericarp, 2-2.1 mm long, dark brown.
$n=18$ ( 1 ref TROPICOS).
Distribution (TDWG). Continent. South America.
Country /Province /State. Caribbean, Northern South America, Western South America, Brazil. Trinidad-Tobago. Guyana, Surinam, Venezuela. Bolivia, Colombia. Brazil West Central, Brazil Northeast, Brazil North.

Bahia. Mato Grosso do Sul. Ceará, Maranhão. Amazonas.

Lasiacis divaricata (L.) Hitchcock. Contrib. U. S. Nat. Herb. xv. 16 (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 Jamaica. Basionym or Replaced Name: Panicum divaricatum L., Syst. Nat. (ed. 10) 2 : 871 (1759)
. T:<Type of Basionym>: fide TROPICOS and Kew Synonomy Database: LT: Anon., (LINN-80.65). LT designated (as holotype) by Davidse, Ann. Missouri Bot. Gard. 65: 1164 (1979).

Illustrations (Books): F.O.Zuloaga, Z.E.Rugolo \& A.M. Anton, Flora Argentina 3 - 1, Aristidoideae a Pharoideae (2012) (333), M.E.Barkworth et al, Flora of North America north of Mexico Vol 25 Poaceae, part 2 (2003) (391), A.S.Hitchcock, Manual of the Grasses of the West Indies (1936) (307, Fig. 290), L.B. Smith, D.C. Wasshausen, R.M. Klein Flora Illustrada Catarinensis Gramineas (1981-1982) (623, Fig. 135), F.O.Zuloaga et al, Flora del Paraguay 23 (1994) (190, Fig. 53 as var. austroamericana).

Derivation (Clifford \& Bostock 2007): L. divarico, spread out. Inflorescence branches or culms regularly dividing into equal branches.

Classification. Subfamily Panicoideae. Tribe: Paniceae. Subtribe Boivinellinae.
Habit, Vegetative Morphology. Perennial, caespitose. Culms rambling, zigzag, 100-500 cm long, 5-9 mm diam., woody. Culm-internodes thin-walled, distally glabrous or with pubescent line. Culm-nodes glabrous. Leaf-sheaths glabrous on surface to pubescent, outer margin hairy. Leaf-sheath oral hairs ciliate, $0.3-3 \mathrm{~mm}$ long. Ligule an eciliate membrane or a ciliolate membrane, $0.2-0.6 \mathrm{~mm}$ long. Collar pubescent. Leaf-blade base asymmetrical. Leaf-blades persistent or deciduous at the ligule (lower blades), linear or lanceolate, (3-)5-12(-16) cm long, (3-)6-14(-20) mm wide. Leaf-blade surface glabrous. Leaf-blade margins scabrous. Leaf-blade apex acuminate.

Inflorescence. Inflorescence a panicle. Panicle open, ovate, $2-12(-20) \mathrm{cm}$ long. Primary panicle branches reflexed, $2-8(-12) \mathrm{cm}$ long. Panicle branches bearing distant spikelets, scabrous, pubescent in axils. Spikelets spreading, solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets obovate, tilted on the pedicel, dorsally compressed, $3.5-4.5 \mathrm{~mm}$ long, falling entire.

Glumes. Glumes dissimilar, reaching apex of florets, thinner than fertile lemma, shiny. Lower glume oblate, $1.4-2 \mathrm{~mm}$ long, $0.4-0.5$ length of spikelet, membranous, black, without keels, $7-11$-veined. Lower glume surface woolly, hairy at apex. Lower glume apex obtuse. Upper glume ovate, 1 length of adjacent fertile lemma, membranous, black, without keels, 9-11-veined. Upper glume surface woolly, hairy at apex. 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, $9-13$-veined, woolly, hairy at apex, obtuse. Palea of lower sterile floret 0.5 length of lemma. Fertile lemma ovate, dorsally compressed, $3.4-4 \mathrm{~mm}$ long, indurate, pallid or light brown, shiny, without keel. Lemma margins involute. Lemma apex obtuse, with a shallow excavation or woolly. Palea indurate. Palea apex pubescent.

Flower and Fruit. Anthers 3, 2 mm long. Caryopsis with adherent pericarp, 2.2-2.4 mm long, pallid.
$2 n=36$ ( 1 ref TROPICOS).
Distribution (TDWG). Continent. North America, South America.
Country /Province/State. 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, Southern South America. Belize, Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua. Bahamas, Cayman Is, Cuba, Dominican Republic, Haiti, Jamaica, Leeward Is, Windward Islands, Puerto Rico, Trinidad-Tobago. Venezuela. Bolivia, Colombia, Ecuador, Peru. Brazil Northeast, Brazil Southeast, Brazil South. Paraguay.

Para, Amapa, Goias, Maranhao, Piaui, Ceara, Rio Grande do Norte, Paraiba, Penambuco, Alagoas, Sergipe, Minas Gerais, Rio de Janeiro, Espirito Santo, Sao Paulo Parana, Catarina, Rio Grande do Sul. Ceará, Maranhão. Espirito Santo, Minas Gerais, Sao Paulo. Paraná, Santa Catarina. Salta. Misiones. Mexico State, Morelos, Puebla. Coahuila, Neuvo Leon, Queretaro, San Luis Potosi, Tamaulipas. Veracruz.

Baja California Sur, Sinaloa. Guerrero, Jalisco, Michoacan, Oaxaca. Campeche, Chiapas, Quintana Roo, Tabasco, Yucatan.

Lasiacis grisebachii (Nash) Hitchcock. Bot. Gaz. li. 302 (1911).
Accepted by: R.J.Soreng et al., Catalogue of New World Grasses (2000-2003) and online, W.D.Clayton \& K.Harman, GrassBase (2008) and online, U.Quattrocchi, CRC World Dictionary of Grasses (2006).

TYPE from Cuba. Basionym or Replaced Name: Panicum grisebachii Nash, Bull. Torrey Bot. Club 35: 301 (1908)
. T:<Type of Basionym>: fide TROPICOS and Kew Synonomy Database: HT: N.L. Britton, E.G. Britton \& J.A. Shafer 758, 28 Mar 1903, Cuba: La Habana, Madruga Mun. (NY-71078; IT: US-80686 (fragm. ex NY)).

Illustrations: None found.
Derivation (Clifford \& Bostock 2007): in honor of August Heinrich Rudolf Grisebach (1814-1879) German botanist.

Classification. Subfamily Panicoideae. Tribe: Paniceae. Subtribe Boivinellinae.
Habit, Vegetative Morphology. Perennial, mat forming. Culms rambling, 30-60 cm long, 2-3 mm diam., firm or woody, rooting from lower nodes. Culm-internodes thin-walled, distally pubescent (all over or in a line). Culm-nodes glabrous. Lateral branches ample. Leaf-sheaths pubescent or hirsute, outer margin hairy. Ligule an eciliate membrane or a ciliolate membrane, $0.3-0.6 \mathrm{~mm}$ long. Leaf-blade base asymmetrical. Leaf-blades linear or lanceolate, $6-14 \mathrm{~cm}$ long, $6-11(-14) \mathrm{mm}$ wide. Leaf-blade surface pubescent, hairy abaxially. Leaf-blade margins scabrous. Leaf-blade apex acuminate.

Inflorescence. Inflorescence a panicle. Panicle open, lanceolate, (2-)5-13(-16) cm long. Primary panicle branches $1-5(-7) \mathrm{cm}$ long, bearing spikelets almost to the base. Panicle branches stiff, scabrous, pubescent in axils. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension or with a barren rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets orbicular, dorsally compressed, obtuse, $3.5-3.8 \mathrm{~mm}$ long, falling entire.

Glumes. Glumes dissimilar, reaching apex of florets, thinner than fertile lemma. Lower glume oblate, gibbous, $1.5-2.2 \mathrm{~mm}$ long, $0.4-0.6$ length of spikelet, membranous, pallid or black (at maturity), without keels, 5-7 -veined. Lower glume apex acute. Upper glume orbicular, 1 length of spikelet, membranous, pallid or black (at maturity), without keels, 7-11 -veined. Upper glume apex obtuse.

Florets. Basal sterile florets 1, barren, with palea. Lemma of lower sterile floret similar to upper glume, ovate, 1 length of spikelet, membranous, $7-11$-veined, obtuse. Palea of lower sterile floret 1 length of lemma. Fertile lemma orbicular, dorsally compressed, $3-3.1 \mathrm{~mm}$ long, indurate, dark brown, shiny, without keel. Lemma margins involute. Lemma apex obtuse, with a shallow excavation or woolly. Palea indurate. Rhachilla extension 0.02 length of fertile floret (a point 0.1 mm long).

Flower and Fruit. Anthers 3, 2 mm long.
Distribution (TDWG). Continent. North America, South America.
Country /Province /State. Mexico. Central Mexico, Northeast Mexico, Northwest Mexico, Southwest Mexico, Southeast Mexico. Mesoamerica, Caribbean. Belize, Guatemala, Honduras, Nicaragua. Cuba.

Puebla. Hidalgo. Jalisco, Oaxaca. Campeche, Chiapas, Quintana Roo, Yucatan.

Lasiacis harrisii Nash. Torreya, xiii. 274. (1913).
TYPE from Jamaica. T:<Type of Basionym>: fide TROPICOS and Kew Synonomy Database: HT: D.W. Marble 222, 2-10 Sep 1906, Jamaica: vicinity of Cinchona, Cinchona to Strawberry Hill (NY-71107; IT: US).

Illustrations: None found.
Derivation (Clifford \& Bostock 2007): in honor of William Harris (1860-1920), Jamaican plant collector.

Classification. Subfamily Panicoideae. Tribe: Paniceae. Subtribe Boivinellinae.
Habit, Vegetative Morphology. Perennial, caespitose. Culms rambling or scandent, straight, 100-600 cm long, 2-4 mm diam. Culm-internodes thin-walled, distally with pubescent line. Culm-nodes glabrous.

Leaf-sheaths glabrous on surface, outer margin hairy. Leaf-sheath oral hairs scanty, 3.5 mm long. Ligule an eciliate membrane, $0.4-0.7 \mathrm{~mm}$ long. Collar glabrous. Leaf-blade base asymmetrical. Leaf-blades linear, 612 cm long, $3-7 \mathrm{~mm}$ wide. Leaf-blade surface glabrous. Leaf-blade margins scabrous. Leaf-blade apex acuminate.

Inflorescence. Inflorescence a panicle, embraced at base by subtending leaf. Panicle open, lanceolate, $2-7 \mathrm{~cm}$ long. Primary panicle branches appressed. Panicle branches scabrous, 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, tilted on the pedicel, dorsally compressed, $3.7-4 \mathrm{~mm}$ long, falling entire.

Glumes. Glumes dissimilar, reaching apex of florets, thinner than fertile lemma, shiny. Lower glume oblate, $2-2.5 \mathrm{~mm}$ long, $0.5-0.6$ length of spikelet, membranous, black, without keels, 9 -veined. Lower glume surface woolly, hairy at apex. Lower glume apex obtuse. Upper glume ovate, 1 length of adjacent fertile lemma, membranous, black, without keels, 9 -veined. Upper glume surface woolly, hairy at apex. 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, 9 -veined, woolly, hairy at apex, obtuse. Palea of lower sterile floret $0.66-1$ length of lemma. Fertile lemma ovate, dorsally compressed, 3.2-3.4 mm long, indurate, dark brown, shiny, without keel. Lemma margins involute. Lemma apex obtuse, with a shallow excavation or woolly. Palea indurate. Palea apex pubescent.

Flower and Fruit. Anthers 3. Caryopsis with adherent pericarp, 2.2 mm long.
$n=18$ ( 1 ref TROPICOS).
Distribution (TDWG). Continent. South America.
Country /Province /State. Caribbean. Bahamas, Cayman Is, Cuba, Dominican Republic, Haiti, Jamaica, Leeward Is, Windward Islands, Puerto Rico, Trinidad-Tobago.

Lasiacis ligulata Hitchcock \& Chase. Contrib. US. Nat. Herb. xviii. 337 (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).

TYPE from Trinidad \& Tobago. T:<Type of Basionym>: fide TROPICOS and Kew Synonomy Database: HT: A.S. Hitchcock 10007 [=Amer. Grass Natl. Herb. 589], 28 Nov 1912, Trinidad and Tobago: near Port of Spain, above St. Anns, among bushes along stream, high climbing (US-865564, US-865565; IT: GH, L, MO-4902987, NY, USF).

Illustrations (Books): S.A.Renvoize, Gramineas de Bolivia (1998) (156 Fig. 87), S.A.Renvoize, The Grasses of Bahia, 1984 (112, Fig. 40), J.A.Steyermark et al, Flora of the Venezuelan Guayana Vol. 8 (2004) (140, Fig. 96), L.B. Smith, D.C. Wasshausen, R.M. Klein Flora Illustrada Catarinensis Gramineas (19811982) (623, Fig. 135), E.Judziewicz, Flora of the Guianas, 187. Poaceae (1990) (304, Fig. 53).

Illustrations (Journals): Rodriguesia (63: 943, Fig. 5 (2012)).
Derivation (Clifford \& Bostock 2007): L. ligula, small tongue; -ata, possessing. Ligule conspicuous.
Classification. Subfamily Panicoideae. Tribe: Paniceae. Subtribe Boivinellinae.
Habit, Vegetative Morphology. Perennial, caespitose. Culms rambling or scandent, straight, 100-500 cm long, $6-13 \mathrm{~mm}$ diam., woody. Culm-internodes thin-walled, distally glabrous or with pubescent line. Culm-nodes glabrous. Leaf-sheaths glabrous on surface to pubescent, outer margin hairy. Ligule a ciliolate membrane or a ciliate membrane, $2-3 \mathrm{~mm}$ long, brown, glabrous on abaxial surface or pubescent on abaxial surface. Collar concolorous. Leaf-blade base asymmetrical. Leaf-blades lanceolate, (5-)7-14(-17) cm long, (6-)10-22(-34) mm wide. Leaf-blade surface smooth, glabrous or puberulous. Leaf-blade margins scabrous. Leaf-blade apex acuminate.

Inflorescence. Inflorescence a panicle. Panicle open, ovate, 2-17 cm long. Primary panicle branches spreading or reflexed, $1-8 \mathrm{~cm}$ long. Panicle branches smooth or 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 obovate, tilted on the pedicel, dorsally compressed, $3-4 \mathrm{~mm}$ long, falling entire.

Glumes. Glumes dissimilar, reaching apex of florets, thinner than fertile lemma, shiny. Lower glume oblate, $1.7-2 \mathrm{~mm}$ long, $0.5-0.6$ length of spikelet, membranous, black, without keels, $7-11$-veined. Lower glume surface woolly, hairy at apex. Lower glume apex obtuse. Upper glume ovate, 1 length of adjacent fertile lemma, membranous, black, without keels, 9-11-veined. Upper glume surface woolly, hairy at apex. 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, $9-11$-veined, woolly, hairy at apex, obtuse. Palea of lower sterile floret 0.75-1 length of lemma. Fertile lemma ovate, dorsally compressed, $2.8-3.5 \mathrm{~mm}$ long, indurate, dark brown, shiny, without keel. Lemma margins involute. Lemma apex obtuse, with a shallow excavation or woolly. Palea indurate. Palea apex pubescent.

Flower and Fruit. Anthers 3, 1.6-2.1 mm long. Caryopsis with adherent pericarp, 1.8-2.1 mm long. $n=18$ ( 1 ref TROPICOS).
Distribution (TDWG). Continent. South America.
Country /Province /State. Caribbean, Northern South America, Western South America, Brazil. Dominican Republic, Leeward Is, Puerto Rico, Trinidad-Tobago. French Guiana, Guyana, Surinam, Venezuela. Bolivia, Colombia, Ecuador, Peru. Brazil West Central, Brazil Northeast, Brazil Southeast, Brazil North, Brazil South.

Roraima, Para, Amapa, Amazonas, Acre, Rondonia, Mato Grosso, Goias, Bahia, Maranhao, Piaui, Ceara, Rio Grande do Norte, Paraiba, Penambuco, Alagoas, Sergipe, Minas Gerais, Rio de Janeiro, Espirito Santo, Sao Paulo Parana, Catarina, Rio Grande do Sul. Distrito Federal, Mato Grosso, Goiás. Bahia, Ceará, Maranhão, Pernambuco. Acre, Amapa, Rondonia. Rio de Janeiro, Sao Paulo.

Lasiacis linearis Swallen. Phytologia, iv. 427 (1953).
Accepted by: R.J.Soreng et al., Catalogue of New World Grasses (2000-2003) and online, W.D.Clayton \& K.Harman, GrassBase (2008) and online, U.Quattrocchi, CRC World Dictionary of Grasses (2006).

TYPE from Guatemala. T:<Type of Basionym>: fide TROPICOS and Kew Synonomy Database: Guatemala: Zacapa: Sierra de las Minas, below Finca Alejandria, pine covered canyon bordering Rio Lima, 2000 m, 14 Oct 1939, Steyermark 30046 (HT: F).

Illustrations: None found.
Derivation (Clifford \& Bostock 2007): L. linea, linen thread; -are, pertaining to. Leaf-blades narrow.
Classification. Subfamily Panicoideae. Tribe: Paniceae. Subtribe Boivinellinae.
Habit, Vegetative Morphology. Perennial, mat forming. Culms prostrate, $40-100 \mathrm{~cm}$ long, $2-5 \mathrm{~mm}$ diam., rooting from lower nodes. Culm-internodes solid. Culm-nodes glabrous. Lateral branches ample. Leaf-sheaths puberulous or pubescent, outer margin hairy. Ligule a ciliolate membrane, $1.8-5 \mathrm{~mm}$ long, brown, pubescent on abaxial surface, erose or lacerate. Collar pubescent. Leaf-blade base asymmetrical. Leaf-blades linear or lanceolate, $13-22 \mathrm{~cm}$ long, $8-15 \mathrm{~mm}$ wide. Leaf-blade surface glabrous or puberulous. Leaf-blade margins scabrous. Leaf-blade apex acuminate or attenuate.

Inflorescence. Inflorescence a panicle. Panicle open, ovate, $19-30 \mathrm{~cm}$ long. Primary panicle branches spreading, 10-23 cm long. Panicle branches scabrous, 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 obovate, tilted on the pedicel, dorsally compressed, $3.9-4.5 \mathrm{~mm}$ long, 2.2 mm wide, falling entire.

Glumes. Glumes dissimilar, reaching apex of florets, thinner than fertile lemma, shiny. Lower glume oblate, $2-2.5 \mathrm{~mm}$ long, $0.5-0.6$ length of spikelet, membranous, black, without keels, $7-9$-veined. Lower glume surface woolly, hairy at apex. Lower glume apex obtuse. Upper glume ovate, 1 length of adjacent fertile lemma, membranous, black, without keels, 9-11-veined. Upper glume surface woolly, hairy at apex. 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, $9-11$-veined, woolly, hairy at apex, obtuse. Palea of lower sterile floret 0.33-0.5 length of lemma. Fertile lemma ovate, dorsally compressed, 3.9-4.1 mm long, indurate,
dark brown, shiny, without keel. Lemma margins involute. Lemma apex obtuse, with a shallow excavation or woolly. Palea indurate. Palea apex pubescent.

Flower and Fruit. Anthers 3, pallid. Caryopsis with adherent pericarp, 2.2-2.4 mm long. $n=18$ ( 1 ref TROPICOS).
Distribution (TDWG). Continent. North America, South America.
Country /Province /State. Mexico. Southeast Mexico. Mesoamerica. Costa Rica, Guatemala, Honduras, Panama.

Chiapas.

Lasiacis maculata (Aubl.) Urb. Symb. Antill. 8: 751 (1921).
TYPE from French Guiana. Basionym or Replaced Name: Panicum maculatum Aubl., Hist. Pl. Guiane 1: 51. 1775. (Jun-Dec 1775). T:<Type of Basionym>: fide TROPICOS and Kew Synonomy Database: IET: Charles P. Bélanger - 390. (P) HT: unpublished iconography from a plant of Martinique) "Milium arundinaceum scandens et maculatum" in Plumier's Botanicon americanum MS 4!: t. 82 (holotype, Bibliothèque centrale du Muséum national d'Histoire naturelle).

Illustrations: None found.
Classification. Subfamily Panicoideae. Tribe: Paniceae. Subtribe Boivinellinae.
Habit, Vegetative Morphology. Perennial, caespitose. Culms scandent, 100-1000 cm long (long), 410 mm diam., woody. Culm-internodes thin-walled. Culm-nodes glabrous. Ligule a ciliolate membrane, $0.5-1 \mathrm{~mm}$ long. Leaf-blades linear or lanceolate, $6-23 \mathrm{~cm}$ long, $6-46 \mathrm{~mm}$ wide. Leaf-blade surface pubescent.

Inflorescence. Inflorescence a panicle. Panicle open, ovate, $5-35 \mathrm{~cm}$ 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 obovate, tilted on the pedicel, dorsally compressed, $3-4.3 \mathrm{~mm}$ long, falling entire.

Glumes. Glumes dissimilar, reaching apex of florets, thinner than fertile lemma, shiny. Lower glume oblate, $1.2-2.7 \mathrm{~mm}$ long, $0.4-0.6$ length of spikelet, membranous, black, without keels, $7-11$-veined. Lower glume surface woolly, hairy at apex. Lower glume apex obtuse. Upper glume ovate, 1 length of adjacent fertile lemma, membranous, black, without keels, 9-13 -veined. Upper glume surface woolly, hairy at apex. 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, membranous, $9-11$-veined, woolly, hairy at apex, obtuse. Fertile lemma ovate, dorsally compressed, $3-4.3 \mathrm{~mm}$ long, indurate, dark brown, shiny, without keel. Lemma margins involute. Lemma apex obtuse, with a shallow excavation and woolly. Palea indurate. Palea apex pubescent.

Distribution (TDWG). Continent. North America and South America.
Country /Province/State. Mexico. Mesoamerica, Caribbean, Northern South America, Western South America, Brazil, and Southern South America.

Lasiacis nigra Davidse. Phytologia, 29(2): 152 (1974).
Accepted by: R.J.Soreng et al., Catalogue of New World Grasses (2000-2003) and online, W.D.Clayton \& K.Harman, GrassBase (2008) and online, U.Quattrocchi, CRC World Dictionary of Grasses (2006).

TYPE from Costa Rica. T:<Type of Basionym>: fide TROPICOS and Kew Synonomy Database: HT: R.W. Pohl \& G. Davidse 11272, 22 Oct 1968, Costa Rica: Alajuela: 3 km N of Palmares along the Carretera Interamericana, elev. ca. 800 m , branches hanging from trees, culms 8 m long (ISC; IT: CR50467, EAP, K, MO-2106785, US-2684280).

Illustrations (Books): W.Burger, Flora Costaricensis 15, Gramineae: Fieldiana Botany New Series 4 (1980) (294, Fig 106).

Derivation (Clifford \& Bostock 2007): L. black. Culms or spikelets dark-colored.
Classification. Subfamily Panicoideae. Tribe: Paniceae. Subtribe Boivinellinae.

Habit, Vegetative Morphology. Perennial, caespitose. Culms scandent, $100-800 \mathrm{~cm}$ long, $5-10 \mathrm{~mm}$ diam., woody. Culm-internodes thin-walled, distally with pubescent line. Culm-nodes glabrous. Leafsheaths glabrous on surface or pilose, outer margin hairy. Leaf-sheath oral hairs ciliate, 3-4 mm long. Ligule an eciliate membrane or a ciliolate membrane, $0.5-1.3(-2) \mathrm{mm}$ long, white or brown, glabrous on abaxial surface or pubescent on abaxial surface. Collar glabrous or pubescent or pilose. Leaf-blade base asymmetrical. Leaf-blades linear or lanceolate, $5-11(-15) \mathrm{cm}$ long, (3-)6-18(-26) mm wide. Leaf-blade surface glabrous or pilose. Leaf-blade margins scabrous. Leaf-blade apex acuminate.

Inflorescence. Inflorescence a panicle. Panicle open, ovate, (2-)5-12(-19) cm long. Primary panicle branches ascending, $1-11 \mathrm{~cm}$ long. Panicle branches glabrous or pubescent, glabrous in axils or pubescent in axils or bearded in axils. Spikelets spreading, solitary. Fertile spikelets pedicelled. Pedicels present, flexuous.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets obovate, tilted on the pedicel, dorsally compressed, (3.6-)4-5(-5.5) mm long, falling entire.

Glumes. Glumes dissimilar, reaching apex of florets, thinner than fertile lemma, shiny. Lower glume oblate, $2-2.7 \mathrm{~mm}$ long, 0.5 length of spikelet, membranous, black, without keels, $5-13$-veined. Lower glume surface woolly, hairy at apex. Lower glume apex obtuse. Upper glume ovate, 1 length of spikelet, membranous, black, without keels, 7-13 -veined. Upper glume surface woolly, hairy at apex. 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, membranous, $9-11$-veined, woolly, hairy at apex, obtuse. Palea of lower sterile floret $0.5-1$ length of lemma. Fertile lemma ovate, dorsally compressed, $3.8-4.6 \mathrm{~mm}$ long, $2.5-2.9 \mathrm{~mm}$ wide, indurate, dark brown, shiny, without keel. Lemma margins involute. Lemma apex obtuse, with a shallow excavation or woolly. Palea indurate. Palea apex pubescent.

Flower and Fruit. Anthers 3, 2.1-2.8 mm long, pallid. Caryopsis with adherent pericarp, 2.4-2.7 mm long, light brown.
$n=18$ ( 1 ref TROPICOS).
Distribution (TDWG). Continent. North America, South America.
Country /Province /State. Mexico. Central Mexico, Northeast Mexico, Gulf (Mexico), Southwest Mexico, Southeast Mexico. Mesoamerica, Northern South America, Western South America. Belize, Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua, Panama. Venezuela. Colombia, Ecuador, Peru.

Distrito Federal, Mexico State, Morelos, Puebla. Aguascalientes, Durango, Guanajuato, Hidalgo, Neuvo Leon, Queretaro, San Luis Potosi, Tamaulipas, Zacatecas. Veracruz. Colima, Guerrero, Jalisco, Michoacan, Nayarit, Oaxaca. Campeche, Chiapas, Quintana Roo, Tabasco.

Lasiacis oaxacensis (Steud.) Hitchcock ex Chase. Proc. Biol. Soc. Washington, xxiv. 145 (1911).
Accepted by: R.J.Soreng et al., Catalogue of New World Grasses (2000-2003) and online, W.D.Clayton \& K.Harman, GrassBase (2008) and online, U.Quattrocchi, CRC World Dictionary of Grasses (2006).

TYPE from Mexico. Basionym or Replaced Name: Panicum oaxacense Steud., Syn. Pl. Glumac. 1: 73 (1853)

T:<Type of Basionym>: fide TROPICOS and Kew Synonomy Database: HT: Lenormand s.n., Mexico: Oaxaca (P; IT: US-80885 (fragm. ex P \& photo)).

Illustrations (Journals): Ruizia (13:328, Fig 40a-b (1993)).
Derivation (Clifford \& Bostock 2007): L. -ense, denoting origin. From Oaxaca State, Mexico.
Classification. Subfamily Panicoideae. Tribe: Paniceae. Subtribe Boivinellinae.
Habit, Vegetative Morphology. Perennial. Culms prostrate, 50-200 cm long, 2-5 mm diam., rooting from lower nodes. Culm-internodes solid, distally glabrous. Culm-nodes glabrous. Lateral branches ample. Leaf-sheaths glabrous on surface, outer margin hairy. Ligule a ciliolate membrane, (2-)2.5-5(-6) mm long, brown, pubescent on abaxial surface. Collar glabrous or pubescent. Leaf-blades linear or lanceolate, (13-)17-29 cm long, 12-24 mm wide. Leaf-blade surface scabrous, glabrous. Leaf-blade margins scabrous. Leaf-blade apex acuminate.

Inflorescence. Inflorescence a panicle. Panicle open, ovate, $16-31 \mathrm{~cm}$ long, with spikelets clustered towards branch tips. Primary panicle branches spreading, (4-)9-18(-24) cm long. Spikelets 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, tilted on the pedicel, dorsally compressed, $3.8-4.2 \mathrm{~mm}$ long, falling entire.

Glumes. Glumes dissimilar, reaching apex of florets, thinner than fertile lemma, shiny. Lower glume oblate, $1.6-2.3 \mathrm{~mm}$ long, 0.5 length of spikelet, membranous, black, without keels, $4-6$-veined. Lower glume surface woolly, hairy at apex. Lower glume apex obtuse. Upper glume ovate, 1 length of spikelet, membranous, black, without keels, 7-11 -veined. Upper glume surface woolly, hairy at apex. Upper glume apex obtuse.

Florets. Basal sterile florets 1, male, with palea. Lemma of lower sterile floret similar to upper glume, ovate, 1 length of spikelet, membranous, $9-11$-veined, woolly, hairy at apex, obtuse. Palea of lower sterile floret 1 length of lemma. Fertile lemma ovate, dorsally compressed, $3.2-3.6 \mathrm{~mm}$ long, $1.9-2.3 \mathrm{~mm}$ wide, indurate, dark brown, shiny, without keel. Lemma margins involute. Lemma apex obtuse, with a shallow excavation or woolly. Palea indurate. Palea apex pubescent.

Flower and Fruit. Anthers 3, 1-2.3 mm long. Stigmas purple. Caryopsis with adherent pericarp, 2 mm long.

Distribution (TDWG). Continent. North America, South America.
Country /Province /State. Mexico. Central Mexico, Gulf (Mexico), Southwest Mexico, Southeast Mexico. Mesoamerica, Caribbean, Northern South America, Western South America. Belize, Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua, Panama. Dominican Republic, Haiti, Jamaica. Venezuela. Colombia, Ecuador, Peru.

Mexico State. Veracruz. Jalisco, Oaxaca. Chiapas, Tabasco.

Lasiacis procerrima (Hack.) Hitchcock ex Chase. Proc. Biol. Soc. Washington, xxiv. 145 (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 Costa Rica. Basionym or Replaced Name: Panicum procerrimum Hack., Oesterr. Bot. Z. 51: 431 (1901)

T:<Type of Basionym>: fide TROPICOS and Kew Synonomy Database: HT: A. Tonduz (Pittier) 8819, Aug 1894, Costa Rica: San Jos? inter frutices ad flavium Tiril?prope La Verbena et Alajuelita, 1000 m, 9?54N 84 ? 08 W (W; IT: CR-8819, US-365896, US-80931 (fragm. \& photo ex W)). Collection number published as Pittier 8819.

Illustrations (Books): J.A.Steyermark et al, Flora of the Venezuelan Guayana Vol. 8 (2004) (141, Fig. 98), W.Burger, Flora Costaricensis 15, Gramineae: Fieldiana Botany New Series 4 (1980) (296, Fig 107).

Derivation (Clifford \& Bostock 2007): L. tallest. Taller than related species.
Classification. Subfamily Panicoideae. Tribe: Paniceae. Subtribe Boivinellinae.
Habit, Vegetative Morphology. Annual or perennial, short-lived, caespitose. Culms decumbent, (50-)100-400(-500) cm long, 4-10 mm diam., firm or woody, with prop roots. Culm-internodes thin-walled, distally glabrous. Culm-nodes glabrous. Lateral branches lacking or sparse. Leaf-sheaths glabrous on surface or puberulous or hispid or woolly, outer margin hairy. Leaf-sheath auricles absent or erect, $0-2 \mathrm{~mm}$ long. Ligule a ciliolate membrane, $0.5-1.5(-2.1) \mathrm{mm}$ long, glabrous on abaxial surface or pubescent on abaxial surface. Collar glabrous or pubescent. Leaf-blade base cordate. Leaf-blades linear or lanceolate, $14-42 \mathrm{~cm}$ long, $15-55 \mathrm{~mm}$ wide, glaucous. Leaf-blade surface glabrous or hispid. Leaf-blade margins scabrous, glabrous or ciliate, hairy at base. Leaf-blade apex acuminate.

Inflorescence. Inflorescence a panicle. Panicle open, elliptic, effuse, (20-)32-120 cm long. Primary panicle branches whorled at lower nodes. Panicle branches bearing distant spikelets, scabrous, 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 obovate, tilted on the pedicel, dorsally compressed, (3-)3.5-4(-4.8) mm long, falling entire.

Glumes. Glumes dissimilar, reaching apex of florets, thinner than fertile lemma, shiny. Lower glume oblate, (1.4-)1.6-2.1(-3) mm long, 0.5 length of spikelet, membranous, black, without keels, 7-11-veined. Lower glume surface woolly, hairy at apex. Lower glume apex obtuse. Upper glume ovate, 1 length of spikelet, membranous, black, without keels, 9-11 -veined. Upper glume surface woolly, hairy at apex. Upper glume apex obtuse.

Florets. Basal sterile florets 1, male, with palea. Lemma of lower sterile floret similar to upper glume, ovate, 1 length of spikelet, membranous, $9-11$-veined, woolly, hairy at apex, obtuse. Palea of lower sterile floret $0.75-0.8$ length of lemma. Fertile lemma ovate, dorsally compressed, 3.1-3.4 mm long, $1.8-2.1 \mathrm{~mm}$ wide, indurate, grey or black, shiny, without keel. Lemma margins involute. Lemma apex obtuse, with a shallow excavation or woolly. Palea indurate. Palea apex pubescent.

Flower and Fruit. Anthers 3, 1.6-1.9 mm long, yellow. Stigmas white. Caryopsis with adherent pericarp, 2.3 mm long, dark brown.

Distribution (TDWG). Continent. North America, South America.
Country /Province /State. Mexico. Central Mexico, Northeast Mexico, Gulf (Mexico), Northwest Mexico, Southwest Mexico, Southeast Mexico. Mesoamerica, Northern South America, Western South America, Brazil. Belize, Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua, Panama. Guyana, Venezuela. Colombia, Ecuador, Peru. Brazil North.

Roraima, Amazonas, Acre, Rondonia. Amazonas, Roraima. Mexico State, Puebla. Durango. Veracruz. Sinaloa. Colima, Guerrero, Jalisco, Michoacan, Nayarit, Oaxaca. Chiapas, Tabasco.

Lasiacis rhizophora (Fourn.) Hitchcock ex Chase. Proc. Biol. Soc. Washington, xxiv. 145 (1911).
Accepted by: R.J.Soreng et al., Catalogue of New World Grasses (2000-2003) and online, W.D.Clayton \& K.Harman, GrassBase (2008) and online, U.Quattrocchi, CRC World Dictionary of Grasses (2006).

TYPE from Mexico. Basionym or Replaced Name: Panicum rhizophorum E. Fourn., Mexic. Pl. 2: 31 (1886)
. T:<Type of Basionym>: fide TROPICOS and Kew Synonomy Database: LT: E. Bourgeau 3025, 10 Sep 1866, Mexico: Veracruz: region d'Orizaba (P; ILT: F, GH, MO-1639801 (in part), US-1720124 (fragm. ex B), US-81105, US-80957 (fragm. ex P \& photo)). LT designated by Hitchcock, Contr. U.S. Natl. Herb. 17: 253 (1913), but no specific specimen is specified; and by Davidse, Ann. Missouri Bot. Gard. 65: 1201 (1978), where a specific specimen is designated.

ST: Botteri 150, Mexico: Veracruz: Orizaba.
Illustrations: None found.
Derivation (Clifford \& Bostock 2007): Gk. rhiza, a root; phero, bear. Rooting at the lower nodes.
Classification. Subfamily Panicoideae. Tribe: Paniceae. Subtribe Boivinellinae.
Habit, Vegetative Morphology. Perennial. Culms prostrate, slender, 50-100 cm long, 2-3 mm diam., rooting from lower nodes. Culm-internodes solid, distally pubescent. Culm-nodes glabrous or pubescent. Leaf-sheaths puberulous, outer margin hairy. Leaf-sheath oral hairs ciliate, $1-4 \mathrm{~mm}$ long. Ligule a ciliolate membrane, $0.4-0.7(-1.1) \mathrm{mm}$ long, glabrous on abaxial surface. Collar glabrous. Leaf-blade base asymmetrical. Leaf-blades lanceolate or elliptic, $8-17 \mathrm{~cm}$ long, $16-37 \mathrm{~mm}$ wide. Leaf-blade surface scabrous, hispid, hairy adaxially. Leaf-blade apex acuminate.

Inflorescence. Inflorescence a panicle. Panicle open, ovate, 10-19(-24) cm long, with spikelets clustered towards branch tips. Primary panicle branches ascending or spreading, 3-11 cm long. Panicle branches scabrous, pubescent in axils. Spikelets in pairs. 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 obovate, tilted on the pedicel, dorsally compressed, $3.1-4 \mathrm{~mm}$ long, falling entire.

Glumes. Glumes dissimilar, reaching apex of florets, thinner than fertile lemma, shiny. Lower glume oblate, $1.4-2.1 \mathrm{~mm}$ long, 0.5 length of spikelet, membranous, black, without keels, 5-7 -veined. Lower glume surface woolly, hairy at apex. Lower glume apex obtuse. Upper glume ovate, 1 length of spikelet, membranous, black, without keels, 7-9 -veined. Upper glume surface woolly, hairy at apex. 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, 7-9 -veined, woolly, hairy at apex, obtuse. Palea of lower sterile floret 0.75 length of lemma. Fertile lemma ovate, dorsally compressed, $2.9-3.2 \mathrm{~mm}$ long, $1.7-2.2 \mathrm{~mm}$ wide, indurate, dark brown or black, shiny, without keel. Lemma margins involute. Lemma apex obtuse, with a shallow excavation or woolly. Palea indurate. Palea apex pubescent.

Flower and Fruit. Anthers 3, 1.6-1.9 mm long, pallid. Stigmas purple. Caryopsis with adherent pericarp, 2.2-2.4 mm long.
$2 n=18$ ( 1 ref TROPICOS).
Distribution (TDWG). Continent. North America, South America.
Country /Province/State. Mexico. Central Mexico, Gulf (Mexico), Southwest Mexico. Mesoamerica, Caribbean, Northern South America, Western South America. Costa Rica, Guatemala, Honduras, Nicaragua, Panama. Cuba, Dominican Republic. Venezuela. Colombia.

Puebla. Veracruz. Guerrero, Michoacan, Oaxaca.

Lasiacis rugelii (Griseb.) Hitchcock. Bot. Gaz. li. 302 (1911).
Accepted by: R.J.Soreng et al., Catalogue of New World Grasses (2000-2003) and online, W.D.Clayton \& K.Harman, GrassBase (2008) and online, U.Quattrocchi, CRC World Dictionary of Grasses (2006).

TYPE from Cuba. Basionym or Replaced Name: Panicum rugelii Griseb., Cat. Pl. Cub. 233 (1866)
. T:<Type of Basionym>: fide TROPICOS and Kew Synonomy Database: LT: F.I.X. Rugel 188, 1849, Cuba: in montibus supra Mantanzas, scandes in fruticibus (GOET; ST: GH, L, NY-71073, US-80964 (fragm. ex GOET)). LT designated by Hitchcock, Contr. U.S. Natl. Herb. 12: 183-258 (1909).

Illustrations (Books): W.Burger, Flora Costaricensis 15, Gramineae: Fieldiana Botany New Series 4 (1980) (298, Fig 108).

Derivation (Clifford \& Bostock 2007): in honor of Ferdinand Ignatius Xavier Rugel (1806-1878) German-born United States botanist, physician and apothecary.

Classification. Subfamily Panicoideae. Tribe: Paniceae. Subtribe Boivinellinae.
Habit, Vegetative Morphology. Perennial, caespitose. Culms erect or scandent, zigzag, 60-300 cm long, $2-5 \mathrm{~mm}$ diam., woody. Culm-internodes thin-walled, distally pubescent, with tubercle-based hairs. Culm-nodes glabrous or pubescent. Lateral branches ample or fastigiate. Leaf-sheaths puberulous, outer margin hairy. Leaf-sheath oral hairs ciliate, $1-2 \mathrm{~mm}$ long. Ligule an eciliate membrane or a ciliolate membrane, $0.1-0.3 \mathrm{~mm}$ long. Collar pubescent. Leaf-blade base asymmetrical. Leaf-blades lanceolate or ovate, (2.5-)3.5-5.5(-9.5) cm long, (5-)8-15(-22) mm wide. Leaf-blade surface puberulous, hairy on both sides. Leaf-blade margins scabrous. Leaf-blade apex acute or acuminate.

Inflorescence. Inflorescence a panicle. Panicle open, ovate, $2-10 \mathrm{~cm}$ long. Primary panicle branches spreading or reflexed, $1-5.5 \mathrm{~cm}$ long. Panicle branches puberulous, pubescent 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 obovate, tilted on the pedicel, dorsally compressed, $3.8-4.8 \mathrm{~mm}$ long, falling entire.

Glumes. Glumes dissimilar, reaching apex of florets, thinner than fertile lemma, shiny. Lower glume oblate, $1.5-2.1 \mathrm{~mm}$ long, $0.4-0.5$ length of spikelet, membranous, black, without keels, $7-9$-veined. Lower glume surface woolly, hairy at apex. Lower glume apex obtuse. Upper glume ovate, 1 length of spikelet, membranous, black, without keels, $9-11$-veined. Upper glume surface woolly, hairy at apex. 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, $9-11$-veined, woolly, hairy at apex, obtuse. Palea of lower sterile floret $0.75-1$ length of lemma. Fertile lemma ovate, dorsally compressed, $3.8-4.1 \mathrm{~mm}$ long, $2.3-2.6 \mathrm{~mm}$ wide, indurate, light brown, shiny, without keel. Lemma margins involute. Lemma apex obtuse, with a shallow excavation or woolly. Palea indurate. Palea apex pubescent.

Flower and Fruit. Anthers 3. Caryopsis with adherent pericarp, 2.4-2.6 mm long, pallid.
Distribution (TDWG). Continent. North America, South America.

Country /Province /State. Mexico. Northeast Mexico, Gulf (Mexico), Southwest Mexico, Southeast Mexico. Mesoamerica, Caribbean, Western South America. Belize, Costa Rica, Guatemala, Honduras, Nicaragua, Panama. Cuba, Dominican Republic, Haiti. Colombia.

San Luis Potosi, Tamaulipas. Veracruz. Oaxaca. Campeche, Chiapas, Quintana Roo, Tabasco, Yucatan.

Lasiacis ruscifolia (HBK) Hitchcock ex Chase. Proc. Biol. Soc. Washington, xxiv. 145 (1911).
Accepted by: R.J.Soreng et al., Catalogue of New World Grasses (2000-2003) and online, W.D.Clayton \& K.Harman, GrassBase (2008) and online, U.Quattrocchi, CRC World Dictionary of Grasses (2006).

TYPE from Mexico. Basionym or Replaced Name: Panicum ruscifolium Kunth, Nov. Gen. Sp. (quarto ed.) 1: 101-102 (1815 [1816])
. T:<Type of Basionym>: fide TROPICOS and Kew Synonomy Database: HT: Humboldt \& Bonpland s.n., Sep, Mexico: in radicibus montis ignivomi, Volcan de Jorullo, alt. 490 hexap. (P; IT: P).

Illustrations (Books): M.E.Barkworth et al, Flora of North America north of Mexico Vol 25 Poaceae, part 2 (2003) (391), S.A.Renvoize, Gramineas de Bolivia (1998) (411, Fig 87).

Derivation (Clifford \& Bostock 2007): L. folium, leaf. Leaf-blades ovate thereby resembling the cladodes of Ruscus..

Classification. Subfamily Panicoideae. Tribe: Paniceae. Subtribe Boivinellinae.
Habit, Vegetative Morphology. Perennial, caespitose. Culms scandent, 100-800 cm long, 5-12 mm diam., woody. Culm-internodes thin-walled, distally glabrous or pubescent or with pubescent line. Culmnodes glabrous or pubescent. Leaf-sheaths glabrous on surface to hispid, with tubercle-based hairs, outer margin hairy. Leaf-sheath oral hairs ciliate, 3 mm long. Ligule an eciliate membrane or a ciliate membrane, $0.3-1 \mathrm{~mm}$ long. Collar glabrous or pubescent. Leaf-blade base asymmetrical. Leaf-blades lanceolate or ovate, $4-16 \mathrm{~cm}$ long, $10-56 \mathrm{~mm}$ wide. Leaf-blade surface glabrous to hispid. Leaf-blade margins scabrous, ciliate, hairy at base. Leaf-blade apex acute or acuminate.

Inflorescence. Inflorescence a panicle. Panicle open, ovate, dense, (2-)4-16(-22) cm long. Primary panicle branches spreading, $1-6 \mathrm{~cm}$ long. Panicle branches scaberulous, glabrous in axils or pubescent in axils. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension (but with a distinct shelf at base of upper lemma). 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, tilted on the pedicel, dorsally compressed, $2.8-4 \mathrm{~mm}$ long, falling entire.

Glumes. Glumes dissimilar, reaching apex of florets, thinner than fertile lemma, shiny. Lower glume oblate, $1.2-2 \mathrm{~mm}$ long, 0.5 length of spikelet, membranous, black, without keels, $9-13$-veined. Lower glume surface woolly, hairy at apex. Lower glume apex obtuse. Upper glume ovate, 1 length of spikelet, membranous, black, without keels, 11-13 -veined. Upper glume surface woolly, hairy at apex. 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, 11-13 -veined, woolly, hairy at apex, obtuse. Palea of lower sterile floret $0.66-1$ length of lemma. Fertile lemma ovate, dorsally compressed, $2.8-3.6 \mathrm{~mm}$ long, 2-2.4 mm wide, indurate, dark brown or black, shiny, without keel. Lemma margins involute. Lemma apex obtuse, with a shallow excavation or woolly. Palea indurate. Palea apex pubescent.

Flower and Fruit. Anthers 3, 1.4-2.3 mm long, pallid. Stigmas white. Caryopsis with adherent pericarp, 2-2.5 mm long.

Distribution (TDWG). Continent. Australasia, North America, South America.
Country /Province /State. Australia (*). Northern Territory. 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, El Salvador, Honduras, Nicaragua, Panama. Cuba, Jamaica. Guyana, Venezuela. Bolivia, Colombia, Ecuador. Brazil South.

Sao Paulo Parana. Mexico State, Morelos, Puebla. Chihuahua, Durango, Hidalgo, Neuvo Leon, San Luis Potosi, Tamaulipas. Veracruz. Baja California, Sinaloa, Sonora. Colima, Guerrero, Jalisco, Michoacan, Nayarit, Oaxaca. Campeche, Chiapas, Quintana Roo, Tabasco, Yucatan.

Lasiacis scabrior Hitchcock. Proc. Biol. Soc. Wash. xl. 85. (1927).
Accepted by: R.J.Soreng et al., Catalogue of New World Grasses (2000-2003) and online, W.D.Clayton \& K.Harman, GrassBase (2008) and online, U.Quattrocchi, CRC World Dictionary of Grasses (2006).

TYPE from Guatemala. T:<Type of Basionym>: fide TROPICOS and Kew Synonomy Database: HT: H. von Tuerckheim 4036, Feb 1913, Guatemala: Alta Verapaz (US-725618; IT: US-727020).

Illustrations (Books): J.A.Steyermark et al, Flora of the Venezuelan Guayana Vol. 8 (2004) (142, Fig. 100).

Derivation (Clifford \& Bostock 2007): L. rougher. Leaf-sheaths more or less hispidulus.
Classification. Subfamily Panicoideae. Tribe: Paniceae. Subtribe Boivinellinae.
Habit, Vegetative Morphology. Perennial, caespitose. Culms erect or scandent, 100-600 cm long, 713 mm diam., woody. Culm-internodes thin-walled, distally pubescent or with pubescent line. Culm-nodes glabrous. Leaf-sheaths pubescent to hirsute, outer margin hairy. Leaf-sheath oral hairs ciliate, 2-3.5 mm long. Ligule an eciliate membrane, (3.5-)4-6(-7) mm long, brown, glabrous on abaxial surface or pubescent on abaxial surface, lacerate. Collar glabrous or pubescent. Leaf-blade base asymmetrical. Leafblades lanceolate or elliptic, (6-)8-12(-16) cm long, 10-22(-30) mm wide. Leaf-blade surface scabrous, rough adaxially, puberulous, hairy abaxially. Leaf-blade margins scabrous. Leaf-blade apex acuminate.

Inflorescence. Inflorescence a panicle, embraced at base by subtending leaf. Panicle open, globose, (1-)4-9 cm long. Primary panicle branches spreading or reflexed, (1-)2-5 cm long. Panicle branches pubescent, pubescent in axils. Spikelets spreading, solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets obovate, tilted on the pedicel, dorsally compressed, $3.5-4.5 \mathrm{~mm}$ long, falling entire.

Glumes. Glumes dissimilar, reaching apex of florets, thinner than fertile lemma, shiny. Lower glume oblate, (1.2-)1.7-2(-2.8) mm long, 0.5 length of spikelet, membranous, black, without keels, 7-11-veined. Lower glume surface woolly, hairy at apex. Lower glume apex obtuse. Upper glume ovate, 1 length of spikelet, membranous, black, without keels, 9-13 -veined. Upper glume surface woolly, hairy at apex. 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, 11-13 -veined, woolly, hairy at apex, obtuse. Palea of lower sterile floret $0.66-1$ length of lemma. Fertile lemma ovate, dorsally compressed, $3.5-3.6 \mathrm{~mm}$ long, $1.8-2$ mm wide, indurate, dark brown, shiny, without keel. Lemma surface with a median groove. Lemma margins involute. Lemma apex obtuse, with a shallow excavation or woolly. Palea indurate. Palea apex pubescent.

Flower and Fruit. Anthers 3, 2 mm long, pallid. Stigmas white. Caryopsis with adherent pericarp, $2.1-2.3 \mathrm{~mm}$ long.

Distribution (TDWG). Continent. North America, South America.
Country /Province /State. Mexico. Gulf (Mexico), Southwest Mexico, Southeast Mexico. Mesoamerica, Northern South America, Western South America. Belize, Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua, Panama. Venezuela. Colombia, Ecuador, Peru.

Veracruz. Oaxaca. Chiapas.

Lasiacis sloanei (Griseb.) Hitchcock. Bot. Gaz. li. 302 (1911).
Accepted by: R.J.Soreng et al., Catalogue of New World Grasses (2000-2003) and online, W.D.Clayton \& K.Harman, GrassBase (2008) and online, U.Quattrocchi, CRC World Dictionary of Grasses (2006).

TYPE from Jamaica. Basionym or Replaced Name: Panicum sloanei Griseb., Fl. Brit. W. I. 551 (1864)
. T:<Type of Basionym>: fide TROPICOS and Kew Synonomy Database: ST: H.R. Wullschlaegel 872, Jamaica (US-975668 (fragm. ex GOET)).

LT: Purdie s.n., Nov. 1843, Jamaica: Manchester, woods near Broke(horn?) (K). LT designated by Davidse, Ann. Missouri Bot. Gard. 65: 1218 (1978)..

Illustrations (Books): J.A.Steyermark et al, Flora of the Venezuelan Guayana Vol. 8 (2004) (142, Fig. 99).

Derivation (Clifford \& Bostock 2007): in honor of Hans Sloane (1660-1753) English physician and botanist who collected in West Indies.

Classification. Subfamily Panicoideae. Tribe: Paniceae. Subtribe Boivinellinae.
Habit, Vegetative Morphology. Perennial, caespitose. Culms erect or scandent, 100-600 cm long, 410 mm diam. Culm-internodes thin-walled, distally with pubescent line. Culm-nodes glabrous. Leafsheaths glabrous on surface, outer margin hairy. Leaf-sheath oral hairs ciliate, $1.5-3 \mathrm{~mm}$ long. Ligule a ciliolate membrane, $0.5-1 \mathrm{~mm}$ long, pubescent on abaxial surface. Collar pubescent. Leaf-blade base asymmetrical, with a brief petiole-like connection to sheath, petiole $0.1-0.3 \mathrm{~cm}$ long, petiole pubescent. Leaf-blades lanceolate or ovate, $8-16 \mathrm{~cm}$ long, (13-)17-40(-45) mm wide. Leaf-blade surface smooth, glabrous. Leaf-blade margins scabrous. Leaf-blade apex acuminate.

Inflorescence. Inflorescence a panicle. Panicle open, ovate, 6-34 cm long, bearing few spikelets. Primary panicle branches spreading, $2-15 \mathrm{~cm}$ long. Panicle branches scabrous, glabrous in axils or pubescent in axils. 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 obovate, tilted on the pedicel, dorsally compressed, (4-)4.3-4.8(-5.3) mm long, falling entire.

Glumes. Glumes dissimilar, reaching apex of florets, thinner than fertile lemma, shiny. Lower glume oblate, $1.5-2.6 \mathrm{~mm}$ long, $0.4-0.5$ length of spikelet, membranous, black, without keels, $7-9$-veined. Lower glume surface woolly, hairy at apex. Lower glume apex obtuse. Upper glume ovate, 1 length of spikelet, membranous, black, without keels, 9-13 -veined. Upper glume surface woolly, hairy at apex. 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, membranous, $9-13$-veined, woolly, hairy at apex, obtuse. Palea of lower sterile floret $0.75-1$ length of lemma. Fertile lemma ovate, dorsally compressed, $3.8-4.3 \mathrm{~mm}$ long, $2.2-2.6 \mathrm{~mm}$ wide, indurate, shiny, without keel. Lemma margins involute. Lemma apex obtuse, with a shallow excavation or woolly. Palea indurate. Palea apex pubescent.

Flower and Fruit. Anthers 3, 1.5-2.2 mm long, pallid. Stigmas white. Caryopsis with adherent pericarp, 2.3-2.6 mm long, pallid.
$n=18$ ( 1 ref TROPICOS).
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. Belize, Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua. Cuba, Dominican Republic, Haiti, Jamaica, Leeward Is, Puerto Rico. Venezuela. Colombia.

Hidalgo, Queretaro, San Luis Potosi, Tamaulipas. Veracruz. Jalisco, Oaxaca. Campeche, Chiapas, Quintana Roo, Tabasco, Yucatan.

Lasiacis sorghoidea (Ham.) Hitchcock \& Chase. Contrib. US. Nat. Herb. xviii. 338 (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).

TYPE from Puerto Rico. Basionym or Replaced Name: Panicum sorghoideum Desv. ex Ham., Prodr. Pl. Ind. Occid. 10 (1825)
. T:<Type of Basionym>: fide TROPICOS and Kew Synonomy Database: HT: A.N. Desvaux 24, Puerto Rico (P; IT: US-81124 (fragm. ex P \& photo)).

Recent Synonyms: Lasiasis maculata (Aubl.) Urb., Symb. Antill. 8: 751 (1921).
Illustrations (Books): S.A.Renvoize, The Grasses of Bahia, 1984 (112, Fig. 40), E.G.Nicora, Los Generos de Gramineas de America Austral (1987) (444, Fig. 156 as var. sorghoidea), L.B. Smith, D.C. Wasshausen, R.M. Klein Flora Illustrada Catarinensis Gramineas (1981-1982) (623, Fig. 135), F.O.Zuloaga et al, Flora del Paraguay 23 (1994) (190, Fig. 53), G.Harling \& C.Persson, Flora of Ecuador (2006) (78: 33, Fig. 2 (2006)).

Derivation (Clifford \& Bostock 2007): Gk. -oidea, resembling. Resembling Sorghum..

Classification. Subfamily Panicoideae. Tribe: Paniceae. Subtribe Boivinellinae.
Habit, Vegetative Morphology. Perennial, caespitose. Culms scandent, 100-1000 cm long (long), 410 mm diam., woody. Culm-internodes thin-walled. Culm-nodes glabrous. Ligule a ciliolate membrane, $0.5-1 \mathrm{~mm}$ long. Leaf-blades linear or lanceolate, $6-23 \mathrm{~cm}$ long, $6-46 \mathrm{~mm}$ wide. Leaf-blade surface pubescent.

Inflorescence. Inflorescence a panicle. Panicle open, ovate, $5-35 \mathrm{~cm}$ 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 obovate, tilted on the pedicel, dorsally compressed, $3-4.3 \mathrm{~mm}$ long, falling entire.

Glumes. Glumes dissimilar, reaching apex of florets, thinner than fertile lemma, shiny. Lower glume oblate, $1.2-2.7 \mathrm{~mm}$ long, $0.4-0.6$ length of spikelet, membranous, black, without keels, $7-11$-veined. Lower glume surface woolly, hairy at apex. Lower glume apex obtuse. Upper glume ovate, 1 length of adjacent fertile lemma, membranous, black, without keels, 9-13 -veined. Upper glume surface woolly, hairy at apex. 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, membranous, $9-11$-veined, woolly, hairy at apex, obtuse. Fertile lemma ovate, dorsally compressed, $3-4.3 \mathrm{~mm}$ long, indurate, dark brown, shiny, without keel. Lemma margins involute. Lemma apex obtuse, with a shallow excavation or woolly. Palea indurate. Palea apex pubescent.

Flower and Fruit. $2 n=36$ ( 1 ref TROPICOS).
Distribution (TDWG). Continent. North America, South America.
Country /Province /State. Mexico. Central Mexico, Northeast Mexico, Gulf (Mexico), Southwest Mexico, Southeast Mexico. Mesoamerica, Caribbean (as L. maculata), Northern South America, Western South America, Brazil, Southern South America. Belize, Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua, Panama. Bahamas, Cuba, Dominican Republic, Haiti, Jamaica, Leeward Is, Windward Islands (\& as L. maculata), Puerto Rico, Trinidad-Tobago. French Guiana, Guyana, Surinam, Venezuela. Bolivia, Colombia, Ecuador, Peru. Brazil West Central, Brazil Northeast, Brazil North, Brazil Southeast, Brazil South. Argentina Northwest, Paraguay.

Roraima, Para, Amapa, Mato Grosso, Goias, Bahia, Minas Gerais, Rio de Janeiro, Espirito Santo, Sao Paulo Parana. Mato Grosso, Goiás, Mato Grosso do Sul. Bahia. Acre, Amapa. Minas Gerais, Sao Paulo. Paraná. Jujuy, Salta. Chaco, Corrientes, Formosa, Misiones. Mexico State, Puebla. Queretaro, Tamaulipas. Veracruz. Guerrero, Jalisco, Michoacan, Oaxaca. Campeche, Chiapas, Tabasco.

Lasiacis standleyi Hitchcock. Proc. Biol. Soc. Wash. xl. 86. (1927).
Accepted by: R.J.Soreng et al., Catalogue of New World Grasses (2000-2003) and online, W.D.Clayton \& K.Harman, GrassBase (2008) and online, U.Quattrocchi, CRC World Dictionary of Grasses (2006).

TYPE from Costa Rica. T:<Type of Basionym>: fide TROPICOS and Kew Synonomy Database: HT: P.C. Standley \& J. Valerio 45839, 25 Jan 1926, Costa Rica: Guanacaste: La Tejona, N of Tilarán (US1307185).

Illustrations: None found.
Derivation (Clifford \& Bostock 2007): in honor of Paul Carpenter Standley (1884-1963) United States botanist.

Classification. Subfamily Panicoideae. Tribe: Paniceae. Subtribe Boivinellinae.
Habit, Vegetative Morphology. Perennial. Culms prostrate or rambling, 50-100 cm long, $2-4 \mathrm{~mm}$ diam., rooting from lower nodes. Culm-internodes thin-walled, distally with pubescent line. Culm-nodes glabrous. Leaf-sheaths puberulous or pubescent or hirsute, outer margin hairy. Ligule an eciliate membrane, (4.5-)5-7(-9) mm long, brown, glabrous on abaxial surface, lacerate. Collar glabrous or pubescent. Leafblade base asymmetrical. Leaf-blades linear or lanceolate, $10-18 \mathrm{~cm}$ long, (8-)12-29(-35) mm wide. Leafblade surface scabrous, rough adaxially, puberulous, hairy abaxially. Leaf-blade margins entire or undulate, scabrous. Leaf-blade apex acuminate.

Inflorescence. Inflorescence a panicle. Panicle open, ovate, 7-27 cm long. Primary panicle branches ascending or spreading, $2-15 \mathrm{~cm}$ long, bearing spikelets almost to the base. Panicle branches scabrous,
glabrous or pubescent, pubescent in axils. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, pubescent.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets obovate, tilted on the pedicel, dorsally compressed, $3.7-5 \mathrm{~mm}$ long, falling entire.

Glumes. Glumes dissimilar, reaching apex of florets, thinner than fertile lemma, shiny. Lower glume oblate, $1.7-2.5 \mathrm{~mm}$ long, 0.5 length of spikelet, membranous, black, without keels, $9-11$-veined. Lower glume surface woolly, hairy at apex. Lower glume apex obtuse. Upper glume ovate, 1 length of spikelet, membranous, black, without keels, 9-13 -veined. Upper glume surface woolly, hairy at apex. 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, 11-13 -veined, woolly, hairy at apex, obtuse. Palea of lower sterile floret $0.25-0.33$ length of lemma. Fertile lemma ovate, dorsally compressed, $3.4-4.1 \mathrm{~mm}$ long, $2.2-$ 2.5 mm wide, indurate, shiny, without keel. Lemma margins involute. Lemma apex obtuse, with a shallow excavation or woolly. Palea indurate. Palea apex pubescent.

Flower and Fruit. Anthers 3, pallid. Stigmas purple. Caryopsis with adherent pericarp, 2.1-2.4 mm long.
$n=18$ (1 ref TROPICOS).
Distribution (TDWG). Continent. North America, South America.
Country /Province /State. Mexico. Southeast Mexico. Mesoamerica, Northern South America, Western South America. Costa Rica, Guatemala, Honduras, Nicaragua, Panama. Venezuela. Colombia, Ecuador, Peru.

Chiapas.

Lasiurus scindicus Henrard. Blumea, iv. 514 (1941).
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 L. hirsutus).

TYPE from Pakistan. Basionym or Replaced Name: Lasiurus hirsutus (Vahl) Boiss., nom superfl, Diagn. Ser. II. 4: 146 (1859). T:<Type of Basionym>: fide TROPICOS and Kew Synonomy Database: Pakistan, Sind: Stocks (L holo, K).

Illustrations (Books): H.Jacques-Felix, Les Graminees d'Afrique tropicale (1962) (278, Fig. 213 as L. hirsutus), N.Feinbrun-Dothan, Flora Palaestina 4 (1986) (Pl. 422), S.Phillips, Poaceae (Gramineae) in I.Hedberg \& S.Edwards, Flora of Ethiopia and Eritrea (1995) (359, Fig 148), L.Boulos, Flora of Egypt 4 (2005) (346, Pl. 102), T.A.Cope, in M.Thulin, Poaceae (Gramineae). Flora of Somalia (1995) (269, Fig 162), N.L.Bor, Gramineae in Flora of Iraq (1968) (537, Pl. 206 as L. hirsutus).

Illustrations (Journals): Hooker's Icones Plantarum (t. 3080 (1922) as L. hirsutus).
Images: L.Boulos, Flora of Egypt 4 (2005);.
Derivation (Clifford \& Bostock 2007): L. -icum, belonging to. From Scinde, now Sind, Province of Pakistan.

Classification. Subfamily Panicoideae. Tribe: Sacchareae. Subtribe Rottboelliinae.
Habit, Vegetative Morphology. Perennial, caespitose. Rhizomes short, scaly, hairy. Culms 30-100 cm long. Ligule a fringe of hairs. Leaf-blades flat or convolute, $10-30 \mathrm{~cm}$ long, $1-3 \mathrm{~mm}$ wide, glaucous. Leaf-blade apex attenuate, filiform.

Inflorescence. Inflorescence composed of racemes. Racemes 1, single, 5-12 cm long. Rhachis fragile at the nodes, flattened, glabrous on surface or pubescent on surface or villous on surface, ciliate on margins. Rhachis internodes cuneate. Rhachis internode tip transverse, flat. Spikelets in threes. Fertile spikelets sessile, (1-)2 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, linear, flattened, 3-3.5 mm long, glabrous or pubescent or villous, tip rectangular.

Sterile Spikelets. Companion sterile spikelets well-developed, male, lanceolate, 5-7 mm long, shorter than fertile, deciduous with the fertile. Companion sterile spikelet callus truncate. Companion sterile spikelet glumes coriaceous, ciliate on margins, dentate, acuminate, mucronate. 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 bearded, base truncate, with central peg, attached transversely. Spikelet callus hairs $0.3-0.5$ length of spikelet.

Glumes. Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma. Lower glume lanceolate, 1 length of spikelet, coriaceous, 2-keeled, keeled above, keeled laterally. Lower glume primary vein ciliate. Lower glume surface flat. Lower glume apex entire or dentate, 2 -fid, caudate. Upper glume lanceolate, membranous, 1 -keeled, 5 -veined. Upper glume primary vein ciliate. Upper glume apex acute.

Florets. Basal sterile florets 1, male, with palea. Lemma of lower sterile floret oblong, 4 mm long, hyaline, 3 -veined, acute. Fertile lemma oblong, hyaline, without keel, 3 -veined, $0-3$-veined. Lemma apex acute. Palea hyaline.

Flower and Fruit. $n=9$ ( 2 refs TROPICOS), or 28 ( 1 ref TROPICOS).
Distribution (TDWG). Continent. Africa, Temperate Asia, Tropical Asia.
Country /Province /State. Northern Africa, West Tropical Africa, Northeast Tropical Africa. Algeria, Egypt, Libya, Morocco. Mali. Eritrea, Ethiopia (inc. Eritrea), Somalia, Sudan. Western Asia, Arabian Peninsula. Iran, Iraq. Gulf States, Kuwait, Oman, Saudi Arabia. Indian Subcontinent. India, Pakistan.

Haryana. Punjab, Rajasthan. Jammu Kashmir.
Lecomtella madagascariensis A. Camus. Compt. Rend. cl i. 567 (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 Synonomy Database: Madagascar: Massif de l'Andringitra; 1600-2400 m.., Perrier 10816, 13598 (ST: not designated).

Illustrations (Journals): Hooker's Icones Plantarum (t. 3123 (1927)).
Derivation (Clifford \& Bostock 2007): L. -ense, denoting origin. From Madagascar.
Classification. Subfamily Panicoideae. Tribe: Paspaleae. Subtribe Paspalinae.
Habit, Vegetative Morphology. Perennial. Culms 100-200 cm long. Ligule a fringe of hairs. Leafblades linear or lanceolate, 12-22 cm long, $10-18 \mathrm{~mm}$ wide. Leaf-blade apex attenuate.

Inflorescence. Inflorescence a panicle. Panicle contracted, oblong, $5-6 \mathrm{~cm}$ long. Primary panicle branches bearing 1 fertile spikelets on each lower branch, bearing sterile spikelets below, fertile at tip. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, filiform, $3-5 \mathrm{~mm}$ long, tip rectangular.

Sterile Spikelets. Basal sterile spikelets well-developed, 4-6 in number (per branch), pedicelled, separately deciduous, male, lanceolate, $9-10 \mathrm{~mm}$ long, equalling fertile. Basal sterile spikelet glumes membranous.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets lanceolate, laterally compressed, compressed slightly, $9-10 \mathrm{~mm}$ long, falling entire, readily shedding fertile florets. Floret callus winged, with free apical wings, with this appendage 0.5 mm long.

Glumes. Glumes similar, shorter than spikelet, thinner than fertile lemma. Lower glume lanceolate, 67 mm long, $0.5-0.75$ length of spikelet, membranous, 1 -keeled, 3 -veined. Lower glume apex acuminate. Upper glume lanceolate, 7 mm long, membranous, 1 -keeled, 7 -veined. Upper glume apex acuminate.

Florets. Basal sterile florets 1, male, with palea. Lemma of lower sterile floret similar to upper glume, lanceolate, $9-10 \mathrm{~mm}$ long, 1 length of spikelet, membranous, 1 -keeled, 5 -veined, acuminate. Fertile florets female. Fertile lemma oblong, dorsally compressed, $4-5 \mathrm{~mm}$ long, coriaceous, without keel, 5 -veined, more than 3 -veined. Lemma surface pubescent. Lemma margins flat. Lemma apex obtuse, tuberculate. Palea reflexed at apex, 1 length of lemma, coriaceous, 2 -veined. Palea apex tuberculate.

Distribution (TDWG). Continent. Africa.
Country /Province /State. Western Indian Ocean. Madagascar.

Leersia angustifolia Prodoehl. Bot. Archiv, i. 217 . (1922).
Accepted by: W.D.Clayton \& K.Harman, GrassBase (2008) and online.

TYPE from Sudan. T:<Type of Basionym>: fide TROPICOS and Kew Synonomy Database: Sudan, Djur: Schweinfurth 1098 (K iso).

Illustrations (Journals): Hooker's Icones Plantarum (t. 3492 (1950) as Oryza).
Derivation (Clifford \& Bostock 2007): L. angustus, narrow; folium, leaf. Leaf-blades narrow.
Classification. Subfamily Ehrhartoideae. Tribe: Oryzeae.
Habit, Vegetative Morphology. Annual, caespitose. Culms $40-60 \mathrm{~cm}$ long. Ligule an eciliate membrane, acute. Leaf-blades $10-20 \mathrm{~cm}$ long, $2-3 \mathrm{~mm}$ wide. Leaf-blade margins smooth.

Inflorescence. Inflorescence a panicle. Panicle open, lanceolate, $8-12 \mathrm{~cm}$ long, $1-4 \mathrm{~cm}$ wide, contracted about primary branches. Primary panicle branches simple, $2-6 \mathrm{~cm}$ long, naked below. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets oblong, laterally compressed, compressed strongly, 2.2-2.8(-3.6) mm long, $1-1.25 \mathrm{~mm}$ wide, falling entire.

Glumes. Glumes both absent or obscure.
Florets. Fertile lemma $2.2-2.8(-3.6) \mathrm{mm}$ long, chartaceous, keeled, 5 -veined, more than 3-veined. Lemma midvein pectinately ciliate, hairy above. Lemma surface scabrous. Lemma margins involute. Lemma apex acute. Palea elliptic, 1 length of lemma, chartaceous, 3 -veined, 1-keeled. Palea keels pectinate. Palea surface scabrous. Palea apex entire, acute.

Flower and Fruit. Lodicules 2. Anthers 6. Stigmas 2.
Distribution (TDWG). Continent. Africa.
Country /Province /State. West-Central Tropical Africa, Northeast Tropical Africa. DRC. Sudan.
Leersia denudata Launert. Senck. Biol. xlvi. 144 (1965).
Accepted by: W.D.Clayton \& K.Harman, GrassBase (2008) and online, U.Quattrocchi, CRC World Dictionary of Grasses (2006).

TYPE from Tanzania. T:<Type of Basionym>: fide TROPICOS and Kew Synonomy Database: Tanzania, Dodoma: Burtt 3677 (K holo).

Illustrations: None found.
Derivation (Clifford \& Bostock 2007): L. lacking in hairs. Foliage of spikelets glabrous or weakly hairy.

Classification. Subfamily Ehrhartoideae. Tribe: Oryzeae.
Habit, Vegetative Morphology. Perennial, caespitose. Culms geniculately ascending or decumbent, $40-70 \mathrm{~cm}$ long, rooting from lower nodes. Culm-nodes pubescent. Ligule an eciliate membrane, $1-2 \mathrm{~mm}$ long, truncate. Leaf-blades flat or conduplicate, $3-14 \mathrm{~cm}$ long, $1.5-6 \mathrm{~mm}$ wide, flaccid. Leaf-blade surface smooth, glabrous. Leaf-blade apex acute or acuminate.

Inflorescence. Inflorescence a panicle. Panicle open, elliptic or oblong, $5-15 \mathrm{~cm}$ long, $1.5-5 \mathrm{~cm}$ wide. Primary panicle branches ascending or spreading, bearing spikelets almost to the base. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets oblong, laterally compressed, compressed strongly, 3.5-4.5(-5.5) mm long, $1.3-1.6 \mathrm{~mm}$ wide, falling entire.

Glumes. Glumes both absent or obscure.
Florets. Fertile lemma 3.5-4.3(-5.5) mm long, chartaceous, mid-green or red or purple, keeled, 5 veined, more than 3 -veined. Lemma midvein ciliolate. Lemma surface glabrous. Lemma margins involute. Lemma apex rostrate. Palea elliptic, 1 length of lemma, chartaceous, 3 -veined, 1-keeled. Palea keels ciliolate. Palea apex entire.

Flower and Fruit. Lodicules 2. Anthers 6. Stigmas 2.
Distribution (TDWG). Continent. Africa.
Country /Province /State. East Tropical Africa, South Tropical Africa, Southern Africa. Kenya, Tanzania. Zambia, Zimbabwe. North-West, Kwazulu-Natal, Eastern Cape.

Leersia drepanothrix Stapf. Journ. de Bot. 1905, 107. (1905).
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 Synonomy Database: Guinee: Pobeguin 495 ( P holo, K).

Illustrations (Books): H.Jacques-Felix, Les Graminees d'Afrique tropicale (1962) (127, Fig.52), R.M.Polhill, F.T.E.A., Gramineae (1(1970):26, Fig.9).

Derivation (Clifford \& Bostock 2007): Gk. drepanos, sickle; thrix, hair. Hairs on sterile lemmas sickle-shaped.

Classification. Subfamily Ehrhartoideae. Tribe: Oryzeae.
Habit, Vegetative Morphology. Annual or perennial. Rhizomes absent or elongated. Culms geniculately ascending or decumbent, $50-100 \mathrm{~cm}$ long. Culm-nodes pubescent. Ligule an eciliate membrane, $2.4-3 \mathrm{~mm}$ long, truncate. Leaf-blades $5-30 \mathrm{~cm}$ long, $2-5 \mathrm{~mm}$ wide. Leaf-blade surface scabrous, rough abaxially.

Inflorescence. Inflorescence a panicle. Panicle open, ovate, effuse, 8-19 cm long. Primary panicle branches spreading, naked below. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets elliptic or ovate, laterally compressed, compressed strongly, 2-2.5 mm long, $1.2-1.3 \mathrm{~mm}$ wide, falling entire.

Glumes. Glumes both absent or obscure.
Florets. Fertile lemma 2-2.5 mm long, chartaceous, keeled, 5 -veined, more than 3 -veined. Lemma midvein ciliolate (semicircular hairs). Lemma surface pubescent, with semicircular hairs. Lemma margins involute. Lemma apex obtuse. Palea elliptic, 1 length of lemma, chartaceous, 3 -veined, 1 -keeled. Palea keels ciliolate. Palea surface pubescent, with hooked hairs (semicircular). Palea apex entire.

Flower and Fruit. Lodicules 2. Anthers 6. Stigmas 2.
Distribution (TDWG). Continent. Africa.
Country /Province /State. West Tropical Africa, West-Central Tropical Africa, Northeast Tropical Africa, East Tropical Africa. Burkina, Ghana, Guinea, Nigeria, Senegal. Sudan. Uganda.

Leersia friesii Melderis. Svensk Bot. Tidskr. x1. 225 (1946).
Accepted by: W.D.Clayton \& K.Harman, GrassBase (2008) and online, U.Quattrocchi, CRC World Dictionary of Grasses (2006).

TYPE from Zaire. T:<Type of Basionym>: fide TROPICOS and Kew Synonomy Database: Zaire, Katanga: Fries 527 (UPS holo).

Illustrations (Books): G.V.Pope et al., Flora Zambesiaca 10 (1(1971):27, t. 7).
Derivation (Clifford \& Bostock 2007): in honor of Thore Christian Elias Fries (1886-1930) Swedish botanist.

Classification. Subfamily Ehrhartoideae. Tribe: Oryzeae.
Habit, Vegetative Morphology. Perennial. Rhizomes elongated. Culms geniculately ascending or decumbent, $60-80 \mathrm{~cm}$ long, spongy, $3-6(-8)$-noded. Culm-nodes glabrous. Ligule an eciliate membrane, $2-2.5 \mathrm{~mm}$ long, truncate. Leaf-blades flat or involute, $8-20 \mathrm{~cm}$ long, $3-6 \mathrm{~mm}$ wide, stiff. Leaf-blade surface scaberulous, rough adaxially, glabrous or pilose, hairy abaxially. Leaf-blade apex attenuate.

Inflorescence. Inflorescence a panicle. Panicle open, linear, $8-14 \mathrm{~cm}$ long, $0.5-1 \mathrm{~cm}$ 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 oblong, laterally compressed, compressed strongly, 3-3.5 mm long, $0.9-1(-1.2) \mathrm{mm}$ wide, falling entire.

Glumes. Glumes both absent or obscure.
Florets. Fertile lemma 3-3.5 mm long, chartaceous, yellow or mid-green, keeled, 5 -veined, more than 3 -veined. Lemma midvein scabrous. Lemma surface glabrous or hispidulous. Lemma margins involute.

Lemma apex rostrate (point up to 1 mm ). Palea elliptic, 1 length of lemma, chartaceous, 3 -veined, 1-keeled.
Palea keels scabrous. Palea surface glabrous or pubescent. Palea apex entire.
Flower and Fruit. Lodicules 2. Anthers 6, 2-3 mm long. Stigmas 2.
Distribution (TDWG). Continent. Africa.
Country /Province /State. West-Central Tropical Africa, Northeast Tropical Africa, East Tropical Africa, South Tropical Africa, Southern Africa. DRC. Tanzania, Uganda. Angola, Zambia. Botswana.

Leersia hexandra Sw. Prod. Veg. Ind. Occ. 21. (1788).
Accepted by: R.J.Soreng et al., Catalogue of New World Grasses (2000-2003) and online, W.D.Clayton \& K.Harman, GrassBase (2008) and online, U.Quattrocchi, CRC World Dictionary of Grasses (2006), D.Sharp, D. \& B.K.Simon, AusGrass (2002), S-L Chen et al, Flora of China 22 (Poaceae) (2006), N.L.Bor, Grasses of Burma, Ceylon, India and Pakistan (1960), T.Koyama, Grasses of Japan and its neighboring regions (1987).

TYPE from Jamaica. T:<Type of Basionym>: fide TROPICOS and Kew Synonomy Database: HT: Swartz s.n., Jamaica (S; IT: BM).

Illustrations (Books): F.O.Zuloaga, Z.E.Rugolo \& A.M. Anton, Flora Argentina 3 - 1, Aristidoideae a Pharoideae (2012) (240), F.N.Hepper, F.W.T.A. 3(2) (1972) (368, Fig.422), G.V.Pope et al., Flora Zambesiaca 10 (1(1971):27, t. 7), L.K.A. Chippindall, Grasses and Pastures of South Africa (1955) (Pl. 2), G.E.Gibbs Russell el al, Grasses of Southern Africa (1990) (196, Fig 118), J.Bosser, Graminees des Paturage et des Cultures a Madagascar (1969) (60, Fig 11), N.Feinbrun-Dothan, Flora Palaestina 4 (1986) (Pl. 198), S.Phillips, Poaceae (Gramineae) in I.Hedberg \& S.Edwards, Flora of Ethiopia and Eritrea (1995) (11, Fig. 4), L.Boulos, Flora of Egypt 4 (2005) (128, Fig 36), C-C Hsu, Flora of Taiwan, Vol 5 (1978) (218), C-C Hsu,Taiwan Grasses (1975) (379, Pl. 1367), N.L.Bor, The grasses of Burma, Ceylon, India and Pakistan (1960) (600, Fig. 68), K.M.Matthew, Flora Palni Hills (1996) (843, Pl. 843), K.M.Matthew, Illustrations on the Flora of Tamilnadu Carnatic (1982) (Pl. 888 \& 889), H.J.Noltie, The Grasses of Bhutan (2000) (516, Fig. 9), H.B.Gilliland, Grasses of Malaya (1971) (98, Fig. 16), H.Duistermaat, Field Guide to the Grasses of Singapore (2005) (87, Fig. 85), E.E.Henty, A Manual of the Grasses of New Guinea (1969) (123, Pl. 47), S.W.L.Jacobs, R.D.B.Whalley \& D.J.B.Wheeler,, Grasses of New South Wales, 4th edn (2008) (292), J.C.Tothill,\& J.B.Hacker. The grasses of southern Queensland (1983) (294), T.D.Stanley \& E.Ross, Flora of South East Queensland, Gramineae (1989) (105, Fig. 17), A.Wilson (ed.), Flora of Australia, Vol 44A. Poaceae (2009) (363, Fig. 49), 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) (45), F.W.Gould, The Grasses of Texas (1975) (45, Fig. 8), A.S.Hitchcock, Manual of the Grasses of the West Indies (1936) (148, Fig. 93), S.A.Renvoize, Gramineas de Bolivia (1998) (66, Fig. 12), S.A.Renvoize, The Grasses of Bahia, 1984, E.G.Nicora, Los Generos de Gramineas de America Austral (1987) (154, Fig. 37), L.B. Smith, D.C. Wasshausen, R.M. Klein Flora Illustrada Catarinensis Gramineas (1981-1982) (564, Fig. 121, 584, Fig. 126 \& 585, Fig. 127), A.Burkat, Flora Ilustrada de Entre Rios (Argentina), Pt II, Gramineas (1969) (38, Fig. 6), W.Burger, Flora Costaricensis 15, Gramineae: Fieldiana Botany New Series 4 (1980) (303, Fig 109), A.L.Cabrera, Flora de la Provincia de Buenos Aires, IV Pt 2 Gramineas (1970) (42, Fig. 7), B.Rosengurtt, Gramineas UruguayasI (1970) (277, Fig. 114), E.Judziewicz, Flora of the Guianas, 187. Poaceae (1990) (312, Fig. 54), S-L Chen et al, Flora of China, Illustrations, Poaceae (2007) (Fig. 248), E.Hafliger \& E.Schultz, Grass Weeds, CIBA-GEIGY (2:92(1980)), G.G.Potgar, C.B.Salunkhe \& S.R.Yadav, Grasses of Maharashtra (2012) (Fig. 286).

Illustrations (Journals): Ruizia (13:62, Fig.71-j (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;, L.Boulos, Flora of Egypt 4 (2005);, H.B.Gilliland et al., Flora of Malaya Vol. 3 Grasses (1971);, F.van Oudtshoorn, Guide to Grasses of Southern Africa (1999), G.G.Potgar, C.B.Salunkhe \& S.R.Yadav, Grasses of Maharashtra (2012) (Pl. 22).
Derivation (Clifford \& Bostock 2007): Gk. hexa, six; aner, man. The florets possess six anthers.
Classification. Subfamily Ehrhartoideae. Tribe: Oryzeae.
Habit, Vegetative Morphology. Perennial. Rhizomes elongated. Culms geniculately ascending or decumbent, $30-100 \mathrm{~cm}$ long. Culm-nodes pubescent. Ligule an eciliate membrane, $1-2 \mathrm{~mm}$ long, truncate. Leaf-blades $10-20 \mathrm{~cm}$ long, $4-8 \mathrm{~mm}$ wide. Leaf-blade surface scaberulous. Leaf-blade margins scabrous.

Inflorescence. Inflorescence a panicle. Panicle open, elliptic or oblong, 5-12 cm long, 1-4 cm wide. Primary panicle branches bearing spikelets almost to the base. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets oblong, laterally compressed, compressed strongly, (3.2-)3.4-$4.8(-5.2) \mathrm{mm}$ long, (1-)1.2-1.4(-1.7) mm wide, falling entire.

Glumes. Glumes both absent or obscure.
Florets. Fertile lemma (3.2-)3.4-4.8(-5.2) mm long, chartaceous, pallid or purple, keeled, 5 -veined, more than 3-veined. Lemma midvein pectinately ciliate. Lemma surface scabrous. Lemma margins involute. Lemma apex acute. Palea elliptic, 1 length of lemma, chartaceous, 3 -veined, 1-keeled. Palea keels pectinate. Palea apex entire.

Flower and Fruit. Lodicules 2. Anthers 6. Stigmas 2.
$n=24$ ( 5 refs TROPICOS). $2 n=48$ ( 1 ref TROPICOS), or 42 ( 1 ref TROPICOS).
Distribution (TDWG). Continent. Africa, Temperate Asia, Tropical Asia, Australasia, 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, Egypt, Morocco, Tunisia. Canary Is. Burkina, Gambia, Ghana, Guinea, Ivory Coast, Mali, Nigeria, Sierre Leone, Togo. Cameroon, Gabon, Annobon, Principe \& Sao Tome, Bioko, Rwanda, DRC. Eritrea, Ethiopia (inc. Eritrea), Sudan. Kenya, Tanzania, Uganda. Angola, Malawi, Mozambique, Zambia, Zimbabwe. Namibia, Botswana, Limpopo, North-West, Gauteng, Mpumalanga, Swaziland, Free State, Kwazulu-Natal, Lesotho, Eastern Cape. Mauritius, Madagascar. Western Asia, China, Eastern Asia. China South Central, Hainan, China Southeast. Nansei-Shoto, Taiwan. Indian Subcontinent, Indo-China, Malesia, Papuasia. Bangladesh, Eastern Himalaya, India, Sri Lanka. Laos, Myanmar, Thailand, Vietnam. Borneo, Java, Lesser Sunda Is, Sumatra, Sulawesi, Philippines, Singapore. New Guinea. Australia. Northern Territory, Queensland, New South Wales. South-central USA, Southeastern USA, 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, Windward Islands, Puerto Rico, Trinidad-Tobago. French Guiana, Guyana, Surinam. Bolivia, Colombia, Ecuador. Brazil West Central, Brazil Northeast, Brazil Southeast, Brazil South. Argentina Northeast, Argentina Northwest, Paraguay, Uruguay.

Fujian, Guangdong, Guangxi. Guizhou, Sichuan, Yunnan. Bhutan. Assam, Manipur, Meghalaya. Andhra Pradesh, Bihar, Kerala, Karnataka. Orissa, Rajasthan, Tamilnadu, West Bengal. Darwin \& Gulf. North, Central, South East. Coast. Mato Grosso, Mato Grosso do Sul. Alagoas, Bahia, Ceará, Fernando do Noronha, Maranhão, Pernambuco, Paraíba, Piaui, Rio Grande do Norte (RN), Sergipe. Minas Gerais, Sao Paulo. Paraná, Santa Catarina. Jujuy, Salta, Tucuman. Buenos Aires, Chaco, Cordoba, Corrientes, Distrito Federal, Entre Rios, Formosa, La Pampa, Misiones, Santa Fe. Distrito Federal, Mexico State, Morelos, Puebla. Durango, Guanajuato, Zacatecas. Veracruz. Jalisco, Michoacan, Nayarit, Oaxaca. Chiapas, Tabasco.

Leersia japonica (Honda) Honda. J. Tokyo Univ. Fac. Sci. Bot. 3:7 (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: Homalocenchrus japonicus Honda, Bot. Mag., Tokyo, 39: 37 (1925). T:<Type of Basionym>: fide TROPICOS and Kew Synonomy Database: Japan, Kochi: Makino.

Illustrations (Books): T.Koyama, Grasses of Japan and its neighbouring regions (1987) (24, Fig 2), S-L Chen et al, Flora of China, Illustrations, Poaceae (2007) (Fig. 247).

Derivation (Clifford \& Bostock 2007): L. -ica, belonging to; Japan, a modified spelling Zhapan introduced into Europe by Marco Polo as a transliteration for the Chinese name for the large islands to the east of that country. From Japan.

Classification. Subfamily Ehrhartoideae. Tribe: Oryzeae.

Habit, Vegetative Morphology. Perennial. Rhizomes elongated. Culms prostrate, 100-120 cm long, rooting from lower nodes. Culm-nodes bearded. Leaf-sheaths smooth or scaberulous. Leaf-sheath auricles erect. Ligule an eciliate membrane, $1-2.5 \mathrm{~mm}$ long, truncate. Leaf-blades $6-12 \mathrm{~cm}$ long, $5-7 \mathrm{~mm}$ wide. Leaf-blade surface scaberulous. Leaf-blade margins scabrous.

Inflorescence. Inflorescence a panicle. Panicle open, ovate, $8-11 \mathrm{~cm}$ long. Primary panicle branches $4-14$ in number, ascending, 1 -nate, $5-8 \mathrm{~cm}$ long, bearing spikelets almost to the base. Panicle branches flat ( 1 mm 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, compressed strongly, acuminate, $5-6 \mathrm{~mm}$ long, falling entire.

Glumes. Glumes both absent or obscure.
Florets. Fertile lemma $5-6 \mathrm{~mm}$ long, chartaceous, keeled, 5 -veined, more than 3-veined. Lemma midvein ciliate. Lemma surface glabrous. Lemma margins involute. Lemma hairs 0.5 mm long. Palea 1 length of lemma, chartaceous, 3 -veined, 1-keeled. Palea keels ciliate.

Flower and Fruit. Lodicules 2. Anthers $6,3 \mathrm{~mm}$ long. Stigmas 2.
$n=48$ ( 1 ref TROPICOS).
Distribution (TDWG). Continent. Temperate Asia.
Country /Province/State. China, Eastern Asia. China South Central, China North-Central, China Southeast. Japan Hokkaido, or Honshu, or Shikoku, or Kyushu. Japan, Korea, Nansei-Shoto.

Hebei, Shaanxi, Shandong. Anhui, Guangxi, Henan, Hunan, Jiangsu, Zhejiang. Guizhou, Hubei, Sichuan, Yunnan.

Leersia lenticularis Michx. Fl. Bor. Am. i. 69. (1803).
Accepted by: R.J.Soreng et al., Catalogue of New World Grasses (2000-2003) and online, W.D.Clayton \& K.Harman, GrassBase (2008) and online, U.Quattrocchi, CRC World Dictionary of Grasses (2006).

TYPE from USA. T:<Type of Basionym>: fide TROPICOS and Kew Synonomy Database: USA, Illinois: Michaux (P holo).

Illustrations (Books): M.E.Barkworth et al, Flora of North America north of Mexico Vol 24 Poaceae, part 1 (2007), F.W.Gould, The Grasses of Texas (1975) (45, Fig. 9).

Derivation (Clifford \& Bostock 2007): L. lens, lentil; -ulus, diminutive; -aris, pertaining to. Spikelets nearly orbicular.

Classification. Subfamily Ehrhartoideae. Tribe: Oryzeae.
Habit, Vegetative Morphology. Perennial. Rhizomes elongated, scaly. Culms decumbent, 50-170 cm long. Culm-internodes distally glabrous or hispid. Culm-nodes constricted, glabrous or pubescent. Lateral branches lacking or sparse. Leaf-sheaths smooth or retrorsely scabrous. Ligule an eciliate membrane, 0.51.5 mm long, truncate. Leaf-blades ascending or spreading, $4-35 \mathrm{~cm}$ long, $5-22 \mathrm{~mm}$ wide. Leaf-blade surface smooth or scaberulous, rough on both sides, glabrous or pubescent, hairy on both sides. Leaf-blade margins scaberulous.

Inflorescence. Inflorescence a panicle. Panicle open, ovate, $4-25 \mathrm{~cm}$ long, with spikelets clustered towards branch tips. Primary panicle branches spreading or drooping, 1 -nate, $6-15 \mathrm{~cm}$ long. Panicle branches flexuous, secund, 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 orbicular, laterally compressed, compressed strongly, $4-5.5 \mathrm{~mm}$ long, $3-4 \mathrm{~mm}$ wide, falling entire.

Glumes. Glumes both absent or obscure.
Florets. Fertile lemma $4-5.5 \mathrm{~mm}$ long, chartaceous, keeled, 5 -veined, more than 3-veined. Lemma midvein setose. Lemma margins involute, ciliate. Lemma hairs 0.5 mm long. Palea 1 length of lemma, chartaceous, 3 -veined, 1-keeled. Palea keels ciliate.

Flower and Fruit. Lodicules 2. Anthers 2, 1.5-2 mm long. Stigmas 2.
Distribution (TDWG). Continent. North America.

Country /Province /State. North-central USA, Northeast USA, South-central USA, Southeastern USA. Iowa, Minnesota, Missouri, Wisconsin. Indiana. Texas. Alabama, Arkansas, Florida, Georgia, Louisiana, Maryland, Mississippi, North Carolina, South Carolina, Tennessee, Virginia, District of Columbia.

Leersia ligularis Trin. Mem. Acad. Petersb. Ser. VI. v. 168. (1839).
Accepted by: R.J.Soreng et al., Catalogue of New World Grasses (2000-2003) and online, W.D.Clayton \& K.Harman, GrassBase (2008) and online, U.Quattrocchi, CRC World Dictionary of Grasses (2006).

TYPE from Mexico. T:<Type of Basionym>: fide TROPICOS and Kew Synonomy Database: Mexico, Jalapa: Schiede (LE holo).

Illustrations (Books): F.O.Zuloaga, Z.E.Rugolo \& A.M. Anton, Flora Argentina 3 - 1, Aristidoideae a Pharoideae (2012) (241, as grandiflora), J.A.Steyermark et al, Flora of the Venezuelan Guayana Vol. 8 (2004) (144, Fig. 101), E.G.Nicora, Los Generos de Gramineas de America Austral (1987) (154, Fig. 37 as var. ligularis), L.B. Smith, D.C. Wasshausen, R.M. Klein Flora Illustrada Catarinensis Gramineas (19811982) (564 \& 590, Fig $121 \& 128$ as var. grandiflora), W.Burger, Flora Costaricensis 15, Gramineae: Fieldiana Botany New Series 4 (1980) (303, Fig 109), E.Judziewicz, Flora of the Guianas, 187. Poaceae (1990) (Fig. 54).

Derivation (Clifford \& Bostock 2007): L. ligula, small tongue; -aris, pertaining to. Ligule conspicuous.
Classification. Subfamily Ehrhartoideae. Tribe: Oryzeae.
Habit, Vegetative Morphology. Perennial, caespitose. Rhizomes absent. Culms erect or geniculately ascending, 100-200 cm long. Culm-internodes smooth or retrorsely scabrous. Culm-nodes glabrous or pubescent. Lateral branches lacking. Leaves cauline. Leaf-sheaths smooth or retrorsely scabrous. Leafsheath auricles erect. Ligule an eciliate membrane, 2-12 mm long, truncate. Leaf-blades $20-40 \mathrm{~cm}$ long, 825 mm wide. Leaf-blade surface glabrous or pilose, hairy adaxially. Leaf-blade margins scaberulous.

Inflorescence. Inflorescence a panicle. Panicle open, ovate, $20-45 \mathrm{~cm}$ long. Primary panicle branches ascending or spreading, 2-4 -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, laterally compressed, compressed strongly, subacute or acute, $2-3 \mathrm{~mm}$ long, $1.2-1.6 \mathrm{~mm}$ wide, falling entire.

Glumes. Glumes both absent or obscure.
Florets. Fertile lemma $2-3 \mathrm{~mm}$ long, chartaceous, keeled, 5 -veined, more than 3 -veined. Lemma midvein eciliate or ciliolate. Lemma surface glabrous or pubescent. Lemma margins involute, eciliate or ciliolate. Palea 1 length of lemma, chartaceous, 3 -veined, 1-keeled.

Flower and Fruit. Lodicules 2. Anthers 2, $1-1.5 \mathrm{~mm}$ long. Stigmas 2. Caryopsis ovoid, 1.7-2.7 mm long.

Distribution (TDWG). Continent. North America, South America.
Country /Province /State. Mexico. Central Mexico, Gulf (Mexico), Southeast Mexico. Mesoamerica, Caribbean, Northern South America, Western South America, Brazil, Southern South America. Belize, El Salvador, Guatemala, Honduras. Leeward Is, Windward Islands. Venezuela. Colombia, Ecuador. Brazil Southeast, Brazil North, Brazil South. Paraguay.

Minas Gerais, Rio de Janeiro, Espirito Santo, Sao Paulo Parana, Catarina, Rio Grande do Sul. Sao Paulo. Santa Catarina. Formosa, Misiones. Puebla. Veracruz. Campeche, Chiapas.

Leersia monandra Sw. Prod. Veg. Ind. Occ. 21. (1788).
Accepted by: 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 Synonomy Database: Jamaica: Swartz (S holo, BM).

Illustrations (Books): M.E.Barkworth et al, Flora of North America north of Mexico Vol 24 Poaceae, part 1 (2007) (43), F.W.Gould, The Grasses of Texas (1975) (47, Fig. 10), A.S.Hitchcock, Manual of the Grasses of the West Indies (1936) (148, Fig. 93).

Derivation (Clifford \& Bostock 2007): Gk. monos, one; aner, man. Florets with one stamen.
Classification. Subfamily Ehrhartoideae. Tribe: Oryzeae.
Habit, Vegetative Morphology. Perennial, caespitose. Rhizomes absent. Culms erect, 40-120 cm long. Culm-internodes distally glabrous or hispid. Culm-nodes glabrous or pubescent. Lateral branches lacking. Leaves mostly basal. Leaf-sheaths smooth or retrorsely scabrous. Ligule an eciliate membrane, 2 mm long. Leaf-blades flat or involute, $15-30 \mathrm{~cm}$ long, $3-6 \mathrm{~mm}$ wide. Leaf-blade surface smooth or scaberulous. Leaf-blade margins smooth or scaberulous.

Inflorescence. Inflorescence a panicle. Panicle open, ovate, $5-15 \mathrm{~cm}$ long, contracted about secondary branches. Primary panicle branches ascending or spreading, 4-6 -nate. 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 ovate, laterally compressed, compressed strongly, obtuse to acute, $1.5-2 \mathrm{~mm}$ long, $1-1.3 \mathrm{~mm}$ wide, falling entire.

Glumes. Glumes both absent or obscure.
Florets. Fertile lemma $1.5-2 \mathrm{~mm}$ long, chartaceous, keeled, 5 -veined, more than 3 -veined. Lemma surface glabrous. Lemma margins involute. Palea 1 length of lemma, chartaceous, 3 -veined, 1-keeled.

Flower and Fruit. Lodicules 2. Anthers 1-2, 1 mm long. Stigmas 2. Caryopsis 1.5 mm long.
Distribution (TDWG). Continent. North America, South America.
Country /Province /State. South-central USA, Southeastern USA, Mexico. Texas. Northeast Mexico, Gulf (Mexico), Southwest Mexico, Southeast Mexico. Mesoamerica, Caribbean, Brazil. Cuba, Dominican Republic, Haiti, Jamaica, Puerto Rico.

Neuvo Leon, San Luis Potosi, Tamaulipas. Veracruz. Oaxaca. Campeche, Chiapas, Yucatan.

Leersia nematostachya Launert, nom nov. Senck. Biol. xlvi. 136 (1965).
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 Synonomy Database: : Based on Oryza angustifolia ; Zambia, Matonchi: Milne-Redhead 1928 (K holo).

Illustrations (Books): G.V.Pope et al., Flora Zambesiaca 10 (1(1971):27, t. 7).
Derivation (Clifford \& Bostock 2007): Gk. nema, thread; stachys, ear of corn. Branches of panicle thread-like.

Classification. Subfamily Ehrhartoideae. Tribe: Oryzeae.
Habit, Vegetative Morphology. Annual. Culms geniculately ascending or decumbent, 30-70 cm long, $3-4$-noded, rooting from lower nodes. Leaf-sheath auricles erect. Ligule an eciliate membrane, $3-7.5 \mathrm{~mm}$ long. Leaf-blades filiform, flat or conduplicate or involute, $10-30 \mathrm{~cm}$ long, $2-3 \mathrm{~mm}$ wide. Leaf-blade surface smooth or scaberulous. Leaf-blade apex attenuate, filiform.

Inflorescence. Inflorescence a panicle. Panicle open, linear, $3-10 \mathrm{~cm}$ long. Primary panicle branches appressed, simple, 2-5 cm long, bearing 2-6 fertile spikelets on each lower branch. 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 oblong, laterally compressed, compressed strongly, 5-8 mm long, $1-1.3 \mathrm{~mm}$ wide, falling entire.

Glumes. Glumes both absent or obscure.
Florets. Fertile lemma $5-8 \mathrm{~mm}$ long, chartaceous, mid-green or purple, keeled, 5 -veined, more than 3veined. Lemma midvein ciliate, hairy above. Lemma margins involute. Lemma apex acute, awned, 1 awned. Principal lemma awn 11-18 mm long overall, limb scaberulous. Palea elliptic, 1 length of lemma, chartaceous, 3 -veined, 1-keeled. Palea keels ciliate, adorned above. Palea apex entire, acute.

Flower and Fruit. Lodicules 2. Anthers 6. Stigmas 2.
Distribution (TDWG). Continent. Africa.
Country /Province/State. West-Central Tropical Africa, South Tropical Africa. Angola, Zambia.

Leersia oncothrix C. E. Hubbard. Kew Bull. 1934, 263. (1934).
Accepted by: W.D.Clayton \& K.Harman, GrassBase (2008) and online.
TYPE from Zambia. T:<Type of Basionym>: fide TROPICOS and Kew Synonomy Database: Zambia, Kalomo: Trapnell 993 (K holo).

Illustrations (Books): G.V.Pope et al., Flora Zambesiaca 10 (1(1971):27, t. 7).
Derivation (Clifford \& Bostock 2007): Gk. onkos, barb; thrix, hair. Keels of the sterile lemmas stiffly hairy.

Classification. Subfamily Ehrhartoideae. Tribe: Oryzeae.
Habit, Vegetative Morphology. Perennial, caespitose. Rhizomes absent or elongated. Culms geniculately ascending or decumbent, $30-85(-170) \mathrm{cm}$ long, 2-4 -noded, without nodal roots or rooting from lower nodes. Culm-nodes pubescent. Ligule an eciliate membrane, 2.3-6(-9) mm long. Leaf-blades flat or conduplicate or involute, $5-25(-33) \mathrm{cm}$ long, $2-3.6 \mathrm{~mm}$ wide. Leaf-blade apex attenuate, filiform.

Inflorescence. Inflorescence a panicle. Panicle open, elliptic or oblong, 10-28 cm long, $1.5-3 \mathrm{~cm}$ wide. Primary panicle branches ascending or spreading, $8-12 \mathrm{~cm}$ long, bearing 3-7(-9) fertile spikelets on each lower branch, naked below. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, oblong, $0.5-1$ 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 oblong, laterally compressed, compressed strongly, 3.5-4(-4.25) mm long, (1.5-)1.7-2 mm wide, falling entire.

Glumes. Glumes both absent or obscure.
Florets. Fertile lemma $3.5-4(-4.25) \mathrm{mm}$ long, chartaceous, keeled, 5 -veined, more than 3 -veined. Lemma midvein ciliolate (semicircular hairs). Lemma surface pubescent, with semicircular hairs. Lemma margins involute. Lemma apex obtuse. Palea elliptic, 1 length of lemma, chartaceous, 3 -veined, 1 -keeled. Palea keels ciliolate. Palea surface pubescent, with hooked hairs (semicircular). Palea apex entire.

Flower and Fruit. Lodicules 2. Anthers 6, 2.5 mm long. Stigmas 2.
Distribution (TDWG). Continent. Africa.
Country/Province/State. South Tropical Africa. Zambia, Zimbabwe.

Leersia oryzoides (L.) Sw. Prod. Veg. Ind. Occ. 21. (1788).
Accepted by: R.J.Soreng et al., Catalogue of New World Grasses (2000-2003) and online, W.D.Clayton \& K.Harman, GrassBase (2008) and online, U.Quattrocchi, CRC World Dictionary of Grasses (2006), D.Sharp, D. \& B.K.Simon, AusGrass (2002), S-L Chen et al, Flora of China 22 (Poaceae) (2006), T.G.Tutin et al, Flora Europaea 5 (1980), N.Tsvelev, Grasses of the Soviet Union (1983), T.Koyama, Grasses of Japan and its neighboring regions (1987).

TYPE from USA. Basionym or Replaced Name: Phalaris oryzoides L., Sp. Pl. 1: 55 (1753). T: $<$ Type of Basionym>: fide TROPICOS and Kew Synonomy Database: LT: Clayton s.n., USA: Virginia, "5. oryzoides" (LINN-78.10). LT designated by Hitchcock, Contr. U.S. Natl. Herb. 12: 115 (1908).

Illustrations (Books): C.E.Hubbard, Grasses (1968) (346), T. Cope \& A. Gray, Grasses of the British Isles (1), T.Koyama, Grasses of Japan and its neighbouring regions (1987) (22, Fig 1), T.A.Cope, Flora of Pakistan 143: Poaceae (1982) (18, Fig 1), S.W.L.Jacobs, R.D.B.Whalley \& D.J.B.Wheeler,, Grasses of New South Wales, 4th edn (2008) (292), M.E.Barkworth et al, Flora of North America north of Mexico Vol 24 Poaceae, part 1 (2007), F.W.Gould, The Grasses of Texas (1975) (47, Fig. 10), S-L Chen et al, Flora of China, Illustrations, Poaceae (2007) (Fig 341), E.Hafliger \& E.Schultz, Grass Weeds, CIBA-GEIGY (2:93(1980)).

Images: D.Sharp \& B.K.Simon, AusGrass. Grasses of Australia. CD-Rom Version 1.0. (2002);,
Derivation (Clifford \& Bostock 2007): Gk. -oides, appearance. Resembling Oryza.
Classification. Subfamily Ehrhartoideae. Tribe: Oryzeae.
Habit, Vegetative Morphology. Perennial. Rhizomes elongated. Culms erect or geniculately ascending, $30-120 \mathrm{~cm}$ long. Culm-nodes pubescent. Ligule an eciliate membrane, $0.5-1.5 \mathrm{~mm}$ long, truncate. Leaf-blades $8-30 \mathrm{~cm}$ long, $5-10 \mathrm{~mm}$ wide. Leaf-blade surface scaberulous. Leaf-blade margins scabrous.

Inflorescence. Inflorescence a panicle, exserted or embraced at base by subtending leaf or enclosed. Panicle open, elliptic or oblong, $10-22 \mathrm{~cm}$ long, $5-14 \mathrm{~cm}$ wide. Primary panicle branches 2 -nate. Panicle
branches capillary, flexuous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, oblong, 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 elliptic, laterally compressed, compressed strongly, 4-5 mm long, falling entire.

Glumes. Glumes both absent or obscure.
Florets. Fertile lemma elliptic, $4-5 \mathrm{~mm}$ long, chartaceous, keeled, 5 -veined, more than 3-veined. Lemma midvein pectinately ciliate. Lemma surface smooth or scaberulous. Lemma margins involute. Lemma apex acute. Palea elliptic, 1 length of lemma, chartaceous, 3 -veined, 1-keeled. Palea keels eciliate. Palea apex entire.

Flower and Fruit. Lodicules 2. Anthers 3, 1.5-2 mm long ( $0.4-0.7$ when cleistogamous), eventually exserted or retained within floret. Stigmas 2. Caryopsis with adherent pericarp, ellipsoid. Embryo 0.4 length of caryopsis.
$2 n=28$ ( 1 ref TROPICOS), or 48 ( 4 refs TROPICOS).
Distribution (TDWG). Continent. Europe, Africa, Temperate Asia, Tropical Asia, Australasia (*), North America.

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

Country /Province /State. : Denmark, Great Britain, Ireland, Sweden. : Austria, Belgium, Germany, Hungary, Netherlands, Poland, Switzerland. : Corsica, France, Portugal, Spain. : Albania, Bulgaria, Italy, Romania, Turkey Europe, Yugoslavia. Estonia, Latvia, Lithuania, Baltic States, Central European Russia, East European Russia, North European Russia, South European Russia, Northwest European Russia, Ukraine. Macaronesia. Azores. Siberia, Russian Far East, Middle Asia, Caucasus, Western Asia, China, Eastern Asia, Russia. Altay. Primorye. Kazakhstan, Kirgizistan, Turkmenistan, Tadzhikistan, Uzbekistan. Hainan, Manchuria, China Southeast, Xinjiang. Japan Hokkaido, or Honshu, or Shikoku, or Kyushu. Japan, Korea. Indian Subcontinent, Indo-China. Laccadive Is, Pakistan, West Himalaya. Australia (*), New Zealand $\left({ }^{*}\right)$. New South Wales $\left({ }^{*}\right)$, Victoria $(*)$. New Zealand North I. Western Canada, Eastern Canada, Northwest USA, North-central USA, Northeast USA, Southwestern USA, South-central USA, Southeastern USA, Mexico. British Columbia. Ontario. Colorado, Idaho, Montana, Oregon, Washington, Wyoming. Illinois, Iowa, Kansas, Minnesota, Missouri, North Dakota, Nebraska, Oklahoma, South Dakota, Wisconsin. Connecticut, Indiana, Maine, Massachusetts, Michigan, Ohio, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, Vermont, West Virginia. Arizona, California, Nevada, Utah. New Mexico, Texas. Alabama, Arkansas, Delaware, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, North Carolina, South Carolina, Tennessee, Virginia, District of Columbia. Northeast Mexico.

Fujian, Hunan. Western Plains. Coahuila, Neuvo Leon, San Luis Potosi, Tamaulipas.

Leersia perrieri (A. Camus) Launert. Senck. Biol. xlvi. 137 (1965).
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: Oryza perrieri A.Camus, Bull. Soc. Bot. France, 78: 690 (1927). T:<Type of Basionym>: fide TROPICOS and Kew Synonomy Database: Madagascar, Majunga: Perrier de la Bathie 17323 (P holo, K).

Illustrations (Books): J.Bosser, Graminees des Paturage et des Cultures a Madagascar (1969) (60, Fig 11).

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

Classification. Subfamily Ehrhartoideae. Tribe: Oryzeae.
Habit, Vegetative Morphology. Annual, caespitose. Culms geniculately ascending, $15-30 \mathrm{~cm}$ long. Ligule an eciliate membrane, 2 mm long, truncate. Leaf-blades $3-6 \mathrm{~cm}$ long, $2.5-5 \mathrm{~mm}$ wide.

Inflorescence. Inflorescence a panicle, embraced at base by subtending leaf. Panicle open, linear, 1.53 cm long. Primary panicle branches $1-1.5 \mathrm{~cm}$ long. Spikelets solitary. Fertile spikelets sessile.

Fertile Spikelets. Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then
both fertile or the upper sterile. Spikelets oblong, laterally compressed, compressed strongly, 3.5-4 mm long, falling entire. Spikelet callus oblong, 0.5 mm long, base obtuse.

Glumes. Glumes both absent or obscure.
Florets. Fertile lemma $3-3.5 \mathrm{~mm}$ long, chartaceous, keeled, 5 -veined, more than 3 -veined. Lemma midvein ciliolate. Lemma margins involute. Lemma apex acute, awned, 1 -awned. Principal lemma awn 56 mm long overall, limb scaberulous. Palea elliptic, 1 length of lemma, chartaceous, 3 -veined, 1-keeled. Palea keels ciliolate. Palea apex entire, awned, awns $1.5-2 \mathrm{~mm}$ long.

Flower and Fruit. Lodicules 2. Anthers 6. Stigmas 2.
$2 n=24$ ( 1 ref TROPICOS).
Distribution (TDWG). Continent. Africa.
Country /Province/State. Western Indian Ocean. Madagascar.
Leersia sayanuka Ohwi. Acta Phytotax. \& Geobot., Kyoto, vii. 36. (1938).
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 L. hackelii).

TYPE from Japan. T:<Type of Basionym>: fide TROPICOS and Kew Synonomy Database: Japan, Ogaya: Otaya.

Illustrations: None found.
Derivation (Clifford \& Bostock 2007): In honor of Sayanuka, Japanese botanist.
Classification. Subfamily Ehrhartoideae. Tribe: Oryzeae.
Habit, Vegetative Morphology. Perennial. Culms decumbent, 30-120 cm long. Culm-internodes smooth. Culm-nodes pubescent. Leaf-sheaths $8-10 \mathrm{~cm}$ long, retrorsely scabrous. Ligule an eciliate membrane, $0.5-1.5 \mathrm{~mm}$ long, truncate. Leaf-blades linear or lanceolate, $7-10 \mathrm{~cm}$ long, $6-10 \mathrm{~mm}$ wide, flaccid, glaucous. Leaf-blade venation with $8-10$ secondary veins. Leaf-blade surface scabrous, rough on both sides. Leaf-blade margins scabrous.

Inflorescence. Inflorescence a panicle. Panicle open, elliptic or oblong, loose, 5-10 cm long. Primary panicle branches 1 -nate, sparsely divided. Panicle branches flexuous. 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 linear or oblong, laterally compressed, compressed strongly, 6-7 mm long, 1.5 mm wide, falling entire.

Glumes. Glumes both absent or obscure.
Florets. Fertile lemma linear or oblong, 6-7 mm long, chartaceous, keeled, 5 -veined, more than 3veined. Lemma midvein pectinately ciliate. Lemma surface scaberulous. Lemma margins involute. Lemma apex acute. Palea elliptic, 1 length of lemma, chartaceous, 3 -veined, 1-keeled. Palea keels scaberulous, eciliate. Palea apex entire.

Flower and Fruit. Lodicules 2. Anthers 3. Stigmas 2. Caryopsis with adherent pericarp.
Distribution (TDWG). Continent. Temperate Asia.
Country /Province /State. China, Eastern Asia. China South Central, China North-Central, China Southeast. Japan, Korea.

Shandong. Anhui, Fujian, Guangdong, Guangxi, Jiangsu, Zhejiang. Guizhou, Hubei.

Leersia stipitata Bor. Dansk Bot. Arkiv, xxiii. 147 (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 Synonomy Database: Thailand, Makam: Larsen 10101 (C holo).

Illustrations: None found.
Classification. Subfamily Ehrhartoideae. Tribe: Oryzeae.
Habit, Vegetative Morphology. Perennial. Culms decumbent, $15-25 \mathrm{~cm}$ long, rooting from lower nodes. Culm-nodes pubescent. Leaf-sheaths scaberulous. Leaf-sheath auricles erect. Ligule an eciliate membrane, 1.5 mm long. Leaf-blades $2-5 \mathrm{~cm}$ long, $1-2 \mathrm{~mm}$ wide. Leaf-blade surface scabrous.

Inflorescence. Inflorescence a panicle, embraced at base by subtending leaf. Panicle contracted, linear, 3 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 elliptic, laterally compressed, compressed strongly, 4-5 mm long, falling entire. Spikelet callus oblong, $0.8-1 \mathrm{~mm}$ long.

Glumes. Glumes both absent or obscure.
Florets. Fertile lemma $4-5 \mathrm{~mm}$ long, chartaceous, keeled, 5 -veined, more than 3 -veined. Lemma midvein ciliate. Lemma surface pubescent. Lemma margins involute. Lemma apex awned, 1 -awned. Principal lemma awn 6-7 mm long overall. Palea 1 length of lemma, chartaceous, 3 -veined, 1-keeled. Palea keels ciliate. Palea apex awned, awns 1 mm long.

Flower and Fruit. Lodicules 2. Anthers 6, 1.2 mm long. Stigmas 2.
Distribution (TDWG). Continent. Tropical Asia.
Country /Province/State. Indo-China. Thailand.

## Leersia tisserantii (A. Cheval.) Launert. Senck. Biol. xlvi. 137 (1965).

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

TYPE from Central African Republic. Basionym or Replaced Name: Oryza tisserantii A.Cheval., Rev. Bot. Appliq. 12: 1024 (1932). T:<Type of Basionym>: fide TROPICOS and Kew Synonomy Database: Central African Rep., Bambari: Tisserant 2582 (P holo, K).

Illustrations (Books): G.V.Pope et al., Flora Zambesiaca 10 (1(1971):27, t. 7).
Derivation (Clifford \& Bostock 2007): in honor of Charles Tisserant (1886-1962) French cleric ethnologist, botanist and traveller.

Classification. Subfamily Ehrhartoideae. Tribe: Oryzeae.
Habit, Vegetative Morphology. Annual or perennial, short-lived, caespitose. Rhizomes absent or elongated. Culms geniculately ascending or decumbent, $15-60 \mathrm{~cm}$ long. Culm-nodes pubescent. Ligule an eciliate membrane, $1-2.6 \mathrm{~mm}$ long, truncate. Leaf-blades flat or convolute, $3-18 \mathrm{~cm}$ long, $1-2 \mathrm{~mm}$ wide. Leaf-blade surface smooth. Leaf-blade margins scaberulous.

Inflorescence. Inflorescence a panicle. Panicle open, ovate, 8-19 cm long. Primary panicle branches bearing spikelets almost to the base. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets elliptic or oblong, laterally compressed, compressed strongly, 4-5 mm long, falling entire.

Glumes. Glumes both absent or obscure.
Florets. Fertile lemma $4-5 \mathrm{~mm}$ long, chartaceous, keeled, 5 -veined, more than 3-veined. Lemma midvein ciliate. Lemma surface glabrous or hispidulous. Lemma margins involute. Lemma apex acute, awned, 1 -awned. Principal lemma awn $1-7.5 \mathrm{~mm}$ long overall. Palea elliptic, 1 length of lemma, chartaceous, 3 -veined, 1-keeled. Palea keels ciliate. Palea apex entire, awned, awns $1.5-2.5 \mathrm{~mm}$ long.

Flower and Fruit. Lodicules 2. Anthers 6. Stigmas 2.
$2 n=24$ ( 1 ref TROPICOS).
Distribution (TDWG). Continent. Africa.
Country /Province /State. West Tropical Africa, West-Central Tropical Africa, East Tropical Africa, South Tropical Africa, Southern Africa. Guinea. Central African Republic, Rwanda, DRC. Kenya. Zambia. Namibia, Botswana.

Leersia triandra C. E. Hubbard. Kew Bull. 1936, 313 (1936).
Accepted by: W.D.Clayton \& K.Harman, GrassBase (2008) and online.
TYPE from Sierra Leone. T:<Type of Basionym>: fide TROPICOS and Kew Synonomy Database: Sierra leone, Konta: Deighton 1241.

Illustrations: None found.
Derivation (Clifford \& Bostock 2007): Gk. treis, three; aner, man. Florets with three anthers.

Classification. Subfamily Ehrhartoideae. Tribe: Oryzeae.
Habit, Vegetative Morphology. Perennial. Culms decumbent, $15-30 \mathrm{~cm}$ long, rooting from lower nodes. Ligule an eciliate membrane, 0.5 mm long, truncate. Leaf-blades $2-6 \mathrm{~cm}$ long, $2-4 \mathrm{~mm}$ wide. Leafblade margins tuberculate-ciliate. Leaf-blade apex acute.

Inflorescence. Inflorescence a panicle. Panicle open, lanceolate, 2-5 cm long, 0.6 cm wide. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, $0.5-1.5 \mathrm{~mm}$ 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, laterally compressed, compressed strongly, $1.7-2 \mathrm{~mm}$ long, 1 mm wide, falling entire.

Glumes. Glumes both absent or obscure.
Florets. Fertile lemma $1.7-2 \mathrm{~mm}$ long, chartaceous, keeled, 5 -veined, more than 3-veined. Lemma midvein scaberulous. Lemma surface glabrous or puberulous. Lemma margins involute. Lemma apex acute. Palea elliptic, 1 length of lemma, chartaceous, 3 -veined, 1-keeled. Palea keels scaberulous. Palea apex entire, glabrous or pubescent.

Flower and Fruit. Lodicules 2. Anthers 3, 1 mm long. Stigmas 2.
Distribution (TDWG). Continent. Africa.
Country /Province/State. West Tropical Africa, West-Central Tropical Africa. Liberia, Sierre Leone.

Leersia virginica Willd. Sp. Pl. i. 325. (1797).
Accepted by: R.J.Soreng et al., Catalogue of New World Grasses (2000-2003) and online, W.D.Clayton \& K.Harman, GrassBase (2008) and online, U.Quattrocchi, CRC World Dictionary of Grasses (2006).

TYPE from USA. T:<Type of Basionym>: fide TROPICOS and Kew Synonomy Database: USA, Virginia: Coll? (B holo).

Illustrations (Books): M.E.Barkworth et al, Flora of North America north of Mexico Vol 24 Poaceae, part 1 (2007), F.W.Gould, The Grasses of Texas (1975) (47, Fig. 10), L.B. Smith, D.C. Wasshausen, R.M. Klein Flora Illustrada Catarinensis Gramineas (1981-1982) (564, Fig. 121).

Derivation (Clifford \& Bostock 2007): L. -ica, belonging to. From Virginia, USA.
Classification. Subfamily Ehrhartoideae. Tribe: Oryzeae.
Habit, Vegetative Morphology. Perennial. Rhizomes short, scaly. Culms decumbent, 50-120 cm long, without nodal roots or rooting from lower nodes. Culm-nodes pubescent. Leaf-sheaths smooth or scaberulous. Ligule an eciliate membrane, $1-3 \mathrm{~mm}$ long, truncate. Leaf-blades $5-20 \mathrm{~cm}$ long, 6-15 mm wide, flaccid. Leaf-blade surface smooth or scaberulous, rough on both sides, pilose, hairy abaxially. Leafblade margins glabrous or ciliate.

Inflorescence. Inflorescence a panicle, exserted or embraced at base by subtending leaf. Panicle open, ovate, $10-24 \mathrm{~cm}$ long, contracted about secondary branches. Primary panicle branches $4-8$ in number, $1-$ nate, $8-12 \mathrm{~cm}$ long. Panicle branches flexuous, 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 ovate, laterally compressed, compressed strongly, (2.4-)3-3.6(-4) mm long, 1.5 mm wide, falling entire.

Glumes. Glumes both absent or obscure.
Florets. Fertile lemma $2.5-4 \mathrm{~mm}$ long, chartaceous, keeled, 5 -veined, more than 3 -veined. Lemma midvein eciliate or ciliate. Lemma surface glabrous or pubescent. Lemma margins involute, eciliate or ciliate. Palea 1.1 length of lemma, chartaceous, 3 -veined, 1-keeled. Palea keels eciliate or ciliate.

Flower and Fruit. Lodicules 2. Anthers 2, 1-1.5 mm long. Stigmas 2.
Distribution (TDWG). Continent. North America, South America.
Country /Province /State. Eastern Canada, North-central USA, Northeast USA, Southeastern USA. Ontario, Quebec. Illinois, Iowa, Kansas, Minnesota, Missouri, North Dakota, Nebraska, Oklahoma, South Dakota, Wisconsin. Connecticut, Indiana, Maine, Massachusetts, Michigan, Ohio, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, Vermont, West Virginia. Alabama, Arkansas,

Delaware, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, North Carolina, South Carolina, Tennessee, Virginia, District of Columbia. Brazil. Brazil South.

Paraná, Rio Grande do Sul, Santa Catarina.
Leptagrostis schimperiana (Hochst.) C. E. Hubbard. Kew Bull. 1937, 63 (1937).
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: Calamagrostis schimperiana Hochst., Flora, 38: 202 (1855). T:<Type of Basionym>: fide TROPICOS and Kew Synonomy Database: Ethiopia, Dschadscha: Schimper in Buchinger 1330 (STR holo, P, K).

Illustrations: None found.
Derivation (Clifford \& Bostock 2007): L. -ana, indicating connection. In honor of Georg Heinrich Wilhelm Schimper (1804-78) German plant collector in Near East and north-eastern Africa.

Classification. Subfamily Arundinoideae. Tribe: Arundineae.
Habit, Vegetative Morphology. Perennial, caespitose. Culms 20 cm long. Leaves mostly basal. Ligule a fringe of hairs. Leaf-blades $5-15 \mathrm{~cm}$ long, 2-3 mm wide. Leaf-blade surface ribbed, scaberulous, rough adaxially. Leaf-blade apex attenuate.

Inflorescence. Inflorescence a panicle. Panicle contracted, linear, 3-6 cm long. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 1 fertile florets, with a barren rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, laterally compressed, $3.5-4 \mathrm{~mm}$ long, breaking up at maturity, disarticulating below each fertile floret. Floret callus bearded, obtuse. Floret callus hairs 0.5 length of lemma.

Glumes. Glumes persistent, similar, shorter than spikelet, similar to fertile lemma in texture. Lower glume lanceolate, 2 mm long, $0.5-0.6$ length of upper glume, membranous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume apex acuminate. Upper glume lanceolate, 3 mm long, 0.8 length of adjacent fertile lemma, membranous, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume apex acuminate.

Florets. Fertile lemma elliptic, $3.5-4 \mathrm{~mm}$ long, membranous, without keel, 5 -veined, more than 3veined. Lemma apex lobed, 2 -fid, with linear lobes, incised 0.15 of lemma length, awned, 1 -awned. Principal lemma awn from a sinus, 1.5 mm long overall. Palea 1 length of lemma, 2 -veined. Rhachilla extension 0.1 length of fertile floret.

Flower and Fruit. Lodicules 2, glabrous.
Distribution (TDWG). Continent. Africa.
Country/Province /State. Northeast Tropical Africa. Ethiopia (inc. Eritrea).
Leptaspis angustifolia Summerhayes \& C. E. Hubbard. Kew Bull. 1927, 40, 78. (1927).
Accepted by: W.D.Clayton \& K.Harman, GrassBase (2008) and online, W.D.Clayton \& N.Snow, Key to Pacific Grasses (2010).

TYPE from Fiji. T:<Type of Basionym>: fide TROPICOS and Kew Synonomy Database: Fiji, Vanua Levu, Lambasa: Greenwood 548 (K syn) ; Fiji, Vanua Levu, Lambasa: Greenwood 550 (K syn).

Illustrations: None found.
Derivation (Clifford \& Bostock 2007): L. angustus, narrow; folium, leaf. Leaf-blades narrow.
Classification. Subfamily Pharoideae. Tribe: Phareae.
Habit, Vegetative Morphology. Perennial, caespitose. Rhizomes elongated. Culms erect, 30-60 cm long. Culm-internodes solid. Lateral branches lacking. Leaves mostly basal. Leaf-sheaths keeled. Ligule a ciliolate membrane. Leaf-blade base with a brief petiole-like connection to sheath, petiole pubescent. Leafblades inverted, linear, $20-45 \mathrm{~cm}$ long, $4-10 \mathrm{~mm}$ wide. Leaf-blade venation slanting obliquely from midrib, with distinct cross veins. Leaf-blade surface scaberulous, rough on both sides, glabrous. Leaf-blade apex acute. Monoecious, with male and female spikelets in the same inflorescence.

Inflorescence. Inflorescence a panicle or composed of racemes. Panicle contracted, linear, $10-13 \mathrm{~cm}$ long. Primary panicle branches 3-5 in number, appressed, 1 -nate, simple, $1.5-2.5 \mathrm{~cm}$ long. Panicle branches angular, scaberulous. Racemes 3-5, borne along a central axis, appressed, $1.5-2.5 \mathrm{~cm}$ long.

Central inflorescence axis $10-13 \mathrm{~cm}$ long. Spikelet packing distant. 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, 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 orbicular, cochleate, laterally compressed, gibbous, 3 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, similar, reaching apex of florets, thinner than fertile lemma. Lower glume ovate, 2 mm long, 0.66 length of upper glume, herbaceous, dark brown, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume surface pubescent, with hooked hairs. Lower glume apex cuspidate. Upper glume ovate, 3 mm long, 1 length of adjacent fertile lemma, herbaceous, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume surface pubescent, with hooked hairs. Upper glume apex cuspidate.

Florets. Fertile florets female. Fertile lemma orbicular, gibbous, 3 mm long, chartaceous, without keel, 9 -veined, more than 3 -veined. Lemma lateral veins ribbed. Lemma surface pubescent, with hooked hairs. Lemma margins closed except for an apical pore, covering most of palea. Lemma apex obtuse. Palea linear, 2 mm long, 0.66 length of lemma, 2 -veined. Palea keels contiguous above a sulcus, puberulous. Palea apex obtuse.

Flower and Fruit. Lodicules absent. Anthers 6. Stigmas 3, terminally exserted, pubescent. Styles connate below. Ovary pubescent all over. Caryopsis with adherent pericarp.

Male spikelets similar to female but less developed, 1 flowered, 2 mm long. Male spikelet glumes 2.
Distribution (TDWG). Continent. Tropical Asia, Pacific.
Country /Province /State. Malesia, Papuasia. New Guinea. Southwestern Pacific. Fiji.

## Leptaspis banksii R. Br. Prod. 211 (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), S-L Chen et al, Flora of China 22 (Poaceae) (2006), J.F.Veldkamp, Poaceae ms (Flora Malesiana), W.D.Clayton \& N.Snow, Key to Pacific Grasses (2010).

TYPE from Australia. T:<Type of Basionym>: fide TROPICOS and Kew Synonomy Database: Australia: Banks.

Illustrations (Books): 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), S-L Chen et al, Flora of China, Illustrations, Poaceae (2007) (Fig. 242).

Images: D.Sharp \& B.K.Simon, AusGrass. Grasses of Australia. CD-Rom Version 1.0. (2002);.
Derivation (Clifford \& Bostock 2007): in honor of Joseph Banks, (1743-1820), English botanist and traveller.

Classification. Subfamily Pharoideae. Tribe: Phareae.
Habit, Vegetative Morphology. Perennial, caespitose. Culms erect, $20-40 \mathrm{~cm}$ long. Culm-internodes solid. Ligule a ciliolate membrane. Leaf-blade base with a brief petiole-like connection to sheath. Leafblades inverted, lanceolate, $10-25 \mathrm{~cm}$ long, $10-25 \mathrm{~mm}$ wide. Leaf-blade venation slanting obliquely from midrib, with distinct cross veins. Leaf-blade surface pubescent, hairy abaxially. Leaf-blade apex acute. Monoecious, with male and female spikelets in the same inflorescence.

Inflorescence. Inflorescence a panicle. Panicle open, lanceolate, $15-20 \mathrm{~cm}$ long. Primary panicle branches appressed, 1 -nate, simple, $1-5 \mathrm{~cm}$ long. 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.

Fertile Spikelets. Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 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, cochleate, laterally compressed, gibbous, 5-7 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, similar, shorter than spikelet, thinner than fertile lemma. Lower glume ovate, 2 mm long, 1 length of upper glume, membranous, dark brown, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume surface pubescent, with hooked hairs. Lower glume apex cuspidate. Upper glume ovate, 2 mm long, $0.3-0.4$ length of adjacent fertile lemma, membranous, dark
brown, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume surface pubescent, with hooked hairs. Upper glume apex cuspidate.

Florets. Fertile florets female. Fertile lemma orbicular, gibbous, $5-7 \mathrm{~mm}$ long, chartaceous, without keel, 5 -veined, more than 3-veined. Lemma lateral veins ribbed. Lemma surface pubescent, with hooked hairs. Lemma margins closed except for an apical pore, covering most of palea. Lemma apex obtuse. Palea linear. Palea keels contiguous above a sulcus.

Flower and Fruit. Lodicules absent. Anthers 6. Stigmas 3, terminally exserted, pubescent. Styles connate below. Ovary pubescent all over. Caryopsis with adherent pericarp.

Male spikelets similar to female but less developed, 1 flowered, 2 mm long. Male spikelet glumes 2.
Distribution (TDWG). Continent. Temperate Asia, Tropical Asia, Australasia, Pacific.
Country /Province /State. Eastern Asia. Taiwan. Indo-China, Malesia, Papuasia. Thailand. Java, Lesser Sunda Is, Sulawesi, Malaya, Philippines. New Guinea West Papua (Irian Jaya). New Guinea, Solomon Is. Australia. Queensland. Southwestern Pacific. New Caledonia.

North, Central.

Leptaspis formosana C. C. Hsu. Taiwania, 16(2): 214 (1971).
TYPE from Taiwan. T:<Type of Basionym>: fide TROPICOS and Kew Synonomy Database: Taiwan, Chi-pen: Hsu 318-1 (TAI holo).

Illustrations (Books): C-C Hsu, Flora of Taiwan, Vol 5 (1978) (214), C-C Hsu,Taiwan Grasses (1975) (376, Pl. 1365).

Derivation (Clifford \& Bostock 2007): L. -ana, indicating location. For Formosa, now Taiwan.
Classification. Subfamily Pharoideae. Tribe: Phareae.
Habit, Vegetative Morphology. Perennial, caespitose. Rhizomes short. Culms erect, 40-60 cm long. Culm-internodes solid. Leaf-sheaths smooth, glabrous on surface. Ligule a ciliolate membrane, truncate. Leaf-blade base with a false petiole, petiole $1-1.5 \mathrm{~cm}$ long. Leaf-blades inverted, lanceolate, $10-20 \mathrm{~cm}$ long, $10-18 \mathrm{~mm}$ wide. Leaf-blade venation slanting obliquely from midrib, with distinct cross veins. Leafblade surface smooth or scaberulous. Monoecious, with male and female spikelets in the same inflorescence.

Inflorescence. Inflorescence a panicle. Panicle contracted, linear, $15-22 \mathrm{~cm}$ long, contracted about primary branches. Primary panicle branches appressed, 1 -nate, $1.5-4 \mathrm{~cm}$ long. Panicle axis bearing persistent branches. Panicle branches stiff, straight. Sexes mixed. Spikelets in pairs. Fertile spikelets sessile, 1 in the cluster. Male spikelets pedicelled, 1 in a cluster. 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 orbicular, cochleate, laterally compressed, gibbous, 4.6 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, similar, shorter than spikelet, thinner than fertile lemma. Lower glume ovate, 1 mm long, 0.66 length of upper glume, membranous, light brown, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume surface pubescent. Lower glume apex cuspidate. Upper glume ovate, 1.6 mm long, 0.33 length of adjacent fertile lemma, membranous, light brown, without keels, 3 veined. Upper glume surface pubescent. Upper glume apex cuspidate.

Florets. Fertile florets female. Fertile lemma orbicular, gibbous, 4.6 mm long, chartaceous, without keel, 7 -veined, more than 3-veined. Lemma lateral veins ribbed. Lemma surface pubescent, with hooked hairs. Lemma margins closed except for an apical pore, covering most of palea. Lemma apex obtuse. Palea linear, 1.5 mm long, 0.33 length of lemma. Palea keels contiguous above a sulcus. Palea apex dentate, 2 fid.

Flower and Fruit. Lodicules absent. Anthers 6, 1.8 mm long. Stigmas 3, terminally exserted, pubescent. Ovary pubescent all over. Caryopsis with adherent pericarp.

Male spikelets similar to female but less developed, 1 flowered, separately deciduous, obovate, 2.3 mm long, hairy. Male spikelet glumes 2, ovate, 1.5 mm long. Male spikelet lemma 2.3 mm long.

Distribution (TDWG). Continent. Temperate Asia.
Country /Province/State. China, Eastern Asia. Taiwan.

Leptaspis zeylanica Nees ex Steud. Syn. Pl. Gram. 8 (1854).
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) (as L. cochleata), W.D.Clayton \& N.Snow, Key to Pacific Grasses (2010).

TYPE from Sri Lanka. Basionym or Replaced Name: Leptaspis cochleata Thw., nom superfl, Enum. Pl. Zeyl. 357. (1864). T:<Type of Basionym>: fide TROPICOS and Kew Synonomy Database: Ceylon: Thwaites CP896.

Illustrations (Books): H.Jacques-Felix, Les Graminees d'Afrique tropicale (1962) (111, Fig. 36 as L. cochleata), F.N.Hepper, F.W.T.A. 3(2) (1972) (364, Fig. 420 as L. cochleata), R.M.Polhill, F.T.E.A., Gramineae (1(1970):20, Fig. 7 as L. cochleata), G.V.Pope et al., Flora Zambesiaca 10 (1(1971):22, t. 5 as L. cochleata), S.Phillips, Poaceae (Gramineae) in I.Hedberg \& S.Edwards, Flora of Ethiopia and Eritrea (1995) (7, Fig 3), N.L.Bor, The grasses of Burma, Ceylon, India and Pakistan (1960) (618, Fig 73as L. cochleata).

Derivation (Clifford \& Bostock 2007): L. -ica, belonging to. Of Ceylon, now Sri Lanka.
Classification. Subfamily Pharoideae. Tribe: Phareae.
Habit, Vegetative Morphology. Perennial. Rhizomes elongated. Culms geniculately ascending, 30100 cm long, rooting from lower nodes. Culm-internodes solid. Ligule a ciliolate membrane, 0.25 mm long, pubescent on abaxial surface. Leaf-blade base with a false petiole. Leaf-blades inverted, oblong, 10-30 cm long, 25-60 mm wide. Leaf-blade venation slanting obliquely from midrib, with distinct cross veins. Leafblade apex abruptly acute. Monoecious, with male and female spikelets in the same inflorescence.

Inflorescence. Inflorescence a panicle, bracteate at branch bases. Panicle open, ovate, 10-45 cm long, contracted about primary branches. Primary panicle branches $3(-5)$-nate, whorled at most nodes, $5-15 \mathrm{~cm}$ long. Panicle axis bearing persistent branches. Panicle branches stiff, straight, pubescent, with hooked hairs, with prominent pulvini. Sexes mixed. Spikelets in pairs. Fertile spikelets sessile, 1 in the cluster. Male spikelets pedicelled, 1 in a cluster. Pedicels present, linear, 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 orbicular, cochleate, laterally compressed, gibbous, 4-6 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, similar, shorter than spikelet, thinner than fertile lemma. Lower glume ovate, $2-3 \mathrm{~mm}$ long, 1 length of upper glume, membranous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume surface pubescent, with hooked hairs. Lower glume apex cuspidate. Upper glume ovate, $2-3 \mathrm{~mm}$ long, 0.5 length of adjacent fertile lemma, membranous, without keels, $1(-3)$-veined. Upper glume surface pubescent, with hooked hairs. Upper glume apex cuspidate.

Florets. Fertile florets female. Fertile lemma orbicular, gibbous, $4-6 \mathrm{~mm}$ long, chartaceous, without keel, 5 -veined, more than 3-veined. Lemma lateral veins ribbed. Lemma surface pubescent, with hooked hairs. Lemma margins closed except for an apical pore, covering most of palea. Lemma apex obtuse. Palea linear, 0.5 length of lemma. Palea keels contiguous above a sulcus.

Flower and Fruit. Lodicules absent. Anthers 6, 2.1-2.6 mm long. Stigmas 3, terminally exserted, pubescent. Styles connate below. Caryopsis with adherent pericarp.

Male spikelets similar to female but less developed, 1 flowered, separately deciduous, $3.5-4 \mathrm{~mm}$ long. Male spikelet glumes 2.

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, Western Indian Ocean. Ghana, Guinea, Ivory Coast, Liberia, Nigeria, Sierre Leone. Cameroon, Gabon, Annobon, Principe \& Sao Tome, Bioko, DRC. Ethiopia (inc. Eritrea), Sudan. Kenya, Tanzania, Uganda. Mozambique, Zimbabwe. Madagascar. Indian Subcontinent, Malesia, Papuasia. Sri Lanka. Java, Malaya, Philippines, Sulawesi, Sumatra. New Guinea West Papua (Irian Jaya). New Guinea, Solomon Is.

Leptatherum boreale (Ohwi) C.-H.Chen, C.S.Kuoh \& Veldk. Blumea 54: 179 (2009).
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: Microstegium boreale Ohwi, J.Jap.Bot. 12: 653 (1936). T:<Type of Basionym>: fide TROPICOS and Kew Synonomy Database: Hondo: Tokura in Kotsuke, J. Ohwi \& M. Tagawa 727 , HT: KYO

Recent Synonyms: Microstegium japonicum (Miq.) Koidz., Bot. Mag., Tokyo, 43: 394 (1929).
Illustrations (Books): T.Koyama, Grasses of Japan and its neighbouring regions (1987) (425, Fig 166), S-L Chen et al, Flora of China, Illustrations, Poaceae (2007) (Fig. 831).

Derivation (Clifford \& Bostock 2007): L, boreas, growing in northern regions.
Classification. Subfamily Panicoideae. Tribe: Sacchareae. Subtribe Saccharinae.
Habit, Vegetative Morphology. Annual, mat forming. Culms rambling, 20-80 cm long, rooting from lower nodes. Leaf-sheaths outer margin hairy. Ligule an eciliate membrane, $0.3-0.5 \mathrm{~mm}$ long. Leaf-blades lanceolate, $3-7 \mathrm{~cm}$ long, $6-10 \mathrm{~mm}$ wide. Leaf-blade apex acute.

Inflorescence. Inflorescence composed of racemes. Racemes 2-7, digitate, drooping, $4-8 \mathrm{~cm}$ long. Central inflorescence axis $1-3 \mathrm{~cm}$ long. Rhachis tough, scaberulous on margins, glabrous on margins. Rhachis internodes filiform, $3-5 \mathrm{~mm}$ long. Spikelets in pairs. Fertile spikelets pedicelled, 2 in the cluster. Pedicels present, filiform, terete, unequal, $1-3.2 \mathrm{~mm}$ long, glabrous.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets lanceolate, dorsally compressed, $3-3.5 \mathrm{~mm}$ long, falling entire. Spikelet callus pubescent, base obtuse, attached transversely.

Glumes. Glumes dissimilar, firmer than fertile lemma. Lower glume oblong, 1 length of spikelet, cartilaginous, 2 -keeled, keeled above, 4 -veined. Lower glume primary vein ciliolate (hispid). Lower glume surface concave. Lower glume apex dentate, 2 -fid, muticous or awned (rarely), 2 -awned, awn $0.5-1 \mathrm{~mm}$ long. Upper glume elliptic, 1 length of spikelet, cartilaginous, 1 -keeled, 3 -veined. Upper glume apex acute, muticous or awned (rarely), 1 -awned, awn $8-10 \mathrm{~mm}$ long.

Florets. Basal sterile florets 1, male, with palea. Lemma of lower sterile floret oblong, $0.7-0.8$ length of fertile lemma, hyaline, erose, muticous or awned (rarely). Awn of lower sterile floret flexuous, $6-8 \mathrm{~mm}$ long. Fertile lemma linear, $1.7-2 \mathrm{~mm}$ long, hyaline, without keel, 0 -veined, $0-3$-veined, without veins. Lemma apex entire, awned, 1 -awned. Principal lemma awn apical, flexuous, 6-8 mm long overall. Palea absent or minute.

Flower and Fruit. Anthers 2.
Distribution (TDWG). Continent. Temperate Asia.
Country /Province /State. Caucasus, China, Eastern Asia. China South Central, China Southeast. Japan Honshu, or Shikoku, or Kyushu. Japan, Korea, Nansei-Shoto.

Anhui, Hunan, Jiangsu, Jiangxi, Zhejiang. Hubei.

## Leptatherum nudum (Trin.) C.-H.Chen, C.S.Kuoh \& Veldk. Blumea 54: 179 (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), S-L Chen et al, Flora of China 22 (Poaceae) (2006), J.F.Veldkamp, Poaceae ms (Flora Malesiana), N.L.Bor, Grasses of Burma, Ceylon, India and Pakistan (1960), N.Tsvelev, Grasses of the Soviet Union (1983), T.Koyama, Grasses of Japan and its neighboring regions (1987), W.D.Clayton \& N.Snow, Key to Pacific Grasses (2010).

TYPE from Nepal. Basionym or Replaced Name: Pollinia nuda Trin., Mem. Acad. Imp. Sci. St.Petersbourg, Ser. 6, Sci. Math 2(3): 307 (1832). T:<Type of Basionym>: fide TROPICOS and Kew Synonomy Database: Nepal:, Wallich s.n. (hb. Hornem.) (HT: LE-TRIN-0056.01 (fragm.)).

Recent Synonyms: Microstegium nudum (Trin.) A. Camus, Lecomte, Fl. Gen. Indo-Chine, 7: 261 (1922).

Illustrations (Books): G.V.Pope et al., Flora Zambesiaca 10 (4(2002):18, T. 7), L.K.A. Chippindall, Grasses and Pastures of South Africa (1955) (484, Fig. 396, as M. capense), G.E.Gibbs Russell el al, Grasses of Southern Africa (1990) (220, Fig 136), C-C Hsu, Flora of Taiwan, Vol 5 (1978) (732), C-C

Hsu,Taiwan Grasses (1975), K.M.Matthew, Flora Palni Hills (1996) (843, Pl. 843), T.A.Cope, Flora of Pakistan 143: Poaceae (1982), H.J.Noltie, The Grasses of Bhutan (2000) (783, Fig. 54), S.W.L.Jacobs, R.D.B.Whalley \& D.J.B.Wheeler,, Grasses of New South Wales, 4th edn (2008) (301), 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. 832).

Derivation (Clifford \& Bostock 2007): L. bare. Rachilla joints glabrous.
Classification. Subfamily Panicoideae. Tribe: Sacchareae. Subtribe Saccharinae.
Habit, Vegetative Morphology. Annual, mat forming. Culms rambling, 20-100 cm long, rooting from lower nodes. Ligule an eciliate membrane. Leaf-blades linear or lanceolate, $1-8 \mathrm{~cm}$ long, $2-13 \mathrm{~mm}$ wide, flaccid.

Inflorescence. Inflorescence composed of racemes. Racemes $2-10$, digitate, spreading, $2-8 \mathrm{~cm}$ long. Rhachis fragile at the nodes, semiterete, glabrous on margins. Rhachis internodes filiform, 1-1.2 length of fertile spikelet. Rhachis internode tip clavate. Spikelets appressed, in pairs. Fertile spikelets sessile and pedicelled, 2 in the cluster. Pedicels present, filiform, terete, glabrous.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets lanceolate, dorsally compressed, $2.5-5 \mathrm{~mm}$ long, falling entire, deciduous from the base or with accessory branch structures. Spikelet callus pilose, base obtuse, attached transversely.

Glumes. Glumes dissimilar, firmer than fertile lemma. Lower glume elliptic, 1 length of spikelet, coriaceous, 2-keeled, keeled obtusely. Lower glume surface concave. Lower glume margins eciliate or ciliate. Lower glume apex emarginate. Upper glume elliptic, without keels or 1-keeled, 3 -veined. Upper glume margins ciliolate. Upper glume apex acute, muticous.

Florets. Basal sterile florets 1, developed or with vestigial lower floret, barren, without significant palea. Lemma of lower sterile floret lanceolate, hyaline. Fertile lemma linear, $1.5-2 \mathrm{~mm}$ long, hyaline, without keel, 0 -veined, $0-3$-veined, without veins. Lemma apex entire or dentate, 2 -fid, awned, 1 -awned. Principal lemma awn apical or from a sinus, flexuous, 6-20 mm long overall. Palea absent or minute.

Flower and Fruit. Anthers $2,0.5-1 \mathrm{~mm}$ long.
$n=10$ ( 1 ref TROPICOS), or 21 ( 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. DRC. Tanzania, Uganda. Mozambique, Zimbabwe. Limpopo, Mpumalanga, Kwazulu-Natal, Western Cape (*), Eastern Cape. China, Eastern Asia. China South Central, China North-Central, China Southeast, Tibet. Japan Honshu, or Shikoku, or Kyushu. Japan, Nansei-Shoto, Ogosawara-shoto, Taiwan. Indian Subcontinent, Indo-China, Malesia, Papuasia. Eastern Himalaya, India, Nepal, Pakistan, West Himalaya. Myanmar, Vietnam. Java, Malaya, Philippines, Sumatra. New Guinea, Solomon Is. Australia. Queensland, New South Wales. Caroline Is.

Hebei, Shaanxi. Anhui, Fujian, Henan, Hunan, Jiangsu, Jiangxi, Zhejiang. Guizhou, Hubei, Sichuan, Yunnan. Bhutan, Sikkim. Assam, Meghalaya, Nagaland. Kerala. Tamilnadu, Uttah Pradesh, West Bengal. Himachal Pradesh, Jammu Kashmir. North. Coast.

## Leptatherum somae (Hayata) C.-H.Chen, C.S.Kuoh \& Veldk. Blumea 54: 179 (2009).

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 Taiwan. Basionym or Replaced Name: Polliniopsis somae Hayata, Ic. Pl. Formos. 7: 76 (1918). T:<Type of Basionym>: fide TROPICOS and Kew Synonomy Database: Taiwan, Mentenzan: Soma (TI holo).

Recent Synonyms: Microstegium somae (Hayata) Ohwi, Acta Phytotax. \& Geobot., Kyoto, 11: 155 (1942).

Illustrations (Books): C-C Hsu, Flora of Taiwan, Vol 5 (1978) (734), C-C Hsu,Taiwan Grasses (1975) (as L. somai), S-L Chen et al, Flora of China, Illustrations, Poaceae (2007) (Fig. 831).

Derivation (Clifford \& Bostock 2007): in honor of T. Soma (fl. 1914) Japanese botanist.
Classification. Subfamily Panicoideae. Tribe: Sacchareae. Subtribe Saccharinae.
Habit, Vegetative Morphology. Annual, mat forming. Culms rambling, 30-40 cm long, rooting from lower nodes. Culm-nodes bearded. Leaf-sheaths outer margin hairy. Ligule an eciliate membrane, $0.2-0.5$
mm long. Leaf-blade base broadly rounded. Leaf-blades lanceolate or ovate, 3-4 cm long, 6 mm wide. Leaf-blade surface glabrous. Leaf-blade apex acute.

Inflorescence. Inflorescence composed of racemes. Racemes 2-7, digitate, drooping, flexuous, 3-8 cm long. Central inflorescence axis $1-3 \mathrm{~cm}$ long. Rhachis tough, glabrous on margins. Rhachis internodes filiform, 1-1.2 length of fertile spikelet. Spikelets in pairs. Fertile spikelets pedicelled, 2 in the cluster. Pedicels present, filiform, terete, unequal, $1-1.5 \mathrm{~mm}$ long or $2.5-3 \mathrm{~mm}$ long, glabrous.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets lanceolate, dorsally compressed, 4-5 mm long, falling entire. Spikelet callus pilose or bearded, base obtuse, attached transversely. Spikelet callus hairs $0.25-0.33$ length of spikelet.

Glumes. Glumes dissimilar, firmer than fertile lemma. Lower glume oblong, 1 length of spikelet, cartilaginous, 2-keeled, keeled above, 4 -veined. Lower glume primary vein scaberulous. Lower glume surface concave, scabrous. Lower glume apex dentate, 2 -fid. Upper glume elliptic, 1 length of spikelet, cartilaginous, 1-keeled. Upper glume surface scabrous. Upper glume apex dentate, 2 -fid, awned, 1 -awned, awn 2-10 mm long.

Florets. Basal sterile florets 1, male, with palea. Lemma of lower sterile floret lanceolate, 2 mm long, hyaline, dentate, 2 -fid, awned. Awn of lower sterile floret flexuous, $2-10 \mathrm{~mm}$ long. Fertile lemma linear, $1.7-2 \mathrm{~mm}$ long, hyaline, without keel, $0-3$-veined. Lemma apex entire, emarginate, awned, 1 -awned. Principal lemma awn apical, flexuous, 12 mm long overall. Palea absent or minute.

Flower and Fruit. Anthers 2, $0.6-0.8 \mathrm{~mm}$ long.
Distribution (TDWG). Continent. Temperate Asia.
Country /Province /State. China, Eastern Asia. China Southeast. Japan, Taiwan.
Anhui, Fujian.

## Leptocarydion vulpiastrum (De Not.) Stapf. Dyer, Fl. Cap. vii. 648. (1900).

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: Rabdochloa vulpiastrum DeNot., Ann. Sci. Nat. Ser. III. 19: 372 (1853). T:<Type of Basionym>: fide TROPICOS and Kew Synonomy Database: Sudan, "Upper Nubia": Figari (GE holo, FI).

Illustrations (Books): R.M.Polhill, F.T.E.A., Gramineae (2(1974):295, Fig.81), G.V.Pope et al., Flora Zambesiaca 10 (2(1999):42, t. 19), L.K.A. Chippindall, Grasses and Pastures of South Africa (1955) (127, Fig 100), G.E.Gibbs Russell el al, Grasses of Southern Africa (1990) (197, Fig 119), J.Bosser, Graminees des Paturage et des Cultures a Madagascar (1969) (135, Fig 44), S.Phillips, Poaceae (Gramineae) in I.Hedberg \& S.Edwards, Flora of Ethiopia and Eritrea (1995) (106, Fig 44).

Derivation (Clifford \& Bostock 2007): L. -astrum, resembling imperfectly. Similar to Vulpia..
Classification. Subfamily Chloridoideae. Tribe: Chlordoideae incertae sedis.
Habit, Vegetative Morphology. Annual, caespitose. Culms $10-120 \mathrm{~cm}$ long. Leaves cauline. Ligule a ciliolate membrane. Leaf-blade base broadly rounded or cordate. Leaf-blades lanceolate, 2-12 cm long, 620 mm wide. Leaf-blade venation comprising 5-15 vascular bundles. Leaf-blade apex acute.

Inflorescence. Inflorescence composed of racemes. Racemes numerous, borne along a central axis, closely spaced, in a multilateral false spike, appressed, unilateral, $0.5-4 \mathrm{~cm}$ long. Central inflorescence axis $3-20 \mathrm{~cm}$ long. Rhachis angular. Spikelet packing broadside to rhachis, crowded. Spikelets appressed, solitary. Fertile spikelets pedicelled or sessile. Pedicels absent or present, filiform, $0.5-1 \mathrm{~mm}$ long.

Fertile Spikelets. Spikelets comprising 6-14 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets oblong, laterally compressed, 5-11 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus evident, pubescent, obtuse, disarticulating obliquely.

Glumes. Glumes persistent, similar, shorter than spikelet. Lower glume lanceolate, 2-3 mm long, 0.60.8 length of upper glume, membranous, 1 -keeled, 1 -veined. Lower glume lateral veins absent. Lower glume apex acute. Upper glume lanceolate, $3-4 \mathrm{~mm}$ long, 1.1-1.2 length of adjacent fertile lemma, membranous, 1 -keeled, 1 -veined. Upper glume lateral veins absent. Upper glume apex obtuse or acute.

Florets. Fertile lemma oblong, $2.5-3.5 \mathrm{~mm}$ long, membranous, keeled, 3 -veined, $0-3$-veined. Lemma lateral veins close to margins. Lemma surface pubescent, hairy below. Lemma margins ciliate. Lemma
apex entire or dentate, 2-4 -fid, awned, 1 -awned. Principal lemma awn apical or from a sinus, $2.5-5 \mathrm{~mm}$ long overall. Palea 0.7 length of lemma, 2 -veined. Palea surface pubescent. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, cuneate, fleshy. Anthers 2, oblong. Stigmas 2. Caryopsis with adherent pericarp, linear, isodiametric, trigonous, 1.5 mm long. Embryo 0.3 length of caryopsis. Hilum punctiform.

Distribution (TDWG). Continent. Africa, Temperate Asia.
Country /Province /State. West-Central Tropical Africa, Northeast Tropical Africa, East Tropical Africa, South Tropical Africa, Southern Africa, Western Indian Ocean. Rwanda. Eritrea, Ethiopia (inc. Eritrea), Sudan. Kenya, Tanzania, Uganda. Angola, Malawi, Mozambique, Zambia, Zimbabwe. Namibia, Botswana, Limpopo, Mpumalanga, Swaziland, Kwazulu-Natal. Madagascar. Arabian Peninsula. Saudi Arabia.

## Leptochloa barbata (Desv.) E.G. Nicora. Hickenia, 2(19): 91: (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: Eleusine barbata Desv., Opusc. 104 (1831). $\mathrm{T}:<$ Type of Basionym>: fide TROPICOS and Kew Synonomy Database: Brazil: Riedel (K iso, US).

Illustrations (Journals): Darwiniana (33: 249, Fig. 4 (1992)).
Derivation (Clifford \& Bostock 2007): L. bearded, barbed. With hairs on the callus, glumes or lemma. Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.
Habit, Vegetative Morphology. Perennial. Culms erect, $30-80 \mathrm{~cm}$ long. Culm-internodes smooth. Culm-nodes glabrous. Leaf-sheaths longer than adjacent culm internode, outer margin hairy. Leaf-sheath oral hairs ciliate. Ligule an eciliate membrane, 0.5 mm long. Collar glabrous. Leaf-blades $4.5-12.5 \mathrm{~cm}$ long, 4-7 mm wide. Leaf-blade surface scabrous, rough adaxially, glabrous, hairless except near base.

Inflorescence. Inflorescence composed of racemes. Racemes 12-20, borne along a central axis, unilateral, $2-5 \mathrm{~cm}$ long. Central inflorescence axis $10-30 \mathrm{~cm}$ long. Spikelet packing broadside to rhachis. Raceme-bases pubescent. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 2-4(-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, $3.5-5.5 \mathrm{~mm}$ long, breaking up at maturity, disarticulating below each fertile floret. Floret callus pubescent.

Glumes. Glumes persistent, shorter than spikelet. Lower glume oblong, $1.5-2.6 \mathrm{~mm}$ long, 0.75 length of upper glume, membranous, 1 -keeled, 1 -veined. Lower glume primary vein scaberulous. Lower glume lateral veins absent. Lower glume apex acute. Upper glume oblong, $2-3 \mathrm{~mm}$ long, 1 length of adjacent fertile lemma, membranous, 1-keeled, 1 -veined. Upper glume primary vein scabrous. Upper glume lateral veins absent. Upper glume apex acute.

Florets. Fertile lemma oblong, $2-2.6 \mathrm{~mm}$ long, membranous, keeled, 3 -veined, $0-3$-veined. Lemma surface pubescent. Lemma margins ciliolate. Lemma apex emarginate, awned, 1 -awned. Principal lemma awn $4.5-8 \mathrm{~mm}$ long overall. Palea 2 -veined. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Anthers 3, 0.2-0.6 mm long. Caryopsis $1.6-1.8 \mathrm{~mm}$ long.
Distribution (TDWG). Continent. South America.
Country /Province/State. Western South America, Brazil, Southern South America. Bolivia. Argentina Northwest, Paraguay.

Catamarca, Jujuy, Salta, Santiago del Estero, Tucuman. Chaco, Formosa.

## Leptochloa chloridiformis (Hack.) Parodi. Physis, iv. 184 (1918).

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

TYPE from Argentina. Basionym or Replaced Name: Diplachne chloridiformis Hackel ex Stuckert, Anal. Mus. Buenos Aires, Ser. III. 6: 498 (1906). T:<Type of Basionym>: fide TROPICOS and Kew Synonomy Database: Argentina, Cordoba, Rio Seco: Stuckert 2329a (W holo).

Illustrations (Books): F.O.Zuloaga, Z.E.Rugolo \& A.M. Anton, Flora Argentina 3 - 1, Aristidoideae a Pharoideae (2012) (132), M.E.Barkworth et al, Flora of North America north of Mexico Vol 25 Poaceae, part 2 (2003) (55), A.Burkat, Flora Ilustrada de Entre Rios (Argentina), Pt II, Gramineas (1969) (234, Fig. 89), A.L.Cabrera, Flora de la Provincia de Buenos Aires, IV Pt 2 Gramineas (1970) (427, Fig. 111).

Derivation (Clifford \& Bostock 2007): L. forma, appearance. With inflorescences resembling those of certain Chloris species.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.
Habit, Vegetative Morphology. Perennial, caespitose. Culms erect, $60-150 \mathrm{~cm}$ long. Leaf-sheaths scaberulous. Ligule a ciliate membrane, $1-2 \mathrm{~mm}$ long. Leaf-blades $10-25 \mathrm{~cm}$ long, $2-3 \mathrm{~mm}$ wide. Leafblade margins scabrous. Leaf-blade apex attenuate.

Inflorescence. Inflorescence composed of racemes. Racemes 5-20, digitate, in several whorls, straight, unilateral, $10-16 \mathrm{~cm}$ long. Central inflorescence axis $3-4 \mathrm{~cm}$ long. Rhachis semiterete. Spikelet packing broadside to rhachis, regular, 2 -rowed. Spikelets solitary. Fertile spikelets sessile.

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

Glumes. Glumes persistent, dissimilar, shorter than spikelet. Lower glume lanceolate, 1.5 mm long, 0.6 length of upper glume, membranous, 1 -keeled, 1 -veined. Lower glume lateral veins absent. Lower glume apex acute. Upper glume elliptic, 2.5 mm long, 0.8 length of adjacent fertile lemma, membranous, 1keeled, 1 -veined. Upper glume lateral veins absent. Upper glume apex obtuse.

Florets. Fertile lemma oblong, $2.5-3.5 \mathrm{~mm}$ long, membranous, keeled, 3 -veined, $0-3$-veined. Lemma midvein pubescent. Lemma lateral veins close to margins. Lemma surface glabrous. Lemma margins ciliate. Lemma apex entire or dentate, 2 -fid, emarginate, mucronate. Palea 2 -veined. Palea keels ciliolate. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Caryopsis with adherent pericarp.
Distribution (TDWG). Continent. North America, South America.
Country /Province/State. South-central USA. Texas. Southern South America. Argentina Northeast, Argentina Northwest, Paraguay, Uruguay.

Santiago del Estero, Tucuman. Buenos Aires, Chaco, Cordoba, Corrientes, Distrito Federal, Entre Rios, Formosa, Santa Fe.

## Leptochloa crinita (Lag.) P.M.Peterson \& N.Snow. Ann.Bot. 109: 1327 (2012).

Accepted by: R.J.Soreng et al., Catalogue of New World Grasses (2000-2003) and online, W.D.Clayton \& K.Harman, GrassBase (2008) and online, U.Quattrocchi, CRC World Dictionary of Grasses (2006), N.L.Bor, Grasses of Burma, Ceylon, India and Pakistan (1960).

TYPE from Philippines. Basionym or Replaced Name: Chloris crinita Lag. Varied. Ci. 2(4): 143 (1805). T:<Type of Basionym>: fide TROPICOS and Kew Synonomy Database: HT: Nee, Philippines: Ex Philippinis Insulis [from Nee letter] [error for Mexico] (MA; IT: US-80822 (fragm. ex MA \& drawing by Parodi)).

Recent Synonyms: Trichloris crinita (Lag.) L. Parodi, Rev. Argent. Agron. 14: 63 (1947).
Illustrations (Books): F.O.Zuloaga, Z.E.Rugolo \& A.M. Anton, Flora Argentina 3 - 1, Aristidoideae a Pharoideae (2012) (168, as Leptochloa), M.E.Barkworth et al, Flora of North America north of Mexico Vol 25 Poaceae, part 2 (2003) (229), S.A.Renvoize, Gramineas de Bolivia (1998) (357, Fig. 76), E.G.Nicora, Los Generos de Gramineas de America Austral (1987) (408, Fig. 144), A.Burkat, Flora Ilustrada de Entre Rios (Argentina), Pt II, Gramineas (1969), M.N.Correa, Flora Patagonica Parte III, Gramineae (1978) (499, Fig 338), B.Rosengurtt, Gramineas UruguayasI (1970) (248, Fig. 101).

Derivation (Clifford \& Bostock 2007): L. with long hair. Hairy as of leaf-blades or awns invested in long weak hairs.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.
Habit, Vegetative Morphology. Perennial. Stolons present. Basal innovations flabellate. Culms 70-80 cm long. Leaf-sheaths keeled. Ligule a fringe of hairs. Leaf-blades conduplicate, $15-25 \mathrm{~cm}$ long, $4-5 \mathrm{~mm}$ wide. Leaf-blade midrib evident. Leaf-blade surface scabrous, rough on both sides.

Inflorescence. Inflorescence composed of racemes. Racemes 7-25, digitate, unilateral, 5-10 cm long. Spikelet packing broadside to rhachis, 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 lanceolate, laterally compressed, $2.5-4 \mathrm{~mm}$ long, breaking up at maturity, disarticulating below each fertile floret. Floret callus pubescent.

Glumes. Glumes persistent, similar, shorter than spikelet, thinner than fertile lemma, gaping. Lower glume lanceolate, 1 mm long, 1 length of upper glume, hyaline, 1 -keeled, 1 -veined. Lower glume lateral veins absent. Lower glume apex acuminate. Upper glume lanceolate, 1 mm long, $0.25-0.5$ length of adjacent fertile lemma, membranous, 1-keeled, 1 -veined. Upper glume lateral veins absent. Upper glume apex acuminate, awned, 1 -awned, awn $2-2.5 \mathrm{~mm}$ long.

Florets. Fertile lemma elliptic, dorsally compressed, 2.5-4 mm long, chartaceous, keeled, 3 -veined, 03 -veined. Lemma surface puberulous. Lemma apex acute, awned, 3 -awned. Principal lemma awn 10-15 mm long overall. Lateral lemma awns present, $8-10 \mathrm{~mm}$ long, subequal to principal. Palea apex with excurrent keel veins. Apical sterile florets 1 in number, barren, linear, 1 mm long. Apical sterile lemmas awned, 3 -awned. Apical sterile lemma awns 5-10 mm long.

Flower and Fruit. Caryopsis with free soft pericarp, ellipsoid, dorsally compressed, concavo-convex, $2-2.4 \mathrm{~mm}$ long.

Distribution (TDWG). Continent. North America, South America.
Country /Province/State. Southwestern USA, South-central USA, Mexico. Arizona. New Mexico, Texas. Northeast Mexico, Northwest Mexico. Western South America, Southern South America. Bolivia, Peru. Argentina Northeast, Argentina South, Chile Central, Paraguay, Uruguay.

Catamarca, Jujuy, La Rioja, Mendoza, Salta, Santiago del Estero, San Juan, San Luis, Tucuman. Buenos Aires, Chaco, Cordoba, Corrientes, Entre Rios, Formosa, La Pampa, Santa Fe. Neuquén, Río Negro. Coahuila, Chihuahua, Durango, Neuvo Leon, San Luis Potosi, Tamaulipas. Baja California Sur, Sonora.

Leptochloa digitata (R.Br.) Domin. Biblioth. Bot. 1 v. 379 (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), D.Sharp, D. \& B.K.Simon, AusGrass (2002).

TYPE from Australia. Basionym or Replaced Name: Poa digitata R. Br., Prodr. 181 (1810). $\mathrm{T}:<$ Type of Basionym>: fide TROPICOS and Kew Synonomy Database: HT: Brown 6266, Australia: Queensland: Port Curtis Distr.: Broad Sound (BM; IT: BM, E, K).

Illustrations (Books): J.P.Jessop, G.R.M. Dashorst \& F.M.James, Grasses of South Australia (2006) (387, Fig. 320), C.A.Gardner, Flora of Western Australia, Vol 1, Part 1, Gramineae (1952) (213, Pl. 63), J.R.Wheeler et al, Flora of the Kimberley Region (1992) (1187, Fig. 336), S.W.L.Jacobs, R.D.B.Whalley \& D.J.B.Wheeler,, Grasses of New South Wales, 4th edn (2008) (294), J.C.Tothill,\& J.B.Hacker. The grasses of southern Queensland (1983) (296), 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. digitus, finger; -ata, possessing. Inflorescence branches finger-like.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.
Habit, Vegetative Morphology. Perennial. Rootstock evident. Cataphylls evident. Culms erect, 100200 cm long. Culm-nodes glabrous. Lateral branches sparse. Leaves cauline. Ligule an eciliate membrane, 0.5 mm long. Leaf-blades persistent or deciduous at the ligule, $5-20 \mathrm{~cm}$ long, $3-6 \mathrm{~mm}$ wide.

Inflorescence. Inflorescence composed of racemes. Racemes 6-20, digitate, unilateral, 5-9 cm long. Central inflorescence axis $0.5-1 \mathrm{~cm}$ long. Spikelet packing broadside to rhachis, crowded, regular, 2 rowed. Spikelets solitary. Fertile spikelets sessile.

Fertile Spikelets. Spikelets comprising 3-7 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets elliptic, laterally compressed, 3-4 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, similar, shorter than spikelet. Lower glume ovate, 1.5 mm long, 0.75 length of upper glume, membranous, 1 -keeled, 1 -veined. Lower glume lateral veins absent. Lower glume
apex acute. Upper glume ovate, 2 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, 2 mm long, membranous, keeled, lightly keeled, 3 -veined, $0-3$-veined. Lemma lateral veins close to margins. Lemma surface glabrous. Lemma margins eciliate. Lemma apex emarginate. Palea 2 -veined. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Anthers $3,0.3 \mathrm{~mm}$ long. Caryopsis with adherent pericarp.
Distribution (TDWG). Continent. Australasia.
Country /Province /State. Australia. Western Australia, Northern Territory, South Australia, Queensland, New South Wales.

Kimberley, Eremean, South-West. Central Australia. NW \& Lake Eyre. North, Central, South East, Inland. Western Slopes, Western Plains.

## Leptochloa longa Griseb. Fl. Brit. W. Ind. 538. (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 Trinidad. T:<Type of Basionym>: fide TROPICOS and Kew Synonomy Database: Trinidad: Crueger (K syn, US) ; Trinidad: Grisebach 3359 (US isosyn).

Illustrations: None found.
Derivation (Clifford \& Bostock 2007): L. long. Culms tall.
Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.
Habit, Vegetative Morphology. Perennial. Culms geniculately ascending, 150 cm long. Ligule an eciliate membrane, 0.5 mm long. Collar pubescent. Leaf-blades $20-40 \mathrm{~cm}$ long, $15-25 \mathrm{~mm}$ wide.

Inflorescence. Inflorescence composed of racemes. Racemes 15-20, borne along a central axis, spreading, flexuous, unilateral, $15-20 \mathrm{~cm}$ long. Central inflorescence axis $10-20 \mathrm{~cm}$ long. Rhachis semiterete. Spikelet packing broadside to rhachis, regular, 2 -rowed. 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 oblong, laterally compressed, $4-5 \mathrm{~mm}$ long, breaking up at maturity, disarticulating below each fertile floret.

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

Florets. Fertile lemma oblong, 3 mm long, membranous, keeled, 3 -veined, $0-3$-veined. Lemma lateral veins close to margins. Lemma margins pubescent. Lemma apex dentate, 2 -fid, awned, 1 -awned. Principal lemma awn from a sinus, $3-4 \mathrm{~mm}$ long overall. Palea 2 -veined. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Caryopsis with adherent pericarp.
Distribution (TDWG). Continent. South America.
Country /Province/State. Mesoamerica, Caribbean. Panama. Windward Islands, Trinidad-Tobago.

## Leptochloa malayana (C.E. Hubb.) Jansen ex Veldkamp. Blumea, 19(1): 64 (1971).

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

TYPE from Thailand. Basionym or Replaced Name: Diplachne malayana C.E.Hubb., Kew Bull. 1934, 106 (1934). T:<Type of Basionym>: fide TROPICOS and Kew Synonomy Database: Thailand, Puket: Haniff \& Nur 4701 (K holo).

Illustrations: None found.
Images: H.B.Gilliland et al., Flora of Malaya Vol. 3 Grasses (1971); (as Diplachne).
Derivation (Clifford \& Bostock 2007): L. -ana, indicating connection. From Peninsula Malaysia and southern Thailand.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose. Culms 20-30 cm long. Leaf-sheaths 10-12 cm long, glabrous on surface. Ligule a ciliate membrane. Leaf-blades involute, $13-25 \mathrm{~cm}$ long, $4-5 \mathrm{~mm}$ wide. Leaf-blade surface glabrous. Leaf-blade margins scabrous. Leaf-blade apex attenuate.

Inflorescence. Inflorescence composed of racemes. Racemes 4-12, borne along a central axis, ascending, unilateral, $3.5-10 \mathrm{~cm}$ long. Central inflorescence axis $7-20 \mathrm{~cm}$ long. Rhachis semiterete, scabrous on margins. Spikelet packing broadside to rhachis, lax, irregular. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, linear, $1-1.5 \mathrm{~mm}$ long.

Fertile Spikelets. Spikelets comprising 5-10 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets elliptic, laterally compressed, compressed slightly, 5.8 mm long, 2 mm wide, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes eventually visible between lemmas. Floret callus evident, pubescent.

Glumes. Glumes persistent, similar, shorter than spikelet. Lower glume lanceolate, 2.5 mm long, 0.75 length of upper glume, membranous, 1 -keeled, 1 -veined. Lower glume primary vein scaberulous. Lower glume lateral veins absent. Lower glume apex acute or acuminate. Upper glume lanceolate, 3.3 mm long, 1-1.1 length of adjacent fertile lemma, membranous, 1 -keeled, 1 -veined. Upper glume primary vein scaberulous. Upper glume lateral veins absent. Upper glume apex acute.

Florets. Fertile lemma ovate, 3.1 mm long, membranous, yellow, without keel, 3 -veined, $0-3$-veined. Lemma lateral veins close to margins. Lemma apex dentate, 2 -fid, mucronate. Palea 3.6 mm long, 2 veined. Palea keels ciliolate. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, cuneate, fleshy. Anthers 3, 0.8 mm long. Caryopsis with adherent pericarp, ovoid, 1.2 mm long, dark brown or red.

Distribution (TDWG). Continent. Tropical Asia.
Country /Province/State. Indo-China, Malesia. Laos, Thailand. Borneo, Malaya.

## Leptochloa monticola Chase. Journ. Wash. Acad. Sc. xvii. 73. (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 Haiti. T:<Type of Basionym>: fide TROPICOS and Kew Synonomy Database: Haiti, Furcy: Leonard 4751 (US holo, NY).

Illustrations (Books): A.S.Hitchcock, Manual of the Grasses of the West Indies (1936) (108, Fig. 67).
Derivation (Clifford \& Bostock 2007): L. mons, mountain; -cola, dweller. Growing on mountains.
Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.
Habit, Vegetative Morphology. Perennial, caespitose. Culms $80-100 \mathrm{~cm}$ long. Leaf-sheaths pilose. Ligule an eciliate membrane. Leaf-blades involute, $20-30 \mathrm{~cm}$ long, $2-6 \mathrm{~mm}$ wide, coriaceous. Leaf-blade apex attenuate, pungent.

Inflorescence. Inflorescence composed of racemes. Racemes numerous, borne along a central axis, closely spaced, straight, unilateral, 3-10 cm long. Central inflorescence axis $20-30 \mathrm{~cm}$ long. Spikelet packing broadside to rhachis. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, scaberulous.

Fertile Spikelets. Spikelets comprising 6-7 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets oblong, laterally compressed, $8-10 \mathrm{~mm}$ long, breaking up at maturity, disarticulating below each fertile floret. Floret callus pubescent.

Glumes. Glumes persistent, similar, shorter than spikelet. Lower glume lanceolate, 0.5-0.75 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume lateral veins absent. Lower glume apex acute. Upper glume lanceolate, 0.75 length of adjacent fertile lemma, membranous, 1 -keeled, 1 -veined. Upper glume lateral veins absent. Upper glume apex obtuse.

Florets. Fertile lemma elliptic, 5 mm long, membranous, keeled, 3 -veined, $0-3$-veined. Lemma midvein pubescent, hairy below. Lemma lateral veins close to margins. Lemma surface villous. Lemma margins villous. Lemma apex dentate, 2 -fid. Palea 0.75 length of lemma, 2 -veined. Palea keels scaberulous. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Anthers 3. Caryopsis with adherent pericarp, ellipsoid.
Distribution (TDWG). Continent. South America.
Country /Province /State. Caribbean. Dominican Republic, Haiti.

Leptochloa pluriflora (E. Fourn.) P.M.Peterson \& N.Snow. Ann.Bot. 109: 1327 (2012).
Accepted by: R.J.Soreng et al., Catalogue of New World Grasses (2000-2003) and online, W.D.Clayton \& K.Harman, GrassBase (2008) and online, U.Quattrocchi, CRC World Dictionary of Grasses (2006), N.L.Bor, Grasses of Burma, Ceylon, India and Pakistan (1960).

TYPE from USA, Mexico. Basionym or Replaced Name: Trichloris pluriflora E. Fourn., Mex. Pl. Enum. Gram. 142 (1886). T:<Type of Basionym>: fide TROPICOS and Kew Synonomy Database: LT: Berlandier 1430, USA: Texas: inter Laredo et Bejar (P). LT designated by Hitchcock, Contr. U.S. Natl. Herb. 17: 335 (1917). ST: Karwinsky s.n., Mexico (LE).

Illustrations (Books): F.O.Zuloaga, Z.E.Rugolo \& A.M. Anton, Flora Argentina 3 - 1, Aristidoideae a Pharoideae (2012) (170, as Trichloris pluriflta for. pluriflora), A.S.Hitchcock, Manual of the Grasses of the West Indies (1936) (137, Fig. 85), S.A.Renvoize, Gramineas de Bolivia (1998) (357, Fig. 76), A.Burkat, Flora Ilustrada de Entre Rios (Argentina), Pt II, Gramineas (1969) (267, Fig. 103), A.L.Cabrera, Flora de la Provincia de Buenos Aires, IV Pt 2 Gramineas (1970) (418, Fig. 108), G.Harling \& C.Persson, Flora of Ecuador (2006) (68: 104, Fig. 15 (2001)), R.Pilger, Die Naturlichen Pflanzenfamilien 14d (1956) (104, Fig. 28).

Illustrations (Journals): Ruizia (13:284, Fig 34g (1993)).
Derivation (Clifford \& Bostock 2007): L. plus, several; flos, flower. Florets several per spikelet.
Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.
Habit, Vegetative Morphology. Perennial, culms solitary or caespitose. Stolons absent or present. Basal innovations flabellate. Culms $100-150 \mathrm{~cm}$ long. Leaf-sheaths keeled, glabrous on surface or hirsute. Ligule a fringe of hairs. Leaf-blades conduplicate, $15-30 \mathrm{~cm}$ long, $5-10 \mathrm{~mm}$ wide. Leaf-blade midrib evident. Leaf-blade surface scabrous, rough on both sides, glabrous or hirsute, sparsely hairy.

Inflorescence. Inflorescence composed of racemes. Racemes 7-20, digitate, in several whorls, erect, unilateral, 10-20 cm long. Rhachis scabrous on margins. Spikelet packing broadside to rhachis, regular, 2 rowed. Spikelets solitary. Fertile spikelets sessile.

Fertile Spikelets. Spikelets comprising 1-2 fertile florets, with diminished florets at the apex. Spikelets of 1 fertile floret with or without additional sterile florets, or of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, laterally compressed, $5-7 \mathrm{~mm}$ long, breaking up at maturity, disarticulating below each fertile floret. Floret callus pubescent.

Glumes. Glumes persistent, similar, shorter than spikelet, thinner than fertile lemma, gaping. Lower glume lanceolate, $2-3 \mathrm{~mm}$ long, 1 length of upper glume, membranous, 1 -keeled, 1 -veined. Lower glume primary vein scaberulous. Lower glume lateral veins absent. Lower glume apex acuminate. Upper glume lanceolate, $2-3 \mathrm{~mm}$ long, $0.6-0.8$ length of adjacent fertile lemma, membranous, 1 -keeled, 1 -veined. Upper glume primary vein scaberulous. Upper glume lateral veins absent. Upper glume apex acuminate, awned, 1 -awned, awn 1 mm long.

Florets. Fertile lemma elliptic, dorsally compressed, 3-5 mm long, chartaceous, keeled, 3 -veined, 0-3 -veined. Lemma surface asperulous, rough above. Lemma margins ciliolate, hairy in the middle. Lemma apex acute, awned, 3 -awned. Principal lemma awn $8-12 \mathrm{~mm}$ long overall. Lateral lemma awns present, $0.5-1.5 \mathrm{~mm}$ long, shorter than principal. Palea apex with excurrent keel veins. Apical sterile florets $2-3$ in number, barren, separate, lanceolate, $1-3 \mathrm{~mm}$ long. Apical sterile lemmas glabrous or pilose, adorned on margins, awned, 3 -awned. Apical sterile lemma awns $0.2-8 \mathrm{~mm}$ long.

Flower and Fruit. Caryopsis with free soft pericarp, ellipsoid, dorsally compressed, concavo-convex, $1.8-2.2 \mathrm{~mm}$ long.

Distribution (TDWG). Continent. North America, South America.
Country /Province/State. South-central USA, Mexico. Texas. Central Mexico, Northeast Mexico, Southwest Mexico, Southeast Mexico. Mesoamerica, Caribbean, Northern South America, Western South America, Southern South America. Guatemala. Cuba. Venezuela. Bolivia, Colombia, Ecuador, Peru. Argentina Northeast, Argentina Northwest.

Catamarca, Jujuy, La Rioja, Mendoza, Salta, Santiago del Estero, San Juan, San Luis, Tucuman. Buenos Aires, Chaco, Cordoba, Distrito Federal, Entre Rios, Formosa, Santa Fe. Puebla. Coahuila, Chihuahua, Durango, Neuvo Leon, San Luis Potosi, Tamaulipas. Jalisco, Michoacan, Oaxaca. Campeche.

Leptochloa procera Nees. Syll. Ratisb. 1: 2. (1824).
Accepted by: R.J.Soreng et al., Catalogue of New World Grasses (2000-2003) and online, U.Quattrocchi, CRC World Dictionary of Grasses (2006).

TYPE from Brazil. T:<Type of Basionym>: fide TROPICOS and Kew Synonomy Database: HT: M.A.P. Wied-Neuwied 244, Brazil (B; IT: US-3266091 (fragm.)).

Illustrations: None found.
Derivation (Clifford \& Bostock 2007): L. tall. Culms tall.
Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.
Habit, Vegetative Morphology. Perennial. Rhizomes absent. Culms erect, 30-100 cm long. Culmnodes glabrous. Lateral branches lacking. Leaf-sheaths mostly shorter than adjacent culm internode, glabrous on surface, outer margin hairy. Ligule a ciliolate membrane, $0.5-0.6 \mathrm{~mm}$ long, truncate. Leafblades $16-25 \mathrm{~cm}$ long, $5-10 \mathrm{~mm}$ wide. Leaf-blade surface glabrous. Leaf-blade apex attenuate.

Inflorescence. Inflorescence composed of racemes. Racemes 25-30, borne along a central axis, flexuous, unilateral, 5-15 cm long. Rhachis glabrous on surface or puberulous on surface. Spikelet packing broadside to rhachis. Spikelets solitary. Fertile spikelets sessile.

Fertile Spikelets. Spikelets comprising 3-6 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets oblong, laterally compressed, $2.6-3.6 \mathrm{~mm}$ long, breaking up at maturity, disarticulating below each fertile floret. Floret callus glabrous.

Glumes. Glumes persistent, shorter than spikelet. Lower glume oblong, $1.2-2 \mathrm{~mm}$ long, 0.75 length of upper glume, membranous, 1 -keeled, 1 -veined. Lower glume lateral veins absent. Lower glume apex acute. Upper glume oblong, $1.2-1.5 \mathrm{~mm}$ long, 0.66 length of adjacent fertile lemma, membranous, 1 -keeled, 1 veined. Upper glume lateral veins absent. Upper glume apex acute.

Florets. Fertile lemma oblong, $2.5-2.6 \mathrm{~mm}$ long, membranous, keeled, 3 -veined, $0-3$-veined. Lemma midvein eciliate or pubescent. Lemma surface puberulous or pubescent, hairy on veins. Lemma margins ciliolate. Lemma apex dentate, 2 -fid, muticous or mucronate. Palea 1 length of lemma. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Anthers 2, 0.2-0.4 mm long. Caryopsis with adherent pericarp, trigonous, 1.5-1.6 mm long, dark brown. Hilum punctiform.

Distribution (TDWG). Continent. South America.
Country /Province/State. Caribbean, Northern South America, Western South America, Brazil, and Southern South America. Bahamas, Cayman Is, Cuba, Dominican Republic, Haiti, Jamaica, Leeward Is, Windward Islands, Trinidad-Tobago. Venezuela. Bolivia. Argentina Northwest, Paraguay.

Jujuy, Salta. Corrientes, Misiones.

Leptochloa tectoneticola (Backer) Jansen ex Veldkamp. Blumea, 19(1): 64 (1971).
Accepted by: W.D.Clayton \& K.Harman, GrassBase (2008) and online, J.F.Veldkamp, Poaceae ms (Flora Malesiana).

TYPE from Indonesia. Basionym or Replaced Name: Diplachne tectoneticola Backer, Bull. Jard. Bot. Buitenzorg, ser. 3, 2: 326 (1920)
. T:<Type of Basionym>: fide TROPICOS and Kew Synonomy Database: ST: Backer 27726, Kangean, in tectonetis (BO).

ST: Backer 27780, Kangean, in tectonetis (BO).
ST: Beumee 4716, Hab. Java occidentalis, in tectonetis (BO).
Illustrations: None found.
Derivation (Clifford \& Bostock 2007): L. -cola, dweller. Growing in Tectonis forests that is in teak forests.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.
Habit, Vegetative Morphology. Perennial, caespitose. Culms $25-50 \mathrm{~cm}$ long, 3-4 -noded. Lateral branches lacking. Ligule an eciliate membrane. Leaf-blades $8-12 \mathrm{~cm}$ long, $2.5-3 \mathrm{~mm}$ wide.

Inflorescence. Inflorescence composed of racemes. Racemes 3 or 4, borne along a central axis, unilateral, $10-15 \mathrm{~cm}$ long. Rhachis semiterete, scabrous on surface. Spikelet packing broadside to rhachis, regular, 2 -rowed. Spikelets solitary. 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 oblong, laterally compressed, 5-7 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, similar, shorter than spikelet. Lower glume lanceolate, $1-2 \mathrm{~mm}$ long, 0.5 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume primary vein scaberulous. Lower glume lateral veins absent. Lower glume apex acute. Upper glume lanceolate, 2.5 mm long, 1 length of adjacent fertile lemma, membranous, 1-keeled, 1 -veined. Upper glume primary vein scaberulous. Upper glume lateral veins absent. Upper glume apex acute.

Florets. Fertile lemma oblong, 2.5 mm long, membranous, keeled, 3 -veined, $0-3$-veined. Lemma lateral veins close to margins. Lemma margins eciliate. Lemma apex emarginate, awned, 1 -awned. Principal lemma awn 1.5-1.8 mm long overall. Palea 2 -veined. Palea keels ciliolate. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Anthers $3,0.4 \mathrm{~mm}$ long. Caryopsis with adherent pericarp.
Distribution (TDWG). Continent. Tropical Asia.
Country /Province /State. Indo-China, Malesia. Cambodia, Thailand. Java.

## Leptochloa virgata (L.) Beauv. Agrost. 71. (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), J.F.Veldkamp, Poaceae ms (Flora Malesiana), W.D.Clayton \& N.Snow, Key to Pacific Grasses (2010).

TYPE from Jamaica. Basionym or Replaced Name: Cynosurus virgatus L., Syst. Nat. (ed. 10) 876 (1759)
. T:<Type of Basionym>: fide TROPICOS and Kew Synonomy Database: LT: P. Browne s.n., Jamaica (LINN-91.18). LT designated by Hitchcock, Contr. U.S. Natl. Herb. 12: 122 (1908).

Illustrations (Books): F.O.Zuloaga, Z.E.Rugolo \& A.M. Anton, Flora Argentina 3 - 1, Aristidoideae a Pharoideae (2012) (137), E.E.Henty, A Manual of the Grasses of New Guinea (1969) (127, Pl. 49), M.E.Barkworth et al, Flora of North America north of Mexico Vol 25 Poaceae, part 2 (2003) (55), F.W.Gould, The Grasses of Texas (1975) (228, Fig. 118), A.S.Hitchcock, Manual of the Grasses of the West Indies (1936) (107, Fig. 66 \& as L. domingensis), S.A.Renvoize, Gramineas de Bolivia (1998) (298, Fig. 61), S.A.Renvoize, The Grasses of Bahia, 1984 (79, Fig. 28), J.A.Steyermark et al, Flora of the Venezuelan Guayana Vol. 8 (2004) (146, Fig. 103), L.B. Smith, D.C. Wasshausen, R.M. Klein Flora Illustrada Catarinensis Gramineas (1981-1982) (357, Fig. 83 \& 366, Fig. 84), A.Burkat, Flora Ilustrada de Entre Rios (Argentina), Pt II, Gramineas (1969) (234, Fig. 89), W.Burger, Flora Costaricensis 15, Gramineae: Fieldiana Botany New Series 4 (1980) (305, Fig. 110), G.Harling \& C.Persson, Flora of Ecuador (2006) (68: 17, Fig. 3 (2001)), E.Judziewicz, Flora of the Guianas, 187. Poaceae (1990) (313, Fig. 55), E.Hafliger \& E.Schultz, Grass Weeds, CIBA-GEIGY (2:99(1980)).

Illustrations (Journals): Darwiniana (33: 251, Fig. 5 (1992) as var. virgata), Ruizia (13:269, Fig 31no (1993)).

Derivation (Clifford \& Bostock 2007): L. virga, broom; -ata, possessing. Inflorescence arms or culms held erect.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.
Habit, Vegetative Morphology. Perennial, caespitose. Culms erect, $40-110 \mathrm{~cm}$ long, $2-3 \mathrm{~mm}$ diam. Ligule a ciliolate membrane, $0.3-0.7 \mathrm{~mm}$ long. Leaf-blades $10-26 \mathrm{~cm}$ long, $7-10 \mathrm{~mm}$ wide.

Inflorescence. Inflorescence composed of racemes. Peduncle 5-28 cm long. Racemes 5-20, borne along a central axis, flexuous, unilateral, $7-11 \mathrm{~cm}$ long. Central inflorescence axis $10-22 \mathrm{~cm}$ long. Rhachis semiterete. Spikelet packing broadside to rhachis, contiguous, regular, 2 -rowed. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 3-5 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets oblong, laterally compressed, $2.5-3.6 \mathrm{~mm}$ long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, shorter than spikelet. Lower glume linear or lanceolate, 1.2-1.6 mm long, 0.66 length of upper glume, membranous, 1 -keeled, 1 -veined. Lower glume primary vein scaberulous.

Lower glume lateral veins absent. Lower glume apex acute. Upper glume lanceolate, $1.8-2.3 \mathrm{~mm}$ long, 1 length of adjacent fertile lemma, membranous, 1 -keeled, 1 -veined. Upper glume primary vein scaberulous. Upper glume lateral veins absent. Upper glume apex acute.

Florets. Fertile lemma ovate, $1.8-2.2 \mathrm{~mm}$ long, membranous, keeled, 3 -veined, $0-3$-veined. Lemma midvein eciliate. Lemma lateral veins close to margins. Lemma margins pubescent, hairy above. Lemma apex emarginate, muticous or mucronate or awned, 1 -awned. Principal lemma awn 0-2.2 mm long overall. Palea 2 -veined. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Anthers 2, $0.2-0.3 \mathrm{~mm}$ long. Caryopsis with free soft pericarp.
$2 n=40$ ( 1 ref TROPICOS).
Distribution (TDWG). Continent. Tropical Asia, Pacific, North America, South America.
Country /Province /State. Malesia, Papuasia. Borneo, Java. New Guinea West Papua (Irian Jaya) (*). New Guinea (*). North-central Pacific. Hawaii. South-central USA, Southeastern USA, Mexico. Texas. Florida, Louisiana, South Carolina. 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. Bahamas, Cuba, Dominican Republic, Haiti, Jamaica, Leeward Is, Windward Islands, TrinidadTobago. French Guiana, Guyana, Surinam, Venezuela. Bolivia, Colombia, Ecuador, Galapagos, Peru. Brazil West Central, Brazil Northeast, Brazil Southeast, Brazil North, Brazil South. Argentina Northeast, Argentina Northwest, Paraguay, Uruguay.

Para, Amapa, Goias, Bahia, Maranhao, Piaui, Ceara, Rio Grande do Norte, Paraiba, Penambuco, Alagoas, Sergipe, Minas Gerais, Rio de Janeiro, Espirito Santo, Sao Paulo Parana, Catarina, Rio Grande do Sul. Distrito Federal $\left(^{*}\right)$, Mato Grosso, Goiás, Mato Grosso do Sul. Bahia, Maranhão, Pernambuco. Amapa, Amazonas, Pará, Tocantins. Minas Gerais, Sao Paulo. Paraná, Rio Grande do Sul. Catamarca, Jujuy, La Rioja, Salta, Santiago del Estero, Tucuman. Chaco, Cordoba, Corrientes, Distrito Federal, Entre Rios, Formosa, Misiones, Santa Fe. Puebla. Guanajuato, San Luis Potosi, Tamaulipas. Veracruz. Colima, Jalisco, Michoacan, Nayarit, Oaxaca. Campeche, Chiapas, Quintana Roo, Tabasco, Yucatan.

## Leptophyllochloa micrathera (Desvaux) Calderon ex E.G.Nicora. Fl. Patagonica, 3: 70 (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 (as Koeleria), U.Quattrocchi, CRC World Dictionary of Grasses (2006), N.Tsvelev, Grasses of the Soviet Union (1983) (as Koeleria cristata \& K. sclerophylla), T.Koyama, Grasses of Japan and its neighboring regions (1987) (as Koeleria cristata).

TYPE from Chile. Basionym or Replaced Name: Trisetum micratherum E. Desv., Fl. Chil. 6: 352 (1854)
. T:<Type of Basionym>: fide TROPICOS and Kew Synonomy Database: T: C. Gay 289, Jan 1835, Chile: Valdivia: Río Bueno (IT: US-91364 (fragm.)).

Recent Synonyms: Koeleria micrathera (Desv.) Griseb., Goett. Abh. 21: 292 (1879).
Illustrations (Books): F.O.Zuloaga, Z.E.Rugolo \& A.M. Anton, Flora Argentina 3 - 2 Pooideae (2012) (265), N.L.Bor, Gramineae in Flora of Iraq (1968) (as Koeleria cristata), T.Koyama, Grasses of Japan and its neighbouring regions (1987) (as K. cristata), K.F.Best, et al, Prairie Grasses (1971) (149 as K. cristata), E.G.Nicora, Los Generos de Gramineas de America Austral (1987) (286, Fig. 93), W.Burger, Flora Costaricensis 15, Gramineae: Fieldiana Botany New Series 4 (1980) (308, Fig 111), M.N.Correa, Flora Patagonica Parte III, Gramineae (1978) (65, Fig 32).

Derivation (Clifford \& Bostock 2007): Gk. mikros, small; ather, spike as of ear of wheat. Inflorescence a small narrow panicle or composed of small racemes.

Classification. Subfamily Pooideae. Tribe: Poeae.
Habit, Vegetative Morphology. Perennial. Rhizomes elongated. Culms geniculately ascending or decumbent, 4-35 cm long, 2-3 -noded. Leaf-sheaths glabrous on surface or pubescent. Ligule an eciliate membrane, $0.2-0.5 \mathrm{~mm}$ long. Leaf-blades flat or conduplicate, $1-10 \mathrm{~cm}$ long, $0.5-2 \mathrm{~mm}$ wide.

Inflorescence. Inflorescence a panicle. Panicle spiciform, linear, interrupted, nodding, $1-10 \mathrm{~cm}$ long. Panicle branches glabrous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, linear, scaberulous.

Fertile Spikelets. Spikelets comprising 2-4 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the
upper sterile. Spikelets elliptic, laterally compressed, $2.75-5.5 \mathrm{~mm}$ long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes pilose. Floret callus pubescent.

Glumes. Glumes persistent, similar, shorter than spikelet, similar to fertile lemma in texture, shiny, gaping. Lower glume lanceolate, $1-3 \mathrm{~mm}$ long, $0.33-0.5$ length of upper glume, hyaline, 1 -keeled, 1 veined. Lower glume primary vein scaberulous. Lower glume lateral veins absent. Lower glume apex acuminate. Upper glume elliptic, 2-4.5 mm long, 0.66-1 length of adjacent fertile lemma, hyaline, 1-keeled, 3 -veined. Upper glume primary vein scaberulous. Upper glume apex acuminate.

Florets. Fertile lemma lanceolate, 3-4.5 mm long, chartaceous, much thinner on margins, shiny, keeled, 3 -veined, 0-3 -veined. Lemma surface smooth or scaberulous. Lemma apex obtuse or acute, awned, 1 awned. Principal lemma awn subapical, $0.5-3 \mathrm{~mm}$ long overall. Palea $0.5-0.75$ length of lemma, hyaline. Palea keels scabrous. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, oblong, membranous. Anthers 3, $0.2-0.3 \mathrm{~mm}$ long. Ovary glabrous.
Distribution (TDWG). Continent. South America.
Country /Province /State. Southern South America. Argentina South, Chile South, Juan Fernandez Is.

Chubut, Neuquén, Río Negro. Rest of Chile- Biobio, La Auracania, Maule, O'Higgins, Santado, Valpariso. Valparaiso, Maule, Biobio, La Araucania. Los Lagos.

Leptothrium rigidum Kunth. Rev. Gram. 156 (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 South America. T:<Type of Basionym>: fide TROPICOS and Kew Synonomy Database: IT: South America: habitat Orinoco (US (fragm. ex B-WILLD.); US (fragm. ex P-HBK)).

Illustrations (Books): A.S.Hitchcock, Manual of the Grasses of the West Indies (1936) (99, Fig. 57). Illustrations (Journals): Ruizia (13:298, Fig 36a-b (1993)).
Derivation (Clifford \& Bostock 2007): L. stiff. Culms, spikelets or inflorescence branches held stiffly erect.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.
Habit, Vegetative Morphology. Perennial, short-lived, caespitose. Cataphylls evident. Culms geniculately ascending, $15-50 \mathrm{~cm}$ long, wiry. Leaves cauline. Leaf-sheaths loose. Leaf-sheath auricles erect. Ligule a fringe of hairs. Leaf-blades linear to lanceolate, flat or involute, $15-30 \mathrm{~cm}$ long, $0.5-2 \mathrm{~mm}$ wide.

Inflorescence. Inflorescence composed of racemes. Racemes numerous, borne along a central axis, in a multilateral false spike, spreading, cuneate, bearing few fertile spikelets, bearing 1 fertile spikelets on each or 2 fertile spikelets on each. Central inflorescence axis $5-10 \mathrm{~cm}$ long. Rhachis obsolete, deciduous from axis. Raceme-bases cuneate, $1.5-2.5 \mathrm{~mm}$ long, pilose, hairy on margins. Spikelets solitary or in pairs. Fertile spikelets sessile, 1-2 in the cluster, subequal or the upper smaller (lower glume of one spikelet usually enlarged).

Fertile Spikelets. Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 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 to lanceolate, laterally compressed, 6-7 mm long, falling entire, deciduous with accessory branch structures.

Glumes. Glumes dissimilar, with lower wider than upper, exceeding apex of florets, firmer than fertile lemma. Lower glume linear to lanceolate, $4-7 \mathrm{~mm}$ long, $1-1.3$ length of upper glume, coriaceous, without keels, (1-)3 -veined. Lower glume surface convex or flat, smooth or scabrous. Lower glume margins ciliolate. Lower glume apex attenuate to caudate. Upper glume linear to lanceolate, 4-6 mm long, 3-4 length of adjacent fertile lemma, coriaceous, without keels, 3 -veined. Upper glume primary vein ciliate. Upper glume surface scabrous. Upper glume apex caudate or acuminate.

Florets. Fertile lemma ovate, $1-1.5 \mathrm{~mm}$ long, hyaline, without keel, 1 -veined, $0-3$-veined, one-veined. Lemma margins ciliolate, hairy above. Lemma apex obtuse. Palea $0.6-0.8$ length of lemma, hyaline, 0 veined, without keels.

Flower and Fruit. Anthers 3, 0.6-0.8 mm long. Caryopsis with adherent pericarp, fusiform, laterally compressed, biconvex, 2 mm long. Embryo 0.5 length of caryopsis.

Distribution (TDWG). Continent. South America.

Country /Province/State. Caribbean, Northern South America, Western South America. Jamaica. Guyana, Venezuela. Colombia, Peru.

Leptothrium senegalense (Kunth) W.D. Clayton. Kew Bull., 27 (1): 151 (1972).
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 Latipes).

TYPE from Senegal. Basionym or Replaced Name: Latipes senegalensis Kunth, Revis. Gramin. 1: 261 (1829)
. T:<Type of Basionym>: fide TROPICOS and Kew Synonomy Database: IT: herb Gay comm. Roger, Senegal (K).

Illustrations (Books): H.Jacques-Felix, Les Graminees d'Afrique tropicale (1962) (229, Fig. 153 as Latipes), R.M.Polhill, F.T.E.A., Gramineae (2(1974):403, Fig.109), S.Phillips, Poaceae (Gramineae) in I.Hedberg \& S.Edwards, Flora of Ethiopia and Eritrea (1995) (181, Fig. 75), L.Boulos, Flora of Egypt 4 (2005) (283, Pl. 84), T.A.Cope, in M.Thulin, Poaceae (Gramineae). Flora of Somalia (1995) (216, Fig. 122), N.L.Bor, Gramineae in Flora of Iraq (1968) (467, Pl. 179 as Latipes), T.A.Cope, Flora of Pakistan 143: Poaceae (1982) (152, Fig 16).

Images: L.Boulos, Flora of Egypt 4 (2005);.
Derivation (Clifford \& Bostock 2007): L. -ensis, denoting origin. From Senegal, now Senagambia.
Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.
Habit, Vegetative Morphology. Perennial, short-lived, caespitose. Culms geniculately ascending, 1060 cm long, wiry. Ligule a fringe of hairs. Leaf-blades $2-10 \mathrm{~cm}$ long, $1-3 \mathrm{~mm}$ wide.

Inflorescence. Inflorescence composed of racemes. Racemes numerous, borne along a central axis, in a multilateral false spike, spreading, cuneate, bearing few fertile spikelets, bearing 2 fertile spikelets on each. Central inflorescence axis $2-17 \mathrm{~cm}$ long. Rhachis obsolete, deciduous from axis. Raceme-bases cuneate, $1-5 \mathrm{~mm}$ long, pilose, hairy on margins. Spikelets in pairs. Fertile spikelets sessile, 2 in the cluster, subequal or the upper smaller (lower glume of one spikelet usually enlarged, rarely equalling upper glume or the latter also enlarged).

Fertile Spikelets. Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 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 to lanceolate, laterally compressed, gibbous, $2.5-8 \mathrm{~mm}$ long, falling entire, deciduous with accessory branch structures.

Glumes. Glumes dissimilar, with lower narrower than upper or with lower wider than upper, exceeding apex of florets, firmer than fertile lemma, recurved at apex. Lower glume lanceolate, $2.4-8 \mathrm{~mm}$ long, 1-2 length of upper glume, coriaceous, without keels, 1-3-veined. Lower glume surface convex or flat, smooth or tuberculate. Lower glume margins ciliate (hooked hairs). Lower glume apex acute or caudate. Upper glume oblong, gibbous, $3-5.5 \mathrm{~mm}$ long, 2-4 length of adjacent fertile lemma, coriaceous, without keels, 3 veined. Upper glume primary vein ciliate (hooked hairs). Upper glume surface tuberculate. Upper glume apex caudate.

Florets. Fertile lemma ovate, 1.5 mm long, hyaline, without keel, 1 -veined, $0-3$-veined, one-veined. Lemma margins ciliolate, hairy above. Lemma apex acute. Palea $0.3-0.5$ length of lemma, hyaline, 0 veined.

Flower and Fruit. Anthers 3, 0.2 mm long. Caryopsis with adherent pericarp, ellipsoid, laterally compressed, biconvex, 2 mm long. Embryo 0.5 length of caryopsis.
$n=10$ ( 1 ref TROPICOS).
Distribution (TDWG). Continent. Africa, Temperate Asia, Tropical Asia.
Country /Province/State. Northern Africa, Macaronesia, West Tropical Africa, Northeast Tropical Africa, East Tropical Africa. Egypt. Cape Verde. Ghana, Mali, Mauritania, Senegal. Eritrea, Ethiopia (inc. Eritrea), Socotra, Somalia, Sudan. Kenya, Tanzania, Uganda. Western Asia, Arabian Peninsula. Iran. Oman, Saudi Arabia. Indian Subcontinent. Pakistan.

Rajasthan.

Lepturidium insulare Hitchcock \& Ekman. U. S. Dept. Agric., Misc. Publ. No. 243 : 111 (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 Cuba. T:<Type of Basionym>: fide TROPICOS and Kew Synonomy Database: T: E.L. Ekman 12060, 11 Mar 1920, Cuba: Isla de Pinos (US-1161850).

HT: E.L. Ekman 12060, 3 Nov 1920, Cuba: La Habana: Isla de Pinos (US-1296125).
Illustrations (Books): A.S.Hitchcock, Manual of the Grasses of the West Indies (1936) (112, Fig. 71), R.Pilger, Die Naturlichen Pflanzenfamilien 14d (1956) (89, Fig. 23).

Derivation (Clifford \& Bostock 2007): L. insula, island; -are, pertaining to. Island species.
Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.
Habit, Vegetative Morphology. Perennial. Culms decumbent, $10-30 \mathrm{~cm}$ long, wiry. Leaves distichous. Leaf-sheaths longer than adjacent culm internode. Ligule a fringe of hairs. Leaf-blades flat or involute, 1-2 cm long, $1-2 \mathrm{~mm}$ wide, coriaceous, stiff. Leaf-blade surface ribbed. Leaf-blade apex obtuse, hardened.

Inflorescence. Inflorescence composed of racemes, embraced at base by subtending leaf. Racemes 1, single, unilateral, $5-8 \mathrm{~cm}$ long. Rhachis angular, scaberulous on margins. Spikelet packing broadside to rhachis, lax, 1.25-2 their length apart, irregular, 2 -rowed. Spikelets appressed, 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 oblong, laterally compressed, acute, 3 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus pubescent.

Glumes. Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma, gaping. Lower glume linear, 3 mm long, 1 length of upper glume, coriaceous, much thinner on margins, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume apex acute. Upper glume linear, 3 mm long, 1.25 length of adjacent fertile lemma, coriaceous, without keels, 1 -veined. Upper glume primary vein conspicuous. Upper glume lateral veins absent. Upper glume apex acute.

Florets. Fertile lemma elliptic, $2.5-2.75 \mathrm{~mm}$ long, membranous, without keel, 3 -veined, $0-3$-veined. Lemma surface pubescent. Lemma apex dentate, 2 -fid, mucronate. Rhachilla extension 0.75 length of fertile floret. Apical sterile florets $0-1$ in number, barren, lanceolate, $0-2 \mathrm{~mm}$ long.

Flower and Fruit. Anthers $3,0.5 \mathrm{~mm}$ long.
Distribution (TDWG). Continent. South America.
Country /Province/State. Caribbean. Cuba.
Lepturopetium kuniense P. Morat. Adansonia, 20(4): 378 (1981).
Accepted by: W.D.Clayton \& K.Harman, GrassBase (2008) and online, U.Quattrocchi, CRC World Dictionary of Grasses (2006), J.F.Veldkamp, Poaceae ms (Flora Malesiana), W.D.Clayton \& N.Snow, Key to Pacific Grasses (2010).

TYPE from New Caledonia. T:<Type of Basionym>: fide TROPICOS and Kew Synonomy Database: HT: Schmid 2103, New Caledonia: Ile des Pins, vers Baie des Kounie (P(photo, US); IT: NOU).

Illustrations: None found.
Derivation (Clifford \& Bostock 2007): L. -ense, denoting origin. From Kunie, now Isle de Pins off New Caledonia.

Classification. Subfamily Chloridoideae. Tribe: Chlordoideae incertae sedis.
Habit, Vegetative Morphology. Perennial. Stolons present. Culms decumbent, 30-50 cm long, rooting from lower nodes. Culm-internodes elliptical in section. Ligule a ciliolate membrane. Leaf-blades $5-7 \mathrm{~cm}$ long, $3-4 \mathrm{~mm}$ wide. Leaf-blade midrib evident.

Inflorescence. Inflorescence composed of racemes. Racemes $1-3$, single or paired or digitate, unilateral, $5-7 \mathrm{~cm}$ long. Rhachis angular, scabrous on margins. 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, laterally compressed, $3-3.5 \mathrm{~mm}$ long, breaking up at maturity, disarticulating below each fertile floret. Floret callus pubescent.

Glumes. Glumes persistent, dissimilar, reaching apex of florets, firmer than fertile lemma, gaping. Lower glume lanceolate, $0.5-0.66$ length of upper glume, coriaceous, 1 -keeled, 1 -veined. Lower glume primary vein scabrous. Lower glume lateral veins absent. Lower glume apex acuminate. Upper glume lanceolate, 3-3.5 mm long, coriaceous, 1-keeled, 5-7 -veined. Upper glume primary vein scabrous. Upper glume lateral veins ribbed. Upper glume apex acuminate, awned, 1 -awned, awn 1 mm long.

Florets. Fertile lemma elliptic, laterally compressed, $3-3.5 \mathrm{~mm}$ long, cartilaginous, keeled, lightly keeled, 3 -veined, $0-3$-veined. Lemma apex dentate, 2 -fid, awned, 1 -awned. Principal lemma awn from a sinus, $1.5-4.5 \mathrm{~mm}$ long overall. Palea cartilaginous, 2 -veined. Palea keels ciliolate. Apical sterile florets 1 in number, barren, lanceolate, $2.5-3 \mathrm{~mm}$ long. Apical sterile lemmas awned, 1 -awned. Apical sterile lemma awns $1-3 \mathrm{~mm}$ long.

Distribution (TDWG). Continent. Tropical Asia, Pacific.
Country /Province /State. Malesia. Cocos (Keeling) Is. Northwestern Pacific. New Caledonia.

Lepturopetium marshallense F.R. Fosberg \& M.-H. Sachet. Micronesica, 18(2): 72 (1984).
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 Marshall Islands. T:<Type of Basionym>: fide TROPICOS and Kew Synonomy Database: HT: J. Lamberson s.n., 22 Jul 1976, Marshall Islands: Eniwetok Atoll (US-2987808).

Illustrations (Books): Flora of Australia Oceanic Islands Poaceae 50(1993) \& 49(1994) (50:490 Fig. 91 (1993) as L. $s p$. ).

Derivation (Clifford \& Bostock 2007): L. -ense, denoting origin. From the Republic of the Marshall Islands in the western Pacific Ocean.

Classification. Subfamily Chloridoideae. Tribe: Chlordoideae incertae sedis.
Habit, Vegetative Morphology. Perennial. Stolons present. Culms decumbent, $30-50 \mathrm{~cm}$ long, rooting from lower nodes. Culm-internodes terete. Leaf-sheaths glabrous on surface. Ligule a ciliate membrane. Leaf-blades flat or involute, $6-8 \mathrm{~cm}$ long, $2-5 \mathrm{~mm}$ wide. Leaf-blade midrib evident. Leaf-blade surface scabrous, rough adaxially.

Inflorescence. Inflorescence composed of racemes. Racemes $1-3$, single or paired or digitate, unilateral, $4-6 \mathrm{~cm}$ long, bearing 10-16 fertile spikelets on each. Rhachis angular, scabrous on surface, scabrous on margins. Spikelet packing broadside to rhachis, regular, 2 -rowed. Spikelets appressed, 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 elliptic, laterally compressed, $4.5-6 \mathrm{~mm}$ long, breaking up at maturity, disarticulating below each fertile floret. Floret callus pubescent.

Glumes. Glumes persistent, dissimilar, reaching apex of florets, firmer than fertile lemma, gaping. Lower glume lanceolate, 2 mm long, $0.33-0.5$ length of upper glume, coriaceous, 1 -keeled, 1 -veined. Lower glume primary vein scabrous. Lower glume lateral veins absent. Lower glume surface scabrous, rough at apex. Lower glume apex acuminate. Upper glume lanceolate, $4.5-6 \mathrm{~mm}$ long, coriaceous, 1 -keeled, $5-7$-veined. Upper glume primary vein scabrous. Upper glume lateral veins ribbed. Upper glume apex acuminate.

Florets. Fertile lemma elliptic, laterally compressed, $2.5-4 \mathrm{~mm}$ long, cartilaginous, keeled, lightly keeled, 3 -veined, 0-3 -veined. Lemma surface scabrous, rough above. Lemma margins ciliate. Lemma apex dentate, 2 -fid, awned, 1 -awned. Principal lemma awn from a sinus, $2-3 \mathrm{~mm}$ long overall. Palea cartilaginous, 2 -veined. Palea keels ciliolate. Apical sterile florets 1 in number, barren, linear, 2.5 mm long.

Flower and Fruit. Anthers 3.
Distribution (TDWG). Continent. Pacific.
Country /Province/State. South-central Pacific, Northwestern Pacific. Cook Is. Marianas, Marshall Is.

Lepturus anadabolavensis A. Camus. Bull. Soc. Bot. France, 102: 122 (1955).
Accepted by: W.D.Clayton \& K.Harman, GrassBase (2008) and online, U.Quattrocchi, CRC World Dictionary of Grasses (2006).

TYPE from Madagascar. T:<Type of Basionym>: fide TROPICOS and Kew Synonomy Database: Madagascar, Anadabolava: Humbert 12543.

Illustrations: None found.
Classification. Subfamily Chloridoideae.
Habit, Vegetative Morphology. Annual, caespitose. Culms erect, 17-25 cm long. Leaf-sheaths smooth, pilose. Leaf-sheath auricles erect. Ligule a ciliolate membrane. Leaf-blades $6-8 \mathrm{~cm}$ long, $3-4 \mathrm{~mm}$ wide, glaucous. Leaf-blade venation with 4-6 secondary veins. Leaf-blade surface smooth, pilose, hairy on both sides. Leaf-blade apex acute or acuminate.

Inflorescence. Inflorescence composed of racemes. Racemes 1, single, smoothly terete, bilateral, 2.5-3 cm long. Rhachis fragile at the nodes, subcylindrical and excavated, $1-1.2 \mathrm{~mm}$ wide, glabrous on surface, glabrous on margins. Spikelet packing adaxial, alternate, regular, 2 -rowed. Rhachis internodes oblong, $1.8-2.2 \mathrm{~mm}$ long. Rhachis internode tip oblique, flat. Spikelets sunken, solitary. Fertile spikelets sessile.

Fertile Spikelets. Spikelets comprising 1 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 elliptic, dorsally compressed, 2.2-2.4 mm long, falling entire, deciduous with accessory branch structures.

Glumes. Glumes one the lower absent or obscure (but terminal spikelet with 2 glumes 5 mm long), exceeding apex of florets, firmer than fertile lemma. Upper glume elliptic, 2.2-2.4 mm long, coriaceous, without keels. Upper glume apex obtuse, awned only on distal spikelets, 1 -awned, awn $2.5-6 \mathrm{~mm}$ long.

Florets. Fertile lemma elliptic, 2 mm long, coriaceous, shiny, without keel, 3 -veined, $0-3$-veined. Lemma apex acute. Palea $1.7-1.9 \mathrm{~mm}$ long.

Distribution (TDWG). Continent. Africa.
Country /Province/State. Western Indian Ocean. Madagascar.
Lepturus androyensis A. Camus. Bull. Mus. Hist. Nat., Paris, Ser. 2, 29: 275 (1957).
Accepted by: W.D.Clayton \& K.Harman, GrassBase (2008) and online.
TYPE from Madagascar. T:<Type of Basionym>: fide TROPICOS and Kew Synonomy Database: Madagascar, Antanimoro, Ambia: Humbert \& Capuron 28838 (P holo).

Illustrations: None found.
Classification. Subfamily Chloridoideae.
Habit, Vegetative Morphology. Perennial. Culms geniculately ascending, $25-35 \mathrm{~cm}$ long, rooting from lower nodes. Culm-internodes smooth, distally glabrous. Leaf-sheaths mostly shorter than adjacent culm internode, keeled, smooth, glabrous on surface. Leaf-sheath auricles erect. Ligule a ciliolate membrane, $0.5-0.7 \mathrm{~mm}$ long. Leaf-blade base with a false petiole. Leaf-blades lanceolate, $7-8.5 \mathrm{~cm}$ long, $5-7 \mathrm{~mm}$ wide. Leaf-blade venation with 4 secondary veins. Leaf-blade surface scaberulous, rough abaxially. Leaf-blade margins scaberulous.

Inflorescence. Inflorescence composed of racemes. Racemes 1, single, smoothly terete, bilateral, 4-6 cm long. Rhachis fragile at the nodes, subcylindrical and excavated, $1-1.5 \mathrm{~mm}$ wide, glabrous on surface, glabrous on margins. Spikelet packing adaxial, alternate, regular, 2 -rowed. Rhachis internodes oblong, 3-4 mm long. Rhachis internode tip oblique, flat. Spikelets sunken, solitary. Fertile spikelets sessile.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets oblong, dorsally compressed, 4 mm long, falling entire, deciduous with accessory branch structures. Spikelet callus oblong, 1 mm long, glabrous.

Glumes. Glumes one the lower absent or obscure (but terminal spikelet with 2 glumes 7 mm long), exceeding apex of florets, firmer than fertile lemma. Upper glume lanceolate, 4 mm long, coriaceous, without keels. Upper glume apex acuminate, awned only on distal spikelets, 1 -awned, awn $3.5-4 \mathrm{~mm}$ long.

Florets. Basal sterile florets 1, male, with palea. Lemma of lower sterile floret lanceolate, 3 mm long. Fertile lemma lanceolate, 2.5 mm long, coriaceous, without keel, 3 -veined, $0-3$-veined. Lemma margins ciliolate. Lemma apex acute. Palea $2.6-2.7 \mathrm{~mm}$ long.

Distribution (TDWG). Continent. Africa.

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

Lepturus boinensis A. Camus. Bull. Soc. Bot. France, 93: 87 (1946).
Accepted by: W.D.Clayton \& K.Harman, GrassBase (2008) and online.
TYPE from Madagascar. T:<Type of Basionym>: fide TROPICOS and Kew Synonomy Database: Madagascar, Boina: Perrier 11235.

Illustrations: None found.
Classification. Subfamily Chloridoideae.
Habit, Vegetative Morphology. Annual. Culms geniculately ascending, $30-35 \mathrm{~cm}$ long, rooting from lower nodes. Culm-internodes smooth, distally glabrous. Leaf-sheaths mostly shorter than adjacent culm internode, glabrous on surface or pilose. Ligule absent. Leaf-blades $10-16 \mathrm{~cm}$ long, $5-7 \mathrm{~mm}$ wide. Leafblade venation with 6 secondary veins. Leaf-blade surface scaberulous, rough adaxially, glabrous or pilose, sparsely hairy, hairy abaxially. Leaf-blade margins scaberulous. Leaf-blade apex attenuate, filiform.

Inflorescence. Inflorescence composed of racemes. Racemes 1, single, straight or flexuous, smoothly terete, bilateral, $8-10 \mathrm{~cm}$ long. Rhachis fragile at the nodes, subcylindrical and excavated, $1.5-1.7 \mathrm{~mm}$ wide, glabrous on surface, glabrous on margins. Spikelet packing adaxial, opposite, regular, 2 -rowed. Rhachis internodes oblong, $5.5-6 \mathrm{~mm}$ long. Rhachis internode tip transverse, flat. Spikelets sunken, 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 oblong, dorsally compressed, $6-6.5 \mathrm{~mm}$ long, falling entire, deciduous with accessory branch structures.

Glumes. Glumes one the lower absent or obscure (but terminal spikelet with 2 glumes $6-7 \mathrm{~mm}$ long), exceeding apex of florets, firmer than fertile lemma. Upper glume lanceolate, 6-6.5 mm long, coriaceous, without keels, 7 -veined. Upper glume apex cuspidate, muticous.

Florets. Fertile lemma lanceolate, $3.5-4 \mathrm{~mm}$ long, coriaceous, without keel, 3 -veined, $0-3$-veined. Lemma apex acute. Palea 1 length of lemma. Rhachilla extension 1.5 mm long. Apical sterile florets 1 in number, barren, lanceolate, $2.5-2.8 \mathrm{~mm}$ long.

Distribution (TDWG). Continent. Africa.
Country/Province/State. Western Indian Ocean. Madagascar.
Lepturus calcareus T.A. Cope. Kew Bull., 47(4): 655 (1992).
Accepted by: W.D.Clayton \& K.Harman, GrassBase (2008) and online, U.Quattrocchi, CRC World Dictionary of Grasses (2006).

TYPE from Socotra, Africa. T:<Type of Basionym>: fide TROPICOS and Kew Synonomy Database: Socotra: Muqadrihon Pass, ca. 10 km SW of Hadiboh, $600 \mathrm{~m}, 26$ Jan 1990, A. G. Miller et al. 10102 C (HT: E; IT: K).

Illustrations: None found.
Derivation (Clifford \& Bostock 2007): L. calx, lime; -arius, pertaining to. Growing on limestone soils. Classification. Subfamily Chloridoideae.
Habit, Vegetative Morphology. Perennial, caespitose, clumped loosely. Rootstock evident. Culms $12-24 \mathrm{~cm}$ long. Leaf-sheaths keeled. Ligule a ciliolate membrane. Leaf-blades $3-6 \mathrm{~cm}$ long, $1-2 \mathrm{~mm}$ wide.

Inflorescence. Inflorescence composed of racemes. Racemes 1, single, smoothly terete, bilateral, 1.22.5 cm long. Rhachis fragile at the nodes, subcylindrical and excavated. Spikelet packing adaxial, regular, 2 -rowed. Rhachis internodes oblong. Rhachis internode tip transverse, flat. Spikelets appressed, solitary. Fertile spikelets sessile.

Fertile Spikelets. Spikelets comprising 1 fertile florets, with a barren rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, dorsally compressed, $1.6-1.8 \mathrm{~mm}$ long, falling entire, deciduous with accessory branch structures.

Glumes. Glumes one the lower absent or obscure, reaching apex of florets, firmer than fertile lemma. Upper glume ovate, $1.6-1.8 \mathrm{~mm}$ long, 1 length of adjacent fertile lemma, coriaceous, without keels, 5-12veined. Upper glume apex obtuse.

Florets. Fertile lemma lanceolate, 1.5 mm long, membranous, without keel, 3 -veined, 0-3 -veined. Lemma apex obtuse. Palea 2 -veined.

Flower and Fruit. Caryopsis with free soft pericarp. Hilum punctiform.
Distribution (TDWG). Continent. Africa.
Country /Province/State. Northeast Tropical Africa. Socotra.

## Lepturus copeanus B.K. Simon. Fl. Australia 44B:460 (2005).

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

TYPE from Australia. T:<Type of Basionym>: fide TROPICOS and Kew Synonomy Database: Australia: Northern Territory: E of Mataranka, near Roper River, 28 Apr 1947, S.T. Blake 17514 (HT: BRI; IT: CANB).

Illustrations (Books): K.O.Mallett (ed.), Flora of Australia, Vol 44B. Poaceae (2004) (420, Fig 75).
Derivation (Clifford \& Bostock 2007): L. -ana, indicating connection. In honor of Thomas Arthur Cope (1949-) English botanist.

Classification. Subfamily Chloridoideae.
Habit, Vegetative Morphology. Annual. Culms $30-40 \mathrm{~cm}$ long. Leaf-sheaths glabrous on surface, outer margin hairy. Ligule a ciliolate membrane. Collar glabrous. Leaf-blades $3.5-6 \mathrm{~cm}$ long, $4-5 \mathrm{~mm}$ wide. Leaf-blade surface glabrous or pilose, sparsely hairy.

Inflorescence. Inflorescence composed of racemes. Racemes 1, single, bilateral. Rhachis fragile at the nodes, subcylindrical and excavated, glabrous on surface, glabrous on margins. Spikelet packing adaxial, regular, 2 -rowed. Rhachis internodes oblong. Rhachis internode tip transverse, flat. Spikelets sunken, solitary. 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, dorsally compressed, acuminate, $7-8 \mathrm{~mm}$ long, falling entire, deciduous with accessory branch structures. Spikelet callus base truncate, attached transversely.

Glumes. Glumes one the lower absent or obscure, exceeding apex of florets, firmer than fertile lemma. Upper glume lanceolate, $5-6 \mathrm{~mm}$ long, $1.6-2$ length of adjacent fertile lemma, coriaceous, without keels, 7 -veined. Upper glume surface smooth or scabrous, glabrous. Upper glume apex attenuate, awned, 1 -awned, awn 2-5 mm long.

Florets. Fertile lemma elliptic, $2.7-3.7 \mathrm{~mm}$ long, membranous, without keel, 3 -veined, 0-3 -veined. Lemma lateral veins more or less parallel. Lemma surface puberulous, hairy above. Lemma apex entire or erose, acute. Palea keels ciliolate, adorned above. Rhachilla extension 1.2 mm long.

Distribution (TDWG). Continent. Australasia.
Country /Province /State. Australia. Western Australia, Northern Territory, Queensland.
Kimberley. Darwin \& Gulf. North.

Lepturus geminatus C. E. Hubbard. Hook. Ic. Pl. iii. t. 3233. (1934).
Accepted by: W.D.Clayton \& K.Harman, GrassBase (2008) and online, U.Quattrocchi, CRC World Dictionary of Grasses (2006), D.Sharp, D. \& B.K.Simon, AusGrass (2002).

TYPE from Australia. T:<Type of Basionym>: fide TROPICOS and Kew Synonomy Database: Australia, Thursday Is.: Hockings .

Illustrations (Journals): Hooker's Icones Plantarum (t. 3233 (1934)).
Images: D.Sharp \& B.K.Simon, AusGrass. Grasses of Australia. CD-Rom Version 1.0. (2002);,
Derivation (Clifford \& Bostock 2007): L. gemini, twins; -ata, possessing. Inflorescence of paired branches.

Classification. Subfamily Chloridoideae.
Habit, Vegetative Morphology. Perennial. Culms decumbent, $30-60 \mathrm{~cm}$ long. Ligule an eciliate membrane. Leaf-blades flat or convolute, $10-18 \mathrm{~cm}$ long, $2-5 \mathrm{~mm}$ wide. Leaf-blade surface scaberulous.

Inflorescence. Inflorescence composed of racemes. Racemes 1, single, moniliform, bilateral, 2-4.5 cm long. Rhachis fragile at the nodes, flattened, puberulous on surface, glabrous on margins. Spikelet packing
adaxial, opposite, regular, 2 -rowed. Rhachis internodes oblong, $5-6.5 \mathrm{~mm}$ long. Rhachis internode tip transverse, notched. Spikelets sunken, solitary. Fertile spikelets sessile.

Fertile Spikelets. Spikelets comprising 1 fertile florets, with a barren rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, dorsally compressed, acuminate, 5-6 mm long, falling entire, deciduous with accessory branch structures. Spikelet callus base acute, inserted.

Glumes. Glumes one the lower absent or obscure, exceeding apex of florets, firmer than fertile lemma. Upper glume lanceolate, $5-6 \mathrm{~mm}$ long, 1.2-1.3 length of adjacent fertile lemma, coriaceous, without keels, 11-13 -veined. Upper glume surface puberulous. Upper glume apex attenuate, awned, 1 -awned, awn 1017 mm long.

Florets. Fertile lemma elliptic, $4-4.3 \mathrm{~mm}$ long, membranous, without keel, 3 -veined, $0-3$-veined. Lemma surface puberulous. Lemma apex truncate or obtuse. Palea 1 length of lemma, 2 -veined. Palea keels ciliolate, adorned above. Rhachilla extension 0.25 length of fertile floret.

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

Distribution (TDWG). Continent. Australasia.
Country /Province/State. Australia. Northern Territory, Queensland.
Darwin \& Gulf. North.

Lepturus humbertianus A.Camus. Bull. Soc. Bot. France, xciii. 86 (1946).
Accepted by: W.D.Clayton \& K.Harman, GrassBase (2008) and online.
TYPE from Madagascar. T:<Type of Basionym>: fide TROPICOS and Kew Synonomy Database: Madagascar occident.: Mt Morahariva (Mahamena) vallee de la Manambolo, bassin du Mandrare., Humbert 13189 (HT: not designated).

Illustrations (Books): J.Bosser, Graminees des Paturage et des Cultures a Madagascar (1969) (73, Fig 16).

Derivation (Clifford \& Bostock 2007): L. -ana, indicating connection. In honor of Jean Henri Humbert (1887-1967) French botanist who collected in Madagascar.

Classification. Subfamily Chloridoideae.
Habit, Vegetative Morphology. Perennial, caespitose, clumped densely. Stolons present. Culms erect or geniculately ascending, $30-45 \mathrm{~cm}$ long, rooting from lower nodes. Culm-internodes smooth, distally glabrous. Lateral branches ample. Leaf-sheaths glabrous on surface. Ligule an eciliate membrane, 1.5 mm long, truncate. Leaf-blade base without a false petiole or with a false petiole (lower leaves). Leaf-blades 615 cm long, $3-6 \mathrm{~mm}$ wide, glaucous. Leaf-blade surface glabrous. Leaf-blade margins scaberulous. Leafblade apex acuminate.

Inflorescence. Inflorescence composed of racemes. Racemes 1, single, smoothly terete, bilateral, 4-6 cm long. Rhachis fragile at the nodes, subcylindrical and excavated, glabrous on surface, glabrous on margins. Spikelet packing adaxial, regular, 2 -rowed. Rhachis internodes oblong, $4-5.5 \mathrm{~mm}$ long. Rhachis internode tip oblique, flat. Spikelets sunken, 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, dorsally compressed, $3.5-5.5 \mathrm{~mm}$ long, falling entire, deciduous with accessory branch structures.

Glumes. Glumes one the lower absent or obscure (but terminal spikelet with 2 glumes $7-8 \mathrm{~mm}$ long), exceeding apex of florets, firmer than fertile lemma. Upper glume oblong, $3.5-5.5 \mathrm{~mm}$ long, coriaceous, without keels, 9 -veined. Upper glume lateral veins ribbed. Upper glume apex acute or acuminate.

Florets. Fertile lemma ovate, 3-4 mm long, membranous, without keel, 3 -veined, $0-3$-veined. Lemma surface glabrous. Lemma apex acute. Palea 2 -veined. Apical sterile florets 1 in number, linear, 1 mm long.

Flower and Fruit. Lodicules 2. Anthers 3. Stigmas 2.
Distribution (TDWG). Continent. Africa.
Country /Province/State. Western Indian Ocean. Madagascar.

Lepturus minutus B.K. Simon. Flora of Australia 44B:461 (2005).
Accepted by: W.D.Clayton \& K.Harman, GrassBase (2008) and online, U.Quattrocchi, CRC World Dictionary of Grasses (2006).

TYPE from Australia. T:<Type of Basionym>: fide TROPICOS and Kew Synonomy Database: Australia: Queensland: Forty Mile Scrub National Park, 31 Mar 2001, R.J. Fensham 4379 (HT: BRI; IT: CANB, K, NSW).

Illustrations (Books): K.O.Mallett (ed.), Flora of Australia, Vol 44B. Poaceae (2004) (420, Fig 75).
Derivation (Clifford \& Bostock 2007): L. very small. Smaller than usual in some respect.
Classification. Subfamily Chloridoideae.
Habit, Vegetative Morphology. Annual. Culms decumbent, $5-20 \mathrm{~cm}$ long. Leaf-sheaths pilose. Ligule a ciliolate membrane. Collar glabrous. Leaf-blades $0.3-2 \mathrm{~cm}$ long, $1-2.5 \mathrm{~mm}$ wide. Leaf-blade surface glabrous.

Inflorescence. Inflorescence composed of racemes. Racemes 1, single, bilateral, 0.8-3.5 cm long. Rhachis fragile at the nodes, subcylindrical and excavated, glabrous on surface, glabrous on margins. Spikelet packing adaxial, regular, 2 -rowed. Rhachis internodes oblong. Rhachis internode tip transverse, flat. Spikelets sunken, solitary. Fertile spikelets sessile.

Fertile Spikelets. Spikelets comprising 1 fertile florets, with a barren rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, dorsally compressed, acuminate, $2.5-3 \mathrm{~mm}$ long, falling entire, deciduous with accessory branch structures. Spikelet callus base truncate, attached transversely.

Glumes. Glumes one the lower absent or obscure, reaching apex of florets, firmer than fertile lemma. Upper glume lanceolate, $2-2.5 \mathrm{~mm}$ long, 1 length of adjacent fertile lemma, coriaceous, without keels, 7-9 -veined. Upper glume surface smooth or asperulous, glabrous. Upper glume apex attenuate, muticous or awned, 1 -awned, awn 1-2 mm long.

Florets. Fertile lemma elliptic, 2-2.5 mm long, membranous, without keel, 3 -veined, 0-3 -veined. Lemma surface glabrous. Lemma apex erose, acute. Palea keels eciliate. Rhachilla extension 0.3 mm long.

Distribution (TDWG). Continent. Australasia.
Country /Province/State. Australia. Queensland.
North.

## Lepturus nesiotes T.A.Cope. Kew Bull. 61: 244 (2006).

Accepted by: W.D.Clayton \& K.Harman, GrassBase (2008) and online.
TYPE from Socotra, Africa. T:<Type of Basionym>: fide TROPICOS and Kew Synonomy Database: Socotra: Miller 19075 (E holo).

Illustrations: None found.
Derivation (Clifford \& Bostock 2007): Gk islander. From St Lucia, one of the Leeward Islands.
Classification. Subfamily Chloridoideae.
Habit, Vegetative Morphology. Perennial, caespitose, clumped loosely. Rootstock evident. Culms $20-40 \mathrm{~cm}$ long. Leaf-sheaths keeled. Ligule a ciliolate membrane. Leaf-blades $5-10 \mathrm{~cm}$ long, $1-2 \mathrm{~mm}$ wide.

Inflorescence. Inflorescence composed of racemes. Racemes 1, single, smoothly terete, bilateral, 2-3 cm long. Rhachis fragile at the nodes, wingless, subcylindrical and excavated. Spikelet packing adaxial, regular, 2 -rowed. Rhachis internodes oblong. Rhachis internode tip transverse, flat. Spikelets sunken, solitary. Fertile spikelets sessile.

Fertile Spikelets. Spikelets comprising 1 fertile florets, with a barren rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets oblong or ovate, dorsally compressed, 4 mm long, falling entire, deciduous with accessory branch structures.

Glumes. Glumes one the lower absent or obscure, reaching apex of florets, firmer than fertile lemma. Upper glume oblong or ovate, 4 mm long, 1 length of adjacent fertile lemma, coriaceous, without keels. Upper glume surface pubescent, hairy on veins. Upper glume apex acute.

Florets. Fertile lemma lanceolate, 4 mm long, membranous, without keel, 3 -veined, $0-3$-veined. Lemma apex acute.

Distribution (TDWG). Continent. Africa.

## Country /Province /State. Northeast Tropical Africa. Socotra.

Lepturus perrieri A. Camus. Bull. Soc. Bot. France, 93: 87 (1946).
Accepted by: W.D.Clayton \& K.Harman, GrassBase (2008) and online.
TYPE from Madagascar. T:<Type of Basionym>: fide TROPICOS and Kew Synonomy Database: Madagascar, Manampetsa: Perrier 19109.

Illustrations: None found.
Classification. Subfamily Chloridoideae.
Habit, Vegetative Morphology. Annual, caespitose. Culms erect, $35-40 \mathrm{~cm}$ long. Culm-internodes smooth, distally glabrous. Leaf-sheaths mostly shorter than adjacent culm internode. Ligule a ciliolate membrane. Leaf-blades convolute, $7-11 \mathrm{~cm}$ long.

Inflorescence. Inflorescence composed of racemes. Racemes 1, single, smoothly terete, bilateral, 3.8-4 cm long. Rhachis fragile at the nodes, subcylindrical and excavated, $1-2 \mathrm{~mm}$ wide, glabrous on surface, glabrous on margins. Spikelet packing adaxial, opposite, regular, 2 -rowed. Rhachis internodes oblong, $5.2-5.5 \mathrm{~mm}$ long. Rhachis internode tip transverse, flat. Spikelets sunken, solitary. Fertile spikelets sessile.

Fertile Spikelets. Spikelets comprising 2 fertile florets. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets oblong, dorsally compressed, 4-4.2 mm long, falling entire, deciduous with accessory branch structures.

Glumes. Glumes one the lower absent or obscure (but terminal spikelet with 2 glumes 5 mm long), exceeding apex of florets, firmer than fertile lemma. Upper glume lanceolate, 4-4.2 mm long, coriaceous, without keels. Upper glume apex acute, muticous.

Florets. Fertile lemma lanceolate, 3.2-3.5 mm long, coriaceous, without keel, 3 -veined, $0-3$-veined. Lemma apex obtuse. Palea 1 length of lemma.

Distribution (TDWG). Continent. Africa.
Country /Province/State. Western Indian Ocean. Madagascar.

Lepturus pilgerianus I. Hansen \& Potztal. Engl. Bot. Jahrb. lxxvi. 268 (1954).
Accepted by: W.D.Clayton \& K.Harman, GrassBase (2008) and online, U.Quattrocchi, CRC World Dictionary of Grasses (2006).

TYPE from Canton Island. T:<Type of Basionym>: fide TROPICOS and Kew Synonomy Database: TYPE COLLECTION: O. Degener \& W. Hatheway DEGENER HERB. 21291, 14 Jul 1950, Kiribati: Phoenix Is., Canton I. (US-2181536).

Illustrations (Books): R.Pilger, Die Naturlichen Pflanzenfamilien 14d (1956) (74, Fig. 17).
Derivation (Clifford \& Bostock 2007): L. -ana, indicating connection. In honor of Robert Knuds Friedrich Pilger (1876-1953) German agrostologist, born on Helgoland before its transfer from British to German administration.

Classification. Subfamily Chloridoideae.
Habit, Vegetative Morphology. Perennial, caespitose, clumped densely. Culms erect, 18-28 cm long. Leaf-sheaths glabrous on surface. Ligule an eciliate membrane, 1 mm long. Leaf-blades erect, involute, 310 cm long, 3-5 mm wide, coriaceous, stiff. Leaf-blade surface scabrous, rough adaxially. Leaf-blade apex acuminate, pungent.

Inflorescence. Inflorescence composed of racemes. Racemes 1, single, smoothly terete, bilateral, 8-11 cm long. Rhachis fragile at the nodes, subcylindrical and excavated, glabrous on surface, glabrous on margins. Spikelet packing adaxial, regular, 2 -rowed. Rhachis internodes oblong, $4-8 \mathrm{~mm}$ long. Rhachis internode tip oblique, flat. Spikelets sunken, solitary. Fertile spikelets sessile.

Fertile Spikelets. Spikelets comprising 1 fertile florets, with a barren rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, dorsally compressed, $5-6 \mathrm{~mm}$ long, falling entire, deciduous with accessory branch structures.

Glumes. Glumes one the lower absent or obscure, exceeding apex of florets, firmer than fertile lemma. Upper glume lanceolate, $5-6 \mathrm{~mm}$ long, 1.1-1.2 length of adjacent fertile lemma, coriaceous, without keels, 9 -veined. Upper glume lateral veins ribbed. Upper glume apex acuminate to setaceously acuminate.

Florets. Fertile lemma ovate, $4.5-5.2 \mathrm{~mm}$ long, membranous, without keel, 3 -veined, $0-3$-veined. Lemma apex obtuse. Palea $4-4.5 \mathrm{~mm}$ long, 2 -veined. Rhachilla extension 1.2 mm long.

Flower and Fruit. Lodicules 2, cuneate, 0.4 mm long. Anthers 3, 2.2 mm long. Stigmas 2. Ovary glabrous. Caryopsis with free soft pericarp.

Distribution (TDWG). Continent. Pacific.
Country /Province/State. Southwestern Pacific. Phoenix Archipelago.

Lepturus pulchellus (Balf.f.) W.D. Clayton. Kew Bull., 37(3): 420 : (1982).
Accepted by: W.D.Clayton \& K.Harman, GrassBase (2008) and online, U.Quattrocchi, CRC World Dictionary of Grasses (2006).

TYPE from Socotra, Africa. Basionym or Replaced Name: Ischnurus pulchellus Balf. f., Proc. Roy. Soc. Edinburgh 12: 98 (1883)
. T:<Type of Basionym>: fide TROPICOS and Kew Synonomy Database: Socotra, Galonsir: Balfour 109 (K syn.) ; Socotra, Galonsir: Balfour 301 (K syn.).

Illustrations (Books): R.Pilger, Die Naturlichen Pflanzenfamilien 14d (1956) (76, Fig. 18 as Ischnurus).

Derivation (Clifford \& Bostock 2007): L. pretty. Attractive in some respect, usually the inflorescence. Classification. Subfamily Chloridoideae.
Habit, Vegetative Morphology. Perennial, caespitose. Basal innovations flabellate. Culms 5-14(-40) cm long. Leaf-sheaths keeled. Ligule a ciliolate membrane. Leaf-blades $1-20 \mathrm{~cm}$ long, $0.5-2 \mathrm{~mm}$ wide.

Inflorescence. Inflorescence composed of racemes, embraced at base by subtending leaf. Racemes 1 , single, smoothly terete, bilateral, $1.5-2.5 \mathrm{~cm}$ long. Rhachis fragile at the nodes, subcylindrical and excavated. Spikelet packing adaxial, regular, 2 -rowed. Rhachis internodes oblong, 3 mm long (auriculate at base). Rhachis internode tip oblique, flat. Spikelets sunken (and concavely depressed within the hollow), solitary. Fertile spikelets sessile.

Fertile Spikelets. Spikelets comprising 1 fertile florets, with a barren rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets oblong, dorsally compressed, $1.5-2 \mathrm{~mm}$ long, falling entire, deciduous with accessory branch structures.

Glumes. Glumes one the lower absent or obscure, reaching apex of florets, firmer than fertile lemma. Upper glume oblong, $1.5-2 \mathrm{~mm}$ long, 1 length of adjacent fertile lemma, coriaceous, without keels, 5-12 veined. Upper glume apex truncate.

Florets. Fertile lemma ovate, $1.5-2 \mathrm{~mm}$ long, membranous, without keel, 3 -veined, $0-3$-veined. Lemma apex obtuse. Palea 2 -veined.

Flower and Fruit. Caryopsis with free soft pericarp, ellipsoid, dorsally compressed. Hilum punctiform. Distribution (TDWG). Continent. Africa.
Country /Province/State. Northeast Tropical Africa. Socotra.

Lepturus radicans (Steud.) A. Camus. Ann. Soc. Linn. Lyon n. s. lxix. 87 (1923).
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 Madagascar. Basionym or Replaced Name: Ophiuros radicans Steud., Syn. Pl. Glumac. 1: 430 (1855)

T:<Type of Basionym>: fide TROPICOS and Kew Synonomy Database: Madagascar, Nossibe: Boivin 1980 (P holo, K).

Illustrations (Books): G.V.Pope et al., Flora Zambesiaca 10 (2(1999):203 t. 58), J.Bosser, Graminees des Paturage et des Cultures a Madagascar (1969) (91, Fig 24), G.G.Potgar, C.B.Salunkhe \& S.R.Yadav, Grasses of Maharashtra (2012).

Images: G.G.Potgar, C.B.Salunkhe \& S.R.Yadav, Grasses of Maharashtra (2012)
(Pl. 22).
Derivation (Clifford \& Bostock 2007): L. radico, take root. Putting forth aerial roots from lower nodes. Classification. Subfamily Chloridoideae.
Habit, Vegetative Morphology. Perennial. Stolons present. Culms erect or geniculately ascending, $10-30 \mathrm{~cm}$ long. Ligule a ciliolate membrane. Leaf-blade base without a false petiole or with a false petiole
(lower leaves). Leaf-blades linear or lanceolate, $2-12.5 \mathrm{~cm}$ long, $4-8 \mathrm{~mm}$ wide, mid-green or glaucous. Leaf-blade apex attenuate.

Inflorescence. Inflorescence composed of racemes. Racemes 1, single, smoothly terete, bilateral, 2-6.5 cm long. Rhachis fragile at the nodes, subcylindrical and excavated, glabrous on surface, glabrous on margins. Spikelet packing adaxial, regular, 2 -rowed. Rhachis internodes oblong, $2-5 \mathrm{~mm}$ long. Rhachis internode tip oblique, flat. Spikelets sunken, 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 oblong, dorsally compressed, $3-5 \mathrm{~mm}$ long, falling entire, deciduous with accessory branch structures.

Glumes. Glumes one the lower absent or obscure, exceeding apex of florets, firmer than fertile lemma. Upper glume oblong, 3-5 mm long, 1.2 length of adjacent fertile lemma, coriaceous, without keels, 5-9 veined. Upper glume lateral veins ribbed. Upper glume apex acute or acuminate.

Florets. Fertile lemma ovate, $2.5-4 \mathrm{~mm}$ long, membranous, without keel, 3 -veined, $0-3$-veined. Lemma lateral veins extending close to apex. Lemma surface glabrous or puberulous, hairy below. Lemma apex obtuse. Palea 2 -veined. Palea keels winged, narrowly winged. Apical sterile florets 1 in number, lanceolate, $0-2 \mathrm{~mm}$ long.

Flower and Fruit. Lodicules 2. Anthers 3, 0.6-2 mm long. Stigmas 2. Caryopsis with free soft pericarp, ellipsoid, dorsally compressed. Hilum punctiform.

Distribution (TDWG). Continent. Africa, Tropical Asia.
Country /Province /State. East Tropical Africa, South Tropical Africa, Western Indian Ocean. Kenya, Tanzania. Malawi, Mozambique, Zimbabwe. Comoros, Mauritius, Madagascar, Seychelles. Indian Subcontinent, Malesia. Sri Lanka (*). Malaya.

Karnataka.

## Lepturus repens (Forst.) R. Br. Prod. 207. (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), 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 Tahiti. Basionym or Replaced Name: Rottboellia repens G. Forst., Fl. Ins. Austr. 9 (1786). T:<Type of Basionym>: fide TROPICOS and Kew Synonomy Database: Insula intra tropicos ; Tahiti: Forster (K iso).

Recent Synonyms: Lepturus acutiglumis Steud., Syn. Pl. Gram. 357 (1854). Lepturus gasparicensis Fosberg, Occas. Papers Bishop Mus., Honolulu, 21: No. 14, 293 (1955).

Illustrations (Books): R.M.Polhill, F.T.E.A., Gramineae (2(1974):390, Fig.104), G.E.Gibbs Russell el al, Grasses of Southern Africa (1990) (199, Fig. 121), J.Bosser, Graminees des Paturage et des Cultures a Madagascar (1969) (73, Fig 16), T.A.Cope, in M.Thulin, Poaceae (Gramineae). Flora of Somalia (1995) (199, Fig. 108), T.Koyama, Grasses of Japan and its neighbouring regions (1987) (292, Fig 113), C-C Hsu, Flora of Taiwan, Vol 5 (1978) (432), C-C Hsu,Taiwan Grasses (1975) (495, Pl. 1407), H.B.Gilliland, Grasses of Malaya (1971) (84, Fig. 12), H.Duistermaat, Field Guide to the Grasses of Singapore (2005) (91, Fig. 87as var. repens), J.R.Wheeler et al, Flora of the Kimberley Region (1992), S.W.L.Jacobs, R.D.B.Whalley \& D.J.B.Wheeler,, Grasses of New South Wales, 4th edn (2008) (294), J.C.Tothill,\& J.B.Hacker. The grasses of southern Queensland (1983) (298), T.D.Stanley \& E.Ross, Flora of South East Queensland, Gramineae (1989) (190, Fig. 29), Flora of Australia Oceanic Islands Poaceae 50(1993) \& 49(1994) (50:490 Fig. 91 (1993)), K.O.Mallett (ed.), Flora of Australia, Vol 44B. Poaceae (2004) (425, Fig 76), D.Sharp \& B.K.Simon, AusGrass. Grasses of Australia. CD-Rom Version 1.0. (2002), E.Edgar. \& H.E.Connor, Flora of New Zealand 5, Gramineae (2000) (520, Fig. 20 as var. cinereus), W.L.Wagner et al., Manual of the Flowering Plants of Hawai'i, Vol. 2 (1990) (1559, Pl. 231), S-L Chen et al, Flora of China, Illustrations, Poaceae (2007) (Fig. 435).

Images: H.Duistermaat, Field Guide to the Grasses of Singapore (2005); (as var. repens), H.B.Gilliland et al., Flora of Malaya Vol. 3 Grasses (1971);.

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

Classification. Subfamily Chloridoideae.
Habit, Vegetative Morphology. Perennial. Stolons present. Culms erect or geniculately ascending, $10-60 \mathrm{~cm}$ long. Ligule a ciliolate membrane. Leaf-blade base without a false petiole. Leaf-blades linear or lanceolate, flat or involute, $5-15 \mathrm{~cm}$ long, $2-10 \mathrm{~mm}$ wide, stiff, glaucous. Leaf-blade surface ribbed, scabrous. Leaf-blade apex acute, muticous or pungent.

Inflorescence. Inflorescence composed of racemes. Racemes 1, single, smoothly terete, bilateral, 4-20 cm long. Rhachis fragile at the nodes, subcylindrical and excavated, glabrous on surface, glabrous on margins. Spikelet packing adaxial, regular, 2 -rowed. Rhachis internodes oblong, 3-7.5 mm long. Rhachis internode tip oblique, flat. Spikelets sunken, solitary. Fertile spikelets sessile.

Fertile Spikelets. Spikelets comprising 1 fertile florets, with a barren rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, dorsally compressed, $10-14 \mathrm{~mm}$ long, falling entire, deciduous with accessory branch structures.

Glumes. Glumes one the lower absent or obscure, exceeding apex of florets, firmer than fertile lemma. Upper glume lanceolate, $10-14 \mathrm{~mm}$ long, 2-3 length of adjacent fertile lemma, coriaceous, without keels, 8-12 -veined. Upper glume lateral veins ribbed. Upper glume apex attenuate, muticous or awned, 1 -awned, awn $0-5 \mathrm{~mm}$ long.

Florets. Fertile lemma ovate, $4-5.5 \mathrm{~mm}$ long, membranous, without keel, 3 -veined, $0-3$-veined. Lemma lateral veins extending close to apex. Lemma surface puberulous, hairy below. Lemma apex obtuse. Palea 2 -veined.

Flower and Fruit. Lodicules 2. Anthers 3, 1.5-2.5 mm long. Stigmas 2. Caryopsis with free soft pericarp, ellipsoid, dorsally compressed. Hilum punctiform.

Distribution (TDWG). Continent. Africa, Temperate Asia, Tropical Asia, Australasia, Pacific.
Country /Province /State. Northeast Tropical Africa, East Tropical Africa, South Tropical Africa, Southern Africa, Western Indian Ocean. Somalia. Kenya, Tanzania. Mozambique. Kwazulu-Natal. Aldabra, Mauritius, Madagascar, Seychelles. China, Eastern Asia. Japan Kyushu. Japan, Kazan-retto, Nansei-Shoto, Ogosawara-shoto, Taiwan. Indian Subcontinent, Indo-China, Malesia, Papuasia. Sri Lanka. Thailand, Vietnam. Cocos (Keeling) Is, Java, Lesser Sunda Is, Malaya, Singapore, Moluccas, Philippines, Sulawesi, Sumatra, Christmas I. New Guinea, Solomon Is. Australia, New Zealand. Western Australia, Northern Territory, Queensland, Lord Howe-Norfolk Is. Kermadec Is. Southwestern Pacific, South-central Pacific, Northwestern Pacific, North-central Pacific. Fiji, Gilbert Is, Howland-Baker Is, Nauru, Niue, New Caledonia, Phoenix Archipelago, Samoa, Tonga, Tuvalu, Vanuatu, Wallis-Futuna Is. Cook Is, Easter Is, Line Is, Pitcairn Is, Society Is, Tuamotu Is, Tubuai Is. Caroline Is, Marcus Is, Marianas, Marshall Is, Wake Is. Hawaii.

Kimberley. Darwin \& Gulf. North, Central, South East.

## Lepturus tenuis Balf. f. Proc. Roy. Soc. Edinb. 12 :97 (1884).

Accepted by: W.D.Clayton \& K.Harman, GrassBase (2008) and online.
TYPE from Socotra, Africa. T:<Type of Basionym>: fide TROPICOS and Kew Synonomy Database: Socotra: in campis orientalibus insulae, Balfour, Cockburn \& Scott 572.

Illustrations: None found.
Derivation (Clifford \& Bostock 2007): L. thin. Culms, leaf-blades or pedicels, slender.
Classification. Subfamily Chloridoideae.
Habit, Vegetative Morphology. Perennial, caespitose. Rootstock evident. Culms 20-35 cm long. Leaf-sheaths keeled. Ligule a ciliolate membrane. Leaf-blades $5-10 \mathrm{~cm}$ long, $1-2 \mathrm{~mm}$ wide.

Inflorescence. Inflorescence composed of racemes, embraced at base by subtending leaf. Racemes 1, single, smoothly terete, bilateral, $4-6 \mathrm{~cm}$ long. Rhachis fragile at the nodes, subcylindrical and excavated. Spikelet packing adaxial, regular, 2 -rowed. Rhachis internodes oblong. Rhachis internode tip transverse, flat. Spikelets sunken, solitary. Fertile spikelets sessile.

Fertile Spikelets. Spikelets comprising 1 fertile florets, with a barren rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, dorsally compressed, $5-5.5 \mathrm{~mm}$ long, falling entire, deciduous with accessory branch structures.

Glumes. Glumes one the lower absent or obscure, reaching apex of florets, firmer than fertile lemma. Upper glume lanceolate, $5-5.5 \mathrm{~mm}$ long, 1 length of adjacent fertile lemma, coriaceous, without keels, 512 -veined. Upper glume apex acute.

Florets. Fertile lemma lanceolate, 5-5.5 mm long, membranous, without keel, 3 -veined, $0-3$-veined. Lemma apex acute. Palea 2 -veined.

Flower and Fruit. Caryopsis with free soft pericarp, ellipsoid, dorsally compressed. Hilum punctiform.
Distribution (TDWG). Continent. Africa.
Country /Province /State. Northeast Tropical Africa. Socotra.

Lepturus xerophilus Domin. Biblioth. Bot. 1(5) 412 (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 Synonomy Database: ST: Domin s.n., Feb 1910, Australia: Queensland: Nord-Queensland, Karsthgel (Blufff) bei Chillagoa ST: Domin s.n., Feb 1910, Australia: Queensland: Boonmoo.

Illustrations (Books): J.R.Wheeler et al, Flora of the Kimberley Region (1992) (1178, Fig 333).
Images: D.Sharp \& B.K.Simon, AusGrass. Grasses of Australia. CD-Rom Version 1.0. (2002);.
Derivation (Clifford \& Bostock 2007): Gk. xeros, dry; phileo, love. Desert species.
Classification. Subfamily Chloridoideae.
Habit, Vegetative Morphology. Annual. Culms geniculately ascending, 30-60 cm long. Ligule a ciliolate membrane. Leaf-blades $2.5-10 \mathrm{~cm}$ long, $2-5 \mathrm{~mm}$ wide.

Inflorescence. Inflorescence composed of racemes. Racemes 1, single, straight or flexuous, bilateral, $2-7 \mathrm{~cm}$ long. Rhachis fragile at the nodes, subcylindrical and excavated, puberulous on surface, glabrous on margins. Spikelet packing adaxial, regular, 2 -rowed. Rhachis internodes oblong, 5-7 mm long. Rhachis internode tip transverse, flat. Spikelets sunken, solitary. Fertile spikelets sessile.

Fertile Spikelets. Spikelets comprising 2 fertile florets, with a barren rhachilla extension. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, dorsally compressed, acuminate, $4-6 \mathrm{~mm}$ long, falling entire, deciduous with accessory branch structures. Spikelet callus base truncate, attached transversely.

Glumes. Glumes one the lower absent or obscure, exceeding apex of florets, firmer than fertile lemma. Upper glume lanceolate, $4-6 \mathrm{~mm}$ long, 1.4-1.5 length of adjacent fertile lemma, coriaceous, without keels, 11 -veined. Upper glume surface puberulous. Upper glume apex attenuate, awned, 1 -awned, awn 2-14 mm long.

Florets. Fertile lemma elliptic, $2.8-3 \mathrm{~mm}$ long, membranous, without keel, 3 -veined, $0-3$-veined. Lemma surface asperulous. Lemma apex acute. Palea 1 length of lemma, 2 -veined. Rhachilla extension 0.2 length of fertile floret.

Flower and Fruit. Lodicules 2. Anthers 3. Stigmas 2. Caryopsis with free soft pericarp, oblong, dorsally compressed, 2 mm long. Embryo 0.6 length of caryopsis. Hilum elliptic.

Distribution (TDWG). Continent. Australasia.
Country /Province /State. Australia. Western Australia, Northern Territory, Queensland.
Kimberley. Darwin \& Gulf. North.

Leucophrys mesocoma (Nees) Rendle. Cat. Afr. Pl. 61, 2:194 (1899).
Accepted by: W.D.Clayton \& K.Harman, GrassBase (2008) and online (as Brachiaria).
TYPE from South Africa. Basionym or Replaced Name: Panicum mesocomum Nees, Fl. Afr. Austral. Ill. 34 (1841). T:<Type of Basionym>: fide TROPICOS and Kew Synonomy Database: IT: J.F. Drége s.n., Sep, South Africa: Natal (L, US-80786 (fragm.)).

Recent Synonyms: Brachiaria mesocoma Bull. Soc. Bot. France, 77: 640 (1931).
Illustrations (Books): L.K.A. Chippindall, Grasses and Pastures of South Africa (1955) (380, Fig 325), M.A.N.Muller, Grasses of South West Africa/Namibia (1984), G.E.Gibbs Russell el al, Grasses of Southern Africa (1990) (200, Fig 122).

Illustrations (Journals): Hooker's Icones Plantarum (t. 3095 (1922)).
Derivation (Clifford \& Bostock 2007): Gk. mesos, middle; koma, hair of head. The lemma of the lower floret has tufts of hairs at its middle.

Classification. Subfamily Panicoideae. Tribe: Paniceae. Subtribe Melinidinae.
Habit, Vegetative Morphology. Perennial, caespitose, clumped loosely. Culms geniculately ascending or decumbent, 30-100 cm long, woody. Culm-internodes glaucous. Culm-nodes swollen. Lateral branches ample. Ligule a fringe of hairs. Leaf-blades flat or involute, $3-12 \mathrm{~cm}$ long, $3-8 \mathrm{~mm}$ wide, glaucous. Leafblade surface glabrous or pubescent. Leaf-blade apex attenuate, callose.

Inflorescence. Inflorescence composed of racemes. Racemes 5-6, borne along a central axis, unilateral, $1-3 \mathrm{~cm}$ long, with branchlets at base of longer racemes. Central inflorescence axis $7-15 \mathrm{~cm}$ long. Rhachis wingless, angular. Spikelet packing adaxial, lax, irregular. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, filiform, glabrous or ciliate, 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 ovate, dorsally compressed, compressed slightly, acute, 7 mm long, $2-3 \mathrm{~mm}$ wide, falling entire. Rhachilla internodes elongated between glumes. Rhachilla elongation $0.8-1.5 \mathrm{~mm}$ long.

Glumes. Glumes dissimilar, reaching apex of florets, thinner than fertile lemma. Lower glume ovate, 1 length of spikelet, hyaline, pallid, without keels, $1-5$-veined. Lower glume surface villous, hairy at base. Lower glume margins ciliolate. Lower glume apex acute. Upper glume ovate, 1 length of spikelet, membranous, without keels, 5-7 -veined. Upper glume surface with a transverse fringe of hair. Upper glume margins ciliolate. Upper glume apex acuminate or rostrate.

Florets. Basal sterile florets 1, male, with palea. Lemma of lower sterile floret similar to upper glume, ovate, 1 length of spikelet, membranous, 5 -veined, sulcate, with dorsal tufts of hair, 2 hair tufts in all, ciliolate on margins, acute or acuminate. Fertile lemma elliptic, 3 mm long, indurate, without keel, 5 veined, more than 3 -veined. Lemma margins involute. Lemma apex obtuse. Palea involute, indurate, without keels.

Flower and Fruit. Anthers 3, 2 mm long.
Distribution (TDWG). Continent. Africa.
Country /Province /State. South Tropical Africa, Southern Africa. Angola. Namibia, Northern Cape.

## Leucopoa kingii (S. Wats.) W. A. Weber. Univ. Colorado Stud., Ser. Biol., No. 23, 2 (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 (as Festuca), U.Quattrocchi, CRC World Dictionary of Grasses (2006).

TYPE from USA. Basionym or Replaced Name: Poa kingii S. Watson, Botany Fortieth Parallel 387 (1871)
. T:<Type of Basionym>: fide TROPICOS and Kew Synonomy Database: IT: S. Watson 1317, Jul 186-, USA: Nevada (US-556202).

Recent Synonyms: Festuca kingii (Wats.) Cassidy, Bull. Agric. Exper. Sta., Colorado, 12: 36 (1890).
Illustrations (Books): M.E.Barkworth et al, Flora of North America north of Mexico Vol 24 Poaceae, part 1 (2007) (444).

Derivation (Clifford \& Bostock 2007): in honor of Clarence King (1842-1901) United States geologist and explorer.

Classification. Subfamily Pooideae. Tribe: Poeae.
Habit, Vegetative Morphology. Perennial, caespitose, clumped densely. Butt sheaths persistent and investing base of culm, with compacted dead sheaths. Culms erect, $30-60 \mathrm{~cm}$ long. Culm-internodes smooth or scaberulous. Lateral branches lacking. Leaf-sheaths glabrous on surface. Ligule an eciliate membrane, $0.5-2 \mathrm{~mm}$ long, pubescent on abaxial surface, erose. Leaf-blades erect, flat or involute, 3-6 mm wide, stiff, glaucous. Leaf-blade surface glabrous. Dioecious.

Inflorescence. Inflorescence a panicle. Panicle contracted, lanceolate, $10-20 \mathrm{~cm}$ long. Primary panicle branches appressed, bearing spikelets almost to the base. 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 ovate, laterally compressed, $10-12 \mathrm{~mm}$ long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, similar, shorter than spikelet. Lower glume lanceolate, 4-6.5 mm long, $0.66-1$ length of upper glume, chartaceous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume apex acute. Upper glume lanceolate, $4-6.5 \mathrm{~mm}$ long, $0.75-0.9$ length of adjacent fertile lemma, chartaceous, without keels, 3 -veined. Upper glume apex acute.

Florets. Fertile florets female. Fertile lemma ovate, 6-7 mm long, chartaceous, keeled, lightly keeled, 5 -veined, more than 3-veined. Lemma lateral veins obscure. Lemma surface scaberulous. Lemma apex acuminate, muticous. Palea 1 length of lemma, 2 -veined. Palea keels scabrous. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Anthers 3, 3 mm long. Caryopsis with adherent pericarp. Hilum linear.
Male inflorescence similar to female. Male spikelets resembling female.
Distribution (TDWG). Continent. North America.
Country /Province /State. Northwest USA, North-central USA, Southwestern USA. Colorado, Oregon, Wyoming. Kansas, Nebraska. California, Nevada, Utah.
xLeydeum dutillyanum (Lepage) Barkworth. Phytologia 83(4): 309 (1997) [1998].
Basionym or Replaced Name: XElymordeum dutillyanum Lepage, Naturaliste Canad. 84: 97, f. 3 (1957). T:<Type of Basionym>: fide TROPICOS and Kew Synonomy Database: Canada: Quebec: Baie James, Vieux Comptoir 52?37' N., $78 ? 420$ surla haut rivage, 29 Jul 1954, Dutilly, Lepage \& Duman 32996.

Illustrations (Books): M.E.Barkworth et al, Flora of North America north of Mexico Vol 24 Poaceae, part 1 (2007) (371).

Classification. Subfamily Pooideae. Tribe: Triticeae.
xLeydeum littorale (H.J. Hodgs. \& W.W. Mitch.) Barkworth. Sida 22(1): 498 (2006).
Basionym or Replaced Name: XElymordeum littorale H.J. Hodgs. \& W.W. Mitch., Canad. J. Bot. 43: 1355 (1965).

Illustrations (Books): M.E.Barkworth et al, Flora of North America north of Mexico Vol 24 Poaceae, part 1 (2007) (371).

Classification. Subfamily Pooideae. Tribe: Triticeae.
xLeydeum piperi (Bowden) Barkworth. Phytologia 83: 309 (1997 [1998].
Accepted by: R.J.Soreng et al., Catalogue of New World Grasses (2000-2003) and online.
Basionym or Replaced Name: XElymordeum piperi Bowden, Canad. J. Bot. 36: 106 (1958). T:<Type of Basionym>: fide TROPICOS and Kew Synonomy Database: USA: Oregon: Hot Lake, 22 Jun 1921, C.V. Piper s.n. (HT: US-1107887).

Illustrations (Books): M.E.Barkworth et al, Flora of North America north of Mexico Vol 24 Poaceae, part 1 (2007) (371).

Classification. Subfamily Pooideae. Tribe: Triticeae.

Leymus aemulans (Nevski) Tzvelev. Not. Syst. Herb. Inst. Bot. Acad. Sci. URSS, 20: 430 (1960).
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. Basionym or Replaced Name: Aneurolepidium aemulans Nevski, Fl. URSS 2 : 710 (1934)
. T:<Type of Basionym>: fide TROPICOS and Kew Synonomy Database: Russia, Aulie-Ata: Knorring 114 (LE holo).

Illustrations: None found.
Derivation (Clifford \& Bostock 2007): L. aemulor, come near to. Rather similar to another species.
Classification. Subfamily Pooideae. Tribe: Triticeae.
Habit, Vegetative Morphology. Perennial, caespitose, clumped densely. Rhizomes short. Culms 5080 cm long. Ligule an eciliate membrane. Leaf-blades flat or involute, $1-2.5 \mathrm{~mm}$ wide, coriaceous, stiff, glaucous. Leaf-blade surface scabrous, rough adaxially.

Inflorescence. Inflorescence composed of racemes. Racemes 1, single, linear, bilateral, 5-10 cm long. Spikelet packing broadside to rhachis, lax. Rhachis internodes linear. Spikelets appressed, solitary. Fertile spikelets sessile.

Fertile Spikelets. Spikelets comprising 3-5 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets oblong, laterally compressed, $15-20 \mathrm{~mm}$ long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, similar, shorter than spikelet. Lower glume subulate, $3-5.5 \mathrm{~mm}$ long, 0.5 length of upper glume, coriaceous, 1 -veined. Lower glume lateral veins absent. Upper glume subulate, $6-$ 12 mm long, $0.6-1$ length of adjacent fertile lemma, coriaceous, 1 -veined. Upper glume lateral veins absent.

Florets. Fertile lemma lanceolate, $10-12 \mathrm{~mm}$ long, coriaceous, without keel, 5 -veined, more than 3veined. Lemma lateral veins obscure. Lemma apex acuminate, awned, 1 -awned. Principal lemma awn 3-4 mm long overall. Palea 2 -veined. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. $2 n=28$ ( 1 ref TROPICOS).
Distribution (TDWG). Continent. Temperate Asia.
Country /Province /State. Middle Asia, China, Russia. Kazakhstan, Kirgizistan, Turkmenistan, Uzbekistan. Xinjiang.

Leymus ajanensis (V. Vassil.) Tsvelev. Novosti Sist. Vyssh. Rast., 9: 59 (1972).
Accepted by: R.J.Soreng et al., Catalogue of New World Grasses (2000-2003) and online, W.D.Clayton \& K.Harman, GrassBase (2008) and online, U.Quattrocchi, CRC World Dictionary of Grasses (2006), N.Tsvelev, Grasses of the Soviet Union (1983).

TYPE from Russia. Basionym or Replaced Name: Asperella ajanensis V.N. Vassil., Bot. Mater. Gerb. Bot. Inst. Komarova Acad. Nauk SSSR 8: 216 (1940)
. T:<Type of Basionym>: fide TROPICOS and Kew Synonomy Database: Russia, Ajan: Tiling (LE holo).

Illustrations: None found.
Derivation (Clifford \& Bostock 2007): L. -ensis, denoting origin. From Ajan, on the coast of Okhotsk Sea, Siberia.

Classification. Subfamily Pooideae. Tribe: Triticeae.
Habit, Vegetative Morphology. Perennial, caespitose. Rhizomes short. Culms 40-80 cm long. Ligule an eciliate membrane. Leaf-blades flat or convolute, 3-6 mm wide, coriaceous, stiff, glaucous. Leaf-blade surface scabrous, rough adaxially.

Inflorescence. Inflorescence composed of racemes. Peduncle pubescent above. Racemes 1, single, linear, bilateral, $5-10 \mathrm{~cm}$ long. Rhachis pubescent on margins. Spikelet packing broadside to rhachis. Rhachis internodes linear. Spikelets appressed, in pairs or in threes. Fertile spikelets sessile, 2-3 in the cluster.

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, $10-18 \mathrm{~mm}$ long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, similar, shorter than spikelet. Lower glume lanceolate, 1 length of upper glume, chartaceous, 3 -veined. Lower glume lateral veins obscure. Lower glume surface pubescent, hairy above. Upper glume lanceolate, 5-12 mm long, 0.8-1 length of adjacent fertile lemma, chartaceous, 3 veined. Upper glume lateral veins obscure. Upper glume surface pubescent, hairy above.

Florets. Fertile lemma lanceolate, 6-14 mm long, coriaceous, without keel, 5 -veined, more than 3veined. Lemma surface pubescent. Lemma apex acute, muticous. Palea 2 -veined. Palea keels scabrous, eciliate. Apical sterile florets resembling fertile though underdeveloped.

Distribution (TDWG). Continent. Temperate Asia, North America.
Country /Province /State. Siberia, Russian Far East. Krasnoyarsk. Kamchatka, Magadan. Subarctic America. Alaska.

Leymus akmolinensis (Drobov) Tsvelev. Not. Syst. Herb. Inst. Bot. Acad. Sci. URSS, 20: 430 (1960).
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: Elymus akmolinensis Drobow, Trudy Bot. Muz. Imp. Akad. Nauk 14: 133, t. 1, f. 1, 3 (1915)

T:<Type of Basionym>: fide TROPICOS and Kew Synonomy Database: ST: Drobov 561, 1913, USSR: In salsis, declivis argillosis et ripis lacum

ST: Drobov 687, 1913, In salsis, declivis argillasis et ripis lacum
ST: Drobov 719, 1913, In salsis, declivis argillosis et ripis lacum
ST: Ganeschin 1130, 1914,.
Illustrations: None found.
Derivation (Clifford \& Bostock 2007): L. -ensis, denoting origin. From Akmolinsk, Kazakhstan, former Soviet Union.

Classification. Subfamily Pooideae. Tribe: Triticeae.
Habit, Vegetative Morphology. Perennial, pluricaespitose. Rhizomes short. Culms 45-80 cm long. Ligule an eciliate membrane. Leaf-blades flat or convolute, $3-5 \mathrm{~mm}$ wide, coriaceous, stiff, glaucous. Leafblade venation prominent. Leaf-blade surface scabrous, rough adaxially.

Inflorescence. Inflorescence composed of racemes. Racemes 1, single, linear, bilateral, 6-10 cm long, $5-7 \mathrm{~mm}$ wide. Rhachis pubescent on margins. Spikelet packing broadside to rhachis. Rhachis internodes linear. Spikelets appressed, in pairs. Fertile spikelets sessile, 2 in the cluster.

Fertile Spikelets. Spikelets comprising 3-5 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets oblong, laterally compressed, 8-13 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, similar, shorter than spikelet. Lower glume subulate, 1 length of upper glume, coriaceous, 1 -veined. Lower glume lateral veins absent. Lower glume surface scabrous. Upper glume subulate, $7-10 \mathrm{~mm}$ long, 1.2 length of adjacent fertile lemma, coriaceous, 1 -veined. Upper glume lateral veins absent. Upper glume surface scabrous.

Florets. Fertile lemma lanceolate, 6-8.5 mm long, coriaceous, without keel, 5 -veined, more than 3veined. Lemma apex acuminate, awned, 1 -awned. Principal lemma awn $1-2 \mathrm{~mm}$ long overall. Palea 2 veined. Palea keels ciliate. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. $2 n=28$ ( 1 ref TROPICOS).
Distribution (TDWG). Continent. Europe, Temperate Asia.
Region. Eastern Europe.
Country /Province /State. East European Russia. Siberia, Middle Asia. Altay, Irkutsk, Tuva. Kazakhstan.

Leymus alaicus (Korsh.) Tsvelev. Not. Syst. Herb. Inst. Bot. Acad. Sci. URSS, 20: 429 (1960).
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: Elymus alaicus Korsh., Mem. Acad. Imp. Sci. Saint-Petersbourg, Ser. 6, Sci. Math., Seconde Pt. Sci. Nat. 4(4): 77, 102 (1896)
. T:<Type of Basionym>: fide TROPICOS and Kew Synonomy Database: ST: 5-18 Jul, in valle Alaj
ST: 5-18 Jul, ad fl. Birdshar
ST: 5-18 Jul, in loco Bachmir
ST: 5-18 Jul, ad rivulum Tarascha
ST: 5-18 Jul, ad trajectum Kulduk etc.
ST: 5-18 Jul, fl. legi.
Illustrations: None found.
Derivation (Clifford \& Bostock 2007): L. -ica, belonging to. From the Alaj valley, Turkestania, former Soviet Union.

Classification. Subfamily Pooideae. Tribe: Triticeae.

Habit, Vegetative Morphology. Perennial, caespitose, clumped densely. Butt sheaths persistent and investing base of culm, with compacted dead sheaths. Culms $60-100 \mathrm{~cm}$ long. Culm-internodes smooth. Ligule an eciliate membrane. Leaf-blades flat or involute, $3-6 \mathrm{~mm}$ wide, coriaceous, stiff, glaucous. Leafblade surface scabrous, rough on both sides. Leaf-blade margins scabrous.

Inflorescence. Inflorescence composed of racemes. Peduncle antrorsely scabrous above. Racemes 1, single, linear, bilateral, $9-14 \mathrm{~cm}$ long. Rhachis scabrous on margins. Spikelet packing broadside to rhachis, crowded. Rhachis internodes linear. Spikelets appressed, in pairs or in threes. Fertile spikelets sessile, 2-3 in the cluster.

Fertile Spikelets. Spikelets comprising 4-5 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets oblong, laterally compressed, 13-19 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, similar, shorter than spikelet. Lower glume subulate, 1 length of upper glume, coriaceous, 1 -veined. Lower glume lateral veins absent. Lower glume surface scabrous. Upper glume subulate, $9-15 \mathrm{~mm}$ long, $1-1.4$ length of adjacent fertile lemma, coriaceous, 1 -veined. Upper glume lateral veins absent. Upper glume surface scabrous.

Florets. Fertile lemma lanceolate, $9-11 \mathrm{~mm}$ long, coriaceous, without keel, 7 -veined, more than 3veined. Lemma surface asperulous, puberulous, hairy all along or above. Lemma apex acuminate, awned, 1 -awned. Principal lemma awn 2.5-3 mm long overall. Palea 2 -veined. Apical sterile florets resembling fertile though underdeveloped.

Distribution (TDWG). Continent. Temperate Asia.
Country /Province /State. Middle Asia, China. Kazakhstan, Turkmenistan.

Leymus altus D.F. Cui. Fl. Xinjiangensis, 6: 604 ;et in Bull. Bot. Res. North-East. Forest. Univ., 18(2): 144 (1996).

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

TYPE from China. T:<Type of Basionym>: fide TROPICOS and Kew Synonomy Database: China: Xinjiang: Yecheng Xian, Uqiabashi, in hortis et admargines agrorum, $2200 \mathrm{~m}, 13$ Aug. 1983, N.R. Cui 830257 (HT: XJA-1AC; IT: JSBI).

Illustrations (Books): S-L Chen et al, Flora of China, Illustrations, Poaceae (2007) (Fig. 548).
Derivation (Clifford \& Bostock 2007): L. tall. Culms tall, relative to those of other members of the genus.

Classification. Subfamily Pooideae. Tribe: Triticeae.
Habit, Vegetative Morphology. Perennial, culms solitary or caespitose, clumped loosely. Culms erect, $80-150 \mathrm{~cm}$ long, 2 -noded. Culm-internodes glaucous, smooth, distally glabrous. Leaves mostly basal. Leaf-sheaths smooth, glabrous on surface. Ligule an eciliate membrane, 2 mm long. Leaf-blades flat or involute, $4-5 \mathrm{~mm}$ wide, stiff. Leaf-blade surface scabrous, rough adaxially.

Inflorescence. Inflorescence composed of racemes. Racemes 1, single, erect, bilateral, 8-15 cm long, $7-9 \mathrm{~mm}$ wide. Rhachis flattened, puberulous on surface. Spikelet packing broadside to rhachis. Rhachis internodes $5-30 \mathrm{~mm}$ long. Spikelets in pairs or in threes. Fertile spikelets sessile, (1-)2-3 in the cluster.

Fertile Spikelets. Spikelets comprising 4-6 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets elliptic, laterally compressed, $15-18 \mathrm{~mm}$ long, breaking up at maturity, disarticulating below each fertile floret. Spikelet callus pilose. Rhachilla internodes $1.5-2 \mathrm{~mm}$ long, pubescent. Floret callus pilose. Floret callus hairs 1 mm long.

Glumes. Glumes persistent, similar, subequal in width, shorter than spikelet. Lower glume linear, 1015 mm long, 0.9 length of upper glume, coriaceous, much thinner on margins, 1 -keeled, 3 -veined. Lower glume lateral veins obscure. Lower glume margins ciliate. Lower glume apex acuminate to setaceously acuminate. Upper glume linear, $10-15 \mathrm{~mm}$ long, 1 length of adjacent fertile lemma, coriaceous, with membranous margins, 1 -keeled, 3 -veined. Upper glume lateral veins obscure. Upper glume margins ciliate. Upper glume apex attenuate or setaceously acuminate.

Florets. Fertile lemma lanceolate, $10-14 \mathrm{~mm}$ long, chartaceous, keeled, 5 -veined, more than 3-veined. Lemma surface puberulous. Lemma margins ciliate. Lemma apex acuminate, awned, 1 -awned. Principal
lemma awn 1-3 mm long overall. Palea 1 length of lemma, 2 -veined, 2 -keeled. Palea keels ciliate, adorned above. Palea apex emarginate. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Anthers 3, 3-4 mm long, yellow. Caryopsis with adherent pericarp.
Distribution (TDWG). Continent. Temperate Asia.
Country /Province /State. China. Xinjiang.
Leymus ambiguus (Vasey \& Scribn.) D.R. Dewey. Brittonia, 35(1): 32: (1983).
Accepted by: R.J.Soreng et al., Catalogue of New World Grasses (2000-2003) and online, W.D.Clayton \& K.Harman, GrassBase (2008) and online, U.Quattrocchi, CRC World Dictionary of Grasses (2006).

TYPE from USA. Basionym or Replaced Name: Elymus ambiguus Vasey \& Scribn., Contr. U.S. Natl. Herb. 1(8): 280 (1893)
. T:<Type of Basionym>: fide TROPICOS and Kew Synonomy Database: HT: G.R. Vasey s.n., 1884, USA: Colorado: Pen Gulch (US-2489459; IT: US-2489455).

Illustrations (Books): M.E.Barkworth et al, Flora of North America north of Mexico Vol 24 Poaceae, part 1 (2007) (365).

Derivation (Clifford \& Bostock 2007): L. uncertain. Species that may be readily confused with others or do not necessarily belong in the genus in which they have been placed or are intermediate in characters between other genera.

Classification. Subfamily Pooideae. Tribe: Triticeae.
Habit, Vegetative Morphology. Perennial, caespitose. Rhizomes absent or short. Culms $30-90 \mathrm{~cm}$ long. Leaf-sheaths glabrous on surface or pubescent. Leaf-sheath auricles absent or falcate. Ligule a ciliolate membrane, $0.5-1.5 \mathrm{~mm}$ long. Leaf-blades involute, $5-20 \mathrm{~cm}$ long, $1-4 \mathrm{~mm}$ wide, coriaceous, stiff, glaucous. Leaf-blade surface ribbed, pubescent or pilose, hairy abaxially.

Inflorescence. Inflorescence composed of racemes. Racemes 1, single, erect, bilateral, 5-15 cm long. Spikelet packing broadside to rhachis. Rhachis internodes linear. Spikelets in pairs. Fertile spikelets sessile, 2 in the cluster.

Fertile Spikelets. Spikelets comprising 2-4 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets oblong, laterally compressed, $9-15 \mathrm{~mm}$ long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes collateral, persistent, similar. Lower glume subulate, $3-15 \mathrm{~mm}$ long, coriaceous, 1 veined. Lower glume lateral veins absent. Lower glume surface glabrous or pubescent. Upper glume subulate, $3-15 \mathrm{~mm}$ long, coriaceous, 1 -veined. Upper glume lateral veins absent. Upper glume surface glabrous or pubescent.

Florets. Fertile lemma lanceolate, $7-12 \mathrm{~mm}$ long, coriaceous, without keel, 5 -veined, more than 3veined. Lemma surface puberulous. Lemma apex acute, muticous or awned, 1 -awned. Principal lemma awn $0-5 \mathrm{~mm}$ long overall. Palea 2 -veined. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Anthers $4-7 \mathrm{~mm}$ long.
$2 n=28$ ( 1 ref TROPICOS), or 56 ( 1 ref TROPICOS).
Distribution (TDWG). Continent. North America.
Country /Province /State. Northwest USA, South-central USA. Colorado, Idaho. New Mexico.

## Leymus angustus (Trin.) Pilger. Engl. Bot. Jahrb. 74: 6 (1947).

Accepted by: R.J.Soreng et al., Catalogue of New World Grasses (2000-2003) and online, W.D.Clayton \& K.Harman, GrassBase (2008) and online, U.Quattrocchi, CRC World Dictionary of Grasses (2006), S-L Chen et al, Flora of China 22 (Poaceae) (2006), N.Tsvelev, Grasses of the Soviet Union (1983).

TYPE from Russia. Basionym or Replaced Name: Elymus angustus Trin., Fl. Altaic. 1: 119 (1829)
. T:<Type of Basionym>: fide TROPICOS and Kew Synonomy Database: Russia: Siberia: in argillosis apricis ad fl. Tachuja,.

Illustrations (Books): K.F.Best, et al, Prairie Grasses (1971) (113 as Elymus angustus), M.E.Barkworth et al, Flora of North America north of Mexico Vol 24 Poaceae, part 1 (2007), S-L Chen et al, Flora of China, Illustrations, Poaceae (2007) (Fig. 544).

Derivation (Clifford \& Bostock 2007): L. narrow. Narrow, with respect to leaf- blades or spicate panicles.

Classification. Subfamily Pooideae. Tribe: Triticeae.
Habit, Vegetative Morphology. Perennial, caespitose. Rhizomes short. Culms geniculately ascending, $60-100 \mathrm{~cm}$ long. Culm-internodes smooth. Ligule an eciliate membrane. Leaf-blades $5-7 \mathrm{~mm}$ wide, coriaceous, stiff, glaucous. Leaf-blade surface scabrous, rough on both sides. Leaf-blade margins scabrous.

Inflorescence. Inflorescence composed of racemes. Peduncle antrorsely scabrous above. Racemes 1, single, linear, bilateral, $10-20 \mathrm{~cm}$ long, $4-10 \mathrm{~mm}$ wide. Rhachis pubescent on margins. Spikelet packing broadside to rhachis, crowded. Rhachis internodes filiform, $10-17 \mathrm{~mm}$ long. Spikelets appressed, in pairs. Fertile spikelets sessile, 2 in the cluster.

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

Glumes. Glumes collateral, persistent, similar, shorter than spikelet. Lower glume lanceolate, 1 length of upper glume, coriaceous, 1 -veined. Lower glume lateral veins absent. Lower glume surface scabrous. Upper glume lanceolate, $11-15 \mathrm{~mm}$ long, 1 length of adjacent fertile lemma, coriaceous, 1 -veined. Upper glume lateral veins absent. Upper glume surface scabrous.

Florets. Fertile lemma lanceolate, 11-14 mm long, coriaceous, without keel, 5-7 -veined, more than 3veined. Lemma surface puberulous. Lemma apex acuminate, awned, 1 -awned. Principal lemma awn 1.22.5 mm long overall. Palea 2 -veined. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. $2 n=28$ ( 1 ref TROPICOS), or 70 ( 1 ref TROPICOS), or 84 ( 5 refs TROPICOS).
Distribution (TDWG). Continent. Temperate Asia, North America.
Country /Province /State. Siberia, Middle Asia, China, Mongolia, Russia. Altay, Irkutsk, Tuva. Kazakhstan, Kirgizistan, Turkmenistan, Uzbekistan. Inner Mongolia, China North-Central, Qinghai, Xinjiang. Mongolia. Western Canada. Alberta, Saskatchewan.

Gansu.

Leymus arenarius (L.) Hochst. Flora, 1: 118 (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), 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), N.Tsvelev, Grasses of the Soviet Union (1983), T.Koyama, Grasses of Japan and its neighboring regions (1987) (as Elymus).

TYPE from Europe. Basionym or Replaced Name: Elymus arenarius L., Sp. Pl. 1: 83 (1753). T:<Type of Basionym>: fide TROPICOS and Kew Synonomy Database: LT: (LINN-100.1). LT designated by Bowden, Canad. J. Bot. 42: 567 (1964). ; Europe: Herb. Linn.

Illustrations (Books): F.O.Zuloaga, Z.E.Rugolo \& A.M. Anton, Flora Argentina 3 - 2 Pooideae (2012) (82), C.E.Hubbard, Grasses (1968) (106 as Elymus arenarius), T. Cope \& A. Gray, Grasses of the British Isles (160), T.Koyama, Grasses of Japan and its neighbouring regions (1987) (49, Fig 12 as Elymus arenarius ssp. mollis), M.E.Barkworth et al, Flora of North America north of Mexico Vol 24 Poaceae, part 1 (2007) (357), M.N.Correa, Flora Patagonica Parte III, Gramineae (1978) (444, Fig 295 as Elymus arenarius).

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

Derivation (Clifford \& Bostock 2007): L. arena, sandy place; -aria, pertaining to. Of sandy habitats.
Classification. Subfamily Pooideae. Tribe: Triticeae.
Habit, Vegetative Morphology. Perennial, caespitose. Rhizomes elongated. Culms erect or geniculately ascending, $60-200 \mathrm{~cm}$ long. Leaves cauline. Leaf-sheaths glabrous on surface. Leaf-sheath oral hairs lacking. Leaf-sheath auricles falcate. Ligule an eciliate membrane, $0.3-1 \mathrm{~mm}$ long, truncate. Leaf-blades flat or involute, $20-60 \mathrm{~cm}$ long, $8-22 \mathrm{~mm}$ wide, stiff, glaucous. Leaf-blade surface ribbed, scaberulous, rough adaxially. Leaf-blade apex acuminate, hardened.

Inflorescence. Inflorescence composed of racemes. Racemes 1, single, erect, bilateral, 15-35 cm long. Rhachis flattened, scabrous on margins. Spikelet packing broadside to rhachis, regular, 2 -rowed. Spikelets appressed, in pairs. Fertile spikelets sessile, 2 in the cluster.

Fertile Spikelets. Spikelets comprising 3-6 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets oblong or cuneate, laterally compressed, $20-32 \mathrm{~mm}$ long, breaking up at maturity, disarticulating below each fertile floret. Spikelet callus glabrous, base truncate. Rhachilla internodes definite, obscured by lemmas, pubescent.

Glumes. Glumes persistent, similar, subequal in width, reaching apex of florets or shorter than spikelet Lower glume lanceolate, $18-30 \mathrm{~mm}$ long, 1 length of upper glume, coriaceous, 1-keeled, 3-5 -veined. Lower glume surface pubescent. Lower glume apex attenuate. Upper glume lanceolate, $18-30 \mathrm{~mm}$ long, 1.2 length of adjacent fertile lemma, coriaceous, 1-keeled, 3-5 -veined. Upper glume surface pubescent. Upper glume apex attenuate.

Florets. Fertile lemma lanceolate, $15-25 \mathrm{~mm}$ long, coriaceous, keeled, keeled above, 7 -veined, more than 3 -veined. Lemma surface pubescent. Lemma apex acute. Palea lanceolate, 1 length of lemma, 2 veined. Palea keels ciliolate. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, elliptic, membranous. Anthers 3, 7-8 mm long. Stigmas 2, protandrous, laterally exserted. Ovary pubescent on apex. Caryopsis with adherent pericarp, fusiform, isodiametric, estipitate, without sulcus, 10 mm long, smooth, apex unappendaged. Embryo 0.2 length of caryopsis. Hilum linear, 0.9 length of caryopsis. Endosperm farinose.
$2 n=56$ ( 6 refs TROPICOS).
Distribution (TDWG). Continent. Europe, Temperate Asia, Australasia (*), North America, South America.

## Region. Northern Europe, Middle Europe, Southwestern Europe, Eastern Europe.

Country /Province /State. : Denmark, Finland, Foroyar, Great Britain, Iceland, Norway, Sweden. : Belgium, Germany, Netherlands. : France, Spain. Belarus, Estonia, Latvia, Lithuania, Baltic States, Central European Russia, North European Russia, Northwest European Russia, Ukraine. China, Eastern Asia. Japan Hokkaido, or Honshu, or Shikoku, or Kyushu. Japan. Australia (*), New Zealand (*). Tasmania (*). Chatham Is, New Zealand South I. Eastern Canada, Northeast USA. Ontario. New York. Southern South America. Argentina South, Chile South. Falkland Is (Malvinas).

Santa Cruz, Tierra del Fuego. Magellanes.

Leymus aristiglumis L.B. Cai. Bull. Bot. Res. North-East. Forest. Univ., 17(1): 28 (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 Synonomy Database: China: Qinghai: Xining Xhi, in clivis apricis, 2590 m, 30 June 1990, Z.H. Zhang et al. 5871 (HT: HNWP).

Illustrations: None found.
Derivation (Clifford \& Bostock 2007): L. arista, bristle; gluma, husk. With awned subtending glumes or lemmas.

Classification. Subfamily Pooideae. Tribe: Triticeae.
Habit, Vegetative Morphology. Perennial. Butt sheaths persistent and investing base of culm, with fibrous dead sheaths. Culms erect, $30-50 \mathrm{~cm}$ long, $1.5-2 \mathrm{~mm}$ diam., 3 -noded. Leaves mostly basal. Leafsheaths outer margin hairy. Ligule an eciliate membrane, $1.2-2 \mathrm{~mm}$ long. Leaf-blades conduplicate or involute, $7-16 \mathrm{~cm}$ long, $2.5-4 \mathrm{~mm}$ wide, stiff. Leaf-blade surface scabrous, rough on both sides.

Inflorescence. Inflorescence composed of racemes. Racemes 1, single, erect, bilateral, 7-10 cm long, 6-9 mm wide. Rhachis flattened, puberulous on surface. Spikelet packing broadside to rhachis. Spikelets in pairs or in threes. Fertile spikelets sessile, 2-3 in the cluster.

Fertile Spikelets. Spikelets comprising 3-4 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets elliptic, laterally compressed, $8-11 \mathrm{~mm}$ long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes pubescent.

Glumes. Glumes persistent, similar, subequal in width, shorter than spikelet. Lower glume lanceolate, $3.5-4.5 \mathrm{~mm}$ long, 1 length of upper glume, coriaceous, much thinner on margins, 1 -keeled, 1 -veined. Lower glume lateral veins absent. Lower glume apex attenuate, awned, 1 -awned, awn 4-5 mm long. Upper
glume lanceolate, $3.5-4.5 \mathrm{~mm}$ long, 0.66 length of adjacent fertile lemma, coriaceous, with membranous margins, 1-keeled, 1 -veined. Upper glume lateral veins absent. Upper glume apex attenuate, awned, 1 awned, awn $4-5 \mathrm{~mm}$ long.

Florets. Fertile lemma lanceolate, 6-7 mm long, chartaceous, keeled, 5 -veined, more than 3-veined. Lemma surface glabrous. Lemma margins pubescent. Lemma apex acuminate, mucronate or awned, 1 awned. Principal lemma awn 1 mm long overall. Palea 1 length of lemma, 2 -veined, 2-keeled. Palea keels ciliate. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Anthers 3, 4 mm long, yellow. Caryopsis with adherent pericarp.
Distribution (TDWG). Continent. Temperate Asia.
Country /Province/State. China. Qinghai.

## Leymus arjinshanicus D.F.Cui. Fl. Xinjiangensis, 6: 602 (1996).

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

TYPE from China. T:<Type of Basionym>: fide TROPICOS and Kew Synonomy Database: China, Tiemlike: Cui Nai-ran (XJA holo, JSBI).

Illustrations (Books): S-L Chen et al, Flora of China, Illustrations, Poaceae (2007) (Fig. 547).
Classification. Subfamily Pooideae. Tribe: Triticeae.
Habit, Vegetative Morphology. Perennial, caespitose. Rhizomes elongated. Culms erect, 30-70 cm long, 2-4 -noded. Leaf-sheaths glabrous on surface, outer margin glabrous or hairy. Ligule an eciliate membrane, 0.5 mm long, truncate. Leaf-blades $10-20 \mathrm{~cm}$ long, 3 mm wide. Leaf-blade surface puberulous, hairy adaxially.

Inflorescence. Inflorescence composed of racemes. Racemes 1, single, linear, straight or arcuate, bilateral, $4-10 \mathrm{~cm}$ long, $6-8 \mathrm{~mm}$ wide. Spikelet packing broadside to rhachis. Rhachis internodes linear, 5-$7(-15) \mathrm{mm}$ long. Spikelets solitary. Fertile spikelets sessile.

Fertile Spikelets. Spikelets comprising 3-5 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets oblong, laterally compressed, $10-17 \mathrm{~mm}$ long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes 0.2 mm long, pubescent.

Glumes. Glumes persistent, similar, shorter than spikelet. Lower glume linear or lanceolate, 7-10 mm long, 1 length of upper glume, coriaceous, 1 -veined. Lower glume lateral veins absent. Lower glume surface smooth or scabrous, rough above. Lower glume apex setaceously acuminate. Upper glume linear or lanceolate, $7-10 \mathrm{~mm}$ long, $0.7-0.85$ length of adjacent fertile lemma, coriaceous, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume margins smooth or scabrous. Upper glume apex setaceously acuminate.

Florets. Fertile lemma lanceolate, 9-12 mm long, coriaceous, without keel, 5 -veined, more than 3veined. Lemma lateral veins obscure. Lemma margins eciliate or ciliate. Lemma apex acuminate, muticous. Palea 1 length of lemma, 2 -veined. Palea surface pilose, hairy on back. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Anthers $3,4 \mathrm{~mm}$ long, yellow.
Distribution (TDWG). Continent. Temperate Asia.
Country /Province /State. China. Xinjiang.

Leymus californicus (Bol. ex Thurb.) Barkworth. Sida 22(1): 498 (2006).
Accepted by: R.J.Soreng et al., Catalogue of New World Grasses (2000-2003) and online (as Elymus), W.D.Clayton \& K.Harman, GrassBase (2008) and online (as Hystrix), U.Quattrocchi, CRC World Dictionary of Grasses (2006) (as Elymus).

TYPE from USA. Basionym or Replaced Name: Gymnostichum californicum Bol. ex Thurb., Bot. California 2: 327 (1880)
. T:<Type of Basionym>: fide TROPICOS and Kew Synonomy Database: LT: Bolander s.n., USA: California: Red Woods, near San Francisco (GH; ILT: G, MO-2970590, MO-2970589). LT designated by Baden et al., Nordic J. Bot. 17: 457 (1997).

Recent Synonyms: Elymus californicus (Boland. ex Thurb.) Gould, Rev. Gen. 778 (1891). Hystrix californica (Bol.) Kuntze, Rev. Gen. 778 (1891).

Illustrations (Books): M.E.Barkworth et al, Flora of North America north of Mexico Vol 24 Poaceae, part 1 (2007) (368).

Derivation (Clifford \& Bostock 2007): L. -ica, belonging to. From California, USA.
Classification. Subfamily Pooideae. Tribe: Triticeae.
Habit, Vegetative Morphology. Perennial. Culms 100-200 cm long. Leaf-sheaths hispid. Ligule an eciliate membrane. Leaf-blades $10-20 \mathrm{~mm}$ wide. Leaf-blade apex attenuate.

Inflorescence. Inflorescence composed of racemes. Racemes 1, single, bilateral, 12-25 cm long. Spikelet packing broadside to rhachis, lax. Spikelets ascending, in pairs. Fertile spikelets sessile, 2 in the cluster.

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 lanceolate, dorsally compressed, 12-15 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes both absent or obscure or one the lower absent or obscure, persistent. Upper glume subulate, $0-1 \mathrm{~mm}$ long, 1 -veined. Upper glume lateral veins absent.

Florets. Fertile lemma lanceolate, $9-11 \mathrm{~mm}$ long, coriaceous, without keel, 5 -veined, more than 3veined. Lemma surface hispidulous. Lemma apex attenuate, awned, 1 -awned. Principal lemma awn 20 mm long overall.

Flower and Fruit. Lodicules 2. Anthers 3. Ovary pubescent on apex. Caryopsis with adherent pericarp, hairy at apex.

Distribution (TDWG). Continent. North America.
Country/Province /State. Southwestern USA. California.

Leymus cappadocicus (Boiss. \& Bal.) A. Melderis. Notes Roy. Bot. Gard. Edinburgh, 42(1): 81: (1984).

Accepted by: W.D.Clayton \& K.Harman, GrassBase (2008) and online.
TYPE from Turkey. Basionym or Replaced Name: Elymus cappadocicus Boiss. \& Balansa, Bull. Soc. Bot. France 4: 308 (1857)
. T:<Type of Basionym>: fide TROPICOS and Kew Synonomy Database: OM: Balansa, 23 Feb 1859, Turkey: Cappadocia (US-1020847 (ex hb. J. Gay)).

Illustrations: None found.
Derivation (Clifford \& Bostock 2007): L. -ica, belonging to. From Cappadocia, a region of Central Turkey.

Classification. Subfamily Pooideae. Tribe: Triticeae.
Habit, Vegetative Morphology. Perennial, caespitose. Rhizomes elongated. Culms erect, 25-50 cm long. Leaf-sheath oral hairs lacking. Leaf-sheath auricles falcate. Ligule an eciliate membrane. Leaf-blades convolute, $5-15 \mathrm{~cm}$ long, $1-3 \mathrm{~mm}$ wide, coriaceous, stiff, glaucous. Leaf-blade surface pubescent, hairy adaxially. Leaf-blade apex attenuate.

Inflorescence. Inflorescence composed of racemes. Racemes 1, single, erect, bilateral, 2-7 cm long. Rhachis flattened, ciliate on margins. Spikelet packing broadside to rhachis. Spikelets in pairs. Fertile spikelets sessile, 2 in the cluster.

Fertile Spikelets. Spikelets comprising 1-2 fertile florets, with diminished florets at the apex. Spikelets of 1 fertile floret with or without additional sterile florets, or of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets elliptic, laterally compressed, $8-10 \mathrm{~mm}$ long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes collateral, persistent, similar, reaching apex of florets. Lower glume subulate, 8-10 mm long, 1 length of upper glume. Upper glume subulate, $8-10 \mathrm{~mm}$ long, $1.1-1.4$ length of adjacent fertile lemma.

Florets. Fertile lemma lanceolate, $7-7.5 \mathrm{~mm}$ long, coriaceous, without keel, 5 -veined, more than 3veined. Lemma lateral veins ribbed. Lemma surface glabrous. Lemma apex acute, awned, 1 -awned. Principal lemma awn 2-3 mm long overall. Palea 1 length of lemma, 2 -veined. Palea keels ciliolate. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, membranous. Anthers 3. Stigmas 2. Ovary pubescent on apex. Caryopsis with adherent pericarp. Hilum linear.

Distribution (TDWG). Continent. Temperate Asia.

## Country /Province /State. Western Asia. Iran.

Leymus chakassicus Peshkova. Flora Sibiri 2: 45 (1990).
TYPE from Russia. T:<Type of Basionym>: fide TROPICOS and Kew Synonomy Database: Siberia: Chakassia, Altaisk, near the village of Letnik, valley of R. Jesissei, 1967-06-28, E.Jerschova \& T.Lamanova s.n. (holo: NS).

Illustrations: None found.
Classification. Subfamily Pooideae. Tribe: Triticeae.
Habit, Vegetative Morphology. Perennial. Rhizomes elongated. Culms erect, $50-130 \mathrm{~cm}$ long. Culminternodes distally glabrous. Ligule an eciliate membrane. Leaf-blades flat or convolute, $9-20 \mathrm{~cm}$ long, indurate, stiff. Leaf-blade surface scaberulous, rough adaxially, glabrous or pilose, hairy on both sides.

Inflorescence. Inflorescence composed of racemes. Peduncle pubescent above. Racemes 1, single, bilateral, $5-20 \mathrm{~cm}$ long, $15-25 \mathrm{~mm}$ wide. Rhachis flattened, glabrous on surface or pilose on surface. Spikelet packing broadside to rhachis, crowded, with subequal internodes or lowest internode elongated. Spikelets in pairs or in threes. Fertile spikelets sessile, 2-3 in the cluster.

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 elliptic, laterally compressed, 12-18 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, similar, reaching apex of florets. Lower glume linear, $10-15 \mathrm{~mm}$ long, 1 length of upper glume, coriaceous, 1 -veined. Lower glume primary vein ciliolate. Lower glume lateral veins absent. Lower glume margins ciliolate. Lower glume apex setaceously acuminate. Upper glume linear, $10-15 \mathrm{~mm}$ long, 1 -veined. Upper glume primary vein ciliolate. Upper glume margins ciliolate. Upper glume apex setaceously acuminate.

Florets. Fertile lemma lanceolate, $8-12 \mathrm{~mm}$ long, coriaceous, without keel, 5 -veined, more than 3veined. Lemma surface glabrous or pilose, hairy all along. Lemma apex acute, mucronate or awned, 1 awned. Principal lemma awn $0.5-2 \mathrm{~mm}$ long overall. Palea 1 length of lemma, 2 -veined. Palea keels ciliate, adorned all along or above. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, membranous. Anthers 3. Stigmas 2.
Distribution (TDWG). Continent. Temperate Asia.
Country /Province/State. Siberia. Altay.

Leymus chinensis (Trin.) Tsvelev. Akad. Nauk SSSR Bot. Inst. Komarova, Rast. Tsentral. Azii, Fasc. 4, 205 (1968).

Accepted by: W.D.Clayton \& K.Harman, GrassBase (2008) and online, U.Quattrocchi, CRC World Dictionary of Grasses (2006), S-L Chen et al, Flora of China 22 (Poaceae) (2006), N.Tsvelev, Grasses of the Soviet Union (1983), T.Koyama, Grasses of Japan and its neighboring regions (1987) (as Elymus).

TYPE from China. Basionym or Replaced Name: Triticum chinense Trin., Enum. Pl. China Bor. 72 (1833)
. T:<Type of Basionym>: fide TROPICOS and Kew Synonomy Database: China: Bunge (LE holo).
Recent Synonyms: Elymus chinensis (Trinius) Keng, Sunyatsenia 6:. 66 (1941).
Illustrations: None found.
Derivation (Clifford \& Bostock 2007): L. -ense, denoting origin. From China.
Classification. Subfamily Pooideae. Tribe: Triticeae.
Habit, Vegetative Morphology. Perennial. Rhizomes elongated. Butt sheaths persistent and investing base of culm, with fibrous dead sheaths. Culms $30-100 \mathrm{~cm}$ long, $2-3$-noded. Ligule an eciliate membrane, $0.5-0.75 \mathrm{~mm}$ long, truncate. Leaf-blades flat or convolute, $7-20 \mathrm{~cm}$ long, $3-5 \mathrm{~mm}$ wide, coriaceous, stiff, glaucous. Leaf-blade surface ribbed, scabrous, rough adaxially. Leaf-blade margins scabrous. Leaf-blade apex pungent.

Inflorescence. Inflorescence composed of racemes. Racemes 1, single, bilateral, $10-20 \mathrm{~cm}$ long. Rhachis flattened, spinulose on margins. Spikelet packing broadside to rhachis. Rhachis internodes linear, $7-15 \mathrm{~mm}$ long. Spikelets appressed, in pairs. Fertile spikelets sessile, 2 in the cluster.

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 oblong, laterally compressed, $10-20 \mathrm{~mm}$ long, $2.2-2.5 \mathrm{~mm}$ wide, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes $1-1.5 \mathrm{~mm}$ long, smooth.

Glumes. Glumes persistent, similar, shorter than spikelet. Lower glume subulate, 0.9 length of upper glume, coriaceous, 1 -veined. Lower glume lateral veins absent. Upper glume subulate, $5-9 \mathrm{~mm}$ long, 0.75 length of adjacent fertile lemma, coriaceous, 1 -veined. Upper glume lateral veins absent. Upper glume margins scabrous (above).

Florets. Fertile lemma lanceolate, 7-11 mm long, coriaceous, without keel, 5 -veined. Lemma apex acuminate. Palea 2 -veined. Palea keels eciliate or ciliolate. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. $2 n=28$ ( 7 ref TROPICOS).
Distribution (TDWG). Continent. Temperate Asia.
Country /Province /State. Siberia, Russian Far East, China, Mongolia, Eastern Asia, Russia. Altay, Buryatiya, Chita, Irkutsk, Tuva. Amur, Primorye. Inner Mongolia, Manchuria, China North-Central, Qinghai, China Southeast, Xinjiang. Mongolia. Korea.

Gansu, Hebei, Shaanxi, Shandong, Shanxi. Henan.

Leymus cinereus (Scribn. \& Merr.) A. Love. Taxon, 29(1): 168 (1980).
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: Elymus cinereus Scribn. \& Merr., Bull. Torrey Bot. Club 29(7): 467 (1902)

T:<Type of Basionym>: fide TROPICOS and Kew Synonomy Database: HT: C.A. Purpus 6050, May-Oct 1898, USA: Nevada: Pahrump valley, dry plains (US-345073).

Illustrations (Books): M.E.Barkworth et al, Flora of North America north of Mexico Vol 24 Poaceae, part 1 (2007) (365).

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

Derivation (Clifford \& Bostock 2007): L. ashy-grey. Plant grey due to hairs or wax.
Classification. Subfamily Pooideae. Tribe: Triticeae.
Habit, Vegetative Morphology. Perennial, caespitose. Rhizomes short. Culms 100-200 cm long. Leaf-sheath oral hairs lacking. Leaf-sheath auricles falcate. Ligule an eciliate membrane, 3-7 mm long. Leaf-blades flat, $20-50 \mathrm{~cm}$ long, $10-20 \mathrm{~mm}$ wide, coriaceous, stiff. Leaf-blade surface ribbed, glabrous or pubescent.

Inflorescence. Inflorescence composed of racemes. Peduncle pubescent above. Racemes 1, single, erect, bilateral, 12-20 cm long, simple or secondarily branched. Rhachis flattened. Spikelet packing broadside to rhachis. Spikelets clustered at each node. Fertile spikelets pedicelled or sessile, 3-6 in the cluster.

Fertile Spikelets. Spikelets comprising 4-6 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets elliptic, laterally compressed, $15-20 \mathrm{~mm}$ long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes collateral, persistent, similar, reaching apex of florets or shorter than spikelet. Lower glume subulate, $10-20 \mathrm{~mm}$ long, 1 length of upper glume. Upper glume subulate, $10-20 \mathrm{~mm}$ long, $1-1.3$ length of adjacent fertile lemma.

Florets. Fertile lemma lanceolate, $10-15 \mathrm{~mm}$ long, coriaceous, without keel, 5 -veined, more than 3veined. Lemma surface glabrous or pubescent. Lemma apex acute, muticous or awned, 1 -awned. Principal lemma awn $2-7 \mathrm{~mm}$ long overall. Palea 1 length of lemma, 2 -veined. Palea keels ciliolate. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, membranous. Anthers 3, 3-6 mm long. Stigmas 2. Ovary pubescent on apex. Caryopsis with adherent pericarp. Hilum linear.
$2 n=28$ ( 1 ref TROPICOS), or 56 ( 1 ref TROPICOS).
Distribution (TDWG). Continent. North America.
Country /Province /State. Western Canada, Northwest USA, North-central USA, Southwestern USA, South-central USA. Alberta, British Columbia, Manitoba, Saskatchewan. Colorado, Idaho, Montana, Oregon, Washington, Wyoming. Arizona, California, Nevada, Utah. New Mexico.

Leymus condensatus (Presl) A. Love. Taxon, 29(1): 168 (1980).
Accepted by: R.J.Soreng et al., Catalogue of New World Grasses (2000-2003) and online, W.D.Clayton \& K.Harman, GrassBase (2008) and online, U.Quattrocchi, CRC World Dictionary of Grasses (2006).

TYPE from USA. Basionym or Replaced Name: Elymus condensatus J. Presl, Reliq. Haenk. 1(4-5): 265 (1830)
. T:<Type of Basionym>: fide TROPICOS and Kew Synonomy Database: HT: Haenke s.n., USA: California: Monte Rey (PR; IT: US-78626 (fragm. ex PR)).

Illustrations (Books): K.F.Best, et al, Prairie Grasses (1971) (117 as Elymus condensatus), M.E.Barkworth et al, Flora of North America north of Mexico Vol 24 Poaceae, part 1 (2007) (363).

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

Derivation (Clifford \& Bostock 2007): L. condenso, press close together. Spikelets crowded in the inflorescence.

Classification. Subfamily Pooideae. Tribe: Triticeae.
Habit, Vegetative Morphology. Perennial, caespitose. Rhizomes short. Culms $150-350 \mathrm{~cm}$ long. Culm-internodes distally glabrous or pubescent. Ligule an eciliate membrane, $2-5 \mathrm{~mm}$ long. Leaf-blades $15-30 \mathrm{~cm}$ long, $12-30 \mathrm{~mm}$ wide.

Inflorescence. Inflorescence composed of racemes. Racemes 1, single, bilateral, $15-50 \mathrm{~cm}$ long, simple or secondarily branched. Spikelet packing broadside to rhachis. Rhachis internodes linear. Spikelets clustered at each node. Fertile spikelets sessile, 2-5 in the cluster.

Fertile Spikelets. Spikelets comprising 3-6 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets oblong, laterally compressed, $10-15 \mathrm{~mm}$ long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes collateral, persistent, similar, shorter than spikelet. Lower glume subulate, 1 length of upper glume, coriaceous, 1 -veined. Lower glume lateral veins absent. Upper glume subulate, 1 length of adjacent fertile lemma, coriaceous, 1 -veined. Upper glume lateral veins absent.

Florets. Fertile lemma lanceolate, $8-13 \mathrm{~mm}$ long, coriaceous, without keel, 5 -veined, more than 3 veined. Lemma surface glabrous or pubescent. Lemma apex acute, muticous or mucronate. Palea 2 -veined. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. $2 n=28$ ( 2 refs TROPICOS).
Distribution (TDWG). Continent. North America.
Country /Province /State. Northwest USA, Southwestern USA, Mexico. Oregon, Wyoming. California, Nevada. Northeast Mexico, Northwest Mexico.

Coahuila. Baja California.
Leymus crassiusculus L.B. Cai. Acta Phytotax. Sin., 33(5): 494 (1995).
Accepted by: W.D.Clayton \& K.Harman, GrassBase (2008) and online, S-L Chen et al, Flora of China 22 (Poaceae) (2006).

TYPE from China. T:<Type of Basionym>: fide TROPICOS and Kew Synonomy Database: China: Qinghai: Xinghai, ad margines agrorum, $2550 \mathrm{~m}, 23$ June 1965, T.N. He 0051 (HT: HNWP).

Illustrations (Books): S-L Chen et al, Flora of China, Illustrations, Poaceae (2007) (Fig. 543).
Derivation (Clifford \& Bostock 2007): L. crassius, thicker; -ula, indicating a tendency. Spike relatively thicker than those of related species.

Classification. Subfamily Pooideae. Tribe: Triticeae.
Habit, Vegetative Morphology. Perennial. Culms erect, 70-110 cm long, 4 mm diam., 2-3 -noded. Leaves mostly basal. Leaf-sheaths glabrous on surface, outer margin glabrous or hairy. Ligule an eciliate membrane, $1.5-2 \mathrm{~mm}$ long, truncate. Leaf-blades convolute, $20-42 \mathrm{~cm}$ long, $5-7 \mathrm{~mm}$ wide, stiff. Leafblade surface smooth or scabrous, rough adaxially, glabrous.

Inflorescence. Inflorescence composed of racemes. Racemes 1, single, erect, bilateral, 16-22 cm long, $15-20 \mathrm{~mm}$ wide. Rhachis flattened, villous on surface. Spikelet packing broadside to rhachis. Rhachis internodes $4-10 \mathrm{~mm}$ long. Spikelets clustered at each node. Fertile spikelets sessile, 4-6(-11) in the cluster.

Fertile Spikelets. Spikelets comprising 4-7 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets elliptic, laterally compressed, $12-18 \mathrm{~mm}$ long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes $1-1.5 \mathrm{~mm}$ long, pubescent.

Glumes. Glumes persistent, similar, subequal in width, shorter than spikelet. Lower glume linear, 1013 mm long, 1 length of upper glume, coriaceous, much thinner on margins, 1 -keeled, 1 -veined. Lower glume lateral veins absent. Lower glume margins ciliate. Lower glume apex attenuate. Upper glume linear, $10-13 \mathrm{~mm}$ long, 1.1 length of adjacent fertile lemma, coriaceous, with membranous margins, 1-keeled, 1 veined. Upper glume lateral veins absent. Upper glume margins ciliate. Upper glume apex attenuate.

Florets. Fertile lemma lanceolate, $8-10 \mathrm{~mm}$ long, chartaceous, keeled, 5 -veined, more than 3-veined. Lemma lateral veins obscure. Lemma surface pubescent. Lemma apex acuminate, awned, 1 -awned. Principal lemma awn 1-2 mm long overall. Palea 1 length of lemma, 2 -veined, 2-keeled. Palea keels ciliate. Palea apex emarginate. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Anthers 3, 5 mm long, yellow. Caryopsis with adherent pericarp.
$2 n=28$ ( 1 ref TROPICOS).
Distribution (TDWG). Continent. Temperate Asia.
Country /Province/State. China. China North-Central, Qinghai.
Shanxi.

Leymus erianthus (Phil.) J. Dubcovsky. Genome, 40(4): 518: (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 Argentina. Basionym or Replaced Name: Elymus erianthus Phil., Anales Mus. Nac. Santiago de Chile 13, t. 3, f. 2 (1892)
. T:<Type of Basionym>: fide TROPICOS and Kew Synonomy Database: LT: A. Borschers s.n., 1886, Argentina: habitat in Andibus uspallatensis ad thermas Baños del Inca [boarder of Argentia and Chile, 31?9'S x 70?8'W] (SGO-063443; ILT: BM, F, GH, SGO-037276, US (photo only, SGO-PHIL-508), US(photo SGO-37276)). LT designated by Seberg \& Linde-LAursen, Syst. Bot. 21: 11 (1996).

Recent Synonyms: Eremium erianthum (Phil.) J. Dubcovsky, Syst. Bot., 21(1): 11 (1996).
Illustrations (Books): F.O.Zuloaga, Z.E.Rugolo \& A.M. Anton, Flora Argentina 3 - 2 Pooideae (2012) (65, as Eremium erianthum), M.N.Correa, Flora Patagonica Parte III, Gramineae (1978) (Fl. Pat. 3: 439, Fig. 293 (1978) as Elymus erianthus).

Derivation (Clifford \& Bostock 2007): Gk erion, wool; anthos, flower. The subtending glumes are covered with long hairs.

Classification. Subfamily Pooideae. Tribe: Triticeae.
Habit, Vegetative Morphology. Perennial, caespitose. Culms 25-70 cm long. Leaf-sheaths glabrous on surface. Leaf-sheath auricles falcate. Ligule a ciliolate membrane, $0.5-1 \mathrm{~mm}$ long. Leaf-blades convolute, $10-35 \mathrm{~cm}$ long, $4-7 \mathrm{~mm}$ wide, indurate, stiff, glaucous. Leaf-blade surface pubescent, hairy adaxially or on both sides.

Inflorescence. Inflorescence composed of racemes, embraced at base by subtending leaf. Racemes 1, single, linear, bilateral, $5-15 \mathrm{~cm}$ long. Rhachis scabrous on margins, ciliate on margins. Spikelet packing broadside to rhachis. Rhachis internodes linear, 8 mm long. Spikelets appressed, solitary or in pairs. Fertile spikelets sessile, 1-2 in the cluster.

Fertile Spikelets. Spikelets comprising 3-7 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets oblong, laterally compressed, 12-27 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, similar, shorter than spikelet. Lower glume subulate, 1 length of upper glume, coriaceous, 1 -veined. Lower glume lateral veins absent. Upper glume subulate, $14-18 \mathrm{~mm}$ long, 1 length of adjacent fertile lemma, coriaceous, 1 -veined. Upper glume lateral veins absent.

Florets. Fertile lemma lanceolate, $14-18 \mathrm{~mm}$ long, coriaceous, without keel, 5 -veined, more than 3veined. Lemma surface smooth or scaberulous, rough above. Lemma margins ciliate. Lemma hairs 3-5 mm long. Lemma apex dentate, 2 -fid, muticous or awned, 1 -awned. Principal lemma awn from a sinus, $1-10$
mm long overall. Palea 1 length of lemma, 2 -veined. Palea keels ciliate. Palea surface pubescent, hairy on back. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Anthers 3-4 mm long. Caryopsis 5-6 mm long.
Distribution (TDWG). Continent. South America.
Country /Province /State. Southern South America. Chile Central.
La Rioja, Mendoza, San Juan. Chubut, Neuquén, Río Negro, Santa Cruz. Valparaiso.

Leymus flavescens (Scribn. \& J. G. Smith) Pilger. Engl. Bot. Jahrb. 74: 6 (1947).
Accepted by: R.J.Soreng et al., Catalogue of New World Grasses (2000-2003) and online, W.D.Clayton \& K.Harman, GrassBase (2008) and online, U.Quattrocchi, CRC World Dictionary of Grasses (2006).

TYPE from USA. Basionym or Replaced Name: Elymus flavescens Scribn. \& J.G. Sm., Bull. Div. Agrostol., U.S.D.A. 8: 8, f. 1 (1897)
. T:<Type of Basionym>: fide TROPICOS and Kew Synonomy Database: ST: W.N. Suksdorf 916, 11 Jun 1886, USA: Washington: Klickitat Co.: Columbus (US-1019505; IST: MO).

ST: E. Palmer 257, 30 Jun 1892, USA: Idaho: Blackfoot (US).
ST: T.J. Howell s.n., 11 Jun 1881, USA: Oregon: near the Dalles (US).
ST: Wilkes Exploring Expedition s.n., Without locality (US).
Illustrations (Books): M.E.Barkworth et al, Flora of North America north of Mexico Vol 24 Poaceae, part 1 (2007) (367).

Derivation (Clifford \& Bostock 2007): L. flavesco, become yellow. Foliage yellowish.
Classification. Subfamily Pooideae. Tribe: Triticeae.
Habit, Vegetative Morphology. Perennial, caespitose. Rhizomes elongated. Culms 60-100 cm long. Leaf-sheaths glabrous on surface. Ligule an eciliate membrane, $0.5-1.5 \mathrm{~mm}$ long. Leaf-blades involute, 3-5 mm wide, coriaceous, stiff, glaucous. Leaf-blade surface ribbed, scaberulous, rough abaxially.

Inflorescence. Inflorescence composed of racemes. Peduncle pubescent above. Racemes 1, single, erect, bilateral, 10-20 cm long. Spikelet packing broadside to rhachis. Rhachis internodes linear. Spikelets in pairs. Fertile spikelets sessile or sessile and pedicelled, 2 in the cluster. Pedicels absent or present, 5-15 mm long.

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 oblong, laterally compressed, $12-25 \mathrm{~mm}$ long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes collateral, persistent, similar, shorter than spikelet. Lower glume subulate, $10-15 \mathrm{~mm}$ long, coriaceous, $1-3$-veined. Lower glume lateral veins absent or distinct. Lower glume surface pubescent. Upper glume subulate, $10-15 \mathrm{~mm}$ long, coriaceous, $1-3$-veined. Upper glume lateral veins absent or distinct. Upper glume surface pubescent.

Florets. Fertile lemma lanceolate, $11-15 \mathrm{~mm}$ long, coriaceous, without keel, 5 -veined, more than 3veined. Lemma lateral veins prominent. Lemma surface pubescent or pilose. Lemma apex acute, muticous. Palea 2 -veined. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Anthers 6 mm long.
$2 n=28$ ( 1 ref TROPICOS).
Distribution (TDWG). Continent. North America.
Country /Province/State. Northwest USA. Idaho, Montana, Oregon, Washington.

Leymus flexilis (Nevski) Tsvelev. Not. Syst. Herb. Inst. Bot. Acad. Sci. URSS, 20: 429 (1960).
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: Aneurolepidium flexile Nevski, Trudy Bot. Inst. Akad. Nauk S.S.S.R., Ser. 1, Fl. Sist. Vyssh. Rast. 2: 71 (1936)
. T:<Type of Basionym>: fide TROPICOS and Kew Synonomy Database: Russia, Talas-Alatau Mts.: Pavlov 984 (LE holo).

Illustrations: None found.

Derivation (Clifford \& Bostock 2007): L. flecto, bend; -ile, property. Culm geniculate at base and slender.

Classification. Subfamily Pooideae. Tribe: Triticeae.
Habit, Vegetative Morphology. Perennial, caespitose. Rhizomes short. Butt sheaths persistent and investing base of culm, with compacted dead sheaths. Culms $30-70 \mathrm{~cm}$ long. Culm-internodes smooth. Ligule an eciliate membrane. Leaf-blades involute, $1-3 \mathrm{~mm}$ wide, coriaceous, stiff, glaucous. Leaf-blade surface scaberulous, rough adaxially.

Inflorescence. Inflorescence composed of racemes. Peduncle smooth. Racemes 1, single, linear, bilateral, $4-7 \mathrm{~cm}$ long, $7-9 \mathrm{~mm}$ wide. Rhachis pubescent on margins. Spikelet packing broadside to rhachis, crowded. Rhachis internodes linear. Spikelets appressed, in pairs. Fertile spikelets sessile, 2 in the cluster.

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, 11-14 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes collateral, persistent, similar, shorter than spikelet. Lower glume subulate, 1 length of upper glume, coriaceous, 1 -veined. Lower glume lateral veins absent. Lower glume surface scabrous. Upper glume subulate, $7-10 \mathrm{~mm}$ long, $1-1.1$ length of adjacent fertile lemma, coriaceous, 1 -veined. Upper glume lateral veins absent. Upper glume surface scabrous.

Florets. Fertile lemma lanceolate, 6-10 mm long, coriaceous, without keel, 5 -veined, more than 3veined. Lemma apex acuminate, awned, 1 -awned. Principal lemma awn 1-2 mm long overall. Palea 2 veined. Palea keels ciliate. Apical sterile florets resembling fertile though underdeveloped.

Distribution (TDWG). Continent. Temperate Asia.
Country/Province/State. Middle Asia. Kirgizistan.
Leymus flexus L.B. Cai. Acta Phytotax. Sin., 33(5): 491 (1995).
Accepted by: W.D.Clayton \& K.Harman, GrassBase (2008) and online, S-L Chen et al, Flora of China 22 (Poaceae) (2006).

TYPE from China. T:<Type of Basionym>: fide TROPICOS and Kew Synonomy Database: China:.
Illustrations (Books): S-L Chen et al, Flora of China, Illustrations, Poaceae (2007) (Fig. 546).
Derivation (Clifford \& Bostock 2007): L. flecto, bend. Spike slightly bent.
Classification. Subfamily Pooideae. Tribe: Triticeae.
Habit, Vegetative Morphology. Perennial. Culms erect, $60-100 \mathrm{~cm}$ long, 2-3 mm diam., 3-5 -noded. Leaves mostly basal. Leaf-sheaths glabrous on surface or pubescent. Ligule an eciliate membrane, 1.5 mm long. Leaf-blades convolute, $15-27 \mathrm{~cm}$ long, $4-5 \mathrm{~mm}$ wide, stiff. Leaf-blade surface scabrous, rough adaxially.

Inflorescence. Inflorescence composed of racemes. Racemes 1, single, erect, bilateral, $15-25 \mathrm{~cm}$ long, 10 mm wide. Rhachis flattened, puberulous on surface. Spikelet packing broadside to rhachis. Rhachis internodes $8-15 \mathrm{~mm}$ long. Spikelets in threes. Fertile spikelets sessile, 3 in the cluster.

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 elliptic, laterally compressed, $13-17 \mathrm{~mm}$ long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes $0.5-1.5 \mathrm{~mm}$ long, pubescent. Floret callus pilose.

Glumes. Glumes persistent, similar, subequal in width, shorter than spikelet. Lower glume linear, 1114 mm long, 1 length of upper glume, coriaceous, much thinner on margins, 1 -keeled, $1-2$-veined. Lower glume lateral veins absent or obscure. Lower glume margins ciliate. Lower glume apex setaceously acuminate, awned, awn 2-3 mm long. Upper glume linear or lanceolate, $9-14 \mathrm{~mm}$ long, 1.2 length of adjacent fertile lemma, coriaceous, with membranous margins, 1 -keeled, 1-2 -veined. Upper glume lateral veins absent or obscure. Upper glume margins ciliate. Upper glume apex setaceously acuminate, awned, 1 awned, awn 2-3 mm long.

Florets. Fertile lemma lanceolate, $9-10 \mathrm{~mm}$ long, chartaceous, keeled, 5 -veined, more than 3 -veined. Lemma surface glabrous or pilose. Lemma apex acuminate, awned, 1 -awned. Principal lemma awn 2-3 mm long overall. Palea 1 length of lemma, 2 -veined, 2 -keeled. Palea keels ciliolate. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Anthers 3, 3-4 mm long, yellow. Caryopsis with adherent pericarp.

Distribution (TDWG). Continent. Temperate Asia. Country /Province/State. China. China North-Central, Qinghai. Gansu, Shanxi.

Leymus innovatus (Beal) Pilger. Engl. Bot. Jahrb. 1xxiv. 6 (1947).
Accepted by: R.J.Soreng et al., Catalogue of New World Grasses (2000-2003) and online, W.D.Clayton \& K.Harman, GrassBase (2008) and online, U.Quattrocchi, CRC World Dictionary of Grasses (2006).

TYPE from USA. Basionym or Replaced Name: Elymus innovatus Beal, Grass. N. Amer. 2: 650 (1896)
. T:<Type of Basionym>: fide TROPICOS and Kew Synonomy Database: USA: Montana: North fork of Sims River, 1887, R.S. Williams s.n..

Illustrations (Books): K.F.Best, et al, Prairie Grasses (1971) (121 as Elymus innovatus), M.E.Barkworth et al, Flora of North America north of Mexico Vol 24 Poaceae, part 1 (2007) (367, \& as subsp. innovatus \& subsp. velutinus).

Derivation (Clifford \& Bostock 2007): L. innovo, renew. Readily regenerating from creeping root stalks.

Classification. Subfamily Pooideae. Tribe: Triticeae.
Habit, Vegetative Morphology. Perennial. Rhizomes elongated. Culms $40-80 \mathrm{~cm}$ long. Leaf-sheath oral hairs lacking. Leaf-sheath auricles falcate. Ligule an eciliate membrane, 1 mm long. Leaf-blades involute, $5-25 \mathrm{~cm}$ long, $2-4 \mathrm{~mm}$ wide, stiff. Leaf-blade surface scaberulous, rough abaxially.

Inflorescence. Inflorescence composed of racemes. Peduncle pubescent above. Racemes 1, single, erect, linear or oblong, bilateral, 4-9 cm long. Rhachis flattened. Spikelet packing broadside to rhachis. Spikelets in pairs. Fertile spikelets sessile, 2 in the cluster.

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, $12-15 \mathrm{~mm}$ long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes definite.

Glumes. Glumes collateral, persistent, similar, shorter than spikelet. Lower glume subulate, 2-7 mm long, 1 length of upper glume. Lower glume surface pubescent. Upper glume subulate, $2-7 \mathrm{~mm}$ long, $0.25-$ 0.5 length of adjacent fertile lemma. Upper glume surface pubescent.

Florets. Fertile lemma elliptic, 7-9 mm long, coriaceous, without keel, 5 -veined, more than 3-veined. Lemma surface pubescent or villous. Lemma apex acuminate, awned, 1 -awned. Principal lemma awn 1-4 mm long overall. Palea 1 length of lemma, 2 -veined. Palea keels ciliolate. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, membranous. Anthers 3, 5 mm long. Stigmas 2. Ovary pubescent on apex. Caryopsis with adherent pericarp. Hilum linear.

Distribution (TDWG). Continent. North America.
Country /Province/State. Subarctic America, Western Canada, Eastern Canada, Northwest USA. Alaska, Yukon, Northwest Territories. Alberta, British Columbia, Manitoba, Saskatchewan. Ontario. Montana, Wyoming.

Leymus karelinii (Turcz.) Tsvelev. Novosti Sist. Vyssh. Rast., 9: 59 (1972).
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 Turkmenistan. Basionym or Replaced Name: Elymus karelinii Turcz., Bull. Soc. Imp. Naturalistes Moscou 29(1): 64 (1856)
. T:<Type of Basionym>: fide TROPICOS and Kew Synonomy Database: Turkmenistan:, Karelin s.n.. Illustrations: None found.
Derivation (Clifford \& Bostock 2007): in honor of Grigorij Silych Karelin (1801-72) Russian botanist. Classification. Subfamily Pooideae. Tribe: Triticeae.

Habit, Vegetative Morphology. Perennial, pluricaespitose. Rhizomes short. Culms 50-100 cm long. Ligule an eciliate membrane. Leaf-blades $3-6 \mathrm{~mm}$ wide, coriaceous, stiff, glaucous. Leaf-blade surface scabrous, rough adaxially.

Inflorescence. Inflorescence composed of racemes. Peduncle antrorsely scabrous above. Racemes 1, single, linear, bilateral, $10-20 \mathrm{~cm}$ long, $5-10 \mathrm{~mm}$ wide. Rhachis pubescent on margins. Spikelet packing broadside to rhachis. Rhachis internodes linear. Spikelets appressed, in pairs or in threes. Fertile spikelets sessile, 2-3 in the cluster.

Fertile Spikelets. Spikelets comprising 2-3 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets oblong, laterally compressed, $12-15 \mathrm{~mm}$ long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, similar, shorter than spikelet. Lower glume subulate, 1 length of upper glume, coriaceous, 2-3-veined. Lower glume lateral veins obscure. Lower glume surface scabrous. Lower glume margins ciliate. Upper glume subulate, $10-15 \mathrm{~mm}$ long, 1 length of adjacent fertile lemma, coriaceous, 2-3 -veined. Upper glume lateral veins obscure. Upper glume surface scabrous. Upper glume margins ciliate.

Florets. Fertile lemma lanceolate, $10-15 \mathrm{~mm}$ long, coriaceous, without keel, 5 -veined, more than 3veined. Lemma surface pubescent. Lemma apex acuminate, mucronate or awned, 1 -awned. Principal lemma awn $0.5-1 \mathrm{~mm}$ long overall. Palea 2 -veined. Palea keels ciliate, adorned above. Apical sterile florets resembling fertile though underdeveloped.

Distribution (TDWG). Continent. Europe, Temperate Asia.
Region. Northern Europe (*), Eastern Europe.
Country /Province /State. : GB Aliens (Ryves et al). Central European Russia, East European Russia, South European Russia. Siberia, Middle Asia, China, Russia. Kamchatka. Kazakhstan, Kirgizistan, Turkmenistan, Uzbekistan. Xinjiang.

Leymus kopetdaghensis (Roshev.) Tsvelev. Not. Syst. Herb. Inst. Bot. Acad. Sci. URSS, 20: 429 (1960).

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: Elymus kopetdaghensis Roshev., Fl. Turkmen. 1: 211 (1932)
. T:<Type of Basionym>: fide TROPICOS and Kew Synonomy Database: Russia, Meuliyams: Brobov \& Ermolenko 45 (LE lecto).

Illustrations: None found.
Derivation (Clifford \& Bostock 2007): L. -ensis, denoting origin. From Kopet Dag Khrebet mountains, Turkmenskaja (Turkmenistan), former Soviet Union.

Classification. Subfamily Pooideae. Tribe: Triticeae.
Habit, Vegetative Morphology. Perennial, caespitose, clumped densely. Rhizomes short. Butt sheaths persistent and investing base of culm. Culms erect or geniculately ascending, $25-50 \mathrm{~cm}$ long. Ligule an eciliate membrane. Leaf-blades convolute, $7-15 \mathrm{~cm}$ long, $3-5 \mathrm{~mm}$ wide, coriaceous, stiff. Leaf-blade surface scabrous, rough adaxially. Leaf-blade margins scabrous. Leaf-blade apex attenuate.

Inflorescence. Inflorescence composed of racemes. Peduncle scaberulous above. Racemes 1, single, bilateral, $10-20 \mathrm{~cm}$ long, 7 mm wide. Rhachis flattened, pubescent on surface. Spikelet packing broadside to rhachis, lax. Spikelets in pairs. Fertile spikelets sessile, 2 in the cluster.

Fertile Spikelets. Spikelets comprising 2-4 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, laterally compressed, $17-20 \mathrm{~mm}$ long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, similar, shorter than spikelet. Lower glume subulate, $10-15 \mathrm{~mm}$ long, 1 length of upper glume, 1 -veined. Lower glume surface scabrous. Upper glume subulate, $10-15 \mathrm{~mm}$ long, 1 length of adjacent fertile lemma, 1 -veined. Upper glume surface scabrous.

Florets. Fertile lemma lanceolate or elliptic, 10-12 mm long, coriaceous, without keel, 5-7 -veined, more than 3-veined. Lemma surface pilose, hairy above. Lemma margins ciliate. Lemma apex acute, mucronate. Palea 2 -veined. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, membranous. Anthers 3. Stigmas 2. Ovary pubescent on apex. Caryopsis with adherent pericarp. Hilum linear.

Distribution (TDWG). Continent. Temperate Asia.
Country /Province/State. Middle Asia, Western Asia. Tadzhikistan. Iran.

Leymus lanatus (Korsh.) Tsvelev. Novit. Syst. Pl. Vasc., Acad. Sci. URSS, 6: 21 (1970).
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: Malacurus lanatus (Korsh.) Nevski, Acta Univ. As. Med. Ser. 8 b, Bot. Fasc. 17, 19 (1934). T:<Type of Basionym>: fide TROPICOS and Kew Synonomy Database: Russia, Birgar R.: Korzhinskii 5852 (LE holo).

Illustrations (Books): N.L.Bor, Gramineae in K.H.Rechinger, Flora Iranica. No. 70/30 (1970) (Tab. 36 as Malacurus).

Derivation (Clifford \& Bostock 2007): L. lana, wool; -ata, possessing. Leaf-blades densely pubescent.
Classification. Subfamily Pooideae. Tribe: Triticeae.
Habit, Vegetative Morphology. Perennial, caespitose, clumped densely. Rhizomes short. Culms erect, $45-85 \mathrm{~cm}$ long. Culm-internodes distally pruinose. Ligule an eciliate membrane. Leaf-blades $4-7 \mathrm{~mm}$ wide, coriaceous, stiff, glaucous. Leaf-blade surface scabrous, rough adaxially.

Inflorescence. Inflorescence composed of racemes. Peduncle smooth. Racemes 1, single, oblong, bilateral, $6-13 \mathrm{~cm}$ long, $15-22 \mathrm{~mm}$ wide. Spikelet packing broadside to rhachis, crowded. Rhachis internodes linear. Spikelets appressed, in pairs. Fertile spikelets sessile, 2 in the cluster.

Fertile Spikelets. Spikelets comprising 3-4 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets oblong, laterally compressed, $12-15 \mathrm{~mm}$ long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes collateral, persistent, similar, shorter than spikelet. Lower glume subulate, 1 length of upper glume, coriaceous, 1 -veined. Lower glume lateral veins absent. Upper glume subulate, $6-10 \mathrm{~mm}$ long, 1 length of adjacent fertile lemma, coriaceous, 1 -veined. Upper glume lateral veins absent.

Florets. Fertile lemma lanceolate, $9-10 \mathrm{~mm}$ long, membranous or chartaceous, without keel, 7-9 veined, more than 3 -veined. Lemma surface villous. Lemma hairs 2 mm long. Lemma apex acuminate, awned, 1 -awned. Principal lemma awn $1.5-2 \mathrm{~mm}$ long overall. Palea 1 length of lemma, 2 -veined. Palea keels ciliate. Apical sterile florets resembling fertile though underdeveloped.

Distribution (TDWG). Continent. Temperate Asia.
Country /Province /State. Middle Asia, Western Asia. Turkmenistan. Iran.

Leymus latiglumis Tsvelev. Novosti Sist Vyssh. Rast., 9: 62 (1972).
Accepted by: W.D.Clayton \& K.Harman, GrassBase (2008) and online, N.Tsvelev, Grasses of the Soviet Union (1983).

TYPE from Russia. T:<Type of Basionym>: fide TROPICOS and Kew Synonomy Database: : Based on Elymus latiglumis Nikit. ; Russia, Iordan: Kultiasov \& Granitov 1044 (TAK holo).

Illustrations: None found.
Derivation (Clifford \& Bostock 2007): L. latus, broad; gluma, husk. Glumes broad.
Classification. Subfamily Pooideae. Tribe: Triticeae.
Habit, Vegetative Morphology. Perennial, mat forming. Culms $40-100 \mathrm{~cm}$ long. Ligule an eciliate membrane. Leaf-blades $3-6 \mathrm{~mm}$ wide, coriaceous, stiff, glaucous. Leaf-blade surface scabrous, rough adaxially.

Inflorescence. Inflorescence composed of racemes. Peduncle pubescent above. Racemes 1, single, linear, bilateral, $8-25 \mathrm{~cm}$ long. Rhachis pubescent on surface. Spikelet packing broadside to rhachis. Rhachis internodes linear. Spikelets appressed, in pairs or in threes. Fertile spikelets sessile, 2-3 in the cluster.

Fertile Spikelets. Spikelets comprising 2-3 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets oblong, laterally compressed, $12-15 \mathrm{~mm}$ long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, similar, shorter than spikelet. Lower glume lanceolate, 1 length of upper glume, coriaceous, 3 -veined. Lower glume lateral veins obscure. Lower glume surface scabrous. Lower glume margins ciliate. Lower glume apex setaceously acuminate. Upper glume lanceolate, 1 length of adjacent fertile lemma, coriaceous, 2-3 -veined. Upper glume lateral veins obscure. Upper glume surface scabrous. Upper glume apex setaceously acuminate.

Florets. Fertile lemma lanceolate, 11-14 mm long, coriaceous, mid-green, without keel, 5 -veined, more than 3 -veined. Lemma surface glabrous. Lemma apex acuminate, mucronate or awned, 1 -awned. Principal lemma awn $0.5-1 \mathrm{~mm}$ long overall. Palea 2 -veined. Apical sterile florets resembling fertile though underdeveloped.

Distribution (TDWG). Continent. Temperate Asia.
Country /Province /State. Middle Asia. Turkmenistan.

Leymus leptostachyus L.B. Cai \& X. Su. Bull. Bot. Res., Harbin 27 (6): 654-655, f. 1 (2007).
TYPE from China. T:<Type of Basionym>: fide TROPICOS and Kew Synonomy Database: ST: Z.H. Zhang et al. 2959, 28 May 1989, China: Qinghai: Xining, Xiaoxiakou, in clivis apricis, 2230 m (HNWP?).

Illustrations: None found.
Classification. Subfamily Pooideae. Tribe: Triticeae.
Habit, Vegetative Morphology. Perennial, caespitose. Rhizomes short. Butt sheaths persistent and investing base of culm, with fibrous dead sheaths. Culms erect, $35-60 \mathrm{~cm}$ long, $1.2-2 \mathrm{~mm}$ diam., 3-4 noded. Leaf-sheaths glabrous on surface. Ligule an eciliate membrane, $1-2 \mathrm{~mm}$ long, obtuse. Leaf-blades involute, $5-18 \mathrm{~cm}$ long, $2-3.5 \mathrm{~mm}$ wide, indurate, stiff. Leaf-blade surface scabrous, rough adaxially.

Inflorescence. Inflorescence composed of racemes. Racemes 1, single, erect, linear, bilateral, 6-13 cm long, $5-7.5 \mathrm{~mm}$ wide. Rhachis villous on margins. Spikelet packing broadside to rhachis, lax. Rhachis internodes 5-8 mm long. Spikelets solitary or in pairs. Fertile spikelets sessile, 1-2 in the cluster.

Fertile Spikelets. Spikelets comprising 4-5 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets oblong, laterally compressed, $9-13 \mathrm{~mm}$ long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes $0.5-1 \mathrm{~mm}$ long, scaberulous.

Glumes. Glumes collateral, persistent, similar, shorter than spikelet. Lower glume lanceolate, 8-10.5 mm long, 1 length of upper glume, coriaceous, $1-3$-veined. Lower glume lateral veins absent or obscure. Lower glume margins ciliate. Lower glume apex awned, 1 -awned, awn 3-4 mm long. Upper glume lanceolate, $8-10.5 \mathrm{~mm}$ long, 1.1-1.2 length of adjacent fertile lemma, coriaceous, 1 -veined. Upper glume lateral veins absent. Upper glume margins ciliate. Upper glume awned, 1 -awned, awn 3-4 mm long.

Florets. Fertile lemma lanceolate, 7-8.5 mm long, coriaceous, without keel, 5 -veined, more than 3veined. Lemma lateral veins distinct. Lemma surface pubescent. Lemma apex awned, 1 -awned. Principal lemma awn 1-3 mm long overall. Palea $6-7.5 \mathrm{~mm}$ long, 2 -veined. Palea keels scabrous. Palea apex acute. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Anthers 3, 4.2-4.7 mm long, yellow. Ovary pubescent on apex.
Distribution (TDWG). Continent. Temperate Asia.
Country /Province /State. China. Xinjiang.

Leymus mollis (Trin.) Pilger. Engl. Bot. Jahrb. 74: 6 (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, S-L Chen et al, Flora of China 22 (Poaceae) (2006), N.Tsvelev, Grasses of the Soviet Union (1983).

TYPE from Aleutian Islands. Basionym or Replaced Name: Elymus mollis Trin., Neue Entdeck. Pflanzenk. 2: 72 (1821)
. T:<Type of Basionym>: fide TROPICOS and Kew Synonomy Database: HT: Herb. Gorenk s.n., (LE-TRIN-3137.01; IST: US-865966 (fragm. ex LE-TRIN)). ; Aleutian Is., Unalaschka: Gorenk (LE holo).

Illustrations (Books): M.E.Barkworth et al, Flora of North America north of Mexico Vol 24 Poaceae, part 1 (2007) (357, as subspecies mollis \& villosissimus).

Derivation (Clifford \& Bostock 2007): L. soft. Softly hairy usually of leaf-blades.
Classification. Subfamily Pooideae. Tribe: Triticeae.

Habit, Vegetative Morphology. Perennial, culms solitary or caespitose, clumped loosely. Rhizomes elongated, scaly. Butt sheaths light brown, persistent and investing base of culm, with fibrous dead sheaths. Culms erect, robust, $30-100 \mathrm{~cm}$ long, $3-4 \mathrm{~mm}$ diam., 3-4 -noded. Culm-internodes terete, distally glabrous. Leaves mostly basal. Leaf-sheaths loose, $7-25 \mathrm{~cm}$ long, glabrous on surface. Ligule an eciliate membrane, $1-3 \mathrm{~mm}$ long, truncate. Leaf-blades involute, $14-45 \mathrm{~cm}$ long, $6-12 \mathrm{~mm}$ wide, stiff, glaucous. Leaf-blade surface ribbed, scaberulous, rough adaxially. Leaf-blade apex acuminate.

Inflorescence. Inflorescence composed of racemes. Peduncle pubescent above. Racemes 1, single, erect, bilateral, $9-25 \mathrm{~cm}$ long, $12-22 \mathrm{~mm}$ wide. Rhachis flattened, pubescent on surface, scabrous on margins. Spikelet packing broadside to rhachis, regular, 2 -rowed. Rhachis internodes $5-20 \mathrm{~mm}$ long. Spikelets appressed, in pairs or in threes. Fertile spikelets sessile, 2-3(-5) in the cluster.

Fertile Spikelets. Spikelets comprising 3-5 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets elliptic, laterally compressed, $15-22 \mathrm{~mm}$ long, $5-7 \mathrm{~mm}$ wide, breaking up at maturity, disarticulating below each fertile floret. Spikelet callus glabrous, base truncate. Rhachilla internodes $2-3 \mathrm{~mm}$ long, pubescent.

Glumes. Glumes persistent, similar, subequal in width, reaching apex of florets. Lower glume lanceolate, $14-22 \mathrm{~mm}$ long, 1 length of upper glume, coriaceous, 1-keeled, (3-)5 -veined. Lower glume surface pubescent. Lower glume apex attenuate. Upper glume lanceolate, $14-22 \mathrm{~mm}$ long, $1.2-1.3$ length of adjacent fertile lemma, coriaceous, 1-keeled, (3-)5 -veined. Upper glume surface pubescent. Upper glume apex attenuate.

Florets. Fertile lemma lanceolate, 12-17 mm long, 3-4 mm wide, chartaceous, keeled, keeled above, 5 -veined, more than 3 -veined. Lemma surface pubescent. Lemma apex acute. Palea $10-13 \mathrm{~mm}$ long, 2 veined. Palea keels ciliate. Palea surface pubescent. Palea apex dentate, 2 -fid. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, elliptic, membranous. Anthers 3, 6-7 mm long. Stigmas 2. Ovary pubescent on apex. Caryopsis with adherent pericarp, apex unappendaged. Hilum linear.
$2 n=28$ ( 3 refs TROPICOS).
Distribution (TDWG). Continent. Temperate Asia, North America.
Country /Province /State. Russian Far East, China, Mongolia, Eastern Asia, Russia. Kamchatka, Khabarovsk, Kuril Is, Magadan, Primorye, Sakhalin. Manchuria, China North-Central. Mongolia. Japan, Korea. Subarctic America, Western Canada, Eastern Canada, Northwest USA, Northeast USA, Southwestern USA. Aleutian Is, Alaska, Yukon, Northwest Territories, Nunavut, Greenland. Alberta, British Columbia, Manitoba, Saskatchewan. Labrador, New Brunswick, Newfoundland, Nova Scotia, Ontario, Prince Edward I, Quebec. Oregon, Washington. Maine. California.

Hebei, Shandong.

Leymus multicaulis (Karel. \& kir.) Tsvelev. Not. Syst. Herb. Inst. Bot. Acad. Sci. URSS, 20: 430 (1960).

Accepted by: R.J.Soreng et al., Catalogue of 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 Russia. Basionym or Replaced Name: Elymus maulticaulis Kar. \& Kir., Bull. Soc. Imp. Naturalistes Moscou 14: 868 (1841)
. T:<Type of Basionym>: fide TROPICOS and Kew Synonomy Database: Russia, Altai: Karelin \& Kirilov 509 (LE holo).

Illustrations (Books): M.E.Barkworth et al, Flora of North America north of Mexico Vol 24 Poaceae, part 1 (2007), S-L Chen et al, Flora of China, Illustrations, Poaceae (2007) (Fig. 540).

Derivation (Clifford \& Bostock 2007): L. multus, many; caulis, stem. Culms much branched.
Classification. Subfamily Pooideae. Tribe: Triticeae.
Habit, Vegetative Morphology. Perennial, caespitose. Butt sheaths persistent and investing base of culm. Culms erect, 40-75 cm long. Lateral branches sparse. Ligule an eciliate membrane. Leaf-blade base broadly rounded. Leaf-blades $10-25 \mathrm{~cm}$ long, $4-6 \mathrm{~mm}$ wide, coriaceous, stiff, glaucous. Leaf-blade surface scabrous, rough adaxially. Leaf-blade margins scabrous. Leaf-blade apex attenuate.

Inflorescence. Inflorescence composed of racemes. Peduncle scaberulous above. Racemes 1, single, straight or arcuate, bilateral, 6-12.5 cm long, 5 mm wide. Rhachis flattened, scabrous on margins. Spikelet packing broadside to rhachis, with lowest internode elongated. Spikelets in pairs or in threes. Fertile spikelets sessile, 2-3 in the cluster.

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 elliptic, laterally compressed, 8-14 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, similar, shorter than spikelet. Lower glume subulate, $6-7 \mathrm{~mm}$ long, 1 length of upper glume, 1 -veined. Lower glume surface scabrous. Upper glume subulate, 6-7 mm long, $0.8-1.5$ length of adjacent fertile lemma, 1 -veined. Upper glume surface scabrous.

Florets. Fertile lemma elliptic, $4-8 \mathrm{~mm}$ long, coriaceous, without keel, 5 -veined, more than 3-veined. Lemma apex acute, awned, 1 -awned. Principal lemma awn 2-3 mm long overall. Palea 2 -veined. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, membranous. Anthers 3. Stigmas 2. Ovary pubescent on apex. Caryopsis with adherent pericarp. Hilum linear.
$2 n=21$ ( 3 refs TROPICOS), or 28 ( 3 refs TROPICOS).
Distribution (TDWG). Continent. Europe, Temperate Asia, North America.
Region. Eastern Europe.
Country /Province /State. East European Russia, South European Russia. Siberia, Middle Asia, Western Asia, China, Russia. Altay. Primorye. Kazakhstan, Kirgizistan, Turkmenistan, Tadzhikistan, Uzbekistan. Iran. Xinjiang. Northwest USA, Southwestern USA. Wyoming. Utah.

Leymus mundus L.B. Cai \& X. Su. Bull. Bot. Res., Harbin 27(6): 655-656, f. 2 (2007).
TYPE from China. T:<Type of Basionym>: fide TROPICOS and Kew Synonomy Database: China: Xizang: Zhada, Bolin, in clivis herbidis, 4300 m, 15 June 1976, Qinghai-Xizang Exped. 76-7767 (HT: HNWP).

Illustrations: None found.
Classification. Subfamily Pooideae. Tribe: Triticeae.
Habit, Vegetative Morphology. Perennial, caespitose. Rhizomes elongated. Butt sheaths persistent and investing base of culm, with compacted dead sheaths or fibrous dead sheaths. Culms erect, 25-55 cm long, $1.5-2.1 \mathrm{~mm}$ diam., 3-4 -noded. Leaf-sheaths glabrous on surface. Ligule an eciliate membrane, 1-1.6 mm long, obtuse. Leaf-blades involute, $3-21 \mathrm{~cm}$ long, $2.5-4 \mathrm{~mm}$ wide, indurate, stiff. Leaf-blade surface scabrous, rough adaxially.

Inflorescence. Inflorescence composed of racemes. Racemes 1, single, erect, linear, bilateral, 4-10 cm long, $8-10 \mathrm{~mm}$ wide. Rhachis scabrous on surface, ciliate on margins. Spikelet packing broadside to rhachis, crowded, with subequal internodes or lowest internode elongated. Rhachis internodes $4-5 \mathrm{~mm}$ long. Spikelets in pairs or in threes. Fertile spikelets sessile, 2-3 in the cluster.

Fertile Spikelets. Spikelets comprising 4-5 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets elliptic, laterally compressed, $10-15 \mathrm{~mm}$ long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes $0.5-1 \mathrm{~mm}$ long, scaberulous.

Glumes. Glumes persistent, similar, shorter than spikelet. Lower glume lanceolate, $8-10 \mathrm{~mm}$ long, 1 length of upper glume, much thinner on margins, 1-keeled, 1-3-veined. Lower glume lateral veins absent or obscure. Lower glume margins eciliate or ciliolate. Lower glume apex setaceously acuminate. Upper glume lanceolate, $8-10 \mathrm{~mm}$ long, $1-1.1$ length of adjacent fertile lemma, with membranous margins, 1keeled, 1-3-veined. Upper glume lateral veins absent or obscure. Upper glume margins eciliate or ciliolate. Upper glume apex setaceously acuminate.

Florets. Fertile lemma lanceolate, $8-9 \mathrm{~mm}$ long, coriaceous, much thinner on margins, without keel, 7 -veined, more than 3 -veined. Lemma margins without distinctive roughness or scaberulous. Lemma apex acuminate. Palea 2 -veined. Palea keels smooth. Palea apex emarginate. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Anthers $3,3 \mathrm{~mm}$ long. Ovary pubescent on apex.
Distribution (TDWG). Continent. Temperate Asia.
Country /Province /State. China. Tibet.

Leymus nikitinii (Chopanav) Tsvelev. Novosti Sist. Vyssh. Rast., 10: 50 (1973).
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: Elymus nikitinii Czopanov, Izv. Akad. Nauk Turkmensk. SSR 3: 89 (1956)
. T:<Type of Basionym>: fide TROPICOS and Kew Synonomy Database: Russia, Shamlya: Nikitin (ASH holo).

Illustrations: None found.
Derivation (Clifford \& Bostock 2007): in honor of Sergei Nikolaevich Nikitin (1850-1909) Soviet scientist.

Classification. Subfamily Pooideae. Tribe: Triticeae.
Habit, Vegetative Morphology. Perennial, caespitose, clumped densely. Culms erect or geniculately ascending, $60-150 \mathrm{~cm}$ long. Ligule an eciliate membrane. Leaf-blades convolute, $7-15 \mathrm{~cm}$ long, $1-3 \mathrm{~mm}$ wide, coriaceous, stiff. Leaf-blade surface ribbed, scabrous, rough adaxially. Leaf-blade apex attenuate.

Inflorescence. Inflorescence composed of racemes. Peduncle antrorsely scabrous above. Racemes 1, single, bilateral, $10-25 \mathrm{~cm}$ long. Rhachis flattened. Spikelet packing broadside to rhachis, distant. Rhachis internodes $15-20 \mathrm{~mm}$ long. Spikelets in pairs or in threes. Fertile spikelets sessile, 2-3 in the cluster.

Fertile Spikelets. Spikelets comprising 2-4 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, laterally compressed, $10-30 \mathrm{~mm}$ long, breaking up at maturity, disarticulating below each fertile floret. Floret callus glabrous, obtuse.

Glumes. Glumes persistent, similar, shorter than spikelet. Lower glume subulate, $14-25 \mathrm{~mm}$ long, 1 length of upper glume, 1 -veined. Lower glume lateral veins absent. Lower glume surface scabrous. Upper glume subulate, 1 length of adjacent fertile lemma, 1 -veined. Upper glume lateral veins absent. Upper glume surface scabrous.

Florets. Fertile lemma lanceolate or elliptic, $10-14 \mathrm{~mm}$ long, coriaceous, light green, without keel, 5-7 -veined, more than 3 -veined. Lemma surface smooth or asperulous, glabrous. Lemma apex acute, awned, 1 -awned. Principal lemma awn $1-2 \mathrm{~mm}$ long overall. Palea 2 -veined. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, membranous. Anthers 3. Stigmas 2. Ovary pubescent on apex. Caryopsis with adherent pericarp. Hilum linear.

Distribution (TDWG). Continent. Temperate Asia.
Country/Province/State. Middle Asia. Tadzhikistan.
Leymus obvipodus L.B. Cai. Novon, 10(1): 9 (2000).
Accepted by: W.D.Clayton \& K.Harman, GrassBase (2008) and online, S-L Chen et al, Flora of China 22 (Poaceae) (2006).

TYPE from China. T:<Type of Basionym>: fide TROPICOS and Kew Synonomy Database: China: Qinghai: Dulan Xian, Farm Nuomuhong, $2900 \mathrm{~m}, 369^{\prime} \mathrm{N}$, 96?7E, 25 Aug. 1998, L.B. Cai \& L. Zhi 98084 (HT: HNWP; IT: MO).

Illustrations (Journals): Novon (10: 10 Fig. 2 (2000)).
Derivation (Clifford \& Bostock 2007): L. obvius, easily seen; Gk pous, foot. Spikelets conspicuously pedicellate.

Classification. Subfamily Pooideae. Tribe: Triticeae.
Habit, Vegetative Morphology. Perennial. Rhizomes elongated. Butt sheaths persistent and investing base of culm, with fibrous dead sheaths. Culms erect or geniculately ascending, $40-75 \mathrm{~cm}$ long, $2-3 \mathrm{~mm}$ diam., 2-3 -noded. Leaves mostly basal. Leaf-sheaths puberulous. Ligule an eciliate membrane, 1-2 mm long, truncate. Leaf-blades involute, $6-18 \mathrm{~cm}$ long, $2-4 \mathrm{~mm}$ wide, stiff. Leaf-blade surface puberulous, sparsely hairy, hairy on both sides.

Inflorescence. Inflorescence composed of racemes. Peduncle pubescent above. Racemes 1, single, erect, bilateral, $8-18 \mathrm{~cm}$ long, $6-8 \mathrm{~mm}$ wide. Rhachis flattened, pubescent on surface. Spikelet packing broadside to rhachis. Rhachis internodes $5-50 \mathrm{~mm}$ long. Spikelets solitary or in pairs. Fertile spikelets pedicelled, 1-2 in the cluster. Pedicels present, 1-14 mm long, pubescent.

Fertile Spikelets. Spikelets comprising 4-8 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets elliptic, laterally compressed, $11-18 \mathrm{~mm}$ long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes $0.5-2 \mathrm{~mm}$ long, pubescent.

Glumes. Glumes persistent, similar, subequal in width, shorter than spikelet. Lower glume linear or lanceolate, $5-6.5 \mathrm{~mm}$ long, 1 length of upper glume, coriaceous, much thinner on margins, 1-keeled, 1-3veined. Lower glume lateral veins absent or obscure. Lower glume surface smooth to scabrous. Lower glume apex attenuate, awned, 1 -awned, awn 2-4 mm long. Upper glume linear or lanceolate, $6-7.5 \mathrm{~mm}$ long, 0.75-0.9 length of adjacent fertile lemma, coriaceous, with membranous margins, 1-keeled, 1-3 veined. Upper glume lateral veins absent or obscure. Upper glume surface smooth or scabrous. Upper glume apex attenuate, awned, 1 -awned, awn 2-4 mm long.

Florets. Fertile lemma lanceolate, $7-10 \mathrm{~mm}$ long, chartaceous, shiny, keeled, 5 -veined, more than 3veined. Lemma lateral veins obscure. Lemma surface smooth or scabrous. Lemma margins pubescent. Lemma apex acuminate, awned, 1 -awned. Principal lemma awn $1-3 \mathrm{~mm}$ long overall. Palea 0.9 length of lemma, 2 -veined, 2-keeled. Palea keels scaberulous. Palea surface glabrous. Palea apex dentate, 2 -fid. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Anthers 3, 9 mm long, yellow. Ovary pubescent on apex. Caryopsis with adherent pericarp, $4-9 \mathrm{~mm}$ long, hairy at apex.

Distribution (TDWG). Continent. Temperate Asia.
Country /Province/State. China. Qinghai.

Leymus ordensis G.A. Peshkova. Bot. Zhurn., 70(11): 1554 (1985).
Accepted by: W.D.Clayton \& K.Harman, GrassBase (2008) and online.
TYPE from Russia. T:<Type of Basionym>: fide TROPICOS and Kew Synonomy Database: Russia, Irkut, Ustj-Orda: Pescjkova (LE holo, NS).

Illustrations: None found.
Classification. Subfamily Pooideae. Tribe: Triticeae.
Habit, Vegetative Morphology. Perennial, caespitose, clumped densely. Culms erect, 50-90 cm long. Culm-internodes distally glabrous. Ligule an eciliate membrane. Leaf-blades flat or convolute, $2-4 \mathrm{~mm}$ wide, indurate, stiff. Leaf-blade surface scabrous, glabrous.

Inflorescence. Inflorescence composed of racemes. Racemes 1, single, bilateral, 8-15 cm long. Rhachis flattened. Spikelet packing broadside to rhachis, lax. Spikelets solitary or in pairs or in threes. Fertile spikelets sessile, 1-3 in the cluster.

Fertile Spikelets. Spikelets comprising 4-6 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets elliptic, laterally compressed, 13 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, similar, shorter than spikelet. Lower glume subulate, $4-5 \mathrm{~mm}$ long, $0.7-$ 0.8 length of upper glume, 1 -veined. Lower glume lateral veins excurrent. Upper glume subulate, 5-6 mm long, 0.6 length of adjacent fertile lemma, 1 -veined. Upper glume lateral veins excurrent.

Florets. Fertile lemma elliptic, $8-10 \mathrm{~mm}$ long, coriaceous, without keel, 5 -veined, more than 3-veined. Lemma surface pilose, hairy all along or above. Lemma apex attenuate, muticous or awned, 1 -awned. Principal lemma awn $0.5-2 \mathrm{~mm}$ long overall. Palea 2 -veined. Palea keels scabrous. Apical sterile florets resembling fertile though underdeveloped.

Distribution (TDWG). Continent. Temperate Asia.
Country /Province /State. Siberia. Irkutsk.

Leymus ovatus (Trin.) Tsvelev. Not. Syst. Herb. Inst. Bot. Acad. Sci. URSS, 20: 430 (1960).
Accepted by: S-L Chen et al, Flora of China 22 (Poaceae) (2006).
TYPE from Russia. Basionym or Replaced Name: Elymus ovatus Trin., Fl. Altaic. 1: 121-122 (1829)
. T:<Type of Basionym>: fide TROPICOS and Kew Synonomy Database: Russia: Siberia: in sabulosis ad fl. Taschulyschuman, B. s.n..

Illustrations (Books): S-L Chen et al, Flora of China, Illustrations, Poaceae (2007) (Fig. 541).

Derivation (Clifford \& Bostock 2007): L. ovum, egg; -ata, possessing. Inflorescences, spikelets, or leaf-blades in outline the shape of an egg in longitudinal section.

Classification. Subfamily Pooideae. Tribe: Triticeae.
Distribution (TDWG). Continent. Temperate Asia.
Country /Province/State. Middle Asia, Western Asia, China, Russia. Kazakhstan, Kirgizistan, Turkmenistan, Uzbekistan. Afghanistan. Inner Mongolia, Qinghai, Xinjiang.

Leymus paboanus (Claus) Pilger. Engl. Bot. Jahrb. lxxiv. 6, in obs. (1947).
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 Europe. Basionym or Replaced Name: Elymus paboanus Claus, Beitr. Pflanzenk. Russ. Reiches 8: 170 (1851)
. T:<Type of Basionym>: fide TROPICOS and Kew Synonomy Database: 5 IT: (LE).
LT: Pabo s.n., 26 Jun 1848, Europ. Russia: [Volga region]: Rv. Kinel (LE). Orig. label: "Ad fl. Kinel,...".

Illustrations (Books): S-L Chen et al, Flora of China, Illustrations, Poaceae (2007) (Fig. 540).
Derivation (Clifford \& Bostock 2007): L. -anum, indicating connection. In honor of Pabo (prior to 1896) who collected in European Russia.

Classification. Subfamily Pooideae. Tribe: Triticeae.
Habit, Vegetative Morphology. Perennial. Rhizomes elongated. Butt sheaths persistent and investing base of culm. Culms erect, $20-50 \mathrm{~cm}$ long. Ligule an eciliate membrane. Leaf-blades convolute, $7-15 \mathrm{~cm}$ long, $1-3 \mathrm{~mm}$ wide, coriaceous, stiff. Leaf-blade surface scabrous, rough adaxially. Leaf-blade margins scabrous. Leaf-blade apex attenuate.

Inflorescence. Inflorescence composed of racemes. Racemes 1, single, bilateral, 8-15 cm long, 8-10 mm wide. Rhachis flattened, scabrous on margins. Spikelet packing broadside to rhachis, crowded, with subequal internodes or lowest internode elongated. Spikelets in pairs. Fertile spikelets sessile, 2 in the cluster.

Fertile Spikelets. Spikelets comprising 4-6 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets elliptic, laterally compressed, 13 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, similar, shorter than spikelet. Lower glume subulate, $7-9 \mathrm{~mm}$ long, 1 length of upper glume, 1 -veined. Upper glume subulate, $7-9 \mathrm{~mm}$ long, 1 length of adjacent fertile lemma, 1 -veined.

Florets. Fertile lemma elliptic, 7-9 mm long, coriaceous, without keel, 5 -veined, more than 3 -veined. Lemma lateral veins obscure. Lemma surface scabrous, glabrous or pilose. Lemma apex dentate, 2 -fid, acute, mucronate. Palea 2 -veined. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, membranous. Anthers 3. Stigmas 2. Ovary pubescent on apex. Caryopsis with adherent pericarp. Hilum linear.
$2 n=28$ ( 1 ref TROPICOS), or 56 ( 4 refs TROPICOS).
Distribution (TDWG). Continent. Europe, Temperate Asia.
Region. Northern Europe (*), Eastern Europe.
Country /Province /State. : GB Aliens (Ryves et al). East European Russia, South European Russia. Siberia, Middle Asia, Western Asia, China, Mongolia, Russia. Altay, Buryatiya, Chita, Irkutsk, Tuva. Kazakhstan, Kirgizistan, Turkmenistan, Uzbekistan. Iran. Inner Mongolia, China North-Central, Qinghai, Xinjiang. Mongolia.

Gansu.
Leymus pacificus (Gould) D.R. Dewey. Brittonia, 35(1): 32: (1983).
Accepted by: R.J.Soreng et al., Catalogue of New World Grasses (2000-2003) and online, W.D.Clayton \& K.Harman, GrassBase (2008) and online, U.Quattrocchi, CRC World Dictionary of Grasses (2006).

TYPE from USA. Basionym or Replaced Name: Agropyron arenicola Burtt Davy, Fl. W. Calif. 76 (1901) ; Elymus pacificus Gould, Madroño 9(4): 127 (1947)
. T:<Type of Basionym>: fide TROPICOS and Kew Synonomy Database: IT: J.B. Davy 6879, Jul 1900, USA: California: Marin Co.: Point Reyes (US-556648).

Illustrations (Books): M.E.Barkworth et al, Flora of North America north of Mexico Vol 24 Poaceae, part 1 (2007) (359).

Classification. Subfamily Pooideae. Tribe: Triticeae.
Habit, Vegetative Morphology. Perennial, culms solitary. Rhizomes elongated. Culms decumbent, $10-20 \mathrm{~cm}$ long. Ligule an eciliate membrane, truncate. Leaf-blades involute, $2-4 \mathrm{~mm}$ wide, coriaceous, stiff. Leaf-blade surface ribbed. Leaf-blade apex pungent.

Inflorescence. Inflorescence composed of racemes. Racemes 1, single, linear or oblong, bilateral, 2-5 cm long. Rhachis glabrous on surface, glabrous on margins. Spikelet packing broadside to rhachis. Rhachis internodes linear. Spikelets appressed, solitary. Fertile spikelets sessile.

Fertile Spikelets. Spikelets comprising 3-6 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets oblong, laterally compressed, 12-15 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes collateral, persistent, similar, shorter than spikelet or reaching apex of florets or exceeding apex of florets. Lower glume subulate, coriaceous, 0 -veined. Lower glume lateral veins absent. Upper glume subulate, coriaceous, 1 -veined. Upper glume primary vein absent. Upper glume lateral veins absent.

Florets. Fertile lemma lanceolate, 10 mm long, coriaceous, without keel, 5 -veined, more than 3 -veined. Lemma lateral veins obscure. Lemma apex acuminate to setaceously acuminate. Palea 2 -veined. Apical sterile florets resembling fertile though underdeveloped.

Distribution (TDWG). Continent. North America.
Country /Province /State. Southwestern USA. California.

Leymus pendulus L.B. Cai. Novon, 10 (1): 7 (2000).
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. $\mathrm{T}:<$ Type of Basionym>: fide TROPICOS and Kew Synonomy Database: China: Qinghai: Xining, Nan Mountains, near the Xining Botanical Garden, 2300 m, $36 ? 6^{\prime} \mathrm{N}, 101 ? 6^{\prime} \mathrm{E}, 12$ Aug. 1998, L.B. Cai \& L. Zhi 98022 (HT: HNWP; IT: MO).

Illustrations (Journals): Novon (10: 8 Fig. 1 (2000)).
Derivation (Clifford \& Bostock 2007): L. pendulus, hanging down. Spikelets or inflorescence branches pendant.

Classification. Subfamily Pooideae. Tribe: Triticeae.
Habit, Vegetative Morphology. Perennial. Rhizomes elongated. Butt sheaths persistent and investing base of culm, with fibrous dead sheaths. Culms erect or geniculately ascending, 60-150 cm long, $2-3 \mathrm{~mm}$ diam., 2-6 -noded. Culm-internodes smooth. Leaves mostly basal. Leaf-sheaths smooth or antrorsely scabrous. Ligule an eciliate membrane, 2-3.5 mm long, obtuse. Leaf-blades flat or involute, $5-53 \mathrm{~cm}$ long, 2-7 mm wide, stiff. Leaf-blade surface scabrous, rough on both sides. Leaf-blade margins ciliate.

Inflorescence. Inflorescence composed of racemes. Racemes 1, single, drooping, bilateral, 23-32 cm long. Rhachis flattened, pubescent on surface. Spikelet packing broadside to rhachis, lax. Rhachis internodes $6-30 \mathrm{~mm}$ long. Spikelets in pairs or in threes. Fertile spikelets sessile, 2-3 in the cluster.

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 elliptic, laterally compressed, $11-15 \mathrm{~mm}$ long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes $1-1.5 \mathrm{~mm}$ long, pubescent.

Glumes. Glumes persistent, similar, subequal in width, shorter than spikelet. Lower glume linear, 9-11 mm long, 1 length of upper glume, coriaceous, much thinner on margins, 1 -keeled, 1 -veined. Lower glume lateral veins absent. Lower glume surface scabrous. Lower glume margins ciliolate. Lower glume apex attenuate. Upper glume linear, $9-11 \mathrm{~mm}$ long, 1.2-1.5 length of adjacent fertile lemma, coriaceous, with
membranous margins, 1 -keeled, 1 -veined. Upper glume lateral veins absent. Upper glume surface scabrous. Upper glume margins ciliolate. Upper glume apex attenuate.

Florets. Fertile lemma lanceolate, $6-9 \mathrm{~mm}$ long, chartaceous, keeled, 5 -veined, more than 3 -veined. Lemma lateral veins obscure. Lemma surface scaberulous. Lemma margins pubescent. Lemma apex acuminate, awned, 1 -awned. Principal lemma awn 2-3 mm long overall. Palea 1 length of lemma, 2 veined, 2 -keeled. Palea keels scaberulous. Palea surface scabrous. Palea apex entire or dentate, 2 -fid. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Anthers 3, 2.5-3.5 mm long, yellow or purple. Ovary pubescent on apex. Caryopsis with adherent pericarp.

Distribution (TDWG). Continent. Temperate Asia.
Country/Province /State. China. Qinghai.
Leymus pishanicus S.L. Lu \& Yu-huan Wu. Bull. Bot. Res., Harbin 12(4): 344-345, f. 2. 1992.
Accepted by: W.D.Clayton \& K.Harman, GrassBase (2008) and online, S-L Chen et al, Flora of China 22 (Poaceae) (2006).

TYPE from China. T:<Type of Basionym>: fide TROPICOS and Kew Synonomy Database: China: Xinjiang: Pishan Xian, Buqiong, alpine meadows, 2600 m, 20 June 1988, Exped. Karakorum \& Kunlun 1877 (HT: NWBI).

Illustrations: None found.
Derivation (Clifford \& Bostock 2007): L. -ica, belonging to. From Pishan, Xinjiang Uyghur Autonomous Region, China.

Classification. Subfamily Pooideae. Tribe: Triticeae.
Habit, Vegetative Morphology. Perennial, caespitose, clumped loosely. Rhizomes elongated. Culms erect, $50-80 \mathrm{~cm}$ long, $3-5$-noded. Culm-internodes distally glabrous. Leaf-sheaths glabrous on surface. Leaf-sheath auricles falcate, $1-2 \mathrm{~mm}$ long. Ligule an eciliate membrane, 0.5 mm long. Leaf-blades flat or conduplicate, $6-18 \mathrm{~cm}$ long, $2-4.5 \mathrm{~mm}$ wide, coriaceous, stiff. Leaf-blade surface scabrous, rough adaxially. Leaf-blade margins scabrous.

Inflorescence. Inflorescence composed of racemes. Racemes 1, single, linear, bilateral, 8-13 cm long. Rhachis scabrous on margins, glabrous on margins or ciliate on margins. Spikelet packing broadside to rhachis. Rhachis internodes linear, $8-12 \mathrm{~mm}$ long. Spikelets solitary. Fertile spikelets sessile.

Fertile Spikelets. Spikelets comprising 2-3 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets oblong, laterally compressed, $12-17 \mathrm{~mm}$ long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, similar, shorter than spikelet. Lower glume lanceolate, $7-10 \mathrm{~mm}$ long, 1 length of upper glume, coriaceous, 3 -veined. Lower glume margins ciliate. Lower glume apex acuminate. Upper glume lanceolate, $9-11 \mathrm{~mm}$ long, 0.75 length of adjacent fertile lemma, coriaceous, without keels, 3 -veined. Upper glume margins ciliate. Upper glume apex acuminate.

Florets. Fertile lemma lanceolate or oblong, $12-14 \mathrm{~mm}$ long, coriaceous, without keel, 5 -veined, more than 3 -veined. Lemma lateral veins obscure. Lemma apex acuminate, muticous. Palea 9 mm long, 2 veined. Palea keels ciliate. Palea apex emarginate, pubescent. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Anthers 3.
Distribution (TDWG). Continent. Temperate Asia.
Country /Province /State. China. Xinjiang.
Leymus pluriflorus L.B. Cai \& T.Lin Zhang. Bot. J. Linn. Soc. 159 (2): 344-347, 1-3A (2009).
TYPE from China. T:<Type of Basionym>: fide TROPICOS and Kew Synonomy Database: China: Qinghai Province: Xining, Xi Mts., near the Xining Botanical Garden, $36 ? 6^{\prime} \mathrm{N}, 101 ? \mathbf{6}^{\prime} \mathrm{E}$, on mountain slopes, $2320 \mathrm{~m}, 25$ Aug 2005, L.B. Cai \& B.H. Ma LO2 (HT: HNWP; IT: PE).

Illustrations: None found.
Classification. Subfamily Pooideae. Tribe: Triticeae.
Habit, Vegetative Morphology. Perennial, culms solitary or caespitose. Rhizomes elongated. Butt sheaths persistent and investing base of culm, with fibrous dead sheaths. Culms erect or geniculately
ascending, 65-120 cm long, 2-4 mm diam., 3-4 -noded. Culm-internodes distally glabrous. Leaves mostly basal. Leaf-sheaths glabrous on surface to pubescent. Ligule an eciliate membrane, $1.5-2.5 \mathrm{~mm}$ long, truncate. Leaf-blades flat or involute, $10-28 \mathrm{~cm}$ long, $5-7 \mathrm{~mm}$ wide, stiff. Leaf-blade surface glabrous.

Inflorescence. Inflorescence composed of racemes. Peduncle glabrous or pubescent above. Racemes 1, single, erect, linear or oblong, bilateral, 13-20 cm long, 12-24 mm wide. Rhachis flattened, pubescent on surface. Spikelet packing broadside to rhachis, contiguous, with lowest internode elongated. Rhachis internodes $9-18 \mathrm{~mm}$ long. Spikelets in threes or clustered at each node. Fertile spikelets sessile and pedicelled, $3-4$ in the cluster. Pedicels present, $1-5 \mathrm{~mm}$ long, pubescent.

Fertile Spikelets. Spikelets comprising 8-12 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets elliptic, laterally compressed, $14-28 \mathrm{~mm}$ long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes $1-1.5 \mathrm{~mm}$ long, pubescent. Floret callus pubescent, obtuse. Floret callus hairs $0.5-1 \mathrm{~mm}$ long.

Glumes. Glumes persistent, similar, subequal in width, shorter than spikelet. Lower glume lanceolate, $11-15 \mathrm{~mm}$ long, 1 length of upper glume, herbaceous, 1 -veined. Lower glume lateral veins absent. Lower glume margins ciliolate. Lower glume apex setaceously acuminate. Upper glume lanceolate, $11-15 \mathrm{~mm}$ long, 1.1 length of adjacent fertile lemma, herbaceous, 1 -veined. Upper glume lateral veins absent. Upper glume margins ciliolate. Upper glume apex setaceously acuminate.

Florets. Fertile lemma lanceolate, $10-14 \mathrm{~mm}$ long, chartaceous, 5 -veined, more than 3-veined. Lemma lateral veins distinct. Lemma surface glabrous. Lemma margins ciliate. Lemma apex awned, 1 awned. Principal lemma awn $2-3 \mathrm{~mm}$ long overall. Palea $9-12 \mathrm{~mm}$ long, 0.9 length of lemma, 2 -veined. Palea keels scaberulous, adorned above. Palea surface glabrous. Palea apex emarginate. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Anthers 3, 3.5-4 mm long, purple. Caryopsis with adherent pericarp, 6 mm long, light brown.

Distribution (TDWG). Continent. Temperate Asia.
Country /Province/State. China. Qinghai.

Leymus pseudoracemosus C. Yen \& J.L. Yang. Acta Bot. Yunnanica, 5(3): 275 (1983).
Accepted by: W.D.Clayton \& K.Harman, GrassBase (2008) and online, U.Quattrocchi, CRC World Dictionary of Grasses (2006), S-L Chen et al, Flora of China 22 (Poaceae) (2006).

TYPE from China. T:<Type of Basionym>: fide TROPICOS and Kew Synonomy Database: China: Qinghai: Chaidamu Basin, Dulang, Nuo-mu-hong, Talialiha, in deserto, 18 Aug. 1981, C. Yen et al. 81001 (HT: SAC; IT: SAU-TRI).

Illustrations: None found.
Derivation (Clifford \& Bostock 2007): Gk. pseudos, false; racemus, stalk of a bunch of grapes; -osum, abundance. Primary inflorescence axes raceme-like.

Classification. Subfamily Pooideae. Tribe: Triticeae.
Habit, Vegetative Morphology. Perennial, culms solitary. Rhizomes elongated. Butt sheaths persistent and investing base of culm, with fibrous dead sheaths. Culms erect, $60-90 \mathrm{~cm}$ long, $5-6 \mathrm{~mm}$ diam., 2-3 -noded. Culm-internodes distally pubescent. Leaf-sheaths longer than adjacent culm internode, glabrous on surface. Ligule an eciliate membrane, 3 mm long. Leaf-blades flat or involute, $15-40 \mathrm{~cm}$ long, $5-7 \mathrm{~mm}$ wide, coriaceous, stiff, grey-green. Leaf-blade surface smooth or scaberulous, rough on both sides, puberulous to hirsute, hairy adaxially.

Inflorescence. Inflorescence composed of racemes. Racemes 1, single, linear, bilateral, 12-25 cm long, $20-30 \mathrm{~mm}$ wide, with branchlets at base of longer racemes, secondary branches racemulose ( $3-4 \mathrm{~cm}$ long). Rhachis pubescent on surface, ciliate on margins. Spikelet packing broadside to rhachis. Rhachis internodes linear, $2.5-10 \mathrm{~mm}$ long. Spikelets in threes or clustered at each node. Fertile spikelets sessile, 3-5 in the cluster.

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, $13-20 \mathrm{~mm}$ long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes $1-1.8 \mathrm{~mm}$ long, pubescent. Floret callus pilose. Floret callus hairs $1-1.5 \mathrm{~mm}$ long.

Glumes. Glumes persistent, similar, shorter than spikelet. Lower glume lanceolate, $10-12 \mathrm{~mm}$ long, 0.75 length of upper glume, coriaceous, much thinner on margins, 3 -veined. Lower glume lateral veins obscure. Lower glume margins ciliate. Lower glume apex acuminate, awned, 1 -awned, awn $1-1.7 \mathrm{~mm}$ long. Upper glume lanceolate, $13-16 \mathrm{~mm}$ long, $1.2-1.7$ length of adjacent fertile lemma, coriaceous, with membranous margins, without keels, 3 -veined. Upper glume lateral veins obscure. Upper glume margins ciliate. Upper glume apex acuminate, awned, 1 -awned, awn $1-1.7 \mathrm{~mm}$ long.

Florets. Fertile lemma lanceolate, $9-13 \mathrm{~mm}$ long, coriaceous, much thinner on margins, without keel, $5-7(-10)$-veined, more than 3-veined. Lemma lateral veins obscure. Lemma surface pilose. Lemma margins ciliate. Lemma hairs 1 mm long. Lemma apex acuminate, mucronate or awned, 1 -awned. Principal lemma awn $0.2-1.5 \mathrm{~mm}$ long overall. Palea 1 length of lemma, 2 -veined. Palea keels ciliate, adorned above. Palea surface pilose, hairy on margins. Palea apex dentate, 2 -fid. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Anthers 3, 3-5 mm long, yellow. Caryopsis with adherent pericarp, ellipsoid, 4.5-5 mm long, dark brown, hairy at apex.

Distribution (TDWG). Continent. Temperate Asia.
Country /Province/State. China. Qinghai.

Leymus pubinodis (Keng) A. Love. Feddes Repert., 95:481 (1984).
Accepted by: W.D.Clayton \& K.Harman, GrassBase (2008) and online.
Illustrations: None found.
Classification. Subfamily Pooideae. Tribe: Triticeae.
Habit, Vegetative Morphology. Perennial, culms solitary. Basal innovations intravaginal. Culms erect, $75-100 \mathrm{~cm}$ long, $2.5-3.5 \mathrm{~mm}$ diam. Culm-internodes $10-26.5 \mathrm{~cm}$ long, distally glabrous or pubescent, with reflexed hairs. Culm-nodes constricted, pubescent. Leaf-sheaths loose, $18-25 \mathrm{~cm}$ long, mostly shorter than adjacent culm internode, striately veined, glabrous on surface. Ligule an eciliate membrane, 1 mm long, erose. Leaf-blades $12.5-23 \mathrm{~cm}$ long, $4.5-8 \mathrm{~mm}$ wide. Leaf-blade surface scaberulous, rough adaxially or on both sides.

Inflorescence. Inflorescence composed of racemes. Racemes 1, single, erect or drooping, bilateral, 1114 cm long, $5-8 \mathrm{~mm}$ wide. Rhachis flattened, puberulous on surface, ciliate on margins. Spikelet packing broadside to rhachis. Rhachis internodes linear, $3-14 \mathrm{~mm}$ long. Spikelets in pairs or in threes. Fertile spikelets sessile, $2-3$ in the cluster.

Fertile Spikelets. Spikelets comprising 3-4 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets elliptic to oblong, laterally compressed, $12-15 \mathrm{~mm}$ long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes 3 mm long, pubescent. Floret callus pubescent.

Glumes. Glumes persistent, similar, shorter than spikelet. Lower glume lanceolate or oblong, 9-10 mm long, 1 length of upper glume, coriaceous, without keels, $3-5$-veined. Lower glume primary vein scabrous. Lower glume surface scabrous. Lower glume apex acuminate. Upper glume lanceolate or oblong, $9-10 \mathrm{~mm}$ long, 1 length of adjacent fertile lemma, coriaceous, without keels, 3-5 -veined. Upper glume primary vein scabrous. Upper glume surface scabrous. Upper glume apex acuminate.

Florets. Fertile lemma lanceolate, $9-10 \mathrm{~mm}$ long, coriaceous, 5 -veined, more than 3-veined. Lemma surface puberulous. Lemma apex acute, awned, 1 -awned. Principal lemma awn 20-30 mm long overall. Palea keels ciliolate, adorned above. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Anthers 3, $2-2.5 \mathrm{~mm}$ long, brown. Stigmas 2. Ovary pubescent on apex. Caryopsis with adherent pericarp.

Distribution (TDWG). Continent. Temperate Asia.
Country /Province/State. China. Tibet.

Leymus racemosus (Lam.) Tsvelev. Not. Syst. Herb. Inst. Bot. Acad. Sci. URSS, xx. 429 (1960).
Accepted by: R.J.Soreng et al., Catalogue of 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), N.Tsvelev, Grasses of the Soviet Union (1983).

TYPE from Russia. Basionym or Replaced Name: Elymus racemosus Lam., Tabl. Encycl. 1: 207 (1792)
. T:<Type of Basionym>: fide TROPICOS and Kew Synonomy Database: Russia: Siberia: sin. loc., Lamarck s.n. (HT: P; IT: DAO, LE, US).

Illustrations (Books): M.E.Barkworth et al, Flora of North America north of Mexico Vol 24 Poaceae, part 1 (2007) (357), S-L Chen et al, Flora of China, Illustrations, Poaceae (2007) (Fig. 540).

Images: R.Darke, Ornamental Grasses (2004);.
Derivation (Clifford \& Bostock 2007): L. racemus, stalk of a cluster of grapes; -osa, abundance. The spikelets are borne in racemes or contracted panicles.

Classification. Subfamily Pooideae. Tribe: Triticeae.
Habit, Vegetative Morphology. Perennial. Rhizomes elongated. Culms robust, $50-100 \mathrm{~cm}$ long, $10-$ 12 mm diam. Ligule an eciliate membrane. Leaf-blades $30-60 \mathrm{~cm}$ long, $5-15 \mathrm{~mm}$ wide, coriaceous, stiff. Leaf-blade surface scabrous, rough adaxially. Leaf-blade margins scabrous. Leaf-blade apex attenuate.

Inflorescence. Inflorescence composed of racemes. Peduncle antrorsely scabrous above. Racemes 1 , single, oblong, bilateral, $7-15 \mathrm{~cm}$ long, $10-20 \mathrm{~mm}$ wide. Rhachis flattened. Spikelet packing broadside to rhachis, crowded. Spikelets in pairs or in threes or clustered at each node. Fertile spikelets sessile, 2-6 in the cluster.

Fertile Spikelets. Spikelets comprising 4-6 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets elliptic, laterally compressed, $15-20 \mathrm{~mm}$ long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, similar, reaching apex of florets or exceeding apex of florets. Lower glume linear or lanceolate, $15-25 \mathrm{~mm}$ long, 1 length of upper glume, 1 -veined. Lower glume apex acuminate. Upper glume linear or lanceolate, $15-25 \mathrm{~mm}$ long, 1.5-1.8 length of adjacent fertile lemma, 1 -veined. Upper glume apex acuminate.

Florets. Fertile lemma lanceolate or oblong, $10-14 \mathrm{~mm}$ long, coriaceous, without keel, 7 -veined, more than 3 -veined. Lemma surface pubescent, hairy below. Lemma apex acute, muticous. Palea 2 -veined. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, membranous. Anthers 3. Stigmas 2. Ovary pubescent on apex. Caryopsis with adherent pericarp. Hilum linear.
$2 n=28$ ( 7 refs TROPICOS).
Distribution (TDWG). Continent. Europe, Temperate Asia, Australasia, North America.
Region. Southeastern Europe, Eastern Europe.
Country/Province/State. : Bulgaria, Romania, Turkey Europe. Krym, Central European Russia, East European Russia, South European Russia, Northwest European Russia, Ukraine. Siberia, Middle Asia, Caucasus, Western Asia, China, Mongolia, Russia. Buryatiya, Chita, Irkutsk, Tuva. Kamchatka. Kazakhstan, Kirgizistan, Turkmenistan, Uzbekistan. Xinjiang. Mongolia. New Zealand (*). New Zealand South I. Northwest USA. Montana, Oregon, Washington, Wyoming.

Leymus ramosus (C. Richt.) Tsvelev. Not. Syst. Herb. Inst. Bot. Acad. Sci. URSS, xx. 430 (1960).
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: Triticum ramosum Trin. ex Ledeb., non Weigel(1782), Fl. Alt. 1: 114 (1829). T:<Type of Basionym>: fide TROPICOS and Kew Synonomy Database: : Based on Triticum ramosum Trin. ex Ledeb. ; Russia, Semipalatinsk: Meyer.

Recent Synonyms: Elymus giganteus Vahl, Symb. Bot. 3: 10. (1794). Elymus trinii Melderis, in K. H. Rechinger, Fl. Iran., Lief. 70, 225 (1970).

Illustrations: None found.
Derivation (Clifford \& Bostock 2007): L. ramus, branch; -osa, abundance. Inflorescences or culms much branched.

Classification. Subfamily Pooideae. Tribe: Triticeae.
Habit, Vegetative Morphology. Perennial. Rhizomes elongated. Culms $20-45 \mathrm{~cm}$ long. Lateral branches fastigiate, arising from lower culm. Ligule an eciliate membrane. Leaf-blades flat or involute, 10-

20 cm long, 2-6 mm wide, coriaceous, stiff, glaucous. Leaf-blade surface scabrous, rough adaxially. Leafblade margins scabrous. Leaf-blade apex attenuate.

Inflorescence. Inflorescence composed of racemes. Racemes 1, single, bilateral, 4-8 cm long. Rhachis flattened, ciliate on margins. Spikelet packing broadside to rhachis, lax. Rhachis internodes oblong, 6-10 mm long. Spikelets solitary. Fertile spikelets sessile.

Fertile Spikelets. Spikelets comprising 4-9 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets elliptic, laterally compressed, $10-15(-17) \mathrm{mm}$ long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, similar, shorter than spikelet. Lower glume subulate, $5-9 \mathrm{~mm}$ long, 1 length of upper glume, 1 -veined. Upper glume subulate, $5-9 \mathrm{~mm}$ long, $0.75-0.9$ length of adjacent fertile lemma, 1 -veined.

Florets. Fertile lemma lanceolate, 6-8 mm long, coriaceous, without keel, 5 -veined, more than 3veined. Lemma apex acute, muticous or mucronate. Palea 2 -veined. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, membranous. Anthers 3. Stigmas 2. Ovary pubescent on apex. Caryopsis with adherent pericarp. Hilum linear.

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

## Region. Eastern Europe.

Country /Province /State. Central European Russia, East European Russia, South European Russia, Northwest European Russia, Ukraine. Siberia, Middle Asia, Western Asia, China, Mongolia, Russia. Altay, Irkutsk, Tuva. Kazakhstan. Iran. Xinjiang. Mongolia.

Leymus ruoqiangensis S.L. Lu \& Y.H. Wu. Bull. Bot. Res. North-East. Forest. Inst., 12(4): 343 (1992).

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

TYPE from China. T:<Type of Basionym>: fide TROPICOS and Kew Synonomy Database: China, Ruoqiang Xian: Exped. Karakorum \& Kunlun 4268 (NWBI holo).

Illustrations: None found.
Classification. Subfamily Pooideae. Tribe: Triticeae.
Habit, Vegetative Morphology. Perennial, caespitose. Rhizomes elongated. Butt sheaths persistent and investing base of culm, with compacted dead sheaths or fibrous dead sheaths. Culms erect, 30-70 cm long, 3-4 -noded. Culm-internodes distally glabrous. Leaf-sheaths glabrous on surface, outer margin glabrous or hairy. Leaf-sheath auricles falcate. Ligule an eciliate membrane, 0.5 mm long. Leaf-blades filiform, involute, 1-2 mm wide, coriaceous, stiff. Leaf-blade surface scabrous, rough adaxially. Leaf-blade margins scabrous.

Inflorescence. Inflorescence composed of racemes. Racemes 1, single, linear, bilateral, $4.5-14 \mathrm{~cm}$ long. Rhachis ciliate on margins. Spikelet packing broadside to rhachis, lax. Rhachis internodes linear, 615 mm long. Spikelets solitary. Fertile spikelets sessile.

Fertile Spikelets. Spikelets comprising 3-5 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets oblong, laterally compressed, $10-17 \mathrm{~mm}$ long, breaking up at maturity, disarticulating below each fertile floret. Spikelet callus pilose.

Glumes. Glumes persistent, similar, shorter than spikelet. Lower glume linear, 7-10 mm long, 1 length of upper glume, coriaceous, $0-1$-veined. Lower glume lateral veins absent. Lower glume surface glabrous or pilose. Lower glume apex acuminate. Upper glume linear, $7-10 \mathrm{~mm}$ long, $0.7-0.85$ length of adjacent fertile lemma, coriaceous, without keels, $0-1$-veined. Upper glume primary vein absent or obscure. Upper glume lateral veins absent. Upper glume margins scabrous. Upper glume apex acuminate.

Florets. Fertile lemma lanceolate or oblong, $9-12 \mathrm{~mm}$ long, coriaceous, without keel, 5 -veined, more than 3-veined. Lemma lateral veins obscure. Lemma surface puberulous. Lemma apex acuminate, muticous. Palea 1 length of lemma, 2 -veined. Palea keels eciliate or ciliolate. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Anthers 3, 3-4 mm long, yellow or purple.
$2 n=28$ ( 1 ref TROPICOS).

Distribution (TDWG). Continent. Temperate Asia.
Country /Province /State. China. Qinghai, Xinjiang.

Leymus salinus (M.E. Jones) A. Love. Taxon, 29(1): 168 (1980).
Accepted by: R.J.Soreng et al., Catalogue of New World Grasses (2000-2003) and online, W.D.Clayton \& K.Harman, GrassBase (2008) and online, U.Quattrocchi, CRC World Dictionary of Grasses (2006).

TYPE from USA. Basionym or Replaced Name: Elymus salinus M. E. Jones, Proc, Calif. Acad. Ser. II. 5: 725 (1895). T:<Type of Basionym>: fide TROPICOS and Kew Synonomy Database: USA, Utah, Salina Pass: Jones 5447 (US iso).

Recent Synonyms: Elymus strigosus Rydb., Bull. Torr. Bot. Club, 1905, 609 (1905).
Illustrations (Books): M.E.Barkworth et al, Flora of North America north of Mexico Vol 24 Poaceae, part 1 (2007) (365, as subspecies salina, salmonis \& mojavensis).

Derivation (Clifford \& Bostock 2007): from Salina Pass, Utah, USA.
Classification. Subfamily Pooideae. Tribe: Triticeae.
Habit, Vegetative Morphology. Perennial, caespitose, clumped densely. Rhizomes absent. Culms erect, $30-80 \mathrm{~cm}$ long. Culm-internodes smooth or scaberulous. Leaves mostly basal. Ligule an eciliate membrane. Leaf-blades involute, $1-4 \mathrm{~mm}$ wide, indurate, stiff. Leaf-blade surface ribbed, scabrous, glabrous or pubescent.

Inflorescence. Inflorescence composed of racemes. Peduncle smooth or scaberulous above. Racemes 1, single, erect, bilateral, $5-12 \mathrm{~cm}$ long. Spikelet packing broadside to rhachis. Rhachis internodes linear. Spikelets solitary. Fertile spikelets sessile.

Fertile Spikelets. Spikelets comprising 2-3 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets oblong, laterally compressed, $10-16 \mathrm{~mm}$ long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes collateral, persistent, similar. Lower glume subulate, $4-8 \mathrm{~mm}$ long, coriaceous, 1 veined. Lower glume lateral veins absent. Lower glume surface smooth or scabrous. Upper glume subulate, $4-8 \mathrm{~mm}$ long, coriaceous, 1 -veined. Upper glume lateral veins absent. Upper glume surface smooth or scabrous.

Florets. Fertile lemma lanceolate, $10-16 \mathrm{~mm}$ long, coriaceous, without keel, 5 -veined, more than 3veined. Lemma lateral veins obscure. Lemma surface smooth or scaberulous, glabrous or puberulous. Lemma apex acute, muticous. Palea 2 -veined. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. $2 n=56$ ( 1 ref TROPICOS).
Distribution (TDWG). Continent. North America.
Country /Province /State. Northwest USA, Southwestern USA. Colorado, Wyoming. Arizona, California, Nevada, Utah.

Leymus secalinus (Georgi) Tsvelev. Akad. Nauk SSSR Bot. Inst. Komarova, Rast. Tsentral. Azii, Fasc. 4, 209 (1968).

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. Basionym or Replaced Name: Triticum secalinum Georgi, Bemerk. Reise Russ. Reich. 1: 198 (1775)
. T:<Type of Basionym>: fide TROPICOS and Kew Synonomy Database: Russia: Illustation in Gmelin, Fl. Sib. 1:119(1747).

Recent Synonyms: Elymus dasystachys Trin. ex Ledeb., Fl. Alt. !: 120. (1829).
Illustrations (Books): S-L Chen et al, Flora of China, Illustrations, Poaceae (2007) (Fig. 541).
Derivation (Clifford \& Bostock 2007): L. -inus, belonging to. Growing in fields of rye (Secale).
Classification. Subfamily Pooideae. Tribe: Triticeae.
Habit, Vegetative Morphology. Perennial. Rhizomes elongated. Culms erect, 30-100 cm long. Ligule an eciliate membrane. Leaf-blades flat or involute, $9-20 \mathrm{~cm}$ long, $2-6(-9) \mathrm{mm}$ wide, coriaceous, stiff,
glaucous. Leaf-blade surface scabrous, rough adaxially, glabrous or puberulous, hairy on both sides. Leafblade margins scabrous. Leaf-blade apex attenuate.

Inflorescence. Inflorescence composed of racemes. Racemes 1, single, bilateral, (6-)8-17(-20) cm long. Rhachis flattened. Spikelet packing broadside to rhachis, crowded, with subequal internodes or lowest internode elongated. Spikelets in pairs or in threes. Fertile spikelets sessile, 2-3(-4) in the cluster.

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 elliptic, laterally compressed, $12-18 \mathrm{~mm}$ long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, similar, shorter than spikelet. Lower glume lanceolate, $10-15 \mathrm{~mm}$ long, 1 length of upper glume, 1 -veined. Lower glume margins ciliate. Lower glume apex setaceously acuminate. Upper glume lanceolate, $10-15 \mathrm{~mm}$ long, 1.2 length of adjacent fertile lemma, 1 -veined. Upper glume margins ciliate. Upper glume apex setaceously acuminate.

Florets. Fertile lemma lanceolate or oblong, $8-12 \mathrm{~mm}$ long, coriaceous, without keel, 5 -veined, more than 3 -veined. Lemma lateral veins prominent. Lemma surface pubescent, hairy all along. Lemma apex acute, awned, 1 -awned. Principal lemma awn $1-3 \mathrm{~mm}$ long overall. Palea 2 -veined. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, membranous. Anthers 3. Stigmas 2. Ovary pubescent on apex. Caryopsis with adherent pericarp. Hilum linear.
$2 n=28$ ( 7 refs TROPICOS).
Distribution (TDWG). Continent. Europe (*), Temperate Asia, Tropical Asia.
Region. Northern Europe (*).
Country /Province /State. : GB Aliens (Ryves et al). Siberia, Middle Asia, Western Asia, China, Mongolia, Eastern Asia, Russia. Altay, Buryatiya, Chita, Irkutsk, Krasnoyarsk, Tuva. Kazakhstan, Kirgizistan, Turkmenistan, Uzbekistan. Iran. China South Central, Inner Mongolia, Manchuria, China North-Central, Qinghai, China Southeast, Tibet, Xinjiang. Mongolia. Japan, Korea. Indian Subcontinent. India, Pakistan, West Himalaya.

Gansu, Hebei, Shaanxi, Shanxi. Henan. Sichuan.

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

TYPE from China. Basionym or Replaced Name: Leymus latiglumis L.B. Cai, Acta Phytotax. Sin. 33(5): 493-494, pl. 2 (1995)
. T:<Type of Basionym>: fide TROPICOS and Kew Synonomy Database: China: Shanxi: Youyu, in pratis, 1350 m, 19 Sept. 1984, Huangtu Exped. 3718 (HT: WUG).

Illustrations (Books): S-L Chen et al, Flora of China, Illustrations, Poaceae (2007) (Fig. 545). Classification. Subfamily Pooideae. Tribe: Triticeae.
Habit, Vegetative Morphology. Perennial. Culms erect, $70-110 \mathrm{~cm}$ long, 2-3 mm diam., 3-4 -noded. Leaves mostly basal. Leaf-sheaths antrorsely scabrous. Ligule an eciliate membrane, 0.8 mm long. Leafblades flat or convolute, $10-25 \mathrm{~cm}$ long, $3-5 \mathrm{~mm}$ wide, stiff. Leaf-blade surface scabrous, rough adaxially, glabrous or pubescent, densely hairy, hairy adaxially.

Inflorescence. Inflorescence composed of racemes. Racemes 1, single, erect, bilateral, 8-15 cm long, $10-13 \mathrm{~mm}$ wide. Rhachis flattened, puberulous on surface. Spikelet packing broadside to rhachis. Rhachis internodes $6-20 \mathrm{~mm}$ long. Spikelets in pairs. Fertile spikelets sessile, 2 in the cluster.

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 elliptic, laterally compressed, $18-25 \mathrm{~mm}$ long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes $0.5-1.5 \mathrm{~mm}$ long, pubescent.

Glumes. Glumes persistent, similar, subequal in width, shorter than spikelet. Lower glume lanceolate, $11-14 \mathrm{~mm}$ long, 1 length of upper glume, coriaceous, much thinner on margins, 1 -keeled, 3-5(-7)-veined. Lower glume margins ciliate. Lower glume apex setaceously acuminate. Upper glume lanceolate, 11-16 mm long, 1 length of adjacent fertile lemma, coriaceous, with membranous margins, 1-keeled, 3-5(-7) veined. Upper glume margins ciliolate. Upper glume apex setaceously acuminate.

Florets. Fertile lemma lanceolate, $10-12 \mathrm{~mm}$ long, chartaceous, keeled, 5-7 -veined, more than 3veined. Lemma surface pilose. Lemma apex acuminate, awned, 1 -awned. Principal lemma awn $1-2 \mathrm{~mm}$ long overall. Palea 1 length of lemma, 2 -veined, 2 -keeled. Palea keels ciliate. Palea apex emarginate. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Anthers 3, 5 mm long, yellow. Caryopsis with adherent pericarp.
Distribution (TDWG). Continent. Temperate Asia.
Country /Province/State. China. China North-Central.
Shanxi.

Leymus simplex (Scribn. \& Williams) D.R. Dewey. Brittonia, 35(1): 32: (1983).
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: Elymus simplex Scribn. \& T.A. Williams, Bull. Div. Agrostol., U.S.D.A. 11: 57, t. 17 (1898)

T:<Type of Basionym>: fide TROPICOS and Kew Synonomy Database: TYPE COLLECTION: T.A. Williams 2334, 8 Jul 1897, USA: Wyoming (US-1019217). Possible type-sheet coll. no. 2354. but date \& location are the same.

IT: T.A. Williams 2334, 8 Jul 1897, USA: Wyoming: Sweetwater Co.: Green River, 1800 m (US-9795).
Illustrations (Books): M.E.Barkworth et al, Flora of North America north of Mexico Vol 24 Poaceae, part 1 (2007) (361, \& as var. simplex, var. luxurians).

Derivation (Clifford \& Bostock 2007): L. simple. Culms or inflorescences unbranched.
Classification. Subfamily Pooideae. Tribe: Triticeae.
Distribution (TDWG). Continent. North America.
Country /Province /State. Northwest USA. Colorado, Wyoming.

Leymus spiniformis L.B. Cai \& X. Su. Bull. Bot. Res., Harbin 27(6): 656, f. 3 (2007).
TYPE from China. T:<Type of Basionym>: fide TROPICOS and Kew Synonomy Database: ST: S.G. Wu et al. 987, 9 Aug. 1990, China: Qinghai: Geormu, Kokoxili, in disertis, 4800 m (HT: HNWP).

Illustrations: None found.
Classification. Subfamily Pooideae. Tribe: Triticeae.
Habit, Vegetative Morphology. Perennial, caespitose. Rhizomes elongated. Culms geniculately ascending, $35-60 \mathrm{~cm}$ long, $1.2-2.5 \mathrm{~mm}$ diam., 3-4 -noded. Leaf-sheaths mostly shorter than adjacent culm internode, puberulous. Ligule an eciliate membrane, 1 mm long, obtuse. Leaf-blades involute, 6-15 cm long, $2-5 \mathrm{~mm}$ wide, stiff. Leaf-blade surface scabrous, rough on both sides.

Inflorescence. Inflorescence composed of racemes. Racemes 1, single, erect, linear, bilateral, 8-15 cm long, 6-9 mm wide. Rhachis flattened, pubescent on surface. Spikelet packing broadside to rhachis, crowded. Rhachis internodes $4-15 \mathrm{~mm}$ long. Spikelets in pairs. Fertile spikelets sessile, 2 in the cluster.

Fertile Spikelets. Spikelets comprising 4-5 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets elliptic, laterally compressed, $9-16 \mathrm{~mm}$ long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes 1 mm long, sparsely hairy.

Glumes. Glumes persistent, similar, shorter than spikelet or reaching apex of florets. Lower glume linear, $8-16 \mathrm{~mm}$ long, 1 length of upper glume, coriaceous, 1 -veined. Lower glume lateral veins absent. Lower glume inner surface scabrous. Lower glume apex setaceously acuminate. Upper glume linear, 8-16 mm long, 1 length of adjacent fertile lemma, coriaceous, 1 -veined. Upper glume lateral veins absent. Upper glume margins smooth or scaberulous. Upper glume apex setaceously acuminate.

Florets. Fertile lemma lanceolate, $7-15 \mathrm{~mm}$ long, chartaceous, 5 -veined, more than 3-veined. Lemma lateral veins obscure. Lemma surface scabrous. Lemma margins pubescent. Lemma apex awned, 1 -awned. Principal lemma awn $2-3 \mathrm{~mm}$ long overall ( $9-14 \mathrm{~mm}$ on lowest lemma). Palea 2 -veined. Palea keels scaberulous. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Anthers 3, 4-5 mm long, yellow. Ovary pubescent on apex.
Distribution (TDWG). Continent. Temperate Asia.
Country /Province/State. China. Qinghai.

Leymus tianschanicus (Drobov) Tsvelev. Not. Syst. Herb. Inst. Bot. Acad. Sci. URSS, 20: 429 (1960).
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. Basionym or Replaced Name: Elymus tianschanicus Drobov, Key Pl. Envir. Tashkent, ed. Popov, 44 (1923). T:<Type of Basionym>: fide TROPICOS and Kew Synonomy Database: Russia, Tashkent, Briczmulla: Drobov 178 (TAK holo).

Recent Synonyms: Elymus baldschuanicus Roshev., Bull. Jard. Bot. Acad. Sc. URSS, 30:. 779 (1932).
Illustrations (Books): S-L Chen et al, Flora of China, Illustrations, Poaceae (2007) (Fig. 541).
Derivation (Clifford \& Bostock 2007): L. -ica, belonging to. From Tienshan, eastern Kazakhstan, former Soviet Union.

Classification. Subfamily Pooideae. Tribe: Triticeae.
Habit, Vegetative Morphology. Perennial. Rhizomes elongated. Culms 60-120 cm long. Ligule an eciliate membrane. Leaf-blades involute, $10-20 \mathrm{~cm}$ long, $3-4 \mathrm{~mm}$ wide, coriaceous, stiff, glaucous. Leafblade surface scabrous, rough adaxially. Leaf-blade margins scabrous. Leaf-blade apex attenuate.

Inflorescence. Inflorescence composed of racemes. Peduncle antrorsely scabrous above. Racemes 1, single, bilateral, $15-21 \mathrm{~cm}$ long. Rhachis flattened, pilose on surface, scabrous on margins. Spikelet packing broadside to rhachis, crowded, with lowest internode elongated. Spikelets in pairs or in threes. Fertile spikelets sessile, 2-3 in the cluster.

Fertile Spikelets. Spikelets comprising 5-6 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets elliptic, laterally compressed, $18-25 \mathrm{~mm}$ long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes pilose.

Glumes. Glumes persistent, similar, shorter than spikelet. Lower glume subulate or linear, $20-30 \mathrm{~mm}$ long, 1 length of upper glume, 1 -veined. Lower glume surface scabrous. Upper glume subulate or linear, $20-30 \mathrm{~mm}$ long, 2 length of adjacent fertile lemma, 1 -veined. Upper glume surface scabrous.

Florets. Fertile lemma lanceolate, $10-15 \mathrm{~mm}$ long, coriaceous, without keel, 5 -veined, more than 3veined. Lemma surface scabrous, rough below. Lemma apex acute, awned, 1 -awned. Principal lemma awn $15-20 \mathrm{~mm}$ long overall. Palea 2 -veined. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, membranous. Anthers 3. Stigmas 2. Ovary pubescent on apex. Caryopsis with adherent pericarp. Hilum linear.
$2 n=28$ ( 1 ref TROPICOS), or 84 ( 2 refs TROPICOS).
Distribution (TDWG). Continent. Temperate Asia.
Country /Province/State. Middle Asia, Western Asia, China, Russia. Kazakhstan, Kirgizistan, Turkmenistan, Uzbekistan. Iran. Inner Mongolia, Xinjiang.

Leymus triticoides (Buckl.) Pilger. Engl. Bot. Jahrb. Ixxiv. 6 (1947).
Accepted by: R.J.Soreng et al., Catalogue of New World Grasses (2000-2003) and online, W.D.Clayton \& K.Harman, GrassBase (2008) and online, U.Quattrocchi, CRC World Dictionary of Grasses (2006).

TYPE from USA. Basionym or Replaced Name: Elymus triticoides Buckl., Proc. Acad. Sc. Philad. 1862: 99 (1863). T:<Type of Basionym>: fide TROPICOS and Kew Synonomy Database: HT: Nuttall s.n., USA: Rocky Mountains (PH; US (photo only)).

Illustrations (Books): M.E.Barkworth et al, Flora of North America north of Mexico Vol 24 Poaceae, part 1 (2007) (361).

Images: R.Darke, The Encylopaedia of Grasses for Liveable Landscapes (2007);.
Derivation (Clifford \& Bostock 2007): Gk. -oides, resembling. Resembling Triticum usually with reference to the inflorescence.

Classification. Subfamily Pooideae. Tribe: Triticeae.
Habit, Vegetative Morphology. Perennial, culms solitary. Rhizomes elongated, scaly. Culms erect, $40-120 \mathrm{~cm}$ long. Culm-internodes glaucous, distally glabrous. Leaf-sheaths glabrous on surface or pubescent. Ligule an eciliate membrane, 1 mm long, truncate. Leaf-blades flat or involute, $3-6 \mathrm{~mm}$ wide, coriaceous, stiff, glaucous. Leaf-blade surface ribbed, glabrous or pubescent.

Inflorescence. Inflorescence composed of racemes. Peduncle glabrous or pubescent above. Racemes 1, single, bilateral, 6-20 cm long. Spikelet packing broadside to rhachis. Rhachis internodes linear. Spikelets appressed, in pairs. Fertile spikelets sessile, 2 in the cluster.

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

Glumes. Glumes collateral, persistent, similar, shorter than spikelet or reaching apex of florets or exceeding apex of florets. Lower glume subulate, $5-15 \mathrm{~mm}$ long, coriaceous, 1 -veined. Lower glume lateral veins absent. Upper glume subulate, $5-15 \mathrm{~mm}$ long, coriaceous, 1 -veined. Upper glume lateral veins absent.

Florets. Fertile lemma lanceolate, 6-10 mm long, coriaceous, without keel, 5 -veined, more than 3veined. Lemma apex acute, muticous or mucronate. Palea 2 -veined. Apical sterile florets resembling fertile though underdeveloped.

Distribution (TDWG). Continent. North America.
Country /Province /State. Hawaii (*). Northwest USA, Southwestern USA, South-central USA, Mexico. Colorado, Idaho, Montana, Oregon, Washington, Wyoming. Arizona, California, Nevada, Utah. New Mexico. Northeast Mexico, Northwest Mexico.

Tamaulipas. Baja California.

Leymus villosissimus (Scribn.) Tsvelev. Not. Syst. Herb. Inst. Bot. Acad. Sci. URSS, xx. 429 (1960).
Accepted by: W.D.Clayton \& K.Harman, GrassBase (2008) and online, N.Tsvelev, Grasses of the Soviet Union (1983).

TYPE from Canada. Basionym or Replaced Name: Elymus villosissimus Scribn., Bull. Div. Agrostol., U.S.D.A. 17: 236, f. 622 (1899)
. T:<Type of Basionym>: fide TROPICOS and Kew Synonomy Database: HT: J.M. Macoun 16226, 4 Aug 1897, Canada: Alaska: St. Paul Island (US-2115682).

Illustrations: None found.
Derivation (Clifford \& Bostock 2007): L. most hairy. Plant densely hairy overall or in part.
Classification. Subfamily Pooideae. Tribe: Triticeae.
Habit, Vegetative Morphology. Perennial, caespitose. Rhizomes elongated. Culms 25-60 cm long. Leaf-sheath auricles falcate. Ligule an eciliate membrane, $0.5-1 \mathrm{~mm}$ long. Leaf-blades flat or involute, 3-8 mm wide, coriaceous, stiff, glaucous. Leaf-blade surface scaberulous, rough adaxially.

Inflorescence. Inflorescence composed of racemes. Peduncle hirsute above. Racemes 1, single, linear, bilateral, $5-10 \mathrm{~cm}$ long, $12-17 \mathrm{~mm}$ wide. Rhachis pubescent on surface. Spikelet packing broadside to rhachis, crowded. Rhachis internodes linear. Spikelets appressed, in pairs or in threes. Fertile spikelets sessile and pedicelled, 2-3 in the cluster. Pedicels present.

Fertile Spikelets. Spikelets comprising 3-5 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets oblong, laterally compressed, $12-20 \mathrm{~mm}$ long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, similar, shorter than spikelet. Lower glume lanceolate, 9-14 mm long, 1 length of upper glume, coriaceous, 3 -veined. Lower glume lateral veins obscure. Lower glume surface villous. Lower glume apex acuminate. Upper glume lanceolate, $9-14 \mathrm{~mm}$ long, $0.8-1$ length of adjacent fertile lemma, coriaceous, 3 -veined. Upper glume lateral veins obscure. Upper glume surface villous. Upper glume apex acuminate.

Florets. Fertile lemma lanceolate, $10-13 \mathrm{~mm}$ long, coriaceous, without keel, 5-7 -veined, more than 3veined. Lemma surface villous. Lemma apex acute, muticous. Palea 2 -veined. Palea keels ciliate. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. $2 n=28$ ( 1 ref TROPICOS).
Distribution (TDWG). Continent. Temperate Asia.
Country /Province/State. Siberia, Russian Far East. Krasnoyarsk. Kamchatka, Kuril Is, Magadan.

Leymus x multiflorus (Gould) ? Löve. Feddes Repert. 95(7-8): 482 (1984).
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: Elymus triticoides subsp. multiflorus Gould, Madroño 8(2): 46-47 (1945)
. T:<Type of Basionym>: fide TROPICOS and Kew Synonomy Database: HT: F.W. Gould 1304, 4 Jul 1941, USA: California: Contra Costa Co., near San Francisco Bay at Albany, in partial shade of grove of large trees (UC-686616; IT: US-1868194, US-75884 (fragm. ex UC)).

Illustrations (Books): M.E.Barkworth et al, Flora of North America north of Mexico Vol 24 Poaceae, part 1 (2007) (363).

Derivation (Clifford \& Bostock 2007): L. multus, many; flos, flower. Spikelets with more florets than those of related species.

Classification. Subfamily Pooideae. Tribe: Triticeae.
Distribution (TDWG). Continent. North America.
Country /Province /State. Southwestern USA. California.

Leymus x vancouverensis Vasey. Bull. Torrey Bot. Club 15(2): 48 (1888).
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 Canada. T:<Type of Basionym>: fide TROPICOS and Kew Synonomy Database: HT: J. Macoun 27, 18 Jun 1887, Canada: British Columbia: Vancouver Island (US-81693 (photo, DAO); IT: CAN).

Illustrations (Books): M.E.Barkworth et al, Flora of North America north of Mexico Vol 24 Poaceae, part 1 (2007) (359).

Derivation (Clifford \& Bostock 2007): L. -ensis, denoting origin. From Vancouver Island or mistakenly believed to come from that island.

Classification. Subfamily Pooideae. Tribe: Triticeae.
Distribution (TDWG). Continent. North America.
Country /Province /State. Western Canada, Northwest USA, Southwestern USA. British Columbia. Oregon, Washington. California.

Leymus yiunensis N.R. Cui \& D.F. Cui. Fl. Xinjiangensis, 6: 603 (1996).
Accepted by: W.D.Clayton \& K.Harman, GrassBase (2008) and online, S-L Chen et al, Flora of China 22 (Poaceae) (2006).

TYPE from China. T:<Type of Basionym>: fide TROPICOS and Kew Synonomy Database: China, Xinjiang, Yiu Xian: Cui 820064 (XJA holo).

Illustrations (Books): S-L Chen et al, Flora of China, Illustrations, Poaceae (2007) (Fig. 542).
Derivation (Clifford \& Bostock 2007): L. -ensis, denoting origin. From Yiwu (Yiu), Xinjiang Uyghur Autonomous Region, China.

Classification. Subfamily Pooideae. Tribe: Triticeae.
Habit, Vegetative Morphology. Perennial, caespitose, clumped loosely. Rhizomes elongated. Butt sheaths persistent and investing base of culm, with compacted dead sheaths. Culms erect, $25-35 \mathrm{~cm}$ long. Culm-internodes distally glabrous. Leaf-sheaths glabrous on surface, outer margin glabrous or hairy. Ligule an eciliate membrane, 1 mm long, truncate. Leaf-blades flat or involute, $4-9 \mathrm{~cm}$ long, $1-2 \mathrm{~mm}$ wide, indurate, stiff. Leaf-blade surface scabrous, rough adaxially. Leaf-blade margins scabrous. Leaf-blade apex attenuate.

Inflorescence. Inflorescence composed of racemes. Racemes 1, single, erect, bilateral, 5-11 cm long, $5-10 \mathrm{~mm}$ wide. Rhachis flattened, ciliate on margins. Spikelet packing broadside to rhachis. Rhachis internodes $3-7 \mathrm{~mm}$ long. Spikelets in pairs. Fertile spikelets sessile, 2 in the cluster.

Fertile Spikelets. Spikelets comprising 3-8 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets elliptic, laterally compressed, $7-11 \mathrm{~mm}$ long, breaking up at maturity,
disarticulating below each fertile floret. Rhachilla internodes $1-1.5 \mathrm{~mm}$ long, pubescent. Floret callus pubescent. Floret callus hairs $0.5-1 \mathrm{~mm}$ long.

Glumes. Glumes persistent, similar, shorter than spikelet. Lower glume lanceolate, 5-8 mm long, 0.9 length of upper glume, 1 -veined. Lower glume lateral veins obscure. Lower glume surface pubescent. Lower glume apex setaceously acuminate. Upper glume lanceolate, $8-9 \mathrm{~mm}$ long, $1-1.1$ length of adjacent fertile lemma, 1 -veined. Upper glume lateral veins absent. Upper glume surface pubescent. Upper glume margins ciliate. Upper glume apex setaceously acuminate.

Florets. Fertile lemma lanceolate, $7-9 \mathrm{~mm}$ long, coriaceous, without keel, 5 -veined, more than 3veined. Lemma surface pubescent, hairy all along. Lemma margins ciliate. Lemma apex acute, awned, 1 awned. Principal lemma awn 1 mm long overall. Palea 1 length of lemma. Palea keels ciliate. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Anthers $3,3 \mathrm{~mm}$ long, yellow. Stigmas 2. Ovary pubescent on apex. Caryopsis with adherent pericarp. Hilum linear.

Distribution (TDWG). Continent. Temperate Asia.
Country /Province /State. China. Xinjiang.

## Libyella cyrenaica (Dur. \& Barr.) Pamp. Bull. Soc. Bot. Ital. 1925, 151 (1925).

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

TYPE from Libya. Basionym or Replaced Name: Poa cyrenaica E.A. Durand \& Barratte, Fl. Liby. Prodr. 268 (1910)
. T:<Type of Basionym>: fide TROPICOS and Kew Synonomy Database: HT: G.F. Ruhmer 379, 10 Feb 1883, Libya: Benghasi (IT: US-91017 (fragm. ex B in 1926)).

Illustrations: None found.
Derivation (Clifford \& Bostock 2007): L. -ica, belonging to. From Cyrenaica, Libya.
Classification. Subfamily Pooideae. Tribe: Poeae.
Habit, Vegetative Morphology. Annual. Culms $2-5 \mathrm{~cm}$ long. Ligule an eciliate membrane, $0.5-1 \mathrm{~mm}$ long, truncate. Leaf-blades $1-4 \mathrm{~cm}$ long, $0.5-1 \mathrm{~mm}$ wide.

Inflorescence. Inflorescence composed of racemes, shorter than basal leaves, embraced at base by subtending leaf. Racemes 1 , single, unilateral, 1 cm long, bearing few fertile spikelets, bearing 2-6 fertile spikelets on each. Rhachis angular. Spikelet packing broadside to rhachis, with lowest internode elongated. Spikelets solitary. Fertile spikelets sessile, heteromorphic (lowest female, glumeless).

Fertile Spikelets. Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, laterally compressed, 3 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, similar, shorter than spikelet, similar to fertile lemma in texture. Lower glume ovate, $0.1-1 \mathrm{~mm}$ long, 1 length of upper glume, hyaline, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume apex obtuse. Upper glume ovate, $0.1-1 \mathrm{~mm}$ long, $0.05-0.3$ length of adjacent fertile lemma, hyaline, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume apex obtuse.

Florets. Fertile lemma oblong, 3 mm long, hyaline, without keel, 3 -veined, $0-3$-veined. Lemma lateral veins obscure. Lemma apex erose, truncate. Palea hyaline, 2 -veined.

Flower and Fruit. Lodicules absent. Anthers $3,2 \mathrm{~mm}$ long. Caryopsis with adherent pericarp, oblong, laterally compressed. Hilum elliptic.

Distribution (TDWG). Continent. Africa.
Country /Province /State. Northern Africa. Libya.

Limnas malyschevii O.D. Nikiforova. Bot. Zhurn., 72(3): 391 (1987).
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>: fide TROPICOS and Kew Synonomy Database: Russia, Putorana, Lake Chaja-Kjuel: Malyschev (LE holo, NS).

Illustrations: None found.

Derivation (Clifford \& Bostock 2007): In honor of Leonid Ivanovich Malyshev (1931-) Russian botanist.

Classification. Subfamily Pooideae. Tribe: Poeae.
Habit, Vegetative Morphology. Perennial, caespitose, clumped densely. Rhizomes short. Culms erect, $20-30 \mathrm{~cm}$ long. Ligule an eciliate membrane. Leaf-blades convolute, $10-15 \mathrm{~cm}$ long, $0.5-0.7 \mathrm{~mm}$ wide.

Inflorescence. Inflorescence a panicle. Peduncle scaberulous above. Panicle open, linear, loose, 1.5-3 cm long, $0.5-0.7 \mathrm{~cm}$ wide, bearing few spikelets. 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 oblong, laterally compressed, $2.7-3.2 \mathrm{~mm}$ long, falling entire.

Glumes. Glumes similar, reaching apex of florets, firmer than fertile lemma. Lower glume lanceolate, 2.7-33.2 mm long, 1 length of upper glume, chartaceous, purple, 1 -keeled, 3 -veined. Lower glume primary vein scaberulous. Lower glume surface asperulous. Lower glume apex acute. Upper glume lanceolate, 2.73.2 mm long, 1 length of adjacent fertile lemma, chartaceous, purple, 1 -keeled, 3 -veined. Upper glume primary vein scaberulous. Upper glume surface asperulous. Upper glume apex acute.

Florets. Fertile lemma ovate, $2.7-3.2 \mathrm{~mm}$ long, membranous, shiny, keeled, 5 -veined, more than 3veined. Lemma lateral veins obscure. Lemma apex acute, awned, 1 -awned. Principal lemma awn dorsal, geniculate, $6-7 \mathrm{~mm}$ long overall.

Flower and Fruit. Anthers 2, 1.9-2 mm long.
Distribution (TDWG). Continent. Temperate Asia.
Country/Province/State. Siberia. Yakutiya.

## Limnas stelleri Trin. Fund. Agrost. 116. t. 6. (1920).

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 Synonomy Database: IT: Steller s.n., Russia: East Sibiria: Okhotsk (LE-TRIN-1574.02).

Illustrations: None found.
Derivation (Clifford \& Bostock 2007): in honor of Georg Wilhelm Steller (1709-1746) German traveller who collected in Siberia.

Classification. Subfamily Pooideae. Tribe: Poeae.
Habit, Vegetative Morphology. Perennial, caespitose. Rhizomes short. Culms erect, $15-60 \mathrm{~cm}$ long. Leaves much reduced on the culm. Ligule an eciliate membrane, $0.3-3.5 \mathrm{~mm}$ long. Leaf-blades flat or conduplicate, $5-20 \mathrm{~cm}$ long, $0.6-2 \mathrm{~mm}$ wide. Leaf-blade surface scaberulous, rough abaxially, pubescent, hairy adaxially.

Inflorescence. Inflorescence a panicle. Panicle contracted, oblong, 2-6 cm long. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, filiform, $0.3-6 \mathrm{~mm}$ 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 oblong, laterally compressed, 3-4.2 mm long, falling entire.

Glumes. Glumes similar, reaching apex of florets, firmer than fertile lemma. Lower glume oblong, 34.2 mm long, 1 length of upper glume, chartaceous, 1-keeled, 3 -veined. Lower glume primary vein scaberulous. Lower glume surface asperulous. Lower glume apex acute. Upper glume oblong, 3-4.2 mm long, 1 length of adjacent fertile lemma, chartaceous, 1 -keeled, 3 -veined. Upper glume primary vein scaberulous. Upper glume surface asperulous. Upper glume apex acute.

Florets. Fertile lemma ovate, $3-4.2 \mathrm{~mm}$ long, membranous, keeled, 5 -veined, more than 3 -veined. Lemma surface asperulous, rough above. Lemma apex acute, awned, 1 -awned. Principal lemma awn dorsal, arising $0.2-0.25$ way up back of lemma, geniculate, $4.5-9 \mathrm{~mm}$ long overall. Palea $0.75-0.8$ length of lemma, 1-2 -veined, 1-keeled or 2-keeled.

Flower and Fruit. Lodicules 2. Anthers 2, 2-2.5 mm long. Ovary glabrous. Caryopsis $1.7-2.5 \mathrm{~mm}$ long. Embryo 0.2-0.25 length of caryopsis.

Distribution (TDWG). Continent. Temperate Asia.
Country /Province /State. Siberia, Russian Far East. Irkutsk, Krasnoyarsk, Tuva. Magadan.

Limnas veresczaginii Krylov \& Schischkin. Animadvers. Syst. Herb. Univ. Tomsk. No. 4, 1 (1927).
Accepted by: W.D.Clayton \& K.Harman, GrassBase (2008) and online, N.Tsvelev, Grasses of the Soviet Union (1983).

TYPE from Russia. T:<Type of Basionym>: fide TROPICOS and Kew Synonomy Database: Russia, Katon-Karagai: Vereshchagin 4764 (LE holo, K).

Illustrations: None found.
Derivation (Clifford \& Bostock 2007): in honor of Victor Ivanovich Vereschagin (1871-1956) Soviet botanist.

Classification. Subfamily Pooideae. Tribe: Poeae.
Habit, Vegetative Morphology. Perennial, caespitose. Rhizomes short. Culms erect, $15-60 \mathrm{~cm}$ long. Leaves all alike ( $1-5 \mathrm{~cm}$ long on culm). Ligule an eciliate membrane, $0.3-3.5 \mathrm{~mm}$ long. Leaf-blades flat or conduplicate, $5-20 \mathrm{~cm}$ long, $1.3-4 \mathrm{~mm}$ wide. Leaf-blade surface scaberulous, rough abaxially, pubescent, hairy adaxially.

Inflorescence. Inflorescence a panicle. Panicle contracted, oblong, 3-9 cm long. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, filiform, $0.3-6 \mathrm{~mm}$ 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 oblong, laterally compressed, $3.8-4.5 \mathrm{~mm}$ long, falling entire.

Glumes. Glumes similar, reaching apex of florets, firmer than fertile lemma. Lower glume oblong, $3.8-4.5 \mathrm{~mm}$ long, 1 length of upper glume, chartaceous, 1 -keeled, 3 -veined. Lower glume primary vein scaberulous, ciliolate. Lower glume surface asperulous. Lower glume apex acute. Upper glume oblong, $3.8-4.5 \mathrm{~mm}$ long, 1 length of adjacent fertile lemma, chartaceous, 1-keeled, 3 -veined. Upper glume primary vein scaberulous, ciliolate. Upper glume surface asperulous. Upper glume apex acute.

Florets. Fertile lemma ovate, $3.8-4.5 \mathrm{~mm}$ long, membranous, keeled, 5 -veined, more than 3-veined. Lemma surface asperulous, rough above. Lemma apex acute, awned, 1 -awned. Principal lemma awn dorsal, arising $0.2-0.25$ way up back of lemma, geniculate, $4.5-9 \mathrm{~mm}$ long overall, with a straight or slightly twisted column. Palea $0.75-0.8$ length of lemma, 1-2 -veined, 1-keeled or 2-keeled.

Flower and Fruit. Lodicules 2. Anthers 2, 2-2.5 mm long. Ovary glabrous. Caryopsis $1.7-2.5 \mathrm{~mm}$ long. Embryo 0.2-0.25 length of caryopsis.

Distribution (TDWG). Continent. Temperate Asia.
Country /Province /State. Siberia. Altay.

Limnodea arkansana (Nutt.) Dewey. Contrib U.S. Nat. Herb. ii. 518 (1894).
Accepted by: R.J.Soreng et al., Catalogue of New World Grasses (2000-2003) and online, W.D.Clayton \& K.Harman, GrassBase (2008) and online, U.Quattrocchi, CRC World Dictionary of Grasses (2006).

TYPE from USA. Basionym or Replaced Name: Greenia arkansana Nutt., Trans. Amer. Philos. Soc., n.s., 5: 142 (1835)
. T:<Type of Basionym>: fide TROPICOS and Kew Synonomy Database: USA, Arkansas, Red River: Nuttall (BM holo).

Illustrations (Books): M.E.Barkworth et al, Flora of North America north of Mexico Vol 24 Poaceae, part 1 (2007) (775), F.W.Gould, The Grasses of Texas (1975) (136, Fig. 67).

Derivation (Clifford \& Bostock 2007): L. -ana, indicating location. From Arkansas, USA.
Classification. Subfamily Pooideae. Tribe: Poeae.
Habit, Vegetative Morphology. Annual. Culms 20-60 cm long. Ligule an eciliate membrane, lacerate. Leaf-blades 3-12 cm long, 2-8 mm wide.

Inflorescence. Inflorescence a panicle. Panicle contracted, linear, $5-20 \mathrm{~cm}$ long. Primary panicle branches bearing spikelets almost to the base. 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, laterally compressed, $3.5-4 \mathrm{~mm}$ long, falling entire.

Glumes. Glumes similar, reaching apex of florets, firmer than fertile lemma. Lower glume lanceolate, 1 length of upper glume, coriaceous, without keels, 3-5 -veined. Lower glume surface scabrous. Lower
glume apex acute. Upper glume lanceolate, 1 length of adjacent fertile lemma, coriaceous, without keels, $3-5$-veined. Upper glume surface scabrous. Upper glume apex acute.

Florets. Fertile lemma lanceolate, $3.5-4 \mathrm{~mm}$ long, cartilaginous, keeled, lightly keeled, 3 -veined, 0-3 -veined. Lemma margins covering most of palea. Lemma apex dentate, 2 -fid, awned, 1 -awned. Principal lemma awn subapical, geniculate, $8-11 \mathrm{~mm}$ long overall, with twisted column. Palea 0.7 length of lemma, 2 -veined. Rhachilla extension $0.15-0.25$ length of fertile floret.

Flower and Fruit. Anthers 3. Caryopsis with adherent pericarp. Endosperm liquid.
$2 n=14$ ( 1 ref TROPICOS).
Distribution (TDWG). Continent. North America.
Country /Province/State. North-central USA, South-central USA, Southeastern USA, Mexico. Oklahoma. Texas. Alabama, Arkansas, Florida, Louisiana, Mississippi, South Carolina. Northeast Mexico. Coahuila, Tamaulipas.

Limnopoa meeboldii (C. E. C. Fischer) C. E. Hubbard. Hook. Ic. Pl. v. t. 3432 (1943).
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: Coelachne meeboldii C.E.C. Fisch., Kew Bull. 1934: 169 (1934)
. T:<Type of Basionym>: fide TROPICOS and Kew Synonomy Database: India, Chalakudi: Meebold 12520 ( K iso).

Illustrations (Books): N.L.Bor, The grasses of Burma, Ceylon, India and Pakistan (1960) (584, Fig 62), R.Pilger, Die Naturlichen Pflanzenfamilien 14e (1940) (196, Fig. 4).

Illustrations (Journals): Hooker's Icones Plantarum (t. 3432 (1943)).
Derivation (Clifford \& Bostock 2007): in honor of Alfred Karl Meebold (1863-1952) German botanist.
Classification. Subfamily Micrairoideae. Tribe Isachneae.
Habit, Vegetative Morphology. Annual, mat forming. Culms decumbent, 5-16 cm long, rooting from lower nodes. Ligule a fringe of hairs. Leaf-blades spreading or reflexed, $4-13 \mathrm{~cm}$ long, 1.5 mm wide.

Inflorescence. Inflorescence composed of racemes. Racemes 1, single, flexuous, unilateral, 1-2.3 cm long. Rhachis flattened, glabrous on margins. Spikelet packing abaxial. Spikelets appressed, in pairs. Fertile spikelets sessile and pedicelled, 2 in the cluster. Pedicels present, linear, flattened, $2.5-3.5 \mathrm{~mm}$ 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 elliptic, dorsally compressed, obtuse, $3.8-4.5 \mathrm{~mm}$ long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes elongated below proximal fertile floret.

Glumes. Glumes deciduous, dissimilar, shorter than spikelet, thinner than fertile lemma. Lower glume elliptic, 1 length of upper glume, 0.75 length of spikelet, without keels, 3 -veined. Lower glume apex acute. Upper glume obovate, membranous, without keels, 3 -veined. Upper glume apex obtuse.

Florets. Basal sterile florets 1, male, with palea, separately deciduous. Lemma of lower sterile floret oblong, 2 length of fertile lemma, 1 length of spikelet, 5-7 -veined, glabrous, obtuse. Fertile florets female. Fertile lemma elliptic, $2-2.3 \mathrm{~mm}$ long, cartilaginous, without keel, 5 -veined, more than 3 -veined. Lemma surface pubescent. Lemma margins involute. Lemma apex obtuse. Palea cartilaginous. Palea surface pubescent.

Flower and Fruit. Anthers 3, 1.8-2.6 mm long. Stigmas terminally exserted. Caryopsis with adherent pericarp, ellipsoid, dorsally compressed, plano-convex, $1.5-1.6 \mathrm{~mm}$ long. Embryo 0.2 length of caryopsis. Hilum linear.

Distribution (TDWG). Continent. Tropical Asia.
Country /Province/State. Indian Subcontinent. India.
Kerala.

Lindbergella sintenisii (H. Lindb.) Bor. Svensk Bot. Tidskr. lxiii. 369 (1969).
Accepted by: W.D.Clayton \& K.Harman, GrassBase (2008) and online, U.Quattrocchi, CRC World Dictionary of Grasses (2006).

TYPE from Cyprus. Basionym or Replaced Name: Poa sintenisii H. Lindb., Arsbok-Vuosik. Soc. Sci. Fenn. 20(7): 5 (1942)
. T:<Type of Basionym>: fide TROPICOS and Kew Synonomy Database: Cyprus, Mt. Troodos: Sintenis 881 (K iso).

Illustrations: None found.
Derivation (Clifford \& Bostock 2007): in honor of Paul Ernst Emil Sintenis (1847-1907) German apothecary and plant collector.

Classification. Subfamily Pooideae. Tribe: Poeae.
Habit, Vegetative Morphology. Annual. Culms decumbent, $8-21 \mathrm{~cm}$ long. Ligule an eciliate membrane, $2-3 \mathrm{~mm}$ long, lacerate. Leaf-blades $2-6 \mathrm{~cm}$ long, $1-2 \mathrm{~mm}$ wide. Leaf-blade margins scaberulous. Leaf-blade apex acuminate.

Inflorescence. Inflorescence a panicle. Panicle open, ovate, $2-11 \mathrm{~cm}$ long, $1-9 \mathrm{~cm}$ wide. Primary panicle branches spreading, $2-5$-nate, whorled at most nodes, branching divaricately, $1-5 \mathrm{~cm}$ long. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 2-5 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets elliptic, laterally compressed, $3-4.5 \mathrm{~mm}$ long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes eventually visible between lemmas.

Glumes. Glumes persistent, similar, with lower narrower than upper, shorter than spikelet, similar to fertile lemma in texture. Lower glume elliptic, 3 mm long, 0.8 length of upper glume, membranous, 1keeled, 1 -veined. Lower glume lateral veins absent. Lower glume surface scabrous. Lower glume apex acute. Upper glume elliptic, 3.5 mm long, 0.8 length of adjacent fertile lemma, membranous, with hyaline margins, 1 -keeled, 3 -veined. Upper glume surface scabrous, rough on veins. Upper glume apex acute.

Florets. Fertile lemma elliptic, 4 mm long, membranous, keeled, 3 -veined, $0-3$-veined. Lemma midvein scaberulous. Lemma surface scaberulous, rough on veins, pilose, hairy between veins. Lemma apex acute, muticous or mucronate. Palea 1 length of lemma. Palea keels ciliate. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, ovate, membranous, with a small lateral lobe, acute. Anthers 3, 0.5 mm long. Stigmas 2. Caryopsis with adherent pericarp, fusiform, sulcate on hilar side, $2.5-2.75 \mathrm{~mm}$ long. Embryo 0.1 length of caryopsis. Hilum punctiform.

Distribution (TDWG). Continent. Temperate Asia.
Country /Province /State. Western Asia. Cyprus.

Lintonia brizoides (Chiov.) C. E. Hubbard. A. W. Hill, Fl. Trop. Afr. x. 149 (1937).
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: Joannegria brizoides Chiov., Nuov. Giorn. Bot. Ital. n.s. 36:371 (1929). T:<Type of Basionym>: fide TROPICOS and Kew Synonomy Database: Ethiopia, Darror: Duke of Abruzzi 364 (TO holo).

Illustrations (Books): S.Phillips, Poaceae (Gramineae) in I.Hedberg \& S.Edwards, Flora of Ethiopia and Eritrea (1995) (160, Fig 65).

Derivation (Clifford \& Bostock 2007): Gk. -oides, resembling. Inflorescences or spikelets resemble those of Briza..

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.
Habit, Vegetative Morphology. Perennial, caespitose. Stolons present. Basal innovations flabellate. Culms decumbent, $22-70 \mathrm{~cm}$ long. Ligule an eciliate membrane, truncate. Leaf-blades $5.5-17 \mathrm{~cm}$ long, $3.5-5.5 \mathrm{~mm}$ wide. Leaf-blade surface pilose, moderately hairy. Leaf-blade apex acuminate.

Inflorescence. Inflorescence composed of racemes. Racemes 6-8, borne along a central axis, unilateral, $3-7 \mathrm{~cm}$ long, simple or secondarily branched. Central inflorescence axis $6-10 \mathrm{~cm}$ long. Rhachis subterete. Spikelet packing broadside to rhachis, lax, irregular. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, $0.4-1.2 \mathrm{~mm}$ long.

Fertile Spikelets. Spikelets comprising 4-7 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets elliptic or orbicular, laterally compressed, compressed slightly, $5-7.1 \mathrm{~mm}$ long, breaking up at maturity, disarticulating above glumes but not between florets. Floret callus truncate.

Glumes. Glumes persistent, dissimilar, shorter than spikelet, thinner than fertile lemma. Lower glume lanceolate, $1.3-2.1 \mathrm{~mm}$ long, $0.6-0.7$ length of upper glume, membranous, without keels, $0-1$-veined. Lower glume lateral veins absent. Lower glume apex acute. Upper glume ovate, 2.2-3.2 mm long, 0.6-0.7 length of adjacent fertile lemma, membranous, without keels, $2-3$-veined. Upper glume apex emarginate or acute.

Florets. Fertile florets imbricate to tip. Fertile lemma ovate, 3.6-4.3 mm long, coriaceous, without keel, 5-7 -veined, more than 3-veined. Lemma lateral veins obscure, branched. Lemma surface pubescent, hairy above, hairy on back, with capitate hairs. Lemma apex entire, emarginate, awned, 1 -awned. Principal lemma awn subapical, straight, $0.2-1 \mathrm{~mm}$ long overall. Palea 2 -veined. Palea keels winged, narrowly winged, ciliolate. Palea surface glabrous. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, cuneate, fleshy. Caryopsis with free soft pericarp, ellipsoid, flattened, biconvex, 1.3 mm long, dark brown, smooth.

Distribution (TDWG). Continent. Africa.
Country /Province /State. Northeast Tropical Africa, East Tropical Africa. Ethiopia (inc. Eritrea). Kenya.

Lintonia nutans Stapf. Hook. Ic. Pl. t. 2949 (1911).
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 Synonomy Database: Kenya, Nairobi: Linton 193 (K holo).

Illustrations (Books): R.M.Polhill, F.T.E.A., Gramineae (2(1974):303, Fig.84), G.V.Pope et al., Flora Zambesiaca 10 (2(1999):206 t. 59), L.K.A. Chippindall, Grasses and Pastures of South Africa (1955) (118, Fig 88), G.E.Gibbs Russell el al, Grasses of Southern Africa (1990) (201, Fig 123), S.Phillips, Poaceae (Gramineae) in I.Hedberg \& S.Edwards, Flora of Ethiopia and Eritrea (1995) (160, Fig 65), T.A.Cope, in M.Thulin, Poaceae (Gramineae). Flora of Somalia (1995) (201, Fig 109).

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

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.
Habit, Vegetative Morphology. Perennial, caespitose. Stolons present. Basal innovations flabellate. Culms erect or decumbent, 23-75 cm long. Ligule an eciliate membrane, truncate. Leaf-blades 5-22 cm long, $2.5-5 \mathrm{~mm}$ wide. Leaf-blade surface glabrous or pilose, sparsely hairy. Leaf-blade apex acuminate.

Inflorescence. Inflorescence composed of racemes. Racemes (1-)2-4(-6), digitate, unilateral, 4-11.5 cm long. Rhachis subterete. Spikelet packing broadside to rhachis, regular, 2 -rowed. Spikelets solitary. Fertile spikelets sessile.

Fertile Spikelets. Spikelets comprising 4-10 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets cuneate, laterally compressed, compressed slightly, $5.3-11 \mathrm{~mm}$ long, breaking up at maturity, disarticulating above glumes but not between florets. Rhachilla internodes definite. Floret callus truncate.

Glumes. Glumes persistent, dissimilar, shorter than spikelet, thinner than fertile lemma. Lower glume lanceolate, $1.9-4.5 \mathrm{~mm}$ long, $0.6-0.8$ length of upper glume, membranous, 1 -keeled, 1 -veined. Lower glume lateral veins absent. Lower glume apex acuminate. Upper glume oblong, 3.3-5.8 mm long, 0.6-0.8 length of adjacent fertile lemma, membranous, 1 -keeled, 1 -veined. Upper glume lateral veins absent. Upper glume apex obtuse.

Florets. Fertile florets free at tip. Fertile lemma elliptic or obovate, $4.4-6.7(-9.2) \mathrm{mm}$ long, chartaceous, without keel, 7-11 -veined, more than 3-veined. Lemma lateral veins distinct, branched. Lemma surface pubescent, hairy below, hairy between veins, with simple hairs. Lemma apex dentate, 2 -fid, awned, 1 -awned. Principal lemma awn subapical, flexuous, $0.75-10.5 \mathrm{~mm}$ long overall. Palea 2 -veined. Palea keels ciliate. Palea surface pubescent. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, cuneate, fleshy. Caryopsis with free soft pericarp, ellipsoid, flattened, biconvex, 2-2.2 mm long, dark brown, smooth.

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. Botswana, Limpopo, Mpumalanga, Swaziland, Kwazulu-Natal.

Lithachne horizontalis Chase. Journ. Wash. Acad. Sc. xxv. 189. (1935).
Accepted by: R.J.Soreng et al., Catalogue of New World Grasses (2000-2003) and online, W.D.Clayton \& K.Harman, GrassBase (2008) and online, U.Quattrocchi, CRC World Dictionary of Grasses (2006).

TYPE from Brazil. T:<Type of Basionym>: fide TROPICOS and Kew Synonomy Database: HT: A. Chase 9057, 25 Mar 1925, Brazil: Minas Gerais: SW of Bello Horizonte, ca. 0.5 km beyond end of Calafate car line, alt. 800 m , a colony under Paspalum paniculatum and coarse herbs, gentle slope above streamlet (US-1255920; IT: MO-930644, US-125919, US-1255918).

Illustrations: None found.
Derivation (Clifford \& Bostock 2007): L. horizontal. Primary panicle branches horizontal.
Classification. Subfamily Bambusoideae. Tribe: Olyreae.
Habit, Vegetative Morphology. Perennial, caespitose. Stolons present. Butt sheaths absent. Culms $10-30 \mathrm{~cm}$ long, rooting from lower nodes. Leaves cauline. Ligule a ciliolate membrane, 0.1 mm long. Leafblade base asymmetrical, with a brief petiole-like connection to sheath, petiole glabrous. Leaf-blades spreading, lanceolate or oblong, $2.5-6.5 \mathrm{~cm}$ long, $8-13 \mathrm{~mm}$ wide. Leaf-blade margins scabrous. Leaf-blade apex acute. Monoecious, with male and female spikelets in different inflorescences.

Inflorescence. Inflorescence comprising only a few spikelets, comprising 1 fertile spikelets, axillary, enclosed. Peduncle flattened. Spikelets solitary. Fertile spikelets sessile. Male spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets cuneate, laterally compressed, $5-6 \mathrm{~mm}$ long, breaking up at maturity, disarticulating below each fertile floret. Floret callus evident, truncate.

Glumes. Glumes deciduous, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume ovate, $5-6 \mathrm{~mm}$ long, 1 length of upper glume, herbaceous, without keels, 5 -veined. Lower glume apex acuminate. Upper glume ovate, $5-6 \mathrm{~mm}$ long, $1.5-2$ length of adjacent fertile lemma, herbaceous, without keels, 3 -veined. Upper glume apex acuminate.

Florets. Fertile florets female. Fertile lemma obovate, laterally compressed, gibbous, triangular in profile, 3 mm long, indurate, pallid, shiny, without keel. Lemma margins involute. Lemma apex truncate. Palea indurate.

Flower and Fruit. Lodicules 3. Anthers 3. Caryopsis with adherent pericarp.
Male inflorescence terminal, unlike female, a panicle (3-4cm long). Male spikelets distinct from female, 1 flowered, linear or lanceolate, 4-6 mm long. 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. Espirito Santo, Minas Gerais.

Lithachne humilis T.R. Soderstrom. Brittonia, 32(4): 496 (1980).
Accepted by: R.J.Soreng et al., Catalogue of New World Grasses (2000-2003) and online, W.D.Clayton \& K.Harman, GrassBase (2008) and online, U.Quattrocchi, CRC World Dictionary of Grasses (2006).

TYPE from Honduras. T:<Type of Basionym>: fide TROPICOS and Kew Synonomy Database: HT: R.W. Pohl \& G. Davidse 12421, 23 Jul 1970, Honduras: Olancho: 22 km ENE o Juticalpa, along Hwy. 3, forested patch in fields, elev. 400 m (US-2673319; IT: MO-2639332).

Illustrations (Books): M.E.Barkworth et al, Flora of North America north of Mexico Vol 24 Poaceae, part 1 (2007) (31), E.J.Judziewicz et al, American Bamboos (1999) (281, Fig. 171).

Derivation (Clifford \& Bostock 2007): L. low growing. Short-statured in comparison with related species often prostrate.

Classification. Subfamily Bambusoideae. Tribe: Olyreae.

Habit, Vegetative Morphology. Perennial, caespitose. Rhizomes short. Butt sheaths absent. Culms $15-27 \mathrm{~cm}$ long, 5-6 -noded. Culm-internodes terete, thin-walled. Culm-nodes with distinct supra-nodal ridge, glabrous. Leaves cauline, 2-4 per branch. Leaf-sheaths ribbed, glabrous on surface. Leaf-sheath oral hairs lacking. Ligule an eciliate membrane, 0.2 mm long. Leaf-blade base asymmetrical, with a brief petiole-like connection to sheath. Leaf-blades linear or lanceolate, $3-6 \mathrm{~cm}$ long, $4-8 \mathrm{~mm}$ wide. Leaf-blade midrib prominent beneath. Leaf-blade surface pubescent, hairy on both sides. Monoecious, with male and female spikelets in different inflorescences.

Inflorescence. Inflorescence comprising only a few spikelets, comprising 1 fertile spikelets, axillary, enclosed. Peduncle flattened, $0.8-1 \mathrm{~cm}$ long. Spikelets solitary. Fertile spikelets sessile. Male spikelets pedicelled. Pedicels present.

Sterile Spikelets. Basal sterile spikelets represented by a single scale (tiny vestige of male spikelet).
Fertile Spikelets. Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets cuneate, laterally compressed, $7.3-7.7 \mathrm{~mm}$ long, breaking up at maturity, disarticulating below each fertile floret. Floret callus evident, 1 mm long, truncate.

Glumes. Glumes deciduous, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume ovate, $7.3-7.7 \mathrm{~mm}$ long, 1 length of upper glume, membranous, without keels, $7-9$-veined. Lower glume apex acuminate. Upper glume ovate, $7.3-7.7 \mathrm{~mm}$ long, 2-2.5 length of adjacent fertile lemma, membranous, without keels, 5-7 -veined. Upper glume apex acuminate.

Florets. Fertile florets female. Fertile lemma obovate, laterally compressed, gibbous, triangular in profile, $3-3.5 \mathrm{~mm}$ long, indurate, pallid, shiny, without keel, 5 -veined, more than 3 -veined. Lemma margins involute. Lemma apex truncate. Palea indurate.

Flower and Fruit. Lodicules 3. Anthers 3, basifixed, 4.2-4.7 mm long. Stigmas 2. Caryopsis with adherent pericarp. Hilum linear, 1 length of caryopsis.

Male inflorescence terminal, unlike female, of few spikelets (2-6). Male spikelets distinct from female, 1 flowered, linear or lanceolate, 6 mm long. Male spikelet glumes absent. Male spikelet lemma 3 -veined, awned.

Distribution (TDWG). Continent. North America (+), South America.
Country /Province/State. Mesoamerica. Honduras.

Lithachne pauciflora (Sw.) P. Beauv. Ess. Agrostogr. 135, 168 (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: Olyra pauciflora Sw., Prodr. 21 (1788)
. T:<Type of Basionym>: fide TROPICOS and Kew Synonomy Database: HT: O.P. Swartz s.n., Jamaica (S; IT: BM, M, US-2877935 (fragm. ex S)).

Illustrations (Books): F.O.Zuloaga, Z.E.Rugolo \& A.M. Anton, Flora Argentina 3 - 1, Aristidoideae a Pharoideae (2012) (69), R.McVaugh, Flora Nova-Galiciana Vol. 14 Gramineae (1983), A.S.Hitchcock, Manual of the Grasses of the West Indies (1936) (371, Fig. 340), J.A.Steyermark et al, Flora of the Venezuelan Guayana Vol. 8 (2004) (148, Fig. 10), E.G.Nicora, Los Generos de Gramineas de America Austral (1987) (117, Fig. 23, as. L. pauciflora), L.B. Smith, D.C. Wasshausen, R.M. Klein Flora Illustrada Catarinensis Gramineas (1981-1982) (188 \& 194, Fig. 377 39, as. L. pauciflora), W.Burger, Flora Costaricensis 15, Gramineae: Fieldiana Botany New Series 4 (1980) (310, Fig 112), E.Judziewicz, Flora of the Guianas, 187. Poaceae (1990) (321, Fig 57 as L. pauciflora).

Illustrations (Journals): Ruizia (13:45, Fig.4e-h (1993)).
Derivation (Clifford \& Bostock 2007): L. paucus, few; flos, flower. Spikelets few per inflorescence.
Classification. Subfamily Bambusoideae. Tribe: Olyreae.
Habit, Vegetative Morphology. Perennial, caespitose. Butt sheaths absent. Culms erect or geniculately ascending, $20-75 \mathrm{~cm}$ long. Culm-nodes constricted. Leaves cauline. Ligule an eciliate membrane, 0.5 mm long. Leaf-blade base simple or broadly rounded, asymmetrical, with a brief petiolelike connection to sheath. Leaf-blades lanceolate, $4-10 \mathrm{~cm}$ long, $15-30 \mathrm{~mm}$ wide. Monoecious, with male terminal and mixed axillary inflorescences.

Inflorescence. Inflorescence comprising only a few spikelets, comprising 1 fertile spikelets (and 0-3 male), axillary. Peduncle flexuous. Sexes segregated, with male below. Spikelets solitary. Fertile spikelets pedicelled. Male spikelets pedicelled. Pedicels present, cuneate, flattened.

Fertile Spikelets. Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 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, $9-11 \mathrm{~mm}$ long, breaking up at maturity, disarticulating below each fertile floret. Floret callus evident, 1 mm long, truncate.

Glumes. Glumes deciduous, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume ovate, $9-11 \mathrm{~mm}$ long, 1 length of upper glume, herbaceous, without keels, 9 -veined. Lower glume apex caudate. Upper glume ovate, $9-11 \mathrm{~mm}$ long, 2 length of adjacent fertile lemma, herbaceous, without keels, 7 -veined. Upper glume apex caudate.

Florets. Fertile florets female. Fertile lemma obovate, laterally compressed, gibbous, hemispherical, 45 mm long, indurate, pallid or dark brown, shiny, without keel. Lemma margins involute. Lemma apex truncate. Palea indurate.

Flower and Fruit. Lodicules 3. Anthers 3. Caryopsis with adherent pericarp, orbicular.
Male inflorescence terminal, unlike female, a panicle. Male spikelets distinct from female, 1 flowered, $5-6 \mathrm{~mm}$ long. Male spikelet glumes absent. Male spikelet lemma 3 -veined, muticous.

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. Belize, Costa Rica, Guatemala, Honduras, Nicaragua, Panama. Cuba, Dominican Republic, Haiti, Jamaica, Leeward Is, Windward Islands, Puerto Rico. French Guiana, Venezuela. Bolivia, Colombia, Ecuador, Peru. Brazil West Central, Brazil Northeast, Brazil South.

Mato Grosso, Sao Paulo Parana, Catarina, Rio Grande do Sul. Mato Grosso do Sul. Ceará. Rio Grande do Sul. Salta. Chaco, Corrientes, Formosa, Misiones, Santa Fe. San Luis Potosi. Veracruz. Oaxaca. Chiapas, Quintana Roo, Tabasco, Yucatan.

## Lithachne pinetii (C. Wright ex Griseb.) Chase. Proc. Biol. Soc. Wash. 21: 182 (1908).

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

TYPE from Cuba. Basionym or Replaced Name: Olyra pinetii C. Wright ex Griseb., Mem. Amer. Acad. Arts, n.s., 8: 532 (1862)

Illustrations: None found.
Derivation (Clifford \& Bostock 2007): L. -etum, place of growth. Growing in pine (Pinus) woodlands. Classification. Subfamily Bambusoideae. Tribe: Olyreae.
Habit, Vegetative Morphology. Perennial, caespitose. Butt sheaths absent. Culms slender, 10-20 cm long. Leaves cauline. Ligule a ciliolate membrane, 0.1 mm long. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades reflexed, lanceolate or ovate, $1-1.5 \mathrm{~cm}$ long, $3-7 \mathrm{~mm}$ wide. Leaf-blade apex acute. Monoecious, with male and female spikelets in different inflorescences.

Inflorescence. Inflorescence comprising only a few spikelets, comprising 1 fertile spikelets, axillary, exserted or embraced at base by subtending leaf. Peduncle flattened. Spikelets solitary. Fertile spikelets sessile. Male spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets cuneate, laterally compressed, $4-5 \mathrm{~mm}$ long, breaking up at maturity, disarticulating below each fertile floret. Floret callus evident, truncate.

Glumes. Glumes deciduous, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume ovate, $4-5 \mathrm{~mm}$ long, 1 length of upper glume, herbaceous, without keels, 9 -veined. Lower glume apex caudate. Upper glume ovate, 4-5 mm long, 1.3-1.6 length of adjacent fertile lemma, herbaceous, without keels, 9 -veined. Upper glume apex caudate.

Florets. Fertile florets female. Fertile lemma obovate, laterally compressed, gibbous, triangular in profile, 3 mm long, indurate, pallid, shiny, without keel. Lemma margins involute. Lemma apex truncate. Palea indurate.

Flower and Fruit. Lodicules 3. Anthers 3. Caryopsis with adherent pericarp.
Male inflorescence terminal, unlike female, of few spikelets (2-3). Male spikelets distinct from female, 1 flowered, linear or lanceolate, $3-4 \mathrm{~mm}$ long. Male spikelet glumes absent. Male spikelet lemma 3 -veined, muticous.

Distribution (TDWG). Continent. South America.
Country /Province/State. Caribbean. Cuba.

## Littledalea alaica (Korsh.) Petrov ex Komarov. Fl. URSS, ii. 553 (1934).

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. Basionym or Replaced Name: Bromus alaicus Korsh., Mem. Acad. Petersb. Ser. VIII. 4: 101 (1896). T:<Type of Basionym>: fide TROPICOS and Kew Synonomy Database: Russia, Mynyar R.: Korshinsky 6198 (LE lecto).

Illustrations: None found.
Derivation (Clifford \& Bostock 2007): L. -ica, belonging to. From the Alaj valley, Turkestania, former Soviet Union.

Classification. Subfamily Pooideae. Tribe: Bromeae.
Habit, Vegetative Morphology. Perennial. Rhizomes elongated. Culms erect, 12-35 cm long. Leafsheaths open for most of their length, pubescent. Ligule an eciliate membrane, $1-3 \mathrm{~mm}$ long. Leaf-blades flat or convolute, $4-8 \mathrm{~cm}$ long, $1-4 \mathrm{~mm}$ wide, stiff, mid-green or grey-green. Leaf-blade surface ribbed, pubescent, hairy adaxially.

Inflorescence. Inflorescence a panicle or composed of racemes (in weak plants), comprising 4-10 fertile spikelets. Panicle contracted, ovate, 4-10 cm long. Panicle branches scabrous. Racemes 1, single. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, linear.

Fertile Spikelets. Spikelets comprising 5-11 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets oblong, laterally compressed, $18-35 \mathrm{~mm}$ long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, similar, shorter than spikelet. Lower glume lanceolate, $7-11 \mathrm{~mm}$ long, 0.75 length of upper glume, scarious, without keels, $1-3$-veined. Lower glume apex acute. Upper glume lanceolate, $9-14 \mathrm{~mm}$ long, 0.75 length of adjacent fertile lemma, membranous, without keels, $3-5$-veined. Upper glume apex acute.

Florets. Fertile lemma elliptic, $12-18 \mathrm{~mm}$ long, scarious, much thinner on margins, without keel, 5-11 -veined, more than 3-veined. Lemma apex obtuse or acute. Palea lanceolate, 0.66 length of lemma, 2 veined. Palea keels scabrous. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Anthers 3, 6-7 mm long. Ovary with a fleshy appendage above style insertion, pubescent on apex.

Distribution (TDWG). Continent. Temperate Asia.
Country /Province /State. Middle Asia, China. Kazakhstan, Kirgizistan, Turkmenistan, Tadzhikistan. Qinghai, Tibet.

Littledalea przevalskyi Tzvelev. Akad. Nauk SSSR Bot. Inst. Komarova, Rast. Tsentral. Azii, Fasc. 4, 173 (1968).

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

TYPE from China. T:<Type of Basionym>: fide TROPICOS and Kew Synonomy Database: China, Kansu, Hoangho R.: Przevalsky 244 (LE holo).

Illustrations (Books): S-L Chen et al, Flora of China, Illustrations, Poaceae (2007) (Fig. 519).
Derivation (Clifford \& Bostock 2007): In honor of Nikolai Michailowicz Przewalsky (1839-1888) Russian geographer and explorer.

Classification. Subfamily Pooideae. Tribe: Bromeae.
Habit, Vegetative Morphology. Perennial, caespitose. Culms erect, slender, $25-50 \mathrm{~cm}$ long. Culminternodes smooth, distally glabrous. Lateral branches lacking. Leaf-sheaths glabrous on surface. Ligule an
eciliate membrane, $1-2.5 \mathrm{~mm}$ long. Leaf-blades convolute, $0.8-2.5 \mathrm{~mm}$ wide, grey-green. Leaf-blade surface scabrous, rough adaxially.

Inflorescence. Inflorescence a panicle. Panicle open, oblong or ovate, loose, $5-15 \mathrm{~cm}$ long. Primary panicle branches 2 -nate, bearing 1-2 fertile spikelets on each lower branch. Panicle axis scabrous. Panicle branches capillary, flexuous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 5-11 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets cuneate, laterally compressed, $17-30 \mathrm{~mm}$ long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, similar, shorter than spikelet. Lower glume lanceolate, $5-9 \mathrm{~mm}$ long, $0.5-$ 0.66 length of upper glume, scarious, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume apex acute. Upper glume lanceolate, $9-14 \mathrm{~mm}$ long, 0.75 length of adjacent fertile lemma, membranous, without keels, 3 -veined. Upper glume apex acute.

Florets. Fertile lemma oblong, 11-18 mm long, 4 mm wide, scarious, keeled, 7 -veined, more than 3veined. Lemma surface scaberulous, rough above and on veins. Lemma apex emarginate or obtuse, muticous or mucronate or awned. Principal lemma awn from a sinus, $0-2.5 \mathrm{~mm}$ long overall. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Anthers 3, 5.2-6.7 mm long. Ovary with a fleshy appendage above style insertion.
Distribution (TDWG). Continent. Temperate Asia.
Country /Province/State. China. China North-Central, Qinghai, Tibet.
Gansu.

## Littledalea racemosa Keng. Contrib. Biol. Lab. Sc. Soc. China, Bot. Ser., ix. 136 (1934).

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

TYPE from China. T:<Type of Basionym>: fide TROPICOS and Kew Synonomy Database: China, Sungpan Hsien: Fang 4096 (K iso, US).

Illustrations: None found.
Derivation (Clifford \& Bostock 2007): L. racemus, stalk of a cluster of grapes; -osa, abundance. The spikelets are borne in racemes or contracted panicles.

Classification. Subfamily Pooideae. Tribe: Bromeae.
Habit, Vegetative Morphology. Perennial, culms solitary. Culms erect, 27-35 cm long, 2 mm diam., 3 -noded. Leaf-sheaths open for most of their length, $9.5-11 \mathrm{~cm}$ long, longer than adjacent culm internode, glabrous on surface or puberulous. Ligule an eciliate membrane, 2-2.5 mm long. Leaf-blades involute, 5-7 cm long, $2.5-5 \mathrm{~mm}$ wide. Leaf-blade surface puberulous, hairy adaxially.

Inflorescence. Inflorescence a panicle, comprising 5-12 fertile spikelets. Panicle open, oblong or ovate, $8-11 \mathrm{~cm}$ long. Primary panicle branches indistinct the panicle almost racemose. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, filiform, flexuous, $20-40 \mathrm{~mm}$ long.

Fertile Spikelets. Spikelets comprising 7-9 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets cuneate, laterally compressed, $20-25 \mathrm{~mm}$ long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes 2.5 mm long, smooth.

Glumes. Glumes persistent, similar, shorter than spikelet. Lower glume lanceolate, $8-9 \mathrm{~mm}$ long, 0.66 length of upper glume, scarious, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume apex acute. Upper glume lanceolate, $12-15 \mathrm{~mm}$ long, 1.5 length of adjacent fertile lemma, membranous, without keels, 3 -veined. Upper glume apex acute.

Florets. Fertile lemma oblong, 20-23 mm long, 4 mm wide, scarious, much thinner on margins, purple, keeled, 7 -veined, more than 3-veined. Lemma apex emarginate to obtuse. Palea 0.66 length of lemma, 2 veined. Palea keels scabrous, adorned above. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Anthers $3,6 \mathrm{~mm}$ long. Ovary with a fleshy appendage above style insertion, pubescent on apex.

Distribution (TDWG). Continent. Temperate Asia.
Country /Province/State. China. China South Central, Qinghai, Tibet.
Sichuan, Yunnan.

Littledalea tibetica Hemsl. Hook. Ic. Pl. t. 2472 (1896).
Accepted by: W.D.Clayton \& K.Harman, GrassBase (2008) and online, U.Quattrocchi, CRC World Dictionary of Grasses (2006), S-L Chen et al, Flora of China 22 (Poaceae) (2006).

TYPE from Tibet. T:<Type of Basionym>: fide TROPICOS and Kew Synonomy Database: Tibet, Gooring valley: Littledale.

Illustrations (Books): S-L Chen et al, Flora of China, Illustrations, Poaceae (2007) (Fig. 520).
Illustrations (Journals): Hooker's Icones Plantarum (t. 2472 (1896)).
Derivation (Clifford \& Bostock 2007): L. -ica, belonging to. From Tibet.
Classification. Subfamily Pooideae. Tribe: Bromeae.
Habit, Vegetative Morphology. Perennial, caespitose. Butt sheaths persistent and investing base of culm, with fibrous dead sheaths. Culms erect, $20-60 \mathrm{~cm}$ long. Lateral branches lacking. Leaf-sheaths open for most of their length, glabrous on surface or puberulous. Ligule an eciliate membrane, 4 mm long. Leafblades involute, $5-15 \mathrm{~cm}$ long, $2-3 \mathrm{~mm}$ wide. Leaf-blade surface puberulous, hairy on both sides. Leafblade apex acute.

Inflorescence. Inflorescence a panicle, comprising 5-12 fertile spikelets. Panicle open, oblong or ovate, $10-12 \mathrm{~cm}$ long. Primary panicle branches indistinct the panicle almost racemose, $1-2 \mathrm{~cm}$ long. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, filiform, flexuous, $10-30 \mathrm{~mm}$ long.

Fertile Spikelets. Spikelets comprising 2-8 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets cuneate, laterally compressed, $15-20 \mathrm{~mm}$ long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes 2 mm long, smooth.

Glumes. Glumes persistent, similar, shorter than spikelet. Lower glume lanceolate, 6 mm long, 0.66 length of upper glume, scarious, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume apex acute. Upper glume elliptic, 9 mm long, 1.5 length of adjacent fertile lemma, membranous, without keels, 3 -veined. Upper glume apex acute.

Florets. Fertile lemma oblong, 6-7 mm long, 4 mm wide, scarious, much thinner on margins, purple, keeled, 7 -veined, more than 3-veined. Lemma apex truncate or obtuse. Palea 0.4 length of lemma, 2 veined. Palea keels scabrous. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Anthers 3. Ovary with a fleshy appendage above style insertion, pubescent on apex. Distribution (TDWG). Continent. Temperate Asia, Tropical Asia. Country /Province /State. China. China South Central, Tibet. Indian Subcontinent. Nepal. Yunnan.

Loliolum subulatum (Banks \& Soland.) Eig. Journ. Bot., Lond. lxxv. 189 (1937).
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 Nardurus orientalis), N.Tsvelev, Grasses of the Soviet Union (1983).

TYPE from Syria. Basionym or Replaced Name: Triticum subulatum Sol. ex P. Russell, Nat. Hist. Aleppo (ed. 2) 2: 244 (1794)
. T:<Type of Basionym>: fide TROPICOS and Kew Synonomy Database: Syria, Aleppo: Russell.
Recent Synonyms: Loliolum orientale (Boiss.) Krecz. \& Bobr. in Komarov, Fl. URSS, 2: 544 (1934). Nardurus subulatus (Banks \& Soland.) Bor in K. Danske Vid. Selsk., Biol. Skrift., xiv. No. 4 : 6 (1965).

Illustrations (Books): N.Feinbrun-Dothan, Flora Palaestina 4 (1986) (Pl. 307), N.L.Bor, Gramineae in Flora of Iraq (1968) (103, Pl. 34 as Nardurus), T.A.Cope, Flora of Pakistan 143: Poaceae (1982).

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

Classification. Subfamily Pooideae. Tribe: Poeae.
Habit, Vegetative Morphology. Annual. Culms erect, 10-20 cm long. Leaf-sheaths inflated. Ligule an eciliate membrane, $0.5-1 \mathrm{~mm}$ long, lacerate, truncate. Leaf-blades convolute, $1-3 \mathrm{~cm}$ long, 0.5 mm wide.

Inflorescence. Inflorescence composed of racemes. Racemes 1, single, unilateral, 1.5-6 cm long. Rhachis angular. Spikelet packing broadside to rhachis. Spikelets appressed, solitary. Fertile spikelets sessile.

Fertile Spikelets. Spikelets comprising 3-7 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the
upper sterile. Spikelets cuneate, laterally compressed, $3-6.2 \mathrm{~mm}$ long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes lateral (lower glume), persistent, similar, exceeding apex of florets. Lower glume lanceolate, $2.6-5.1 \mathrm{~mm}$ long, 0.8 length of upper glume, coriaceous, without keels, $1-3$-veined. Lower glume apex attenuate, mucronate. Upper glume lanceolate, 3-6.2 mm long, 1.5-2 length of adjacent fertile lemma, coriaceous, without keels, $1-3$-veined. Upper glume apex attenuate, mucronate.

Florets. Fertile lemma elliptic, $2-3 \mathrm{~mm}$ long, coriaceous, without keel, 5 -veined, more than 3-veined. Lemma lateral veins obscure. Lemma surface smooth or scabrous. Lemma apex emarginate to acute, muticous or awned, 1 -awned. Principal lemma awn $0-1.5 \mathrm{~mm}$ long overall. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Anthers $3,0.5-1 \mathrm{~mm}$ long. Caryopsis with adherent pericarp, ellipsoid, $1.5-2 \mathrm{~mm}$ long. Hilum linear, $0.33-0.5$ length of caryopsis.

Distribution (TDWG). Continent. Temperate Asia, Tropical Asia.
Country /Province /State. Middle Asia, Caucasus, Western Asia, Eastern Asia. Turkmenistan, Uzbekistan. Afghanistan, Iran, Iraq, Palestine, Israel \& Jordan. Japan Honshu. Japan. Indian Subcontinent. Pakistan.

Lolium canariense Steud. Syn. Pl. Gram. 340. (1854).
Accepted by: W.D.Clayton \& K.Harman, GrassBase (2008) and online, U.Quattrocchi, CRC World Dictionary of Grasses (2006).

TYPE from Portugal. T:<Type of Basionym>: fide TROPICOS and Kew Synonomy Database: LT: Portugal: Canary Islands (CAEN). LT designated by Terrell, Techn. Bull. USDA 1392: 30 (1968).

Illustrations: None found.
Derivation (Clifford \& Bostock 2007): L. -ensis, denoting origin. From the Canary Islands.
Classification. Subfamily Pooideae. Tribe: Poeae.
Habit, Vegetative Morphology. Annual. Culms erect or geniculately ascending, 30-67 cm long, 3-4noded. Culm-internodes smooth or scaberulous, distally glabrous. Leaf-sheaths loose, glabrous on surface. Leaf-sheath auricles falcate, $0.5-2.5 \mathrm{~mm}$ long. Ligule an eciliate membrane, $1-2 \mathrm{~mm}$ long, truncate or obtuse. Leaf-blades $5-21 \mathrm{~cm}$ long, $1.5-5 \mathrm{~mm}$ wide. Leaf-blade surface smooth or scaberulous, rough adaxially. Leaf-blade apex attenuate.

Inflorescence. Inflorescence composed of racemes. Peduncle smooth or scaberulous above. Racemes 1, single, bilateral, 10-20 cm long, bearing 7-15 fertile spikelets on each. Rhachis semiterete, $0.8-1.1 \mathrm{~mm}$ wide. Spikelet packing adaxial, regular, 2 -rowed. Spikelets appressed, solitary. Fertile spikelets sessile.

Fertile Spikelets. Spikelets comprising 5-9 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets oblong, laterally compressed, 6-24 mm long, $1-4 \mathrm{~mm}$ wide, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes $0.8-4 \mathrm{~mm}$ long ( $0.25-0.33$ length of lemma).

Glumes. Glumes one the lower absent or obscure, persistent, reaching apex of florets or exceeding apex of florets, similar to fertile lemma in texture. Upper glume lanceolate, $3-28 \mathrm{~mm}$ long, 1 length of spikelet, coriaceous, without keels, 5-7 -veined. Upper glume surface smooth or asperulous. Upper glume apex entire or erose, obtuse or acute.

Florets. Fertile lemma lanceolate, 3-10 mm long, $0.7-1.5 \mathrm{~mm}$ wide, coriaceous, much thinner above, without keel, $1-5$-veined, $0-3$-veined or more than 3 -veined. Lemma surface glabrous or puberulous. Lemma apex erose, obtuse, awned, 1 -awned. Principal lemma awn subapical, flexuous, $2.5-15 \mathrm{~mm}$ long overall. Palea 1 length of lemma. Palea keels scaberulous. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, 0.8-1.1 mm long, membranous. Anthers 3, 1.3-2.9 mm long. Ovary glabrous. Caryopsis with adherent pericarp, ellipsoid, $3.5-4.5 \mathrm{~mm}$ long. Hilum linear.

Distribution (TDWG). Continent. Africa.
Country /Province /State. Macaronesia. Canary Is, Cape Verde, Madeira.

Lolium grandispicum Y.J. Fei. Guihaia 19(3): 205-206, f. 1. 1999.
TYPE from China. T:<Type of Basionym>: fide TROPICOS and Kew Synonomy Database: China: Hubei: Jingzhou, east suburb, 43 m, 23 June 1998, Y.J. Fei 98088 (HT: HBAC).

Illustrations: None found.
Derivation (Clifford \& Bostock 2007): L. grandis, large; spica, a point; hence in particular, an ear or spike of grain. Spikelets large.

Classification. Subfamily Pooideae. Tribe: Poeae.
Distribution (TDWG). Continent. Temperate Asia.
Country /Province /State. China. China South Central.
Hubei.

Lolium loliaceum (Bory \& Chaub.) Hand.-Mazz. Ann. K.K. Naturhist. Hofmus. 28: 32 (1914).
Accepted by: 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 Greece. Basionym or Replaced Name: Rottboellia loliacea Bory \& Chaub. Exp. Sci. Moree Bot. 3: 46 (1832). T:<Type of Basionym>: fide TROPICOS and Kew Synonomy Database: Greece, Modon: Chaubert (G holo, P).

Illustrations (Books): N.L.Bor, Gramineae in Flora of Iraq (1968) (91, Pl. 31), J.P.Jessop, G.R.M. Dashorst \& F.M.James, Grasses of South Australia (2006) (134, Fig 88), N.Walsh \& T.Entwistle, Flora of Victoria Vol 2 (1994) (406, Fig 81), S.W.L.Jacobs, R.D.B.Whalley \& D.J.B.Wheeler,, Grasses of New South Wales, 4th edn (2008) (296), A.Wilson (ed.), Flora of Australia, Vol 44A. Poaceae (2009) (288, Fig 38), M.N.Correa, Flora Patagonica Parte III, Gramineae (1978) (49, Fig 20), B.Rosengurtt, Gramineas UruguayasI (1970) (120, Fig. 43).

Derivation (Clifford \& Bostock 2007): L. -acea, resembling. Inflorescence resembles that of Lolium..
Classification. Subfamily Pooideae. Tribe: Poeae.
Distribution (TDWG). Continent. Australasia.
Country /Province /State. Australia (*). Western Australia, South Australia, New South Wales, Victoria, Tasmania.

South-West. Southern. Coast, Western Slopes, Western Plains.

Lolium multiflorum Lam. Fl. Fr. iii. 621 (1778).
Accepted by: R.J.Soreng et al., Catalogue of New World Grasses (2000-2003) and online, W.D.Clayton \& K.Harman, GrassBase (2008) and online, U.Quattrocchi, CRC World Dictionary of Grasses (2006), 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 France. T:<Type of Basionym>: fide TROPICOS and Kew Synonomy Database: LT: Anon. herb. Lamarck, France: les environs de Peronne (P). LT designated by Terrell, Techn. Bull. U.S.D.A. 1392: 10 (1968).

Illustrations (Books): F.O.Zuloaga, Z.E.Rugolo \& A.M. Anton, Flora Argentina 3 - 2 Pooideae (2012) (266), C.E.Hubbard, Grasses (1968) (152), T. Cope \& A. Gray, Grasses of the British Isles (23), H.Jacques-Felix, Les Graminees d'Afrique tropicale (1962) (as L. multiflorum), R.M.Polhill, F.T.E.A., Gramineae, G.V.Pope et al., Flora Zambesiaca 10 (1(1971):43, T. 11), L.K.A. Chippindall, Grasses and Pastures of South Africa (1955) (58, Fig. 29), N.Feinbrun-Dothan, Flora Palaestina 4 (1986) (Pl. 294), S.Phillips, Poaceae (Gramineae) in I.Hedberg \& S.Edwards, Flora of Ethiopia and Eritrea (1995) (18, Fig. 9), T.Koyama, Grasses of Japan and its neighbouring regions (1987) (107, Fig 31), C-C Hsu, Flora of Taiwan, Vol 5 (1978) (324), C-C Hsu,Taiwan Grasses (1975) (445, Pl. 1393), H.J.Noltie, The Grasses of Bhutan (2000) (541, Fig. 14), J.P.Jessop, G.R.M. Dashorst \& F.M.James, Grasses of South Australia (2006) (135, Fig. 89), N.Walsh \& T.Entwistle, Flora of Victoria Vol 2 (1994) (406, Fig 81), S.W.L.Jacobs, R.D.B.Whalley \& D.J.B.Wheeler,, Grasses of New South Wales, 4th edn (2008) (297), T.D.Stanley \& E.Ross, Flora of South East Queensland, Gramineae (1989) (115, Fig. 18), A.Wilson (ed.), Flora of Australia, Vol 44A. Poaceae (2009) (288, Fig 38), D.Sharp \& B.K.Simon, AusGrass. Grasses of Australia. CD-Rom Version 1.0. (2002), W.L.Wagner et al., Manual of the Flowering Plants of Hawai'i, Vol. 2 (1990) (1559, Pl. 231), M.E.Barkworth et al, Flora of North America north of Mexico Vol 24 Poaceae, part 1 (2007) (457), A.S.Hitchcock, Manual of the Grasses of the West Indies (1936) (63, Fig. 34), S.A.Renvoize,

Gramineas de Bolivia (1998) (124, Fig. 30), E.G.Nicora, Los Generos de Gramineas de America Austral (1987) (274, Fig. 87), L.B. Smith, D.C. Wasshausen, R.M. Klein Flora Illustrada Catarinensis Gramineas (1981-1982) (258 \& 273, Fig. 55 \& 59), A.Burkat, Flora Ilustrada de Entre Rios (Argentina), Pt II, Gramineas (1969) (51, Fig. 11\& as var. muticum), A.L.Cabrera, Flora de la Provincia de Buenos Aires, IV Pt 2 Gramineas (1970) (65, Fig. 16 \& as var. muticum), M.N.Correa, Flora Patagonica Parte III, Gramineae (1978) (55, Fig. 23), B.Rosengurtt, Gramineas UruguayasI (1970) (120, Fig. 43), S-L Chen et al, Flora of China, Illustrations, Poaceae (2007) (Fig. 340 \& Fig. 557), H.M. Longhi-Wagner, Flora Ilustrada do Rio Grande do Sul, Gramineae, Poeae (1987), E.Hafliger \& E.Schultz, Grass Weeds, CIBAGEIGY (2:100(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. multus, many; flos, flower. Spikelets with more florets than those of related species.

Classification. Subfamily Pooideae. Tribe: Poeae.
Habit, Vegetative Morphology. Annual, caespitose. Culms erect or decumbent, 30-90 cm long. Leafsheath oral hairs lacking. Leaf-sheath auricles falcate. Ligule an eciliate membrane, $1-2 \mathrm{~mm}$ long. Leafblades 6-25 cm long, 4-10 mm wide.

Inflorescence. Inflorescence composed of racemes. Racemes 1, single, bilateral, 10-30 cm long. Rhachis semiterete. Spikelet packing adaxial, 1 their length apart, regular, 2 -rowed. Spikelets appressed, solitary. Fertile spikelets sessile.

Fertile Spikelets. Spikelets comprising 5-15 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets oblong, laterally compressed, $7.5-25 \mathrm{~mm}$ long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes one the lower absent or obscure, persistent, shorter than spikelet, similar to fertile lemma in texture. Upper glume lanceolate, coriaceous, without keels, 4-7 -veined. Upper glume surface smooth. Upper glume apex obtuse or acute.

Florets. Fertile lemma oblong, $5-8 \mathrm{~mm}$ long, coriaceous, without keel, 5 -veined, more than 3 -veined. Lemma apex dentate, 2 -fid, obtuse, awned, 1 -awned. Principal lemma awn 5-10 mm long overall. Palea keels scaberulous. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Ovary glabrous. Hilum linear.
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, Finland, Great Britain (*), Ireland. : Austria, Belgium, Czechoslovakia, Germany, Switzerland. : Baleares, Corsica, France, Portugal, Sardinia, Spain. : Albania, Bulgaria, Greece, Italy, Crete, Romania, Sicily, Turkey Europe, Yugoslavia. Belarus, Estonia, Kalingrad, Latvia, Lithuania, Baltic States, Krym, Central European Russia, East European Russia, North European Russia, South European Russia, Northwest European Russia, Moldova, Ukraine. Northern Africa, Macaronesia, West Tropical Africa, Northeast Tropical Africa, East Tropical Africa, South Tropical Africa, and Southern Africa. Algeria, Egypt, Libya, Morocco, Tunisia. Azores, Canary Is, Madeira. Eritrea, Ethiopia (inc. Eritrea). Zimbabwe. Limpopo, North-West, Gauteng, Mpumalanga, Free State, Kwazulu-Natal, Northern Cape, Western Cape, Eastern Cape. Russian Far East, Middle Asia, Caucasus, Western Asia, Arabian Peninsula, China (*), Eastern Asia. Amur. Kazakhstan, Turkmenistan, Tadzhikistan. Afghanistan, Iran, Iraq. China South Central, Inner Mongolia, China North-Central, China Southeast, Xinjiang. Japan Hokkaido, or Honshu, or Shikoku, or Kyushu. Japan, Nansei-Shoto, Taiwan. Indian Subcontinent, Malesia, Papuasia. Eastern Himalaya, Pakistan, Sri Lanka. Java, Philippines. New Guinea West Papua (Irian Jaya). New Guinea. Australia (*), New Zealand (*). Western Australia (*), South Australia (*), Queensland (*), New South Wales (*), A.C.T. (*), Victoria (*), Tasmania (*). New Zealand North I, New Zealand South I, Stewart Is, Campbell Is. North-central Pacific. Hawaii (*). Subarctic America, Western Canada, Eastern Canada, Northwest USA, North-central USA, Northeast USA, Southwestern USA, South-central USA, Southeastern USA, and Mexico. Aleutian Is, Alaska, Yukon, Northwest Territories, Greenland. Alberta, British Columbia, Manitoba, Saskatchewan. Labrador, New Brunswick, Newfoundland, Nova Scotia, Ontario, Prince Edward I, Quebec. Colorado, Idaho, Montana, Oregon, Washington, Wyoming. Illinois, Iowa, Kansas, Minnesota, Missouri, North

Dakota, Nebraska, Oklahoma, South Dakota, Wisconsin. Connecticut, Indiana, Maine, Massachusetts, Michigan, Ohio, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, Vermont, West Virginia. Arizona, California, Nevada, Utah. New Mexico, Texas. Alabama, Arkansas, Delaware, 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, and Southern South America. Guatemala, Panama. Bermuda, Jamaica. French Guiana. Bolivia, Colombia, Ecuador, Peru. Brazil Southeast, Brazil South. Argentina Northeast, Argentina South, Argentina Northwest, Chile North, Chile Central, Chile South, Juan Fernandez Is, Uruguay. Subantarctic islands. South Georgia, Tristan de Cunha.

Hebei, Shaanxi. Anhui, Fujian, Henan, Hunan, Jiangxi. Guizhou, Sichuan, Yunnan. Bhutan. SouthWest. Southern. South East. Coast, Tablelands, Western Slopes. Sao Paulo. Paraná, Rio Grande do Sul, Santa Catarina. Jujuy (*), Mendoza, San Luis, Tucuman. Buenos Aires, Cordoba, Corrientes, Distrito Federal, Entre Rios, La Pampa, Santa Fe. Chubut, Neuquén, Río Negro, Santa Cruz, Tierra del Fuego. Tarapaca, Antofagasta, Atacama. Coquimbo, Valparaiso, Santiago, O’Higgins, Maule, Biobio, La Araucania. Los Lagos, Magellanes. Distrito Federal, Mexico State, Puebla, Tlaxcala. Aguascalientes, Coahuila, Chihuahua, Guanajuato, Neuvo Leon, San Luis Potosi, Zacatecas. Veracruz. Baja California, Sinaloa, Sonora. Jalisco, Michoacan, Oaxaca. Chiapas.

Lolium perenne Linn. Sp. Pl. 83. (1753).
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), 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 Europe. T:<Type of Basionym>: fide TROPICOS and Kew Synonomy Database: LT: Anon., (LINN-99.1). LT designated by Terrell, Techn. Bull. USDA 1392: 7 (1968). See also Loos \& Jarvis, Bot. J. Linn. Soc. 108: 399-408 (1992) for a detailed discussion of the type..

Illustrations (Books): F.O.Zuloaga, Z.E.Rugolo \& A.M. Anton, Flora Argentina 3 - 2 Pooideae (2012) (267), C.E.Hubbard, Grasses (1968) (150), T. Cope \& A. Gray, Grasses of the British Isles (22), G.Hegi, Flora von Mitteleuropa 1 (1909), N.N.Tsvelev, Grasses of the Soviet Union (1983) (633 (421), Pl.8), R.M.Polhill, F.T.E.A., Gramineae, G.V.Pope et al., Flora Zambesiaca 10 (1(1971):43, t. 11), N.FeinbrunDothan, Flora Palaestina 4 (1986) (Pl. 293), S.Phillips, Poaceae (Gramineae) in I.Hedberg \& S.Edwards, Flora of Ethiopia and Eritrea (1995) (18, Fig. 9), L.Boulos, Flora of Egypt 4 (2005) (138, Fig 39), C-C Hsu, Flora of Taiwan, Vol 5 (1978) (326), C-C Hsu,Taiwan Grasses (1975), H.J.Noltie, The Grasses of Bhutan (2000) (541, Fig. 14), J.P.Jessop, G.R.M. Dashorst \& F.M.James, Grasses of South Australia (2006) (136, Fig. 90), C.A.Gardner, Flora of Western Australia, Vol 1, Part 1, Gramineae (1952) (191, Pl. 56), N.Walsh \& T.Entwistle, Flora of Victoria Vol 2 (1994) (406, Fig. 81), S.W.L.Jacobs, R.D.B.Whalley \& D.J.B.Wheeler,, Grasses of New South Wales, 4th edn (2008) (297), J.C.Tothill,\& J.B.Hacker. The grasses of southern Queensland (1983) (300), T.D.Stanley \& E.Ross, Flora of South East Queensland, Gramineae (1989) (115, Fig. 18), D.Sharp \& B.K.Simon, AusGrass. Grasses of Australia. CD-Rom Version 1.0. (2002), K.F.Best, et al, Prairie Grasses (1971) (151), M.E.Barkworth et al, Flora of North America north of Mexico Vol 24 Poaceae, part 1 (2007) (457), F.W.Gould, The Grasses of Texas (1975) (107, Fig. 51), S.A.Renvoize, Gramineas de Bolivia (1998) (124, Fig. 30), L.B. Smith, D.C. Wasshausen, R.M. Klein Flora Illustrada Catarinensis Gramineas (1981-1982) (258, Fig. 55 \& 277, Fig. 60), W.Burger, Flora Costaricensis 15, Gramineae: Fieldiana Botany New Series 4 (1980) (312, Fig. 113), M.N.Correa, Flora Patagonica Parte III, Gramineae (1978) (55, Fig. 21), B.Rosengurtt, Gramineas UruguayasI (1970) (120, Fig. 43), S-L Chen et al, Flora of China, Illustrations, Poaceae (2007) (Fig. 340), E.Hafliger \& E.Schultz, Grass Weeds, CIBA-GEIGY (2:101(1980)).

Images: D.Sharp \& B.K.Simon, AusGrass. Grasses of Australia. CD-Rom Version 1.0. (2002);, K.O.Mallett (ed.). Flora of Australia, Vol 44 A (2002) \& Vol 44B (2004). Poaceae;, E.Edgar \& H.E.Connor, Flora of New Zealand 5, Gramineae (2000);, L.Boulos, Flora of Egypt 4 (2005);, F.van Oudtshoorn, Guide to Grasses of Southern Africa (1999).

Derivation (Clifford \& Bostock 2007): L. persisting for several years. Perennials.

Classification. Subfamily Pooideae. Tribe: Poeae.
Habit, Vegetative Morphology. Perennial, caespitose. Culms erect or decumbent, 30-90 cm long. Leaf-sheath oral hairs lacking. Leaf-sheath auricles falcate. Ligule an eciliate membrane. Leaf-blades 3-20 cm long, 2-6 mm wide.

Inflorescence. Inflorescence composed of racemes. Racemes 1, single, bilateral, 4-30 cm long. Rhachis semiterete. Spikelet packing adaxial, 1 their length apart, regular, 2 -rowed. Spikelets appressed, solitary. Fertile spikelets sessile.

Fertile Spikelets. Spikelets comprising 4-14 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets oblong, laterally compressed, $7-20 \mathrm{~mm}$ long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes one the lower absent or obscure, persistent, shorter than spikelet, similar to fertile lemma in texture. Upper glume lanceolate, coriaceous, without keels, 5-7 -veined. Upper glume surface smooth. Upper glume apex obtuse.

Florets. Fertile lemma oblong, $5-7 \mathrm{~mm}$ long, coriaceous, without keel, 5 -veined, more than 3 -veined. Lemma apex obtuse, muticous. Palea keels scaberulous. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Ovary glabrous. Hilum linear.
$n=7$ ( 10 refs TROPICOS). $2 n=14$ ( 17 refs TROPICOS), or 56 ( 1 ref TROPICOS).
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, Eastern Europe.

Country /Province /State. : Denmark, Finland, Foroyar, Great Britain, Iceland, Ireland, Northern Ireland, Norway, Sweden. : Austria, Liechstenstein, Belgium, Luxembourg, Czechoslovakia, Germany, Hungary, Netherlands, Poland, Switzerland. : Baleares, Corsica, Channel Islands, France, Monaco, Portugal, Sardinia, Andorra, Gibralter, Spain. : Albania, Bulgaria, Greece, Italy, San Marino, Vatican, Crete, Romania, Malta, Sicily, Turkey Europe, Yugoslavia. Belarus, Estonia, Latvia, Lithuania, Central European Russia, East European Russia, North European Russia, South European Russia, Northwest European Russia, Ukraine. Northern Africa, Macaronesia, Northeast Tropical Africa, East Tropical Africa, South Tropical Africa, Southern Africa (*). Algeria, Egypt, Libya, Morocco, Tunisia. Azores, Canary Is, Madeira, Selvagens. Eritrea, Ethiopia (inc. Eritrea). Zimbabwe. Gauteng, Mpumalanga, Free State, Kwazulu-Natal, Lesotho, Northern Cape, Western Cape, Eastern Cape. Siberia, Middle Asia, Caucasus, Western Asia, Arabian Peninsula, China (+), Eastern Asia. Altay. Kazakhstan, Turkmenistan, Tadzhikistan. Afghanistan, Iran, Iraq. Gulf States. Japan, Taiwan. Indian Subcontinent, Indo-China, Malesia, Papuasia. Eastern Himalaya, Pakistan, Sri Lanka, West Himalaya. Java, Malaya. New Guinea. Australia (*), New Zealand (*). Western Australia (*), Northern Territory (*), South Australia (*), Queensland (*), New South Wales (*), A.C.T. (*), Victoria (*), Tasmania (*), Lord HoweNorfolk Is (*). Chatham Is, Kermadec Is, New Zealand North I, New Zealand South I, Stewart Is, Campbell Is. South-central Pacific, North-central Pacific. New Caledonia (*). Hawaii (*). Subarctic America, Western Canada, Eastern Canada, Northwest USA, North-central USA, Northeast USA, Southwestern USA, South-central USA, Southeastern USA, Mexico. Greenland. Alberta, British Columbia, Manitoba, Saskatchewan. New Brunswick, Newfoundland, Nova Scotia, Ontario, Prince Edward I, Quebec. Colorado, Idaho, Montana, Oregon, Washington, Wyoming. Illinois, Iowa, Kansas, Minnesota, Missouri, North Dakota, Nebraska, Oklahoma, South Dakota, Wisconsin. Connecticut, Indiana, Maine, Massachusetts, Michigan, Ohio, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, Vermont, West Virginia. Arizona, California, Nevada, Utah. New Mexico, Texas. Alabama, Arkansas, Delaware, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, North Carolina, South Carolina, Tennessee, Virginia, District of Columbia. Central Mexico, Northeast Mexico, Northwest Mexico, Southwest Mexico, Southeast Mexico. Mesoamerica, Caribbean, Northern South America, Western South America, Brazil, Southern South America. Costa Rica, Guatemala, Honduras, Panama. French Guiana. Colombia, Ecuador, Peru. Brazil South. Argentina Northeast, Argentina South, Argentina Northwest, Chile Central, Desventurados Is, Juan Fernandez Is, Uruguay. Subantarctic islands. Falkland Is (Malvinas).

Darjeeling, Bhutan. Tamilnadu, Uttah Pradesh. Himachal Pradesh, Jammu Kashmir. Kimberley, SouthWest. Central Australia. NW \& Lake Eyre, Southern. North, South East. Coast, Tablelands, Western Slopes,

Western Plains. Rio Grande do Sul, Santa Catarina. Jujuy (*), Mendoza, San Juan. Buenos Aires, Entre Rios, La Pampa. Chubut, Neuquén, Río Negro, Santa Cruz, Tierra del Fuego. Coquimbo, Valparaiso, Santiago, O’Higgins, Maule, Biobio, La Araucania. Los Lagos, Magellanes. Distrito Federal, Mexico State, Puebla. Aguascalientes, Coahuila, Chihuahua, Guanajuato, Neuvo Leon, Tamaulipas, Zacatecas. Baja California, Sonora. Jalisco, Michoacan, Oaxaca. Chiapas.

Lolium persicum Boiss. \& Hohen. Diagn. Ser. I. xiii. 66. (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), N.Tsvelev, Grasses of the Soviet Union (1983).

TYPE from Iran. T:<Type of Basionym>: fide TROPICOS and Kew Synonomy Database: HT: Th. Kotschy 278, 9 Jun 1843, Iran: in uliginosis m. Elbrus pr. Derbend (G (photo, DAO); IT: BM, G ( 3 sheets), K, LE, MO-2972883, P, W). Ed. R.F.Hohenacker. 1846..

Illustrations (Books): N.Feinbrun-Dothan, Flora Palaestina 4 (1986), N.L.Bor, Gramineae in Flora of Iraq (1968) (95, Pl. 32), T.A.Cope, Flora of Pakistan 143: Poaceae (1982) (380, Fig. 39), K.F.Best, et al, Prairie Grasses (1971) (153), M.E.Barkworth et al, Flora of North America north of Mexico Vol 24 Poaceae, part 1 (2007) (458), S-L Chen et al, Flora of China, Illustrations, Poaceae (2007) (Fig.340), E.Hafliger \& E.Schultz, Grass Weeds, CIBA-GEIGY (2:102(1980)).

Derivation (Clifford \& Bostock 2007): L. -ica, belonging to. From Persia, now Iran.
Classification. Subfamily Pooideae. Tribe: Poeae.
Habit, Vegetative Morphology. Annual. Culms erect or geniculately ascending, 14-60 cm long, 3-4noded. Leaf-sheaths smooth or scaberulous. Leaf-sheath oral hairs lacking. Leaf-sheath auricles absent or falcate. Ligule an eciliate membrane, 2 mm long, truncate. Leaf-blades $3.5-20 \mathrm{~cm}$ long, $1.5-7 \mathrm{~mm}$ wide. Leaf-blade surface scaberulous, rough adaxially. Leaf-blade apex attenuate.

Inflorescence. Inflorescence composed of racemes. Peduncle smooth or scaberulous above. Racemes 1, single, bilateral, 5-12 cm long, bearing 3-12 fertile spikelets on each. Rhachis semiterete, $0.5-1.6 \mathrm{~mm}$ wide, scabrous on surface. Spikelet packing adaxial, regular, 2 -rowed. Spikelets appressed, solitary. Fertile spikelets sessile.

Fertile Spikelets. Spikelets comprising 4-9 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets oblong, laterally compressed, $12-22 \mathrm{~mm}$ long, $1.5-7 \mathrm{~mm}$ wide, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes $1.7-2.9 \mathrm{~mm}$ long ( $0.66-1$ length of lemma).

Glumes. Glumes one the lower absent or obscure, persistent, shorter than spikelet or reaching apex of florets, similar to fertile lemma in texture. Upper glume lanceolate, $7.5-23 \mathrm{~mm}$ long, $0.66-1$ length of spikelet, coriaceous, without keels, 5-7 -veined. Upper glume apex obtuse or acute.

Florets. Fertile lemma lanceolate, $8.2-11.7 \mathrm{~mm}$ long, coriaceous, much thinner above, without keel, 35 -veined, $0-3$-veined or more than 3 -veined. Lemma apex erose, acute to attenuate, awned, 1 -awned. Principal lemma awn subapical, $5-15 \mathrm{~mm}$ long overall. Palea 1.1 length of lemma. Palea keels scaberulous. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, lanceolate or obovate, 0.7-1.4 mm long, membranous. Anthers 3, 1.53.1 mm long. Ovary glabrous. Caryopsis with adherent pericarp, linear, $5.5-7 \mathrm{~mm}$ long. Hilum linear.
$2 n=14$ (1 ref TROPICOS).
Distribution (TDWG). Continent. Europe, Africa, Temperate Asia, Tropical Asia, North America.
Region. Northern Europe (*), Eastern Europe.
Country /Province /State. : GB Aliens (Ryves et al). Northwest European Russia. Northeast Tropical Africa. Socotra. Russian Far East, Middle Asia, Caucasus, Western Asia, Arabian Peninsula, China. Primorye. Kazakhstan, Turkmenistan, Tadzhikistan, Uzbekistan. Afghanistan, Iran, Iraq. China North-Central, Qinghai, Xinjiang. Indian Subcontinent. Pakistan. Australia (*). Western Canada, Eastern Canada, Northwest USA, North-central USA. Alberta, Manitoba, Saskatchewan. Montana, Wyoming. North Dakota.

Gansu, Hebei, Shaanxi.

Lolium remotum Schrank. Baier. Fl. i. 382 (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), 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 Germany. T:<Type of Basionym>: fide TROPICOS and Kew Synonomy Database: Germany: Bavaria: "um Burghausen", type not known according to Terrell (1968).

Illustrations (Books): G.Hegi, Flora von Mitteleuropa 1 (1909), S-L Chen et al, Flora of China, Illustrations, Poaceae (2007) (Fig.340), E.Hafliger \& E.Schultz, Grass Weeds, CIBA-GEIGY (2:103(1980)).

Derivation (Clifford \& Bostock 2007): L. distant. Spikelets widely separated.
Classification. Subfamily Pooideae. Tribe: Poeae.
Habit, Vegetative Morphology. Annual. Culms erect, 23-104 cm long, 3-4 -noded. Leaf-sheaths glabrous on surface. Leaf-sheath auricles absent or falcate, $1-2 \mathrm{~mm}$ long. Ligule an eciliate membrane, $1-$ 2.5 mm long, truncate. Leaf-blades $10-26 \mathrm{~cm}$ long, $1-6.5 \mathrm{~mm}$ wide. Leaf-blade surface smooth or scaberulous, rough adaxially. Leaf-blade apex attenuate.

Inflorescence. Inflorescence composed of racemes. Racemes 1, single, bilateral, 20-23 cm long, bearing 3-20 fertile spikelets on each. Rhachis semiterete, $0.5-1.4 \mathrm{~mm}$ wide, smooth on margins or scaberulous on margins. Spikelet packing adaxial, regular, 2 -rowed. Spikelets appressed, solitary. Fertile spikelets sessile.

Fertile Spikelets. Spikelets comprising 2-10 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets oblong, laterally compressed, $5-16 \mathrm{~mm}$ long, $1-5 \mathrm{~mm}$ wide, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes $0.8-2 \mathrm{~mm}$ long.

Glumes. Glumes one the lower absent or obscure, persistent, shorter than spikelet or reaching apex of florets or exceeding apex of florets, similar to fertile lemma in texture. Upper glume lanceolate, $5-16 \mathrm{~mm}$ long, 1 length of spikelet, coriaceous, without keels, 3-7 -veined. Upper glume apex obtuse or acute.

Florets. Fertile lemma ovate, $3.5-4.5 \mathrm{~mm}$ long, $1.2-1.8 \mathrm{~mm}$ wide, coriaceous, much thinner above, without keel, 3-7 -veined, 0-3 -veined or more than 3-veined. Lemma apex erose, obtuse, muticous or awned, 1 -awned. Principal lemma awn subapical, $0-10 \mathrm{~mm}$ long overall. Palea 1 length of lemma. Palea keels smooth or scaberulous, adorned above. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Anthers 3, 1.6-2.2 mm long. Ovary glabrous. Caryopsis with adherent pericarp, oblong or ovoid, $3.2-4.5 \mathrm{~mm}$ long. Hilum linear.
$2 n=14$ ( 1 ref TROPICOS).
Distribution (TDWG). Continent. Europe, Africa, Temperate Asia, Australasia.
Region. Northern Europe, Middle Europe, Southwestern Europe, Southeastern Europe, Eastern Europe.

Country /Province /State. : GB Aliens (Ryves et al). Belarus, Estonia, Latvia, Lithuania, Central European Russia, East European Russia, North European Russia, Northwest European Russia, Ukraine. Northern Africa, Macaronesia. Canary Is. Siberia, Russian Far East, Western Asia, China (*). Irkutsk, Tuva. Amur, Primorye. Afghanistan. Manchuria, Xinjiang. Australia (*), New Zealand. Western Australia, Victoria.

Buenos Aires.

Lolium rigidum Gaud. Agrost. Helv. i. 334. (1811).
Accepted by: R.J.Soreng et al., Catalogue of 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).

TYPE from Switzerland. Basionym or Replaced Name: Lolium subulatum Degen ex Lojac., in syn., Fl. Sic. 3: 373 (1909). T:<Type of Basionym>: fide TROPICOS and Kew Synonomy Database: Europe: Switzerland: Augustae Praetoriae ad vias apricas 1809, Gaudin s.n. (HT: LAU).

Recent Synonyms: Lolium loliaceum (Bory \& Chaub.) Hand.-Mazz., Ann. Nat. Hofmus. Wien, 28:. 32 (1914).

Illustrations (Books): F.O.Zuloaga, Z.E.Rugolo \& A.M. Anton, Flora Argentina 3 - 2 Pooideae (2012) (268), G.Hegi, Flora von Mitteleuropa 1 (1909), N.Feinbrun-Dothan, Flora Palaestina 4 (1986) (Pl. 295, 296, 297\& 298 as ssp. rigidum \& ssp. lepturoides \& ssp. negevense \& as L. subulatum), L.Boulos, Flora of Egypt 4 (2005) (138, Fig 39), N.L.Bor, Gramineae in K.H.Rechinger, Flora Iranica. No. 70/30 (1970) (Tab. 10), N.L.Bor, Gramineae in Flora of Iraq (1968) (97, Pl. 33 \& as Lolium loliaceum), J.P.Jessop, G.R.M. Dashorst \& F.M.James, Grasses of South Australia (2006) (137, Fig 91 \& as Lolium loliaceum), N.Walsh \& T.Entwistle, Flora of Victoria Vol 2 (1994) (406, Fig 81 as Lolium loliaceum), S.W.L.Jacobs, R.D.B.Whalley \& D.J.B.Wheeler,, Grasses of New South Wales, 4th edn (2008) (297), A.Wilson (ed.), Flora of Australia, Vol 44A. Poaceae (2009) (288, Fig 38), D.Sharp \& B.K.Simon, AusGrass. Grasses of Australia. CD-Rom Version 1.0. (2002) (\& as L. loliaceum), M.N.Correa, Flora Patagonica Parte III, Gramineae (1978) (49, Fig 20 as Lolium loliaceum), B.Rosengurtt, Gramineas UruguayasI (1970) (as L. loliaceum), M.E.Barkworth et al, Flora of North America north of Mexico Vol 24 Poaceae, part 1 (2007) (457), S-L Chen et al, Flora of China, Illustrations, Poaceae (2007) (Fig.340), E.Hafliger \& E.Schultz, Grass Weeds, CIBA-GEIGY (2:105(1980)).

Derivation (Clifford \& Bostock 2007): L. stiff. Culms, spikelets or inflorescence branches held stiffly erect.

Classification. Subfamily Pooideae. Tribe: Poeae.
Habit, Vegetative Morphology. Annual. Culms erect or geniculately ascending or decumbent, 18-43 cm long, 2-4 -noded. Leaf-sheaths smooth or scaberulous. Leaf-sheath oral hairs lacking. Leaf-sheath auricles absent or falcate. Ligule an eciliate membrane, 1-1.5 mm long, truncate or obtuse. Leaf-blades 517 cm long, $0.5-5 \mathrm{~mm}$ wide. Leaf-blade surface smooth or scaberulous, rough adaxially. Leaf-blade margins smooth or scaberulous. Leaf-blade apex acute to attenuate.

Inflorescence. Inflorescence composed of racemes. Peduncle smooth or scaberulous above. Racemes 1, single, straight or arcuate, bilateral, $3-30 \mathrm{~cm}$ long, bearing $2-19$ fertile spikelets on each. Rhachis subcylindrical and excavated, $1-2.5 \mathrm{~mm}$ wide, smooth on surface or scabrous on surface. Spikelet packing adaxial, regular, 2 -rowed. Spikelets sunken or appressed, solitary. Fertile spikelets sessile.

Fertile Spikelets. Spikelets comprising 2-8 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets oblong, laterally compressed, $5-18 \mathrm{~mm}$ long, $1-3 \mathrm{~mm}$ wide, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes $0.9-2.8 \mathrm{~mm}$ long ( $0.25-0.5$ length of lemma).

Glumes. Glumes one the lower absent or obscure, persistent, shorter than spikelet or reaching apex of florets, similar to fertile lemma in texture. Upper glume lanceolate or oblong, $4-20 \mathrm{~mm}$ long, $0.75-1$ length of spikelet, coriaceous, without keels, 3-7 -veined. Upper glume surface smooth or asperulous. Upper glume apex obtuse or acute.

Florets. Fertile lemma lanceolate, 3.2-8.5 mm long, coriaceous, without keel, 3-5 -veined, 0-3 -veined or more than 3-veined. Lemma surface smooth or scaberulous. Lemma apex entire or erose, obtuse or acute, muticous or awned (rarely), 1 -awned. Principal lemma awn subapical, $0-3(-10) \mathrm{mm}$ long overall. Palea keels scaberulous. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, lanceolate, $0.8-1 \mathrm{~mm}$ long, membranous. Anthers 3, 1.2-3.1 mm long. Ovary glabrous. Caryopsis with adherent pericarp, fusiform, 2.7-5.5 mm long. Hilum linear.
$n=7$ ( 7 refs TROPICOS). $2 n=14$ ( 2 refs TROPICOS).
Distribution (TDWG). Continent. Europe, Africa, Temperate Asia, Tropical Asia, Australasia (*), North America, South America, Antarctica.

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

Country /Province /State. : Great Britain (*). Northern Africa, Macaronesia, West Tropical Africa, Southern Africa (*). Algeria, Egypt (*), Libya, Morocco, Tunisia. Canary Is, Madeira. Namibia, NorthWest, Kwazulu-Natal, Northern Cape, Western Cape, Eastern Cape. Russian Far East, Middle Asia, Caucasus, Western Asia, Arabian Peninsula, China, Eastern Asia. Primorye. Turkmenistan, Tadzhikistan. Afghanistan, Iran, Iraq. Gulf States, Kuwait. China North-Central, China Southeast. Japan. Indian Subcontinent. India, Pakistan, Sri Lanka. 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. Northwest USA, Southwestern USA, South-central USA, Southeastern USA. Oregon. Arizona, California. Texas. Louisiana. Southern South America. Argentina South, Chile Central, Chile South. Subantarctic islands. Tristan de Cunha.

Gansu. Henan. South-West. Central Australia. NW \& Lake Eyre, Southern. Central, South East, Inland. Coast, Tablelands, Western Slopes, Western Plains. Buenos Aires, Corrientes, Entre Rios, Misiones, Santa Fe. Río Negro. Coquimbo, Valparaiso, Santiago, O’Higgins, Biobio, La Araucania. Los Lagos, Magellanes.

Lolium temulentum Linn. Sp. Pl. 83. (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), W.D.Clayton \& N.Snow, Key to Pacific Grasses (2010).

TYPE from Europe. T:<Type of Basionym>: fide TROPICOS and Kew Synonomy Database: LT: Gramen loliaceum spica longiore (UPS-BURS-Vol. 1, folio 113). LT designated by Loos and Jarvis, Bot. J. Linn. Soc. 108: 408 (1992), who overturn the earlier incorrect lectotypification of Terrell, USDA Bull. 1392: 35 (1968)..

Illustrations (Books): F.O.Zuloaga, Z.E.Rugolo \& A.M. Anton, Flora Argentina 3 - 2 Pooideae (2012) (269), C.E.Hubbard, Grasses (1968) (154), T. Cope \& A. Gray, Grasses of the British Isles (25), G.Hegi, Flora von Mitteleuropa 1 (1909), R.M.Polhill, F.T.E.A., Gramineae (1(1970):42, Fig.15), G.V.Pope et al., Flora Zambesiaca 10 (1(1971):43, t. 11), L.K.A. Chippindall, Grasses and Pastures of South Africa (1955) (59, Fig. 30), G.E.Gibbs Russell el al, Grasses of Southern Africa (1990) (202, Fig 124), N.FeinbrunDothan, Flora Palaestina 4 (1986) (Pl. 299), S.Phillips, Poaceae (Gramineae) in I.Hedberg \& S.Edwards, Flora of Ethiopia and Eritrea (1995) (18, Fig 9), L.Boulos, Flora of Egypt 4 (2005) (138, Fig. 39), H.J.Noltie, The Grasses of Bhutan (2000) (541, Fig. 14), J.P.Jessop, G.R.M. Dashorst \& F.M.James, Grasses of South Australia (2006) (139, Fig. $92 \& 93$ as forma temulentum \& forma arvense), C.A.Gardner, Flora of Western Australia, Vol 1, Part 1, Gramineae (1952) (194, Pl. 57), N.Walsh \& T.Entwistle, Flora of Victoria Vol 2 (1994) (406, Fig 81 as var. temulentum, arvense), S.W.L.Jacobs, R.D.B.Whalley \& D.J.B.Wheeler,, Grasses of New South Wales, 4th edn (2008) (294), T.D.Stanley \& E.Ross, Flora of South East Queensland, Gramineae (1989) (115, Fig. 18 as var. temulentum), A.Wilson (ed.), Flora of Australia, Vol 44A. Poaceae (2009) (288, Fig 38), D.Sharp \& B.K.Simon, AusGrass. Grasses of Australia. CD-Rom Version 1.0. (2002), M.N.Correa, Flora Patagonica Parte III, Gramineae (1978) (49, Fig. 19), M.E.Barkworth et al, Flora of North America north of Mexico Vol 24 Poaceae, part 1 (2007) (458 as subspecies temulentum \& remotum), S.A.Renvoize, Gramineas de Bolivia (1998) (214, Fig. 30), L.B. Smith, D.C. Wasshausen, R.M. Klein Flora Illustrada Catarinensis Gramineas (1981-1982) (258, Fig. 55), B.Rosengurtt, Gramineas UruguayasI (1970) (122, Fig. 44as var. temulentum, arvense), S-L Chen et al, Flora of China, Illustrations, Poaceae (2007) (Fig. 340 as var. arvense \& as var. temulentum), H.M. LonghiWagner, Flora Ilustrada do Rio Grande do Sul, Gramineae, Poeae (1987), E.Hafliger \& E.Schultz, Grass Weeds, CIBA-GEIGY (2:105(1980)), G.G.Potgar, C.B.Salunkhe \& S.R.Yadav, Grasses of Maharashtra (2012) (Fig. 269).

Illustrations (Journals): Ruizia (13:113, Fig12a (1993)).
Images: D.Sharp \& B.K.Simon, AusGrass. Grasses of Australia. CD-Rom Version 1.0. (2002);, G.G.Potgar, C.B.Salunkhe \& S.R.Yadav, Grasses of Maharashtra (2012)
(Pl. 22).
Derivation (Clifford \& Bostock 2007): L. drunken. Eating of the diseased grain has been long and widely associated with vomiting, staggering and impaired vision.

Classification. Subfamily Pooideae. Tribe: Poeae.
Habit, Vegetative Morphology. Annual, culms solitary or caespitose. Culms erect or decumbent, 3090 cm long. Leaf-sheath oral hairs lacking. Leaf-sheath auricles falcate. Ligule an eciliate membrane, 2 mm long. Leaf-blades 6-40 cm long, 3-13 mm wide.

Inflorescence. Inflorescence composed of racemes. Racemes 1, single, bilateral, $10-30 \mathrm{~cm}$ long. Rhachis semiterete. Spikelet packing adaxial, 2 their length apart, regular, 2 -rowed. Spikelets appressed, solitary. Fertile spikelets sessile.

Fertile Spikelets. Spikelets comprising 4-10 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets oblong, laterally compressed, $12-26 \mathrm{~mm}$ long, $4-6 \mathrm{~mm}$ wide, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes one the lower absent or obscure, persistent, exceeding apex of florets or reaching apex of florets, similar to fertile lemma in texture. Upper glume lanceolate, coriaceous, without keels, 7-9 veined. Upper glume surface smooth or asperulous. Upper glume apex obtuse.

Florets. Fertile lemma elliptic to ovate, 6-8 mm long, coriaceous, without keel, 5-9 -veined, more than 3 -veined. Lemma apex obtuse, muticous or awned, 1 -awned. Principal lemma awn $0-20 \mathrm{~mm}$ long overall. Palea keels scaberulous. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Ovary glabrous. Hilum linear.
$n=7$ ( 5 refs TROPICOS). $2 n=14$ ( 6 refs TROPICOS).
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, Eastern Europe.

Country /Province /State. : Denmark, Finland, Foroyar, Great Britain (*), Iceland, Ireland, Northern Ireland, Norway, Sweden. : Austria, Liechstenstein, Belgium, Luxembourg, Czechoslovakia, Germany, Hungary, Netherlands, Poland, Switzerland. : Baleares, Corsica, Channel Islands, France, Monaco, Portugal, Sardinia, Andorra, Gibralter, Spain. : Albania, Bulgaria, Greece, Italy, San Marino, Vatican, Crete, Romania, Malta, Sicily, Turkey Europe, Yugoslavia. Belarus, Estonia, Kalingrad, Latvia, Lithuania, Baltic States, Krym, Central European Russia, East European Russia, North European Russia, South European Russia, Northwest European Russia, Moldova, Ukraine. Northern Africa, Macaronesia, Northeast Tropical Africa, East Tropical Africa, South Tropical Africa, Southern Africa (*), Western Indian Ocean. Algeria, Egypt, Morocco, Tunisia. Azores, Canary Is, Madeira, Selvagens. Eritrea, Ethiopia (inc. Eritrea), Socotra. Kenya, Tanzania. Zimbabwe. North-West, Gauteng, Mpumalanga, Free State, Kwazulu-Natal, Lesotho, Northern Cape, Western Cape, Eastern Cape. Mauritius (*). Siberia, Russian Far East, Middle Asia, Caucasus, Western Asia, Arabian Peninsula, China, Eastern Asia. Kuril Is, Primorye, Sakhalin. Turkmenistan, Tadzhikistan, Uzbekistan. Afghanistan, Iran, Iraq. Kuwait, Oman. Manchuria, China North-Central, Qinghai, China Southeast, Xinjiang. Japan Hokkaido, or Honshu, or Shikoku, or Kyushu. Japan. Indian Subcontinent, Malesia. Eastern Himalaya, Pakistan, Sri Lanka, West Himalaya. Java, Philippines. Australia (*), New Zealand (*). Western Australia (*), South Australia $\left(^{*}\right)$, Queensland (*), New South Wales (*), Victoria (*), Tasmania (*). New Zealand North I, New Zealand South I. North-central Pacific. Hawaii (*). Subarctic America, Western Canada, Eastern Canada, Northwest USA, North-central USA, Northeast USA, Southwestern USA, South-central USA, Southeastern USA, Mexico. Yukon. Alberta, British Columbia, Manitoba, Saskatchewan. Ontario. Colorado, Idaho, Washington, Wyoming. North Dakota. West Virginia. Arizona, California, Utah. New Mexico, Texas. Alabama, Florida, North Carolina, Tennessee, Virginia. Central Mexico, Northeast Mexico, Gulf (Mexico), Northwest Mexico, Southwest Mexico. Mesoamerica, Caribbean, Northern South America, Western South America, Brazil, Southern South America. Cuba (*). Colombia. Brazil Southeast, Brazil South. Argentina Northeast, Argentina South, Chile North, Chile Central, Chile South. Subantarctic islands. South Georgia.

Gansu, Hebei, Shaanxi. Anhui, Henan, Hunan, Shanghai, Zhejiang. Bhutan. Uttah Pradesh. Himachal Pradesh, Jammu Kashmir. South-West. Southern. Central, South East, Inland. Coast, Tablelands, Western Slopes, Western Plains. Sao Paulo. Rio Grande do Sul, Santa Catarina. Mendoza, Salta, San Juan, San Luis. Buenos Aires, Cordoba, Entre Rios, La Pampa, Santa Fe. Chubut, Río Negro, Tierra del Fuego. Coquimbo, Valparaiso, Santiago, Biobio, La Araucania. Los Lagos. Puebla. Aguascalientes, San Luis Potosi, Zacatecas. Veracruz. Baja California. Jalisco, Oaxaca.

Lolium x hubbardii B.K. Simon. Austrobaileya, 2(1): 21 (1984).
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): J.P.Jessop, G.R.M. Dashorst \& F.M.James, Grasses of South Australia (2006) (132, Fig 86).

Derivation (Clifford \& Bostock 2007): In honor of Charles Edward Hubbard (1900-1980) English agrostologist.

Classification. Subfamily Pooideae. Tribe: Poeae.
Distribution (TDWG). Continent. Europe, Australasia, North America.
Country /Province /State. Australia (*). Queensland, Victoria.
North, South East.

Lolium x hybridum Hausskn. Mitth. Bot, Ver. Jena, 5: 32 (1887).
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): J.P.Jessop, G.R.M. Dashorst \& F.M.James, Grasses of South Australia (2006) (133, Fig 87).

Derivation (Clifford \& Bostock 2007): L. of mixed parentage. Sharing the characters of two or more species and not necessarily genetic hybrids.

Classification. Subfamily Pooideae. Tribe: Poeae.
Distribution (TDWG). Continent. Africa, Tropical Asia, Australasia.
Country /Province /State. Southern Africa (*). North-West, Free State, Kwazulu-Natal, Lesotho, Western Cape, Eastern Cape. Indian Subcontinent. Eastern Himalaya. Australia (*). Hawaii $\left(^{*}\right)$.

Bhutan.

## Lophacme digitata Stapf. Hook. Ic. Pl. t. 2611. (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 Synonomy Database: South Africa: Kalahari Region, Transvaal, Rhenoster Poort, Nelson 32 (HT: K).

Illustrations (Books): G.V.Pope et al., Flora Zambesiaca 10 (2(1999):40, t. 18), L.K.A. Chippindall, Grasses and Pastures of South Africa (1955) (128, Fig 101), G.E.Gibbs Russell el al, Grasses of Southern Africa (1990).

Illustrations (Journals): Hooker's Icones Plantarum (t. 2611 (1899)).
Derivation (Clifford \& Bostock 2007): L. digitus, finger; -ata, possessing. Inflorescence branches finger-like.

Classification. Subfamily Chloridoideae. Tribe: Chlordoideae incertae sedis.
Habit, Vegetative Morphology. Perennial, caespitose. Culms erect, 20-60 cm long. Ligule a fringe of hairs. Leaf-blades $2-5 \mathrm{~cm}$ long, $1-2.5 \mathrm{~mm}$ wide.

Inflorescence. Inflorescence composed of racemes. Racemes 3-8, digitate, unilateral, $2.5-8 \mathrm{~cm}$ long. Rhachis angular, scabrous on margins. Spikelet packing broadside to rhachis, lax. 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, $4.5-6 \mathrm{~mm}$ long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes terete, eventually visible between lemmas. Floret callus evident, 0.3 mm long, pubescent, obtuse, disarticulating obliquely.

Glumes. Glumes persistent, similar, exceeding apex of florets, similar to fertile lemma in texture, gaping. Lower glume linear, 0.75 length of upper glume, membranous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume apex acuminate. Upper glume linear, $4.5-6 \mathrm{~mm}$ long, membranous, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume apex acuminate.

Florets. Fertile lemma lanceolate, 3-4 mm long, membranous, keeled, 3 -veined, $0-3$-veined. Lemma surface pilose. Lemma apex dentate, 2 -fid, incised 0.2 of lemma length, awned, 1 -awned. Principal lemma awn 6-8 mm long overall. Apical sterile florets 3-5 in number, barren, in a clump, rudimentary. Apical sterile lemmas awned, 1 -awned. Apical sterile lemma awns 6-8 mm long, 3-4 per spikelet in number.

Distribution (TDWG). Continent. Africa.

Country /Province /State. South Tropical Africa, Southern Africa. Angola, Zambia, Zimbabwe. Limpopo, Gauteng, Mpumalanga, Free State, Kwazulu-Natal.

Lophacme parva S.A. Renvoize \& W.D. Clayton. Kew Bull., 38(1): 61 (1983).
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 Synonomy Database: Zambia: N Shiwa Ngandu, on shallow peat overlying rocks in open Raphia, etc. fringing bush on steamside, associated with Osmunda regalis, 23 Oct 1938, Greenway 5767 (HT: K).

Illustrations: None found.
Derivation (Clifford \& Bostock 2007): L. small. Of dwarf stature.
Classification. Subfamily Chloridoideae. Tribe: Chlordoideae incertae sedis.
Habit, Vegetative Morphology. Annual or perennial, short-lived, caespitose. Culms erect or geniculately ascending, $20-40 \mathrm{~cm}$ long. Leaves distichous. Ligule an eciliate membrane or absent, 0.1 mm long, erose. Leaf-blades flat or involute, $2-5 \mathrm{~cm}$ long, $2-4 \mathrm{~mm}$ wide, stiff. Leaf-blade surface ribbed.

Inflorescence. Inflorescence composed of racemes. Racemes 2-7, digitate, unilateral, $2.5-5 \mathrm{~cm}$ long. Central inflorescence axis $1-4 \mathrm{~cm}$ long. Rhachis angular. Spikelet packing broadside to rhachis, lax. 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 oblong, laterally compressed, 3-4 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus evident, pubescent, obtuse, disarticulating obliquely.

Glumes. Glumes persistent, similar, shorter than spikelet. Lower glume linear, $2-2.5 \mathrm{~mm}$ long, 0.8 length of upper glume, membranous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume apex obtuse. Upper glume lanceolate, $2.5-3 \mathrm{~mm}$ long, $0.8-0.9$ length of adjacent fertile lemma, membranous, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume apex obtuse.

Florets. Fertile lemma lanceolate, 3-3.5 mm long, membranous, keeled, 1(-3) -veined, 0-3 -veined. Lemma midvein ciliate, hairy below. Lemma margins ciliate. Lemma apex dentate, 2 -fid, awned, 1 -awned. Principal lemma awn subapical, flexuous, $10-15 \mathrm{~mm}$ long overall. Apical sterile florets $1-3$ in number, male (the lowest when present) or barren, in a clump, rudimentary. Apical sterile lemmas awned, 1 -awned. Apical sterile lemma awns $4-10 \mathrm{~mm}$ long.

Distribution (TDWG). Continent. Africa.
Country /Province/State. South Tropical Africa. Zambia.

## Lophatherum gracile Brongn. Duperr. Voy. Coq. Bot. 50. t. 8. (1831).

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 Moluccas. T:<Type of Basionym>: fide TROPICOS and Kew Synonomy Database: Moluccas, Amboina: Brongniart .

Illustrations (Books): C-C Hsu, Flora of Taiwan, Vol 5 (1978) (236), C-C Hsu,Taiwan Grasses (1975) (394, Pl. 1373), H.J.Noltie, The Grasses of Bhutan (2000) (637, Fig. 30), H.B.Gilliland, Grasses of Malaya (1971) (56, Fig. 5), H.Duistermaat, Field Guide to the Grasses of Singapore (2005) (91, Fig. 88), 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. 622).

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);, K.Domin, Bibliotheca Botanica 85 (1915) (411, Fig.96).

Derivation (Clifford \& Bostock 2007): L. slender. Culms or inflorescences slender.
Classification. Subfamily Panicoideae. Tribe: Zeugiteae.

Habit, Vegetative Morphology. Perennial, caespitose. Roots bearing tubers. Culms 50-100 cm long. Ligule an eciliate membrane. Leaf-blade base with a false petiole. Leaf-blades lanceolate, 10-20 cm long, $20-50 \mathrm{~mm}$ wide. Leaf-blade venation with distinct cross veins.

Inflorescence. Inflorescence composed of racemes. Racemes borne along a central axis, unilateral, 310 cm long. Central inflorescence axis $5-30 \mathrm{~cm}$ long. Rhachis angular, puberulous on surface. Spikelet packing contiguous or lax. 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 lanceolate, laterally compressed, 8-9 mm long, falling entire.

Glumes. Glumes similar, shorter than spikelet, similar to fertile lemma in texture. Lower glume oblong, 4 mm long, 0.75 length of upper glume, herbaceous, 1 -keeled, 5 -veined. Lower glume surface glabrous or pilose, hairy above. Lower glume apex obtuse. Upper glume oblong, 5.5 mm long, 0.8 length of adjacent fertile lemma, herbaceous, 1-keeled, 5 -veined. Upper glume surface glabrous or pilose, hairy above. Upper glume apex obtuse.

Florets. Fertile lemma oblong, 6.5 mm long, herbaceous, keeled, 7 -veined, more than 3-veined. Lemma apex acute, awned, 1 -awned. Principal lemma awn $1-1.5 \mathrm{~mm}$ long overall, limb retrorsely scabrous. Palea oblanceolate, 2 -veined. Palea keels winged. Palea apex dentate. Apical sterile florets 6-12 in number, barren, in a clump, elliptic, 2.5 mm long. Apical sterile lemmas awned, 1 -awned. Apical sterile lemma awns 1.5 mm long, retrorsely scabrous.

Flower and Fruit. Lodicules 2, cuneate. Anthers 2, 1.5 mm long.
$2 n=48$ (1 ref TROPICOS).
Distribution (TDWG). Continent. Temperate Asia, Tropical Asia, Australasia, Pacific.
Country /Province /State. China, Eastern Asia. China South Central, Hainan, China Southeast. Japan Honshu. Japan, Korea, Nansei-Shoto, Taiwan. Indian Subcontinent, Indo-China, Malesia, Papuasia. Assam, Eastern Himalaya, India, Nepal, Sri Lanka. Cambodia, Myanmar, Thailand, Vietnam. Borneo, Java, Lesser Sunda Is, Moluccas, Philippines, Sulawesi, Sumatra. New Guinea. Australia. Queensland. South-central Pacific, Northwestern Pacific. Society Is. Caroline Is, Marshall Is.

Anhui, Fujian, Guangdong, Guangxi, Hunan, Jiangsu, Jiangxi, Zhejiang. Guizhou, Hubei, Sichuan, Yunnan. Assam. Darwin \& Gulf, Victoria R \& Barkly Tableland. North.

Lophatherum sinense Rendle. Journ. Linn. Soc. vi. 421. (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 Synonomy Database: China: Jiangxi: Jiujiang, shady hillsides by streams, Shearer s.n. (HT: K).

Illustrations (Books): T.Koyama, Grasses of Japan and its neighbouring regions (1987) (231, Fig 84), S-L Chen et al, Flora of China, Illustrations, Poaceae (2007) (Fig. 623).

Derivation (Clifford \& Bostock 2007): L. -ense, denoting origin. From Sina, now China.
Classification. Subfamily Panicoideae. Tribe: Zeugiteae.
Habit, Vegetative Morphology. Perennial. Roots bearing tubers. Culms 80-100 cm long. Ligule absent. Leaf-blades lanceolate, $12-40 \mathrm{~cm}$ long, $15-36 \mathrm{~mm}$ wide. Leaf-blade venation with distinct cross veins. Leaf-blade apex acuminate.

Inflorescence. Inflorescence composed of racemes. Racemes 6-9, borne along a central axis, unilateral, $1-5 \mathrm{~cm}$ long. Central inflorescence axis $18-25 \mathrm{~cm}$ long. Rhachis angular. Spikelet packing crowded. Spikelets ascending, solitary. Fertile spikelets sessile.

Fertile Spikelets. Spikelets comprising 1 fertile florets, with diminished florets at the apex. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets ovate, laterally compressed, $6-10 \mathrm{~mm}$ long, falling entire.

Glumes. Glumes similar, shorter than spikelet. Lower glume ovate, $3-5 \mathrm{~mm}$ long, $0.66-0.75$ length of upper glume, herbaceous, 1 -keeled, 5 -veined. Lower glume surface pilose, hairy above. Lower glume apex obtuse. Upper glume ovate, $5-7 \mathrm{~mm}$ long, $0.7-0.8$ length of adjacent fertile lemma, herbaceous, 1 -keeled, 7 -veined. Upper glume surface pilose, hairy above. Upper glume apex obtuse.

Florets. Fertile lemma ovate, $5-11 \mathrm{~mm}$ long, herbaceous, keeled, 7 -veined, more than 3-veined. Lemma surface pilose, hairy above. Lemma apex acute, mucronate. Palea 2 -veined. Palea keels
scaberulous. Palea apex dentate. Apical sterile florets 5-6 in number, barren, in a clump, elliptic, 4 mm long. Apical sterile lemmas awned, 1 -awned. Apical sterile lemma awns 2 mm long.

Flower and Fruit. Lodicules 2, cuneate.
Distribution (TDWG). Continent. Temperate Asia.
Country /Province/State. China, Eastern Asia. China Southeast. Japan Honshu. Japan, Korea.
Hunan, Jiangsu, Jiangxi, Zhejiang.

Lophopogon kingii Hook. f. Fl. Brit. Ind. vii. 149. (1896).
Accepted by: W.D.Clayton \& K.Harman, GrassBase (2008) and online, U.Quattrocchi, CRC World Dictionary of Grasses (2006), N.L.Bor, Grasses of Burma, Ceylon, India and Pakistan (1960).

TYPE from India. T:<Type of Basionym>: fide TROPICOS and Kew Synonomy Database: India: Behar; at Monghir, Herb. Hort. Calcutt.,.

Illustrations: None found.
Classification. Subfamily Panicoideae. Tribe: Sacchareae. Subtribe Germainiinae.
Habit, Vegetative Morphology. Perennial, caespitose. Butt sheaths pilose. Culms 10-25 cm long. Culm-nodes glabrous or pubescent. Ligule a ciliate membrane. Leaf-blades $10-20 \mathrm{~cm}$ long, $4-6 \mathrm{~mm}$ wide.

Inflorescence. Inflorescence composed of racemes. Racemes 2, paired, appressed back to back, oblong, 1.8 cm long. Rhachis fragile at the nodes, flattened, ciliate on margins. Rhachis hairs red. Rhachis internodes linear. Rhachis internode tip oblique. Spikelets in pairs. Fertile spikelets sessile and pedicelled, 2 in the cluster. Pedicels present, linear, flattened, ciliate, tip rectangular.

Sterile Spikelets. Basal sterile spikelets well-developed, 3-5 in number (lower raceme), 3-5 in upper racemes, paired with a fertile pedicelled spikelet, subsessile, male, cuneate, 5 mm long, equalling fertile. Basal sterile spikelet glumes coriaceous, pilose, with red hairs, lemmas awnless.

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

Glumes. Glumes dissimilar, reaching apex of florets, firmer than fertile lemma. Lower glume cuneate, 4.5 mm long, 1 length of spikelet, chartaceous, without keels, 7 -veined. Lower glume surface with transverse tufts of hair. Lower glume apex dentate, 3 -fid, truncate. Upper glume elliptic, 5 mm long, membranous, without keels, 5-7 -veined. Upper glume surface pilose, hairy between veins. Upper glume margins ciliate. Upper glume hairs red. Upper glume apex acute, awned, 1 -awned, awn 5 mm long.

Florets. Basal sterile florets 1, male or barren, with palea. Lemma of lower sterile floret elliptic, hyaline, 1 -veined, without lateral veins, acute. Fertile florets bisexual or female. Fertile lemma elliptic, 3.5 mm long, hyaline, without keel, 3 -veined, $0-3$-veined. Lemma apex lobed, 2 -fid, incised 0.25 of lemma length, awned, 1 -awned. Principal lemma awn from a sinus, geniculate, 12 mm long overall, with twisted column. Column of lemma awn 3.5 mm long, glabrous. Palea hyaline.

Flower and Fruit. Lodicules absent. Anthers 2.
Distribution (TDWG). Continent. Tropical Asia.
Country /Province/State. Indian Subcontinent. India.
Bihar.

Lophopogon tridentatus (Roxb.) Hack. DC. Monog Phan. vi. 254 (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 L. duthiei).

TYPE from India. Basionym or Replaced Name: Andropogon tridentatus Roxb., Fl. Ind., ed. 1820 1: 261 (1820)
. T:<Type of Basionym>: fide TROPICOS and Kew Synonomy Database: India, Coromandel: Roxburgh.

Recent Synonyms: Lophopogon duthiei Stapf ex Bor, Grasses Burma, Ceyl., Ind. \& Pakist. 689 (1960).

Illustrations (Books): K.M.Matthew, Illustrations on the Flora of Tamilnadu Carnatic (1982) (Pl. 892 \& 893), R.Pilger, Die Naturlichen Pflanzenfamilien 14e (1940) (123, Fig. 70), S.W.L.Jacobs \& J.Everett (2000) (375, Fig. 5), G.G.Potgar, C.B.Salunkhe \& S.R.Yadav, Grasses of Maharashtra (2012) (Fig. 90).

Illustrations (Journals): Hooker's Icones Plantarum (t. 3648 (1967)).
Images: G.G.Potgar, C.B.Salunkhe \& S.R.Yadav, Grasses of Maharashtra (2012)
(Pl. 22).
Derivation (Clifford \& Bostock 2007): L. tria, three; dens, tooth; -ata, possessing. One or both glumes three-toothed.

Classification. Subfamily Panicoideae. Tribe: Sacchareae. Subtribe Germainiinae.
Habit, Vegetative Morphology. Annual or perennial, short-lived, caespitose. Butt sheaths glabrous or pilose. Culms $8-45 \mathrm{~cm}$ long. Culm-nodes glabrous or pubescent. Ligule a ciliate membrane. Leaf-blades flat or conduplicate or involute, $5-12 \mathrm{~cm}$ long, $1-2 \mathrm{~mm}$ wide.

Inflorescence. Inflorescence composed of racemes, exserted or embraced at base by subtending leaf. Racemes 2, paired, appressed back to back, oblong, 2 cm long. Rhachis fragile at the nodes, flattened, ciliate on margins. Rhachis hairs red. Rhachis internodes linear. Rhachis internode tip oblique. Spikelets in pairs. Fertile spikelets sessile and pedicelled, 2 in the cluster. Pedicels present, linear, flattened, ciliate, tip rectangular.

Sterile Spikelets. Basal sterile spikelets well-developed, 3-5 in number (lower raceme), 3-5 in upper racemes, paired with a fertile pedicelled spikelet, subsessile, male, cuneate, 7 mm long, larger than fertile. Basal sterile spikelet glumes coriaceous, glabrous, lemmas awnless.

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

Glumes. Glumes dissimilar, reaching apex of florets, firmer than fertile lemma. Lower glume cuneate, $4-4.5 \mathrm{~mm}$ long, 1 length of spikelet, chartaceous, without keels, 7 -veined. Lower glume surface with transverse tufts of hair. Lower glume apex dentate, 3 -fid, truncate. Upper glume elliptic, 5.5 mm long, membranous, without keels, 3 -veined. Upper glume margins ciliate. Upper glume apex acute, awned, 1 awned, awn 5-7 mm long.

Florets. Basal sterile florets 1, male, with palea. Lemma of lower sterile floret elliptic, hyaline, 1 veined, without lateral veins, acute. Fertile florets bisexual or female. Fertile lemma elliptic, 4 mm long, hyaline, without keel, 3 -veined, $0-3$-veined. Lemma apex lobed, 2 -fid, incised 0.25 of lemma length, awned, 1 -awned. Principal lemma awn from a sinus, geniculate, 17 mm long overall, with twisted column. Column of lemma awn 5 mm long, glabrous. Palea hyaline.

Flower and Fruit. Lodicules absent. Anthers 2.
Distribution (TDWG). Continent. Tropical Asia.
Country /Province /State. Indian Subcontinent. India.
Andhra Pradesh, Karnataka. Madhya Pradesh, Maharashtra, Tamilnadu.

Loudetia angolensis C. E. Hubbard. Kew Bull. 1934. 426. (1934).
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 Synonomy Database: Angola, Benguella: Gossweiler 2458a (K holo).

Illustrations: None found.
Derivation (Clifford \& Bostock 2007): L. -ensis, denoting origin. From Angola.
Classification. Subfamily Panicoideae. Tribe: Tristachyideae.
Habit, Vegetative Morphology. Perennial, caespitose. Cataphylls evident. Rhizomes short. Culms erect or geniculately ascending, 100-200 cm long. Culm-nodes bearded. Ligule a fringe of hairs. Leafblades flat or convolute, $10-22 \mathrm{~cm}$ long, $3-7 \mathrm{~mm}$ wide.

Inflorescence. Inflorescence a panicle, bearing juvenile spikelets at emergence. Panicle contracted, linear, $20-35 \mathrm{~cm}$ long. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the
lower floret male or barren, the upper fertile. Spikelets lanceolate, laterally compressed, 6-7 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus evident, 0.5 mm long, pubescent, truncate.

Glumes. Glumes persistent, dissimilar, reaching apex of florets, thinner than fertile lemma. Lower glume ovate, $3-3.5 \mathrm{~mm}$ long, 0.5 length of spikelet, chartaceous, dark brown, without keels, 3 -veined. Lower glume surface setose, with tubercle-based hairs. Lower glume apex obtuse. Upper glume lanceolate, 1 length of spikelet, chartaceous, dark brown, without keels, 3 -veined. Upper glume surface setose, with tubercle-based hairs. Upper glume apex truncate.

Florets. Basal sterile florets 1, male, with palea, separately deciduous. Lemma of lower sterile floret similar to upper glume, lanceolate, 6-7 mm long, 1 length of spikelet, 3 -veined, glabrous or setose, with tubercle-based hairs, acute. Palea of lower sterile floret pilose. Fertile lemma oblong, $3.5-5 \mathrm{~mm}$ long, coriaceous, without keel, 5-7 -veined, more than 3-veined. Lemma surface pubescent. Lemma margins involute, interlocking with palea keels. Lemma apex lobed, 2 -fid, with triangular lobes, incised 0.2 of lemma length, acute, awned, 1 -awned. Principal lemma awn from a sinus, geniculate, flat below, 20-25 mm long overall, with twisted column, deciduous, abscissing from top of lemma. Column of lemma awn 6 mm long. Palea 2 -veined. Palea keels approximate, thickened.

Flower and Fruit. Anthers 2, 2 mm long, anther tip smooth. Caryopsis with adherent pericarp.
Distribution (TDWG). Continent. Africa.
Country /Province /State. South Tropical Africa. Angola, Zambia.

Loudetia annua (Stapf) C. E. Hubbard. Kew Bull. 1934. 429 (1934).
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: Trichopteryx annua Stapf, Bull. Misc. Inform. Kew 1897: 298 (1897)
. T:<Type of Basionym>: fide TROPICOS and Kew Synonomy Database: ST: Schweinfurth 2007, 2 \& 18 Jul 1869, Sudan: Lande der Djur, grosse Seriba Ghattas (K; IT: B, P, US-1259611, US-1259610).

Illustrations: None found.
Derivation (Clifford \& Bostock 2007): L. annual. Annuals.
Classification. Subfamily Panicoideae. Tribe: Tristachyideae.
Habit, Vegetative Morphology. Annual, caespitose. Culms erect, 30-120 cm long. Ligule a fringe of hairs. Leaf-blades $4-20 \mathrm{~cm}$ long, 2-7 mm wide.

Inflorescence. Inflorescence a panicle, bearing juvenile spikelets at emergence. Panicle open, elliptic or oblong, 10-30 cm long, 2-5 cm wide. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets lanceolate, laterally compressed, $15-20 \mathrm{~mm}$ long, breaking up at maturity, disarticulating below each fertile floret. Floret callus evident, 1 mm long, pubescent, 2-toothed.

Glumes. Glumes persistent, dissimilar, exceeding apex of florets, thinner than fertile lemma. Lower glume ovate, $5-7 \mathrm{~mm}$ long, 0.33 length of spikelet, chartaceous, dark brown, without keels, 3 -veined. Lower glume surface setose, with tubercle-based hairs. Lower glume apex dentate, 3 -fid. Upper glume lanceolate, 1 length of spikelet, chartaceous, dark brown, without keels, 3 -veined. Upper glume surface setose, with tubercle-based hairs. Upper glume apex obtuse or caudate.

Florets. Basal sterile florets 1, male, with palea, separately deciduous. Lemma of lower sterile floret similar to upper glume, lanceolate, $7-10 \mathrm{~mm}$ long, $0.5-0.66$ length of spikelet, 3 -veined, acute. Fertile lemma oblong, $3-5 \mathrm{~mm}$ long, coriaceous, without keel, 7 -veined, more than 3-veined. Lemma surface pubescent. Lemma margins involute, interlocking with palea keels. Lemma apex dentate, 2 -fid, with triangular lobes, acute, awned, 1 -awned. Principal lemma awn from a sinus, geniculate, flat below, 90-140 mm long overall, with twisted column, deciduous, abscissing from top of lemma. Column of lemma awn $25-35 \mathrm{~mm}$ long (black). Palea 2 -veined. Palea keels approximate, thickened.

Flower and Fruit. Anthers 2, anther tip smooth. Caryopsis with adherent pericarp.
Distribution (TDWG). Continent. Africa.
Country /Province /State. West Tropical Africa, West-Central Tropical Africa, Northeast Tropical Africa, East Tropical Africa. Ghana, Guinea-Bissau, Nigeria, Senegal. Sudan.

Loudetia arundinacea (A. Rich) Hochst. ex Steud. Syn. Pl. Gram. 238 (1854).
Accepted by: W.D.Clayton \& K.Harman, GrassBase (2008) and online, U.Quattrocchi, CRC World Dictionary of Grasses (2006).

TYPE from Ethiopia. Basionym or Replaced Name: Tristachya arundinacea Hochst. ex A. Rich., Tent. Fl. Abyss. 2: 417 (1850)

T:<Type of Basionym>: fide TROPICOS and Kew Synonomy Database: HT: Schimper 1214, Ethiopia (B; IT: K).

Illustrations (Books): H.Jacques-Felix, Les Graminees d'Afrique tropicale (1962) (157, Fig. 82), S.Phillips, Poaceae (Gramineae) in I.Hedberg \& S.Edwards, Flora of Ethiopia and Eritrea (1995) (289, Fig. 116).

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

Classification. Subfamily Panicoideae. Tribe: Tristachyideae.
Habit, Vegetative Morphology. Perennial, caespitose. Butt sheaths pubescent or woolly. Culms 60300 cm long. Culm-internodes distally glabrous or pubescent. Culm-nodes glabrous or bearded. Ligule a fringe of hairs. Leaf-blades $20-70 \mathrm{~cm}$ long, $3-15 \mathrm{~mm}$ wide.

Inflorescence. Inflorescence a panicle, bearing juvenile spikelets at emergence. Panicle open, oblong, dense or loose, $18-70 \mathrm{~cm}$ long. Primary panicle branches whorled at most nodes. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets lanceolate, laterally compressed, 6-13 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus evident, $0.5-1 \mathrm{~mm}$ long, pubescent, truncate.

Glumes. Glumes persistent, dissimilar, reaching apex of florets, thinner than fertile lemma. Lower glume ovate, $3-7 \mathrm{~mm}$ long, $0.33-0.5$ length of spikelet, chartaceous, dark brown, without keels, 3 -veined. Lower glume surface glabrous or setose, with tubercle-based hairs. Lower glume apex obtuse. Upper glume lanceolate, 1 length of spikelet, chartaceous, dark brown, without keels, 3 -veined. Upper glume surface glabrous or setose, with tubercle-based hairs. Upper glume apex truncate.

Florets. Basal sterile florets 1, male, with palea, separately deciduous. Lemma of lower sterile floret similar to upper glume, lanceolate, 6-13 mm long, 1 length of spikelet, 3 -veined, truncate. Fertile lemma oblong, 4-7 mm long, coriaceous, without keel, 7 -veined, more than 3-veined. Lemma surface pubescent. Lemma margins involute, interlocking with palea keels. Lemma apex dentate, 2 -fid, with triangular lobes, acute, awned, 1 -awned. Principal lemma awn from a sinus, geniculate, flat below, 20-40 mm long overall, with twisted column, deciduous, abscissing from top of lemma. Palea 2 -veined. Palea keels approximate, thickened.

Flower and Fruit. Anthers 2, anther tip smooth. Caryopsis with adherent pericarp.
Distribution (TDWG). Continent. Africa.
Country /Province /State. West Tropical Africa, West-Central Tropical Africa, Northeast Tropical Africa, East Tropical Africa, South Tropical Africa. Burkina, Ghana, Guinea, Ivory Coast, Liberia, Nigeria, Senegal, Sierre Leone, Togo. Cameroon, Gabon, Rwanda, DRC. Ethiopia (inc. Eritrea), Sudan. Kenya, Tanzania, Uganda. Angola, Mozambique, Zambia.

Loudetia cerata (Stapf) C. E. Hubbard. Kew Bull. 1934, 429 (1934).
Accepted by: W.D.Clayton \& K.Harman, GrassBase (2008) and online, U.Quattrocchi, CRC World Dictionary of Grasses (2006).

TYPE from Republic Central Africa. Basionym or Replaced Name: Trichopteryx cerata Stapf, Bull. Soc. Bot. France, 58 Mem. VIII. 220 (1912). T:<Type of Basionym>: fide TROPICOS and Kew Synonomy Database: Rep. Centre Afr., Bousso to Fort Achambault: Chevalier 10483 (K syn) ; Rep. Centre Afr., Ballokys: Chevalier 10990 (K syn).

Illustrations: None found.
Derivation (Clifford \& Bostock 2007): L. cera, wax; -ata, possessing. Plant overall or in part glaucous. Classification. Subfamily Panicoideae. Tribe: Tristachyideae.

Habit, Vegetative Morphology. Annual. Culms erect or geniculately ascending, 70-110 cm long, 3-4 -noded. Culm-internodes distally pruinose. Culm-nodes bearded. Lateral branches lacking. Leaf-sheaths glabrous on surface. Ligule a fringe of hairs. Leaf-blades flat or convolute, $10-25 \mathrm{~cm}$ long, $2.5-3.5 \mathrm{~mm}$ wide. Leaf-blade surface smooth, glabrous. Leaf-blade margins scabrous. Leaf-blade apex attenuate, filiform.

Inflorescence. Inflorescence a panicle, bearing juvenile spikelets at emergence. Panicle contracted, oblong, $15-18 \mathrm{~cm}$ long, $2-3 \mathrm{~cm}$ wide. Primary panicle branches sparsely divided, $1-3 \mathrm{~cm}$ long. Panicle branches capillary, scaberulous. Spikelets in pairs. Fertile spikelets pedicelled. Pedicels present, oblong, 12 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, acuminate, 9-12 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus evident, 0.75 mm long, bearded, 2-toothed.

Glumes. Glumes persistent, dissimilar, exceeding apex of florets, thinner than fertile lemma. Lower glume ovate, $4-6.5 \mathrm{~mm}$ long, $0.4-0.5$ length of spikelet, chartaceous, without keels, 3 -veined. Lower glume surface setose, hairy on veins, with tubercle-based hairs. Lower glume apex acute. Upper glume lanceolate, 1 length of spikelet, chartaceous, without keels, 3 -veined. Upper glume surface setose, hairy on veins, with tubercle-based hairs. Upper glume apex obtuse.

Florets. Basal sterile florets 1, male, with palea, separately deciduous. Lemma of lower sterile floret similar to upper glume, ovate, 6-7 mm long, 0.6-0.7 length of spikelet, chartaceous, 3 -veined, glabrous or pilose, hairy on veins, acuminate. Palea of lower sterile floret 0.75 length of lemma. Fertile lemma oblong, 4 mm long, coriaceous, without keel, 5 -veined, more than 3-veined. Lemma surface pubescent. Lemma margins involute, interlocking with palea keels. Lemma apex entire, emarginate or obtuse, awned, 1 -awned. Principal lemma awn geniculate, flat below, $50-70 \mathrm{~mm}$ long overall, with twisted column, deciduous, abscissing from top of lemma. Column of lemma awn 10 mm long, puberulous. Palea 2 -veined. Palea keels approximate, thickened.

Flower and Fruit. Anthers 2, 2 mm long, anther tip smooth. Caryopsis with adherent pericarp.
Distribution (TDWG). Continent. Africa.
Country /Province/State. West-Central Tropical Africa. Central African Republic.

Loudetia coarctata (A. Camus) C. E. Hubbard. Kew Bull. 1934, 428 (1934).
Accepted by: W.D.Clayton \& K.Harman, GrassBase (2008) and online, U.Quattrocchi, CRC World Dictionary of Grasses (2006).

TYPE from Guinea. Basionym or Replaced Name: Tristachya coarctata A. Camus, Bull. Soc. Bot. France 80: 774 (1934)
. T:<Type of Basionym>: fide TROPICOS and Kew Synonomy Database: Guinee, Daloba: Chevalier 37898 (P holo).

Illustrations: None found.
Derivation (Clifford \& Bostock 2007): L. coarcto, compress; -ata, possessing; Panicles spicatespiciform.

Classification. Subfamily Panicoideae. Tribe: Tristachyideae.
Habit, Vegetative Morphology. Perennial, caespitose. Butt sheaths persistent and investing base of culm, with fibrous dead sheaths. Culms $30-75 \mathrm{~cm}$ long. Culm-nodes brown. Ligule a fringe of hairs. Leafblades filiform, convolute, $15-35 \mathrm{~cm}$ long, $0.5-1 \mathrm{~mm}$ wide.

Inflorescence. Inflorescence a panicle, bearing juvenile spikelets at emergence. Panicle spiciform, linear, 4-12 cm long. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets lanceolate, laterally compressed, $9-11 \mathrm{~mm}$ long, breaking up at maturity, disarticulating below each fertile floret. Floret callus evident, $0.4-0.7 \mathrm{~mm}$ long, pubescent, truncate.

Glumes. Glumes persistent, dissimilar, reaching apex of florets, thinner than fertile lemma. Lower glume lanceolate, $7.5-9 \mathrm{~mm}$ long, 0.66 length of spikelet, chartaceous, dark brown, without keels, 3 veined. Lower glume surface setose, hairy on veins, with tubercle-based hairs. Lower glume apex obtuse or
acute. Upper glume lanceolate, 1 length of spikelet, chartaceous, dark brown, without keels, 3 -veined. Upper glume apex obtuse.

Florets. Basal sterile florets 1, male, with palea, separately deciduous. Lemma of lower sterile floret similar to upper glume, lanceolate, $9-11 \mathrm{~mm}$ long, 1 length of spikelet, 3 -veined, obtuse. Fertile lemma oblong, 5 mm long, coriaceous, without keel, 7 -veined, more than 3 -veined. Lemma surface pubescent. Lemma margins involute, interlocking with palea keels. Lemma apex entire, acute, awned, 1 -awned. Principal lemma awn geniculate, flat below, $25-40 \mathrm{~mm}$ long overall, with twisted column, deciduous, abscissing from top of lemma. Column of lemma awn 10 mm long. Palea 2 -veined. Palea keels approximate, thickened.

Flower and Fruit. Anthers 2, anther tip smooth. Caryopsis with adherent pericarp.
Distribution (TDWG). Continent. Africa.
Country /Province /State. West Tropical Africa, West-Central Tropical Africa, Northeast Tropical Africa, South Tropical Africa. Guinea, Nigeria. DRC. Sudan. Zambia.

Loudetia cuanzensis Lubke \& Phipps. Bol. Soc. Brot., Ser. 2, xli. 195 (1967).
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 Synonomy Database: HT: J. Gossweiler 10695, 25 Jun 1937, Angola: Cuanza (US-1936058).

Illustrations: None found.
Derivation (Clifford \& Bostock 2007): L. -ensis, denoting origin. From Cuanza River, Angola.
Classification. Subfamily Panicoideae. Tribe: Tristachyideae.
Habit, Vegetative Morphology. Perennial, caespitose. Culms erect or geniculately ascending, 45-60 cm long, 4-6 -noded, rooting from lower nodes. Culm-internodes distally glabrous or pubescent. Lateral branches sparse, arising from lower culm. Leaves basal and cauline. Leaf-sheaths loose, glabrous on surface. Ligule a fringe of hairs. Leaf-blades flat or involute, $10-20 \mathrm{~cm}$ long, $1.5-3 \mathrm{~mm}$ wide. Leaf-blade surface puberulous. Leaf-blade margins entire. Leaf-blade apex attenuate.

Inflorescence. Inflorescence a panicle, bearing juvenile spikelets at emergence. Panicle contracted, lanceolate, $6-15 \mathrm{~cm}$ long, $1-2 \mathrm{~cm}$ wide. Primary panicle branches ascending, $1-3 \mathrm{~cm}$ long. Panicle axis scabrous. Panicle branches scabrous. Spikelets solitary or in pairs. Fertile spikelets pedicelled. Pedicels present, $1-10 \mathrm{~mm}$ long.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets lanceolate, laterally compressed, compressed slightly, $9-11 \mathrm{~mm}$ long, breaking up at maturity, disarticulating below each fertile floret. Floret callus evident, 0.75 mm long, bearded, acute.

Glumes. Glumes persistent, dissimilar, reaching apex of florets, thinner than fertile lemma. Lower glume ovate, $4-6 \mathrm{~mm}$ long, $0.4-0.5$ length of spikelet, chartaceous, light brown, without keels, 3 -veined. Lower glume surface glabrous. Lower glume apex acuminate, mucronate. Upper glume lanceolate, 9-11 mm long, 1 length of spikelet, chartaceous, light brown, without keels, 3 -veined. Upper glume surface glabrous. Upper glume apex acuminate, mucronate.

Florets. Basal sterile florets 1, male, with palea, separately deciduous. Lemma of lower sterile floret similar to upper glume, lanceolate, 1 length of spikelet, 3 -veined, glabrous, acuminate. Palea of lower sterile floret 0.66 length of lemma. Fertile lemma oblong, $8-9 \mathrm{~mm}$ long, coriaceous, without keel, 5-7veined, more than 3 -veined. Lemma lateral veins obscure. Lemma surface pubescent. Lemma margins involute, interlocking with palea keels. Lemma apex dentate, 2 -fid, with lobes 0.33 mm long, acute, awned, 1 -awned. Principal lemma awn from a sinus, geniculate, flat below, $15-20 \mathrm{~mm}$ long overall, with twisted column, deciduous, abscissing from top of lemma. Column of lemma awn 6-9 mm long, puberulous. Palea 2 -veined. Palea keels approximate, thickened.

Flower and Fruit. Anthers 3, 3-3.5 mm long, anther tip smooth. Caryopsis with adherent pericarp. Hilum linear.

Distribution (TDWG). Continent. Africa.
Country /Province/State. South Tropical Africa. Angola.

Loudetia demeusei (De Wild.) C.E.Hubb. Kew Bull. 1934, 429 (1934).
Accepted by: W.D.Clayton \& K.Harman, GrassBase (2008) and online, U.Quattrocchi, CRC World Dictionary of Grasses (2006).

TYPE from Zaire. Basionym or Replaced Name: Trichopteryx demeusei DeWild., Notes Fl. Katanga, 5: 27 (1920). T:<Type of Basionym>: fide TROPICOS and Kew Synonomy Database: Zaire: Dewevre 712 (BR syn) ; Zaire, Leopoldville: Laurent 517 (BR syn) ; Zaire, Noli \& Lukungu valleys: Vanderyst \& Polis (BR syn) ; Zaire, Dolo: Vanderyst 717 (BR syn).

Illustrations: None found.
Derivation (Clifford \& Bostock 2007): in honor of Fernand Demeuse (fl. 1880-92) Belgian botanist.
Classification. Subfamily Panicoideae. Tribe: Tristachyideae.
Habit, Vegetative Morphology. Perennial, caespitose, clumped densely. Butt sheaths villous or woolly, persistent and investing base of culm, with fibrous dead sheaths. Culms erect or geniculately ascending, 100-200 cm long, 2-4 -noded. Culm-nodes bearded. Lateral branches lacking. Leaves mostly basal. Leaf-sheaths glabrous on surface or pilose, outer margin glabrous or hairy. Ligule a fringe of hairs. Leaf-blades flat or convolute, $16-40 \mathrm{~cm}$ long, $4-8 \mathrm{~mm}$ wide, stiff. Leaf-blade surface glabrous to pubescent. Leaf-blade margins entire, scabrous. Leaf-blade apex acute, hardened.

Inflorescence. Inflorescence a panicle, bearing juvenile spikelets at emergence. Panicle contracted, lanceolate, $16-40 \mathrm{~cm}$ long, $2-3 \mathrm{~cm}$ wide. Primary panicle branches appressed, simple or sparsely divided, $4-8 \mathrm{~cm}$ long. Panicle axis smooth or scaberulous. Panicle branches scaberulous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, 6-13 mm long.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets lanceolate or oblong, laterally compressed, compressed slightly, $10-14 \mathrm{~mm}$ long, breaking up at maturity, disarticulating below each fertile floret. Floret callus elongated, $1.5-2 \mathrm{~mm}$ long, bearded, pungent.

Glumes. Glumes persistent, dissimilar, reaching apex of florets, thinner than fertile lemma, gaping. Lower glume oblong, 4-7 mm long, 0.4-0.5 length of spikelet, chartaceous, light brown, without keels, 3 veined. Lower glume surface glabrous or setose, hairy on veins, with tubercle-based hairs. Lower glume apex obtuse. Upper glume lanceolate, $10-14 \mathrm{~mm}$ long, 1 length of spikelet, chartaceous, light brown, without keels, 3 -veined. Upper glume surface setose, hairy on veins, with tubercle-based hairs. Upper glume apex truncate.

Florets. Basal sterile florets 1, male, with palea, separately deciduous. Lemma of lower sterile floret similar to upper glume, lanceolate, 1 length of spikelet, 3 -veined, setose, hairy on veins, acuminate. Palea of lower sterile floret $0.4-0.5$ length of lemma. Fertile lemma oblong, $5-6.5 \mathrm{~mm}$ long, coriaceous, without keel, 7 -veined, more than 3 -veined. Lemma lateral veins obscure. Lemma surface pubescent. Lemma margins involute, interlocking with palea keels. Lemma apex dentate, 2 -fid, acute, awned, 1 -awned. Principal lemma awn from a sinus, geniculate, flat below, $50-70 \mathrm{~mm}$ long overall, with twisted column, deciduous, abscissing from top of lemma. Column of lemma awn $10-16 \mathrm{~mm}$ long, puberulous. Palea 2 veined. Palea keels approximate, thickened.

Flower and Fruit. Anthers 2, 3 mm long, anther tip smooth. Caryopsis with adherent pericarp. Hilum linear.

Distribution (TDWG). Continent. Africa.
Country /Province/State. West-Central Tropical Africa, South Tropical Africa. DRC.

Loudetia densispica (Rendle) C. E. Hubbard. Kew Bull. 1934, 428 (1934).
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: Trichopteryx densispica Rendle, Cat. Welw. Afr. Pl. 2: 214 (1899). T:<Type of Basionym>: fide TROPICOS and Kew Synonomy Database: Angola, Lopollo: Welwitsch 7500 (K iso).

Illustrations (Books): L.K.A. Chippindall, Grasses and Pastures of South Africa (1955) (283, Fig 254).

Derivation (Clifford \& Bostock 2007): L. densus, dense; spica, a point; hence, in aprticular, an ear or spike of grain. Panicle branches erect and closely adpressed to central axis of inflorescence.

Classification. Subfamily Panicoideae. Tribe: Tristachyideae.
Habit, Vegetative Morphology. Perennial, caespitose. Butt sheaths persistent and investing base of culm, with fibrous dead sheaths. Culms $50-120 \mathrm{~cm}$ long. Culm-nodes flush with internodes, pallid. Ligule a fringe of hairs. Leaf-blades filiform or linear, flat or convolute, $7-20 \mathrm{~cm}$ long, $1-2.5 \mathrm{~mm}$ wide. Leafblade surface pubescent, hairy on both sides.

Inflorescence. Inflorescence a panicle, bearing juvenile spikelets at emergence. Panicle spiciform, linear, $4-14 \mathrm{~cm}$ long. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets lanceolate, laterally compressed, $12-18 \mathrm{~mm}$ long, breaking up at maturity, disarticulating below each fertile floret. Floret callus elongated, $1-1.5 \mathrm{~mm}$ long, pubescent, unequally 2-toothed or pungent.

Glumes. Glumes persistent, dissimilar, reaching apex of florets, thinner than fertile lemma. Lower glume ovate, $6-9 \mathrm{~mm}$ long, 0.5 length of spikelet, chartaceous, dark brown, without keels, 3 -veined. Lower glume surface glabrous or setose, hairy on veins, with tubercle-based hairs. Lower glume apex obtuse. Upper glume lanceolate, 1 length of spikelet, chartaceous, dark brown, without keels, 3 -veined. Upper glume surface glabrous or setose, hairy on veins, with tubercle-based hairs. Upper glume apex obtuse.

Florets. Basal sterile florets 1, male, with palea, separately deciduous. Lemma of lower sterile floret similar to upper glume, lanceolate, $12-18 \mathrm{~mm}$ long, 1 length of spikelet, 3 -veined, acute. Fertile lemma oblong, $4.5-6 \mathrm{~mm}$ long, coriaceous, without keel, 5-7 -veined, more than 3 -veined. Lemma surface pubescent. Lemma margins involute, interlocking with palea keels. Lemma apex entire or dentate, 2 -fid, with triangular lobes, acute, awned, 1 -awned. Principal lemma awn apical or from a sinus, geniculate, flat below, $30-70 \mathrm{~mm}$ long overall, with twisted column, deciduous, abscissing from top of lemma. Column of lemma awn 20-25 mm long. Palea 2 -veined. Palea keels approximate, thickened.

Flower and Fruit. Anthers 2, 4 mm long, anther tip smooth. Caryopsis with adherent pericarp.
Distribution (TDWG). Continent. Africa.
Country /Province /State. West-Central Tropical Africa, South Tropical Africa, Southern Africa. DRC. Angola, Zambia. Mpumalanga, Swaziland.

Loudetia echinulata C. E. Hubbard. Kew Bull. 354 (1949).
Accepted by: W.D.Clayton \& K.Harman, GrassBase (2008) and online, U.Quattrocchi, CRC World Dictionary of Grasses (2006).

TYPE from Republic Central Africa. T:<Type of Basionym>: fide TROPICOS and Kew Synonomy Database: Rep. Centre Afr., Waka: Tisserant 2712 (K holo).

Illustrations: None found.
Derivation (Clifford \& Bostock 2007): L. echinus, hedgehog; -ulus, diminutive; -ata, possessing. Spikelets hispid with small prickles.

Classification. Subfamily Panicoideae. Tribe: Tristachyideae.
Habit, Vegetative Morphology. Annual, caespitose. Culms erect, 100-150 cm long, 2-3 -noded. Lateral branches lacking. Ligule a fringe of hairs. Leaf-blades erect, involute, $7-15 \mathrm{~cm}$ long, $0.5-2 \mathrm{~mm}$ wide. Leaf-blade surface scaberulous, rough adaxially. Leaf-blade apex acute.

Inflorescence. Inflorescence a panicle, bearing juvenile spikelets at emergence. Panicle spiciform, linear, $6-10 \mathrm{~cm}$ long, $0.6-0.8 \mathrm{~cm}$ wide. Primary panicle branches appressed, $0.2-0.4 \mathrm{~cm}$ long, bearing $1-2$ fertile spikelets on each lower branch. Spikelets appressed, solitary. Fertile spikelets pedicelled. Pedicels present, oblong.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets linear or lanceolate, laterally compressed, acuminate, $20-22 \mathrm{~mm}$ long, breaking up at maturity, disarticulating below each fertile floret. Floret callus elongated, $1.5-2 \mathrm{~mm}$ long, bearded, acute. Floret callus hairs $2-2.5 \mathrm{~mm}$ long.

Glumes. Glumes persistent, dissimilar, reaching apex of florets, thinner than fertile lemma. Lower glume lanceolate, $11-12 \mathrm{~mm}$ long, 0.6 length of spikelet, chartaceous, without keels, 3 -veined. Lower glume surface pilose, hairy on veins, with tubercle-based hairs. Lower glume hairs $1-1.7 \mathrm{~mm}$ long. Lower
glume apex acuminate. Upper glume lanceolate, $19-20 \mathrm{~mm}$ long, 1 length of spikelet, chartaceous, without keels, 3 -veined. Upper glume surface asperulous, rough above. Upper glume apex acuminate.

Florets. Basal sterile florets 1, male, with palea, separately deciduous. Lemma of lower sterile floret similar to upper glume, lanceolate, 20-22 mm long, 1 length of spikelet, chartaceous, 3 -veined, acuminate. Palea of lower sterile floret 0.66 length of lemma. Fertile lemma oblong, 7 mm long, coriaceous, without keel, 7 -veined, more than 3-veined. Lemma surface pubescent. Lemma margins involute, interlocking with palea keels. Lemma apex dentate, 2 -fid, awned, 1 -awned. Principal lemma awn from a sinus, geniculate, flat below, $100-110 \mathrm{~mm}$ long overall, with twisted column, deciduous, abscissing from top of lemma. Column of lemma awn 40 mm long, puberulous. Palea 2 -veined. Palea keels approximate, thickened.

Flower and Fruit. Anthers 2, $4-5 \mathrm{~mm}$ long, anther tip smooth. Caryopsis with adherent pericarp.
Distribution (TDWG). Continent. Africa.
Country /Province /State. West-Central Tropical Africa. Central African Republic.

Loudetia esculenta C. E. Hubbard. Kew Bull. 352 (1949).
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 Synonomy Database: HT: Culwick \& Andrews 26 (85), Sudan (K).

Illustrations: None found.
Derivation (Clifford \& Bostock 2007): L. edible. Grain edible.
Classification. Subfamily Panicoideae. Tribe: Tristachyideae.
Habit, Vegetative Morphology. Annual, caespitose. Culms 60-100 cm long. Ligule a fringe of hairs. Leaf-blades $20-40 \mathrm{~cm}$ long, $3-11 \mathrm{~mm}$ wide. Leaf-blade surface scaberulous.

Inflorescence. Inflorescence a panicle, bearing juvenile spikelets at emergence. Panicle open, ovate, $15-35 \mathrm{~cm}$ long, $3-7 \mathrm{~cm}$ wide. Primary panicle branches appressed, whorled at most nodes. Panicle branches scabrous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, $3-5 \mathrm{~mm}$ 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, laterally compressed, $22-32 \mathrm{~mm}$ long, breaking up at maturity, disarticulating below each fertile floret. Floret callus elongated, 2 mm long, bearded, truncate.

Glumes. Glumes persistent, dissimilar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, $10-15 \mathrm{~mm}$ long, 0.5 length of spikelet, chartaceous, dark brown, without keels, 3 -veined. Lower glume apex acute. Upper glume lanceolate, 1 length of spikelet, chartaceous, dark brown, without keels, 3 -veined. Upper glume apex truncate.

Florets. Basal sterile florets 1, male, with palea, separately deciduous. Lemma of lower sterile floret similar to upper glume, oblong, 17-24 mm long, 0.75 length of spikelet, 3 -veined, acuminate. Palea of lower sterile floret winged on keels. Fertile lemma oblong, $12.5-15.5 \mathrm{~mm}$ long, coriaceous, without keel, 9 -veined, more than 3-veined. Lemma surface pubescent. Lemma margins involute, interlocking with palea keels. Lemma apex dentate, 2 -fid, with triangular lobes, incised 0.15 of lemma length, acute, awned, 1 awned. Principal lemma awn from a sinus, geniculate, flat below, $80-110 \mathrm{~mm}$ long overall, with twisted column, deciduous, abscissing from top of lemma. Column of lemma awn $30-50 \mathrm{~mm}$ long. Palea 2 -veined. Palea keels approximate, thickened.

Flower and Fruit. Anthers 2, 6.5 mm long, anther tip smooth. Caryopsis with adherent pericarp.
Distribution (TDWG). Continent. Africa.
Country /Province/State. Northeast Tropical Africa. Sudan.

Loudetia filifolia Schweickerdt. Kew Bull. 1935, 207. (1935).
Accepted by: W.D.Clayton \& K.Harman, GrassBase (2008) and online, U.Quattrocchi, CRC World Dictionary of Grasses (2006).

TYPE from South Africa. T:<Type of Basionym>: fide TROPICOS and Kew Synonomy Database: HT: Scweickerdt \& Verdoorn 523, South Africa: Transvaal: Pretoria (B).

Illustrations (Books): J.Bosser, Graminees des Paturage et des Cultures a Madagascar (1969) (65, Fig 65 as subsp. humbertiana).

Derivation (Clifford \& Bostock 2007): L. filum, thread; folium, leaf. Leaf-blades very narrow.
Classification. Subfamily Panicoideae. Tribe: Tristachyideae.
Habit, Vegetative Morphology. Perennial, caespitose, clumped densely. Butt sheaths pubescent. Basal innovations intravaginal. Culms erect, slender, $15-35 \mathrm{~cm}$ long, $1-2$-noded. Culm-internodes distally pruinose. Culm-nodes glabrous or pubescent. Lateral branches ample, arising from lower culm. Leaves mostly basal. Ligule a fringe of hairs. Leaf-blades curved, filiform, involute, $5-10 \mathrm{~cm}$ long, $1-2 \mathrm{~mm}$ wide, stiff. Leaf-blade surface puberulous, hairy adaxially. Leaf-blade margins entire.

Inflorescence. Inflorescence a panicle, bearing juvenile spikelets at emergence. Panicle contracted, lanceolate, $2.5-10 \mathrm{~cm}$ long. Primary panicle branches $1-3$-nate, $1-2.5 \mathrm{~cm}$ long. Panicle branches puberulous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, $2-5 \mathrm{~mm}$ long.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets lanceolate, laterally compressed, compressed slightly, acuminate, $6-7 \mathrm{~mm}$ long, breaking up at maturity, disarticulating below each fertile floret. Floret callus evident, 0.5 mm long, bearded, truncate.

Glumes. Glumes persistent, dissimilar, shorter than spikelet, thinner than fertile lemma. Lower glume ovate, $3-3.5 \mathrm{~mm}$ long, 0.5 length of spikelet, chartaceous, light brown, without keels, 3 -veined. Lower glume surface puberulous. Lower glume apex dentate, 2 -fid, mucronate. Upper glume lanceolate, 5-6 mm long, 0.9 length of spikelet, chartaceous, light brown, without keels, 3-5 -veined. Upper glume surface glabrous. Upper glume apex acute.

Florets. Basal sterile florets 1, male, with palea, separately deciduous. Lemma of lower sterile floret similar to upper glume, lanceolate, 1 length of spikelet, 3 -veined, glabrous, acute to setaceously acuminate. Palea of lower sterile floret 0.5 length of lemma. Fertile lemma oblong, 3.5 mm long, coriaceous, without keel, 9 -veined, more than 3 -veined. Lemma lateral veins obscure. Lemma surface pubescent. Lemma margins involute, interlocking with palea keels. Lemma apex dentate, 2 -fid, acute, awned, 1 -awned. Principal lemma awn from a sinus, geniculate, flat below, $10-20 \mathrm{~mm}$ long overall, with twisted column, deciduous, abscissing from top of lemma. Column of lemma awn 6-8 mm long, puberulous. Palea 2 veined. Palea keels approximate, thickened.

Flower and Fruit. Anthers 3, 2-2.5 mm long, anther tip smooth. Caryopsis with adherent pericarp. Hilum linear.

Distribution (TDWG). Continent. Africa.
Country /Province /State. Southern Africa, Western Indian Ocean. Limpopo, Mpumalanga, Swaziland. Madagascar.

Loudetia flammida (Trin.) C. E. Hubbard. Kew Bull. 1936, 321 (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 Brazil. Basionym or Replaced Name: Arundinella flammida Trin., Sp. Gram. 3: 23, t. 267 (1830)
. T:<Type of Basionym>: fide TROPICOS and Kew Synonomy Database: HT: s.c. s.n., s.d., Brazil: in humidis ad fosses pr. Cuynfe (LE-TRIN-0400.01; IT: US-865388 (fragm. ex LE)).

Illustrations (Books): S.A.Renvoize, Gramineas de Bolivia (1998) (Fig. 131), S.A.Renvoize, The Grasses of Bahia, 1984 (96, Fig. 33).

Derivation (Clifford \& Bostock 2007): L. flammo, blaze; -ida, becoming. Panicle large and yellow.
Classification. Subfamily Panicoideae. Tribe: Tristachyideae.
Habit, Vegetative Morphology. Perennial, caespitose, clumped densely. Culms erect, 120-300 cm long. Culm-nodes bearded. Ligule a fringe of hairs. Leaf-blades $35-60 \mathrm{~cm}$ long, 6-12 mm wide, stiff. Leafblade surface smooth or scaberulous, glabrous. Leaf-blade margins scabrous. Leaf-blade apex acuminate.

Inflorescence. Inflorescence a panicle, bearing juvenile spikelets at emergence. Panicle contracted, oblong, 25-60 cm long. Spikelets solitary or in threes. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the
lower floret male or barren, the upper fertile. Spikelets linear, laterally compressed, 6-7 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus evident, 0.5 mm long, glabrous, truncate.

Glumes. Glumes persistent, dissimilar, reaching apex of florets, thinner than fertile lemma. Lower glume ovate, 3-4 mm long, 0.5-0.66 length of spikelet, chartaceous, dark brown, without keels, 3 -veined. Lower glume surface glabrous. Lower glume apex obtuse or acute. Upper glume lanceolate, 6-7 mm long, 1 length of spikelet, chartaceous, dark brown, without keels, 3 -veined. Upper glume surface glabrous. Upper glume apex acute.

Florets. Basal sterile florets 1, male, with palea, separately deciduous. Lemma of lower sterile floret similar to upper glume, lanceolate, $6-7 \mathrm{~mm}$ long, 1 length of spikelet, 3 -veined, acute. Fertile lemma elliptic, 3-4 mm long, coriaceous, without keel, 5 -veined, more than 3-veined. Lemma surface pubescent. Lemma margins involute, interlocking with palea keels. Lemma apex dentate, 2 -fid, with triangular lobes, acute, awned, 1 -awned. Principal lemma awn from a sinus, flexuous, flat below, $15-20 \mathrm{~mm}$ long overall, without a column, persistent. Palea 2 -veined. Palea keels approximate, thickened. Palea surface pubescent, hairy on back.

Flower and Fruit. Anthers 2, anther tip smooth. Caryopsis with adherent pericarp.
Distribution (TDWG). Continent. South America.
Country /Province /State. Western South America, Brazil, Southern South America. Bolivia, Peru. Brazil West Central, Brazil Northeast, Brazil North, Brazil Southeast. Paraguay.

Mato Grosso, Goias, Bahia, Sao Paulo Parana. Mato Grosso, Goiás. Bahia. Tocantins. Minas Gerais, Sao Paulo.

Loudetia flavida (Stapf) C. E. Hubbard. Kew Bull. 1934, 429 (1934).
Accepted by: W.D.Clayton \& K.Harman, GrassBase (2008) and online, U.Quattrocchi, CRC World Dictionary of Grasses (2006).

TYPE from Transvaal. Basionym or Replaced Name: Trichopteryx flavida Stapf, Bull. Misc. Inform. Kew 1897: 298 (1897)
. T:<Type of Basionym>: fide TROPICOS and Kew Synonomy Database: ST: Rehmann 4730, South Africa: Transvaal: Pretoria (K). ST: Nelson 75a, South Africa; Transvaal: Magalies Bergen at Derde Poort (K).

Illustrations (Books): F.N.Hepper, F.W.T.A. 3(2) (1972) (419, Fig.437), L.K.A. Chippindall, Grasses and Pastures of South Africa (1955) (282, Fig 253), G.E.Gibbs Russell el al, Grasses of Southern Africa (1990) (206, Fig 127), S.Phillips, Poaceae (Gramineae) in I.Hedberg \& S.Edwards, Flora of Ethiopia and Eritrea (1995) (287, Fig 115).

Derivation (Clifford \& Bostock 2007): L. flavidus, pale yellow. Spikelets yellow.
Classification. Subfamily Panicoideae. Tribe: Tristachyideae.
Habit, Vegetative Morphology. Perennial, caespitose. Butt sheaths pubescent or woolly. Culms 30150 cm long. Ligule a fringe of hairs. Leaf-blades linear or filiform, $15-40 \mathrm{~cm}$ long, $2-5 \mathrm{~mm}$ wide.

Inflorescence. Inflorescence a panicle, bearing juvenile spikelets at emergence. Panicle open, linear or lanceolate or ovate, dense or loose, $10-30 \mathrm{~cm}$ long. Panicle branches glabrous or pubescent or villous (rarely). Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, glabrous or pubescent 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 lanceolate or oblong, laterally compressed, 6-12 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus elongated, 0.5-0.7 mm long, pubescent, truncate.

Glumes. Glumes persistent, dissimilar, reaching apex of florets, thinner than fertile lemma, gaping. Lower glume ovate, 3-6 mm long, 0.5-0.66 length of spikelet, chartaceous, dark brown, without keels, 3 veined. Lower glume surface glabrous or setose, with tubercle-based hairs. Lower glume apex acuminate or setaceously acuminate. Upper glume lanceolate, 1 length of spikelet, chartaceous, dark brown, without keels, 3 -veined. Upper glume surface glabrous. Upper glume apex acuminate.

Florets. Basal sterile florets 1, male, with palea, separately deciduous. Lemma of lower sterile floret similar to upper glume, lanceolate, 6-12 mm long, 1 length of spikelet, 3 -veined, acuminate. Fertile lemma oblong, $4-5 \mathrm{~mm}$ long, coriaceous, without keel, 7 -veined, more than 3-veined. Lemma surface pubescent. Lemma margins involute, interlocking with palea keels. Lemma apex dentate, 2 -fid, with triangular lobes,
acute, awned, 1 -awned. Principal lemma awn from a sinus, geniculate, flat below, $15-35 \mathrm{~mm}$ long overall, with twisted column, deciduous, abscissing from top of lemma. Palea 2 -veined. Palea keels approximate, thickened.

Flower and Fruit. Anthers 3, anther tip smooth. Caryopsis with adherent pericarp.
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. Burkina, Ghana, Nigeria, Togo. Ethiopia (inc. Eritrea). Tanzania, Uganda. Malawi, Mozambique, Zambia, Zimbabwe. Botswana, Limpopo, North-West, Gauteng, Mpumalanga, Kwazulu-Natal. Arabian Peninsula. Oman.

Loudetia furtiva Jacques-Felix. Adansonia, 12(2): 238 (1972).
Accepted by: W.D.Clayton \& K.Harman, GrassBase (2008) and online.
TYPE from Cameroons. T:<Type of Basionym>: fide TROPICOS and Kew Synonomy Database: Cameroun: Letouzey 6212 ( P holo).

Illustrations: None found.
Classification. Subfamily Panicoideae. Tribe: Tristachyideae.
Habit, Vegetative Morphology. Annual. Culms erect, slender, 30-80 cm long, 1-1.5 mm diam., 3-5 noded. Culm-nodes bearded. Leaf-sheaths $2-3 \mathrm{~cm}$ long, hirsute, with tubercle-based hairs. Ligule a fringe of hairs. Leaf-blades $8-10 \mathrm{~cm}$ long, $2-5 \mathrm{~mm}$ wide. Leaf-blade surface hirsute, hairy on both sides. Leafblade margins entire, tuberculate-ciliate. Leaf-blade apex acuminate.

Inflorescence. Inflorescence a panicle, bearing juvenile spikelets at emergence. Panicle open, ovate, effuse, $10-20 \mathrm{~cm}$ long. Panicle branches flexuous, smooth or scaberulous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, $10-30 \mathrm{~mm}$ long, smooth or scaberulous.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets linear, laterally compressed, compressed slightly, 810 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus evident, 0.5 mm long, bearded, 2-toothed.

Glumes. Glumes persistent, dissimilar, reaching apex of florets, thinner than fertile lemma. Lower glume elliptic or oblong, 3 mm long, $0.3-0.4$ length of spikelet, chartaceous, light brown, without keels, 3 veined. Lower glume surface glabrous or pilose, hairy on veins, with tubercle-based hairs. Lower glume apex entire or dentate, 3 -fid, when entire truncate. Upper glume oblong, $8-10 \mathrm{~mm}$ long, 1 length of spikelet, chartaceous, light brown, without keels, 3 -veined. Upper glume surface pilose, hairy on veins, with tubercle-based hairs. Upper glume apex truncate.

Florets. Basal sterile florets 1, male, with palea, separately deciduous. Lemma of lower sterile floret similar to upper glume, lanceolate or oblong, 1 length of spikelet, 3 -veined, glabrous or pilose, hairy on veins, with tubercle-based hairs, truncate. Palea of lower sterile floret 0.5 length of lemma. Fertile lemma oblong, 4 mm long, coriaceous, without keel, 7 -veined, more than 3 -veined. Lemma lateral veins obscure. Lemma surface pubescent. Lemma margins involute, interlocking with palea keels. Lemma apex emarginate, awned, 1 -awned. Principal lemma awn from a sinus, geniculate, flat below, $50-65 \mathrm{~mm}$ long overall, with twisted column, deciduous, abscissing from top of lemma. Column of lemma awn 20 mm long. Palea 2 -veined. Palea keels approximate, thickened.

Flower and Fruit. Anthers 2, anther tip smooth. Caryopsis with adherent pericarp. Hilum linear.
Distribution (TDWG). Continent. Africa.
Country /Province/State. West-Central Tropical Africa. Cameroon.

Loudetia hordeiformis (Stapf) C. E. Hubbard. Kew Bull. 1934, 431 (1934).
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: Trichopteryx hordeiformis Stapf, Bull. Misc. Inform. Kew 1897: 297 (1897)
. T:<Type of Basionym>: fide TROPICOS and Kew Synonomy Database: HT: Barter 954, Nigeria (K; IT: P).

Illustrations: None found.

Derivation (Clifford \& Bostock 2007): L. forma, appearance. Inflorescence resembling that of Hordeum.

Classification. Subfamily Panicoideae. Tribe: Tristachyideae.
Habit, Vegetative Morphology. Annual, caespitose. Culms erect, $40-150 \mathrm{~cm}$ long. Culm-nodes bearded. Ligule a fringe of hairs. Leaf-blades $15-30 \mathrm{~cm}$ long, $4-8 \mathrm{~mm}$ wide. Leaf-blade surface pubescent.

Inflorescence. Inflorescence a panicle, bearing juvenile spikelets at emergence. Panicle contracted, linear, $15-45 \mathrm{~cm}$ long, $1-2 \mathrm{~cm}$ wide. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, 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 lanceolate, laterally compressed, $12-20 \mathrm{~mm}$ long, breaking up at maturity, disarticulating below each fertile floret. Floret callus elongated, curved, 0.5-1.5 mm long, pubescent, unequally 2 -toothed or pungent.

Glumes. Glumes persistent, dissimilar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 4-6 mm long, 0.25-0.33 length of spikelet, chartaceous, dark brown, without keels, 3 veined. Lower glume surface setose, with tubercle-based hairs. Lower glume apex obtuse or acute. Upper glume lanceolate, 1 length of spikelet, chartaceous, dark brown, without keels, 3 -veined. Upper glume surface setose, hairy on veins, with tubercle-based hairs. Upper glume apex truncate or caudate.

Florets. Basal sterile florets 1, male, with palea, separately deciduous. Lemma of lower sterile floret similar to upper glume, lanceolate, $7-8 \mathrm{~mm}$ long, 0.5 length of spikelet, 3 -veined, acute. Palea of lower sterile floret winged on keels. Fertile lemma oblong, 3-4 mm long, coriaceous, without keel, 7 -veined, more than 3 -veined. Lemma surface pubescent. Lemma margins involute, interlocking with palea keels. Lemma apex dentate, 2 -fid, with triangular lobes, acute, awned, 1 -awned. Principal lemma awn from a sinus, geniculate, flat below, $8-10 \mathrm{~mm}$ long overall, with twisted column, deciduous, abscissing from top of lemma. Column of lemma awn $2-3 \mathrm{~mm}$ long. Palea 2 -veined. Palea keels approximate, thickened.

Flower and Fruit. Anthers $2,2.5-3 \mathrm{~mm}$ long, anther tip smooth. Caryopsis with adherent pericarp.
Distribution (TDWG). Continent. Africa.
Country /Province /State. West Tropical Africa, West-Central Tropical Africa, Northeast Tropical Africa. Benin, Gambia, Ghana, Guinea-Bissau, Ivory Coast, Mali, Nigeria, Senegal, Togo, Niger. Sudan.

Loudetia jaegeriana A. Camus. Journ. Agric. Trop. \& Bot. Appliq. i. 212 (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 Synonomy Database: Sierra Leone: mont Loma, prairie d'altitude formant un tapis ras sur la pente S.-SE de Serelen-Kouko, vers $1300 \mathrm{~m}, 15$ Sep 1945, M.P. Jaeger 1705.

Illustrations: None found.
Derivation (Clifford \& Bostock 2007): L. -ana, indicating connection. In honor of Fritz and Oehler Eduard Jaeger (fl 1906-1907) who collected in East Africa.

Classification. Subfamily Panicoideae. Tribe: Tristachyideae.
Habit, Vegetative Morphology. Perennial. Culms prostrate, $15-30 \mathrm{~cm}$ long. Ligule a fringe of hairs. Leaf-blades spreading, $2-5 \mathrm{~cm}$ long, $1.5-3 \mathrm{~mm}$ wide.

Inflorescence. Inflorescence a panicle, comprising 4-15 fertile spikelets, bearing juvenile spikelets at emergence. Panicle open, elliptic, $4-5 \mathrm{~cm}$ long, bearing few spikelets. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets lanceolate, laterally compressed, 8-9 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus evident, 0.5 mm long, bearded, truncate.

Glumes. Glumes persistent, dissimilar, reaching apex of florets, thinner than fertile lemma. Lower glume ovate, $4-5 \mathrm{~mm}$ long, 0.5 length of spikelet, chartaceous, dark brown or purple, without keels, 3 veined. Lower glume surface glabrous or hispid, with tubercle-based hairs. Lower glume apex acuminate.

Upper glume lanceolate, 1 length of spikelet, chartaceous, dark brown or purple, without keels, 3 -veined. Upper glume surface glabrous or hispid, with tubercle-based hairs. Upper glume apex acuminate.

Florets. Basal sterile florets 1, male, with palea, separately deciduous. Lemma of lower sterile floret similar to upper glume, lanceolate, $8-9 \mathrm{~mm}$ long, 1 length of spikelet, 3 -veined, acute. Fertile lemma oblong, $3.5-4 \mathrm{~mm}$ long, coriaceous, without keel, 5 -veined, more than 3-veined. Lemma surface pubescent. Lemma margins involute, interlocking with palea keels. Lemma apex dentate, 2 -fid, with triangular lobes, incised 0.2 of lemma length, acute, awned, 1 -awned. Principal lemma awn from a sinus, geniculate, flat below, $15-20 \mathrm{~mm}$ long overall, with twisted column, deciduous, abscissing from top of lemma. Palea 2 veined. Palea keels approximate, thickened.

Flower and Fruit. Anthers 2, anther tip smooth. Caryopsis with adherent pericarp.
Distribution (TDWG). Continent. Africa.
Country /Province/State. West Tropical Africa. Sierre Leone.

Loudetia kagerensis (K. Schum.) C. E. Hubbard. A. W. Hill, Fl.Trop. Afr. x. 28 (1937).
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: Trichopteryx kagarensis K. Schum., Pflanzenw. Ost-Afrikas C: 109 (1895)
. T:<Type of Basionym>: fide TROPICOS and Kew Synonomy Database: HT: Stuhlmann 1961, Tanzania (B).

Illustrations: None found.
Derivation (Clifford \& Bostock 2007): L. -ensis, denoting origin. From Kagera River, Mozambique.
Classification. Subfamily Panicoideae. Tribe: Tristachyideae.
Habit, Vegetative Morphology. Perennial, caespitose. Butt sheaths glabrous or pubescent. Culms erect or geniculately ascending, $25-90 \mathrm{~cm}$ long, wiry. Culm-internodes glaucous. Culm-nodes black. Ligule a fringe of hairs. Leaf-blades $2.5-15 \mathrm{~cm}$ long, $1-4 \mathrm{~mm}$ wide.

Inflorescence. Inflorescence a panicle, bearing juvenile spikelets at emergence. Panicle open, elliptic, $5-16 \mathrm{~cm}$ long. Panicle branches flexuous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets lanceolate, laterally compressed, 6-9 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus evident, $0.5-1 \mathrm{~mm}$ long, pubescent, 2-toothed.

Glumes. Glumes persistent, dissimilar, reaching apex of florets, thinner than fertile lemma. Lower glume ovate, $3-5 \mathrm{~mm}$ long, 0.5 length of spikelet, chartaceous, dark brown, without keels, 3 -veined. Lower glume surface setose, with tubercle-based hairs. Lower glume apex obtuse. Upper glume lanceolate, 1 length of spikelet, chartaceous, dark brown, without keels, 3 -veined. Upper glume surface setose, with tubercle-based hairs. Upper glume apex obtuse.

Florets. Basal sterile florets 1, male, with palea, separately deciduous. Lemma of lower sterile floret similar to upper glume, lanceolate, $6-9 \mathrm{~mm}$ long, 1 length of spikelet, 3 -veined, setose, with tuberclebased hairs, obtuse. Fertile lemma oblong, 3.5-5 mm long, coriaceous, without keel, 7 -veined, more than 3 -veined. Lemma surface pubescent. Lemma margins involute, interlocking with palea keels. Lemma apex entire, emarginate (shoulders less than 0.2 mm ), awned, 1 -awned. Principal lemma awn from a sinus, geniculate, flat below, $20-30 \mathrm{~mm}$ long overall, with twisted column, deciduous, abscissing from top of lemma. Palea 2 -veined. Palea keels approximate, thickened.

Flower and Fruit. Anthers 2, anther tip smooth. Caryopsis with adherent pericarp.
Distribution (TDWG). Continent. Africa.
Country /Province /State. West Tropical Africa, West-Central Tropical Africa, Northeast Tropical Africa, East Tropical Africa, South Tropical Africa. Ghana, Guinea, Nigeria, Sierre Leone. Rwanda, DRC. Ethiopia (inc. Eritrea). Kenya, Tanzania, Uganda. Angola.

Loudetia lanata (Stent \& Rattray) C. E. Hubbard. Kew Bull. 1934, 429 (1934).
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: Trichopteryx lanata Stent \& Rattray, Proc. Rhodes. Scientif. Assoc. 32: 39 (1933). T:<Type of Basionym>: fide TROPICOS and Kew Synonomy Database: Zimbabwe, Harare: Eyles 2955 (SRGH holo, K).

Illustrations: None found.
Derivation (Clifford \& Bostock 2007): L. lana, wool; -ata, possessing. Leaf-blades densely pubescent. Classification. Subfamily Panicoideae. Tribe: Tristachyideae.
Habit, Vegetative Morphology. Perennial, caespitose. Butt sheaths woolly, persistent and investing base of culm, with fibrous dead sheaths. Culms erect, $40-100 \mathrm{~cm}$ long. Ligule a fringe of hairs. Leaf-blades $15-30 \mathrm{~cm}$ long, 2-4 mm wide. Leaf-blade surface pubescent, hairy on both sides.

Inflorescence. Inflorescence a panicle, bearing juvenile spikelets at emergence. Panicle open, ovate, dense or loose, $5-35 \mathrm{~cm}$ long. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets lanceolate, laterally compressed, $8-14 \mathrm{~mm}$ long, breaking up at maturity, disarticulating below each fertile floret. Floret callus elongated, $1-1.5 \mathrm{~mm}$ long, pubescent, unequally 2 -toothed.

Glumes. Glumes persistent, dissimilar, reaching apex of florets, thinner than fertile lemma. Lower glume ovate, $0.5-0.66$ length of spikelet, chartaceous, dark brown, without keels, 3 -veined. Lower glume surface glabrous or setose, with tubercle-based hairs. Lower glume apex obtuse. Upper glume lanceolate, 1 length of spikelet, chartaceous, dark brown, without keels, 3 -veined. Upper glume surface glabrous or setose, with tubercle-based hairs. Upper glume apex obtuse or acute.

Florets. Basal sterile florets 1, male, with palea, separately deciduous. Lemma of lower sterile floret similar to upper glume, lanceolate, $8-14 \mathrm{~mm}$ long, 1 length of spikelet, 3 -veined, glabrous or setose, with tubercle-based hairs, acute. Fertile lemma oblong, 4 mm long, coriaceous, without keel, 7 -veined, more than 3-veined. Lemma surface pubescent. Lemma margins involute, interlocking with palea keels. Lemma apex lobed, 2 -fid, with triangular lobes, incised $0.1-0.2$ of lemma length, acute, awned, 1 -awned. Principal lemma awn from a sinus, geniculate, flat below, $40-60 \mathrm{~mm}$ long overall, with twisted column, deciduous, abscissing from top of lemma. Column of lemma awn $5-10 \mathrm{~mm}$ long. Palea 2 -veined. Palea keels approximate, thickened.

Flower and Fruit. Anthers 2, anther tip smooth. Caryopsis with adherent pericarp.
Distribution (TDWG). Continent. Africa.
Country /Province /State. South Tropical Africa, Southern Africa. Angola, Zambia, Zimbabwe. Namibia.

Loudetia migiurtina (Chiov.) C. E. Hubbard. Kew Bull. 1934, 429 (1934).
Accepted by: W.D.Clayton \& K.Harman, GrassBase (2008) and online, U.Quattrocchi, CRC World Dictionary of Grasses (2006).

TYPE from Somalia. Basionym or Replaced Name: Trichopteryx migiurtina Chiov., Pl. Nov. Minus Not. Aethiopia 30 (1928)
. T:<Type of Basionym>: fide TROPICOS and Kew Synonomy Database: Somalia settentrionale: costa dei Migiurtini, ...,.

Illustrations: None found.
Derivation (Clifford \& Bostock 2007): L. from Migiurtini, Somalia.
Classification. Subfamily Panicoideae. Tribe: Tristachyideae.
Habit, Vegetative Morphology. Perennial, caespitose. Butt sheaths coriaceous, pilose. Culms erect or geniculately ascending, $15-35 \mathrm{~cm}$ long. Culm-internodes distally pubescent or hirsute. Culm-nodes pubescent. Ligule a fringe of hairs. Leaf-blades convolute, $5-11 \mathrm{~cm}$ long, $1-2.5 \mathrm{~mm}$ wide, stiff, glaucous. Leaf-blade surface scaberulous.

Inflorescence. Inflorescence a panicle, bearing juvenile spikelets at emergence. Panicle contracted, linear, $5-8 \mathrm{~cm}$ long. Panicle branches pubescent. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, $1-3 \mathrm{~mm}$ long.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets lanceolate or oblong, laterally compressed, 8-9 mm
long, breaking up at maturity, disarticulating below each fertile floret. Floret callus evident, 0.5 mm long, pubescent, truncate.

Glumes. Glumes persistent, dissimilar, shorter than spikelet, thinner than fertile lemma, gaping. Lower glume ovate, $4-5 \mathrm{~mm}$ long, $0.5-0.66$ length of spikelet, chartaceous, dark brown, without keels, 3 -veined. Lower glume apex acute, mucronate. Upper glume lanceolate, $7.5-8 \mathrm{~mm}$ long, 0.9 length of spikelet, chartaceous, dark brown, without keels, 3 -veined. Upper glume apex truncate or obtuse.

Florets. Basal sterile florets 1, male, with palea, separately deciduous. Lemma of lower sterile floret similar to upper glume, lanceolate, $8-9 \mathrm{~mm}$ long, 1 length of spikelet, 3 -veined, obtuse. Fertile lemma oblong, $3.5-4 \mathrm{~mm}$ long, coriaceous, without keel, 7 -veined, more than 3 -veined. Lemma surface pubescent. Lemma margins involute, interlocking with palea keels. Lemma apex dentate, 2 -fid, with triangular lobes, acute, awned, 1 -awned. Principal lemma awn from a sinus, geniculate, flat below, $25-30 \mathrm{~mm}$ long overall, with twisted column, deciduous, abscissing from top of lemma. Column of lemma awn $10-12 \mathrm{~mm}$ long. Palea 2 -veined. Palea keels approximate, thickened.

Flower and Fruit. Anthers $3,2.5 \mathrm{~mm}$ long, anther tip smooth. Caryopsis with adherent pericarp. Distribution (TDWG). Continent. Africa.
Country /Province /State. Northeast Tropical Africa. Somalia.
Loudetia phragmitoides (Peter) C. E. Hubbard. Kew Bull. 1934, 428. (1934).
Accepted by: W.D.Clayton \& K.Harman, GrassBase (2008) and online, U.Quattrocchi, CRC World Dictionary of Grasses (2006).

TYPE from Burundi. Basionym or Replaced Name: Trichopteryx phragmitoides Peter, Repert. Spec. Nov. Regni Veg. Beih. 40(1): Anhang 96 (1930)
. T:<Type of Basionym>: fide TROPICOS and Kew Synonomy Database: Burundi, Mukayogoro: Peter 38380 (B holo).

Illustrations (Books): S.Phillips, Poaceae (Gramineae) in I.Hedberg \& S.Edwards, Flora of Ethiopia and Eritrea (1995) (289, Fig 116).

Derivation (Clifford \& Bostock 2007): Gk. -oides, resembling. Similar to Phragmites in habit.
Classification. Subfamily Panicoideae. Tribe: Tristachyideae.
Habit, Vegetative Morphology. Perennial, caespitose, clumped densely. Culms erect, 200-400 cm long. Culm-internodes distally glabrous or hirsute. Ligule a fringe of hairs. Leaf-blades flat or convolute, $50-100 \mathrm{~cm}$ long, $10-20 \mathrm{~mm}$ wide, stiff.

Inflorescence. Inflorescence a panicle, bearing juvenile spikelets at emergence. Panicle contracted, oblong, 40-60 cm long. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets linear, laterally compressed, 6-7 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus evident, 0.5 mm long, glabrous, truncate.

Glumes. Glumes persistent, dissimilar, reaching apex of florets, thinner than fertile lemma. Lower glume ovate, $3-4 \mathrm{~mm}$ long, 0.5 length of spikelet, chartaceous, dark brown, without keels, 3 -veined. Lower glume surface setose, with tubercle-based hairs. Lower glume apex obtuse or acute. Upper glume lanceolate, 6-7 mm long, 1 length of spikelet, chartaceous, dark brown, without keels, 3 -veined. Upper glume surface glabrous or setose, with tubercle-based hairs. Upper glume apex acute.

Florets. Basal sterile florets 1, barren, with palea, separately deciduous. Lemma of lower sterile floret similar to upper glume, lanceolate, 6-7 mm long, 1 length of spikelet, 3 -veined, acute. Fertile lemma elliptic, $3-4 \mathrm{~mm}$ long, coriaceous, without keel, 5 -veined, more than 3 -veined. Lemma surface villous. Lemma margins involute, interlocking with palea keels. Lemma hairs $1-2 \mathrm{~mm}$ long. Lemma apex dentate, 2 -fid, with triangular lobes, acute, awned, 1 -awned. Principal lemma awn from a sinus, geniculate, flat below, $10-20 \mathrm{~mm}$ long overall, with twisted column, persistent. Column of lemma awn $1.5-3 \mathrm{~mm}$ long. Palea 2 -veined. Palea keels approximate, thickened. Palea surface pubescent, hairy on back.

Flower and Fruit. Anthers 2, anther tip smooth. Caryopsis with adherent pericarp.
Distribution (TDWG). Continent. Africa.
Country /Province /State. West Tropical Africa, West-Central Tropical Africa, Northeast Tropical Africa, East Tropical Africa, South Tropical Africa. Burkina, Ghana, Liberia, Mali, Nigeria,

Senegal, Sierre Leone. Burundi, Cameroon, Gabon, DRC. Ethiopia (inc. Eritrea), Sudan. Kenya, Tanzania, Uganda. Angola, Malawi, Mozambique, Zambia.

## Loudetia pratii Jacques-Felix. Adansonia, 12(2): 240 (1972).

Accepted by: W.D.Clayton \& K.Harman, GrassBase (2008) and online.
TYPE from Republic Central Africa. T:<Type of Basionym>: fide TROPICOS and Kew Synonomy Database: Rep. Centre Africaine, Zemio to Rafai: Descoings 12497 (P holo).

Illustrations: None found.
Classification. Subfamily Panicoideae. Tribe: Tristachyideae.
Habit, Vegetative Morphology. Annual. Culms $30-50 \mathrm{~cm}$ long, $1-1.5 \mathrm{~mm}$ diam., 3-4 -noded. Culminternodes distally glabrous or pilose. Culm-nodes pubescent. Lateral branches lacking or sparse. Leafsheaths $3-5 \mathrm{~cm}$ long, smooth or papillose, glabrous on surface or hirsute. Ligule a fringe of hairs. Leafblades $2-5 \mathrm{~cm}$ long, 3 mm wide. Leaf-blade venation with 6 secondary veins. Leaf-blade surface pilose, hairy on both sides, with tubercle-based hairs. Leaf-blade apex attenuate.

Inflorescence. Inflorescence a panicle, terminal and axillary, bearing juvenile spikelets at emergence. Panicle open, oblong, $9-12 \mathrm{~cm}$ long. Primary panicle branches spreading. Panicle axis glabrous. Panicle branches capillary, pubescent. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, filiform, 510 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, $7.5-8 \mathrm{~mm}$ long, breaking up at maturity, disarticulating below each fertile floret. Floret callus evident, pubescent, truncate.

Glumes. Glumes persistent, dissimilar, reaching apex of florets, thinner than fertile lemma. Lower glume elliptic or ovate, 3 mm long, 0.5 length of spikelet, chartaceous, dark brown, without keels, 3 veined. Lower glume surface setose, with tubercle-based hairs. Lower glume apex obtuse. Upper glume lanceolate, 7.5 mm long, 1 length of spikelet, chartaceous, dark brown, without keels, 3 -veined. Upper glume surface setose, with tubercle-based hairs. Upper glume apex truncate or obtuse.

Florets. Basal sterile florets 1, male, with palea, separately deciduous. Lemma of lower sterile floret similar to upper glume, lanceolate, $6.5-7 \mathrm{~mm}$ long, 1 length of spikelet, 3 -veined, pilose, hairy in the middle, hairy on veins, obtuse. Fertile lemma elliptic, $4-4.5 \mathrm{~mm}$ long, coriaceous, without keel, 5 -veined, more than 3 -veined. Lemma surface pubescent. Lemma margins involute, interlocking with palea keels. Lemma apex lobed, 2 -fid, with lobes 1 mm long, awned, 1 -awned. Principal lemma awn from a sinus, geniculate, flat below, $25-30 \mathrm{~mm}$ long overall, with twisted column, deciduous, abscissing from top of lemma. Column of lemma awn 15 mm long, scabrous. Palea 2 -veined. Palea keels approximate, thickened.

Flower and Fruit. Anthers 2, 2.5 mm long. Caryopsis with adherent pericarp.
Distribution (TDWG). Continent. Africa.
Country/Province/State. West-Central Tropical Africa. Central African Republic.
Loudetia simplex (Nees) C. E. Hubbard. Kew Bull. 1934, 431 (1934).
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: Tristachya simplex Nees, Fl. Afr. Austr. 269 (1841). T:<Type of Basionym>: fide TROPICOS and Kew Synonomy Database: South Africa, Umzimkulu R.: Drege ( K iso).

Recent Synonyms: Loudetia madagascariensis (Baker) Bosser, Adansonia n.s., vi. 394 (1966).
Illustrations (Books): R.M.Polhill, F.T.E.A., Gramineae (2(1974):419, Fig.114), G.V.Pope et al., Flora Zambesiaca 10 (3(1989):218, t. 60), L.K.A. Chippindall, Grasses and Pastures of South Africa (1955) (Plt. 8II \& 281, Fig 252), J.Bosser, Graminees des Paturage et des Cultures a Madagascar (1969) (36 \& 71, Fig 9 \& 15 as L. madagascariensis), S.Phillips, Poaceae (Gramineae) in I.Hedberg \& S.Edwards, Flora of Ethiopia and Eritrea (1995) (289, Fig 116).

Images: F.van Oudtshoorn, Guide to Grasses of Southern Africa (1999).
Derivation (Clifford \& Bostock 2007): L. simple. Culms or inflorescences unbranched.
Classification. Subfamily Panicoideae. Tribe: Tristachyideae.

Habit, Vegetative Morphology. Perennial, caespitose. Butt sheaths pubescent or woolly, persistent and investing base of culm, with fibrous dead sheaths. Culms erect, $30-150 \mathrm{~cm}$ long. Culm-nodes pallid or black, glabrous or bearded. Leaves mostly basal. Ligule a fringe of hairs. Leaf-blades flat or convolute, 1030 cm long, $2-5 \mathrm{~mm}$ wide. Leaf-blade margins entire.

Inflorescence. Inflorescence a panicle, bearing juvenile spikelets at emergence. Panicle open or contracted, linear to ovate, $10-30 \mathrm{~cm}$ long. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets lanceolate, laterally compressed, compressed slightly, $8-13 \mathrm{~mm}$ long, breaking up at maturity, disarticulating below each fertile floret. Floret callus evident, $0.8-1 \mathrm{~mm}$ long, pubescent, 2 -toothed.

Glumes. Glumes persistent, dissimilar, reaching apex of florets, thinner than fertile lemma. Lower glume ovate, $3-5 \mathrm{~mm}$ long, $0.3-0.5$ length of spikelet, chartaceous, dark brown, without keels, 3 -veined. Lower glume apex obtuse. Upper glume lanceolate, $8-13 \mathrm{~mm}$ long, chartaceous, dark brown, without keels, 3 -veined. Upper glume apex obtuse.

Florets. Basal sterile florets 1, male, with palea, separately deciduous. Lemma of lower sterile floret similar to upper glume, lanceolate, $8-13 \mathrm{~mm}$ long, 3 -veined, acute. Fertile lemma oblong, 4-7 mm long, coriaceous, without keel, 7 -veined, more than 3-veined. Lemma lateral veins obscure. Lemma surface pubescent. Lemma margins involute, interlocking with palea keels. Lemma apex dentate, 2 -fid, with triangular lobes, with lobes $0.2-1 \mathrm{~mm}$ long, acute, awned, 1 -awned. Principal lemma awn from a sinus, geniculate, flat below, $25-50 \mathrm{~mm}$ long overall, with twisted column, deciduous, abscissing from top of lemma. Palea 2 -veined. Palea keels approximate, thickened. Palea surface scaberulous.

Flower and Fruit. Anthers 2, anther tip smooth. Caryopsis with adherent pericarp, fusiform, glabrous. Hilum linear.

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. Benin, Burkina, Ghana, Guinea, Liberia, Mali, Nigeria, Senegal, Sierre Leone, Togo. Cameroon, Congo, Gabon, Rwanda, DRC. Ethiopia (inc. Eritrea), Sudan. Kenya, Tanzania, Uganda. Angola, Malawi, Mozambique, Zambia, Zimbabwe. Limpopo, North-West, Gauteng, Mpumalanga, Swaziland, Free State, Kwazulu-Natal, Eastern Cape. Madagascar.

## Loudetia tisserantii C. E. Hubbard. Kew Bull. 357 (1949).

Accepted by: W.D.Clayton \& K.Harman, GrassBase (2008) and online.
TYPE from Republic Central Africa. T:<Type of Basionym>: fide TROPICOS and Kew Synonomy Database: Rep. Centre Afr., Waka: Tisserant 2713 (K holo).

Illustrations: None found.
Derivation (Clifford \& Bostock 2007): in honor of Charles Tisserant (1886-1962) French cleric ethnologist, botanist and traveller.

Classification. Subfamily Panicoideae. Tribe: Tristachyideae.
Habit, Vegetative Morphology. Annual, caespitose. Culms erect, 30-60 cm long, 2-3 -noded. Lateral branches lacking. Ligule a fringe of hairs. Leaf-blades erect, flat or involute, $5-12 \mathrm{~cm}$ long, $1-2 \mathrm{~mm}$ wide. Leaf-blade surface scaberulous, rough adaxially. Leaf-blade apex attenuate, filiform.

Inflorescence. Inflorescence a panicle, bearing juvenile spikelets at emergence. Panicle spiciform, linear or oblong, $2.5-5 \mathrm{~cm}$ long, $1-1.2 \mathrm{~cm}$ wide. Primary panicle branches appressed, $0.2-0.3 \mathrm{~cm}$ long, bearing 1-2 fertile spikelets on each lower branch. Spikelets appressed, solitary. Fertile spikelets pedicelled. Pedicels present, oblong.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets lanceolate, laterally compressed, acuminate, 12.514 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus elongated, 1.5 mm long, bearded, truncate. Floret callus hairs 2 mm long.

Glumes. Glumes persistent, dissimilar, reaching apex of florets, thinner than fertile lemma. Lower glume lanceolate, 11-14 mm long, 0.9-1 length of spikelet, chartaceous, without keels, 3 -veined. Lower glume surface setose, hairy on veins, with tubercle-based hairs. Lower glume hairs 2-3 mm long. Lower
glume apex obtuse. Upper glume lanceolate, 12.5-14 mm long, 1 length of spikelet, chartaceous, without keels, 3 -veined. Upper glume surface pilose, hairy on veins, with tubercle-based hairs. Upper glume apex acuminate.

Florets. Basal sterile florets 1, male, with palea, separately deciduous. Lemma of lower sterile floret similar to upper glume, lanceolate, $9-10 \mathrm{~mm}$ long, 1 length of spikelet, chartaceous, 3 -veined, emarginate to acuminate. Palea of lower sterile floret $0.66-0.75$ length of lemma. Fertile lemma oblong, $5-5.5 \mathrm{~mm}$ long, coriaceous, without keel, 7 -veined, more than 3-veined. Lemma surface pubescent. Lemma margins involute, interlocking with palea keels. Lemma apex dentate, 2 -fid, awned, 1 -awned. Principal lemma awn from a sinus, geniculate, flat below, $55-60 \mathrm{~mm}$ long overall, with twisted column, deciduous, abscissing from top of lemma. Column of lemma awn 10 mm long, puberulous. Palea 2 -veined. Palea keels approximate, thickened.

Flower and Fruit. Anthers 2, 1.7-2 mm long, anther tip smooth. Caryopsis with adherent pericarp.
Distribution (TDWG). Continent. Africa.
Country /Province/State. West-Central Tropical Africa. Central African Republic.

Loudetia togoensis (Pilger) C. E. Hubbard. Kew Bull. 1934, 431 (1934).
Accepted by: W.D.Clayton \& K.Harman, GrassBase (2008) and online.
TYPE from Togo. Basionym or Replaced Name: Trichopteryx togoensis Pilg., Bot. Jahrb. Syst. 34(1): 128 (1904)

T:<Type of Basionym>: fide TROPICOS and Kew Synonomy Database: Togo: Sokode-Basari, Koukomba, zahlreich an einzeln Stellen der Savanne, 1902, Kersting 662 (HT: B).

Illustrations: None found.
Derivation (Clifford \& Bostock 2007): L. -ense, denoting origin. From Togo.
Classification. Subfamily Panicoideae. Tribe: Tristachyideae.
Habit, Vegetative Morphology. Annual, caespitose. Culms erect or geniculately ascending, 30-100 cm long. Ligule a fringe of hairs. Leaf-blades $2.5-20 \mathrm{~cm}$ long, $2-10 \mathrm{~mm}$ wide. Leaf-blade surface pubescent.

Inflorescence. Inflorescence a panicle, bearing juvenile spikelets at emergence. Panicle contracted, lanceolate, 6-25 cm long. Spikelets in threes. Fertile spikelets pedicelled, 3 in the cluster. Pedicels present, unequal, $2-20 \mathrm{~mm}$ 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, $22-27 \mathrm{~mm}$ long, breaking up at maturity, disarticulating below each fertile floret. Floret callus elongated, $1-2 \mathrm{~mm}$ long, pubescent, 2-toothed.

Glumes. Glumes persistent, dissimilar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, $9-12 \mathrm{~mm}$ long, 0.33 length of spikelet, chartaceous, dark brown, without keels, 3 -veined. Lower glume surface glabrous. Lower glume apex obtuse or acute. Upper glume lanceolate, 1 length of spikelet, chartaceous, dark brown, without keels, 3 -veined. Upper glume surface glabrous. Upper glume apex obtuse or acute.

Florets. Basal sterile florets 1, barren, without significant palea, separately deciduous. Lemma of lower sterile floret similar to upper glume, lanceolate, $18-20 \mathrm{~mm}$ long, $0.66-1$ length of spikelet, 3-5 -veined, obtuse or acute. Fertile lemma oblong, $5-6 \mathrm{~mm}$ long, coriaceous, without keel, 7 -veined, more than 3veined. Lemma surface pubescent. Lemma margins involute, interlocking with palea keels. Lemma apex lobed, 2 -fid, with triangular lobes, acute, awned, 1 -awned. Principal lemma awn from a sinus, geniculate, subterete below, $9-20 \mathrm{~mm}$ long overall, with twisted column, deciduous, abscissing from top of lemma. Column of lemma awn 1.5-4 mm long, hirsute. Palea 2 -veined. Palea keels approximate, thickened.

Flower and Fruit. Anthers 2, 2 mm long, anther tip penicillate. Caryopsis with adherent pericarp.
Distribution (TDWG). Continent. Africa.
Country /Province /State. West Tropical Africa, West-Central Tropical Africa, Northeast Tropical Africa. Benin, Burkina, Gambia, Ghana, Guinea-Bissau, Guinea, Ivory Coast, Mali, Mauritania, Nigeria, Senegal, Togo. Sudan.

Loudetia vanderystii (De Wild.) C. E. Hubbard. Kew Bull. 1934, 428 (1934).
Accepted by: W.D.Clayton \& K.Harman, GrassBase (2008) and online, U.Quattrocchi, CRC World Dictionary of Grasses (2006).

TYPE from Zaire. Basionym or Replaced Name: Trichopteryx vanderystii De Wild., Ann. Soc. Sci. Bruxelles 29: 160 (1920)
. T:<Type of Basionym>: fide TROPICOS and Kew Synonomy Database: Zaire, Wombali: Vanderyst 2212 (BR syn, K) ; Zaire, Wombali: Vanderyst 2212bis (BR syn).

Illustrations: None found.
Derivation (Clifford \& Bostock 2007): in honor of Hyacinthe Robert Julien Vanderyst (fl. 1907-1925) Belgian cleric and botanist.

Classification. Subfamily Panicoideae. Tribe: Tristachyideae.
Habit, Vegetative Morphology. Perennial, caespitose, clumped densely. Butt sheaths villous, persistent and investing base of culm, with fibrous dead sheaths. Basal innovations intravaginal. Culms erect, slender, $30-70 \mathrm{~cm}$ long, wiry, 1 -noded. Lateral branches lacking. Ligule a fringe of hairs. Leafblades erect, filiform or linear, flat or involute, $15-30 \mathrm{~cm}$ long, $1-2 \mathrm{~mm}$ wide, stiff. Leaf-blade surface scaberulous, rough adaxially. Leaf-blade apex acute.

Inflorescence. Inflorescence a panicle, bearing juvenile spikelets at emergence. Panicle spiciform, linear, $1.5-2.5 \mathrm{~cm}$ long, $0.6-1.4 \mathrm{~cm}$ wide. Primary panicle branches appressed, $0.2-0.4 \mathrm{~cm}$ long, bearing $1-$ 3 fertile spikelets on each lower branch. Spikelets appressed, solitary. Fertile spikelets pedicelled. Pedicels present, oblong.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets oblong, laterally compressed, acuminate, $8-9 \mathrm{~mm}$ long, breaking up at maturity, disarticulating below each fertile floret. Floret callus evident, 0.5 mm long, bearded, truncate.

Glumes. Glumes persistent, dissimilar, shorter than spikelet, thinner than fertile lemma, gaping. Lower glume lanceolate, 6-7 mm long, 0.75 length of spikelet, chartaceous, yellow, without keels, 3 -veined. Lower glume surface setose, hairy on veins, with tubercle-based hairs. Lower glume apex acute. Upper glume lanceolate, 0.9 length of spikelet, chartaceous, yellow, without keels, 3 -veined. Upper glume surface glabrous or pilose, hairy on veins, with tubercle-based hairs. Upper glume apex obtuse.

Florets. Basal sterile florets 1, male, with palea, separately deciduous. Lemma of lower sterile floret similar to upper glume, lanceolate, $8-9 \mathrm{~mm}$ long, 1 length of spikelet, chartaceous, 3 -veined, glabrous, acute. Palea of lower sterile floret 0.66 length of lemma. Fertile lemma oblong, $4.5-5 \mathrm{~mm}$ long, coriaceous, without keel, 7 -veined, more than 3-veined. Lemma surface pubescent. Lemma margins involute, interlocking with palea keels. Lemma apex emarginate, awned, 1 -awned. Principal lemma awn geniculate, flat below, $14-20 \mathrm{~mm}$ long overall, with twisted column, deciduous, abscissing from top of lemma. Column of lemma awn 5-6 mm long, pubescent. Palea 2 -veined. Palea keels approximate, thickened.

Flower and Fruit. Anthers 2, 3-4 mm long, anther tip smooth. Caryopsis with adherent pericarp.
Distribution (TDWG). Continent. Africa.
Country /Province /State. West-Central Tropical Africa. Gabon, DRC.

Loudetiopsis ambiens (K. Schum.) Conert. Engl. Bot. Jahrb. lxxvii. 281 (1957).
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: Trichopteryx ambiens K. Schum., Engl. Jahrb. 24: 335 (1897). T:<Type of Basionym>: fide TROPICOS and Kew Synonomy Database: Togo, Misahoehe: Baumann 353.

Illustrations (Books): H.Jacques-Felix, Les Graminees d'Afrique tropicale (1962) (158, Fig. 83).
Derivation (Clifford \& Bostock 2007): L. ambio, surround. Intermediate in characters between other species pairs.

Classification. Subfamily Panicoideae. Tribe: Tristachyideae.
Habit, Vegetative Morphology. Perennial, caespitose, clumped densely. Butt sheaths glabrous. Culms erect, $100-210 \mathrm{~cm}$ long. Culm-internodes distally glabrous. Ligule a fringe of hairs. Leaf-blades flat or involute, $30-60 \mathrm{~cm}$ long, $4-8 \mathrm{~mm}$ wide, stiff.

Inflorescence. Inflorescence a panicle. Peduncle smooth. Panicle contracted, oblong, 25-30 cm long, $2.5-11 \mathrm{~cm}$ wide. Primary panicle branches appressed or ascending. Panicle branches flexuous, scaberulous, glabrous. Spikelets in threes. Fertile spikelets pedicelled, 3 in the cluster. Pedicels present, subequal, 1-2 mm long, setose.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets lanceolate, laterally compressed, compressed slightly, $6-8 \mathrm{~mm}$ long, breaking up at maturity, disarticulating below each fertile floret. Floret callus evident, 0.5 mm long, bearded, truncate.

Glumes. Glumes persistent, reaching apex of florets, thinner than fertile lemma. Lower glume ovate, $3.5-5 \mathrm{~mm}$ long, $0.5-0.66$ length of spikelet, chartaceous, dark brown, without keels, $3-5$-veined. Lower glume surface asperulous, setose, hairy on veins, with tubercle-based hairs. Lower glume hairs yellow. Lower glume apex obtuse or acute. Upper glume lanceolate, 6-8 mm long, 1 length of spikelet, chartaceous, dark brown, without keels, 3 -veined. Upper glume surface glabrous. Upper glume apex truncate.

Florets. Basal sterile florets 1, male, with palea, separately deciduous. Lemma of lower sterile floret similar to upper glume, lanceolate, $6-8 \mathrm{~mm}$ long, chartaceous, 3 -veined, obtuse or acute. Palea of lower sterile floret pilose. Fertile lemma oblong, $3.5-5 \mathrm{~mm}$ long, coriaceous, without keel, 5-7 -veined, more than 3-veined. Lemma surface pubescent. Lemma margins involute, interlocking with palea keels. Lemma apex lobed, 2 -fid, with lanceolate lobes, incised 0.1 of lemma length, awned, 1 -awned. Principal lemma awn from a sinus, geniculate, flat below, $20-25 \mathrm{~mm}$ long overall, with twisted column, deciduous, abscissing from top of lemma. Column of lemma awn $8-10 \mathrm{~mm}$ long. Palea 2 -veined. Palea keels approximate, thickened.

Flower and Fruit. Anthers 2, 2-2.5 mm long. Caryopsis with adherent pericarp.
Distribution (TDWG). Continent. Africa.
Country /Province /State. West Tropical Africa, West-Central Tropical Africa, South Tropical Africa. Benin, Ghana, Guinea, Ivory Coast, Nigeria, Togo. Cabinda. Angola.

Loudetiopsis baldwinii (C. E. Hubbard) Phipps. Kirkia, v. 249 (1966).
Accepted by: W.D.Clayton \& K.Harman, GrassBase (2008) and online, U.Quattrocchi, CRC World Dictionary of Grasses (2006).

TYPE from French Guinea. Basionym or Replaced Name: Loudetia baldwinii C.E. Hubb., Kew Bull. 4(3): 356-357 (1949)

T:<Type of Basionym>: fide TROPICOS and Kew Synonomy Database: French Guinea: Macenta, frequent on open rock hill, 660-830 m., 14-15 Oct 1947, J.T. Baldwin Jr. 9757.

Illustrations: None found.
Derivation (Clifford \& Bostock 2007): in honor of John Thomas Baldwin (1910-) United States botanist.

Classification. Subfamily Panicoideae. Tribe: Tristachyideae.
Habit, Vegetative Morphology. Perennial, caespitose. Culms erect to geniculately ascending, 50-70 cm long. Culm-nodes glabrous or pubescent. Leaf-sheaths striately veined, scaberulous. Ligule a fringe of hairs. Leaf-blades flat or involute, $10-13 \mathrm{~cm}$ long, $2.5-3.5 \mathrm{~mm}$ wide. Leaf-blade apex attenuate.

Inflorescence. Inflorescence a panicle. Panicle open, elliptic or oblong, 8-13 cm long. Panicle axis bearing deciduous spikelet clusters. Panicle branches abruptly recurved near tip, scaberulous, glabrous. Spikelets in threes. Fertile spikelets pedicelled, 3 in the cluster. Pedicels present, fused to each other, united below, filiform, subequal, $0.5-2 \mathrm{~mm}$ 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, laterally compressed, compressed slightly, 4-5 mm long, falling entire, deciduous in a cluster with fused pedicels, readily shedding fertile florets, pedicel base hooked. Floret callus 0.2 mm long, pilose, hairy in 2 tufts, obtuse.

Glumes. Glumes similar, exceeding apex of florets, thinner than fertile lemma, gaping. Lower glume lanceolate, $3-3.5 \mathrm{~mm}$ long, $0.7-0.9$ length of upper glume, chartaceous, dark brown, without keels, 3 veined. Lower glume surface setose, hairy in lines (along margins), with tubercle-based hairs. Lower glume hairs white. Lower glume apex acuminate. Upper glume lanceolate, 3-4 mm long, chartaceous, dark brown,
without keels, 5 -veined (lateral veins close). Upper glume surface setose, hairy on veins (along margins), with tubercle-based hairs. Upper glume apex acuminate.

Florets. Basal sterile florets 1, male, with palea. Lemma of lower sterile floret similar to upper glume, lanceolate, 3-4 mm long, membranous or chartaceous, 7 -veined, acute. Palea of lower sterile floret winged on keels, pilose. Fertile lemma elliptic, $2.5-3 \mathrm{~mm}$ long, coriaceous, without keel, (7-)9 -veined, more than 3 -veined. Lemma surface pubescent, hairy all along (very sparsely in the middle). Lemma margins involute, interlocking with palea keels. Lemma apex lobed, 2 -fid, with lanceolate lobes, incised 0.2 of lemma length, awned, 1 -awned. Principal lemma awn from a sinus, curved, flat below, $3.5-4 \mathrm{~mm}$ long overall, without a column, limb scaberulous. Palea 2 -veined. Palea surface pilose, hairy on back.

Flower and Fruit. Lodicules 2, cuneate. Anthers 3, 2-2.5 mm long. Stigmas 2.

## Distribution (TDWG). Continent. Africa.

Country /Province /State. West Tropical Africa. Guinea.

Loudetiopsis capillipes (C. E. Hubbard) Coner. Engl. Bot. Jahrb. lxxvii. 284 (1957).
Accepted by: W.D.Clayton \& K.Harman, GrassBase (2008) and online, U.Quattrocchi, CRC World Dictionary of Grasses (2006).

TYPE from Guinea. Basionym or Replaced Name: Loudetia capillipes C.E. Hubb., Bull. Misc. Inform. Kew 1934: 432 (1934)
. T:<Type of Basionym>: fide TROPICOS and Kew Synonomy Database: Guinee, Timbo: Pobeguin 1757 (K holo).

Illustrations: None found.
Derivation (Clifford \& Bostock 2007): L. capillis, a hair; pes, foot. As for Capillipedium..
Classification. Subfamily Panicoideae. Tribe: Tristachyideae.
Habit, Vegetative Morphology. Perennial, caespitose. Culms erect, $40-75 \mathrm{~cm}$ long. Ligule a fringe of hairs. Leaf-blades filiform, involute, $10-20 \mathrm{~cm}$ long, $0.5-1 \mathrm{~mm}$ wide. Leaf-blade surface glabrous or hispid. Leaf-blade apex attenuate.

Inflorescence. Inflorescence a panicle. Panicle open, oblong or ovate, effuse, $7-18 \mathrm{~cm}$ long. Panicle axis bearing deciduous spikelet clusters. Panicle branches capillary, abruptly recurved near tip, pilose or villous. Spikelets in threes. Fertile spikelets pedicelled, 3 in the cluster. Pedicels present, fused to each other, united below, filiform, subequal, $1.5-4 \mathrm{~mm}$ 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, laterally compressed, compressed slightly, $6-7.5 \mathrm{~mm}$ long, falling entire, deciduous in a cluster with fused pedicels, readily shedding fertile florets, pedicel base hooked. Floret callus evident, 0.5 mm long, pilose, truncate.

Glumes. Glumes similar, exceeding apex of florets, thinner than fertile lemma, gaping. Lower glume lanceolate, $4-5 \mathrm{~mm}$ long, $0.6-0.7$ length of upper glume, chartaceous, dark brown, without keels, 3 -veined. Lower glume surface setose, hairy on veins, with tubercle-based hairs. Lower glume apex acute. Upper glume lanceolate, 6-7.5 mm long, 1 length of spikelet, chartaceous, dark brown, without keels, 3 -veined. Upper glume surface setose, hairy on veins (along margins), with tubercle-based hairs. Upper glume apex emarginate or truncate or acute or acuminate.

Florets. Basal sterile florets 1, male, with palea. Lemma of lower sterile floret similar to upper glume, oblong, $6-7.5 \mathrm{~mm}$ long, 1 length of spikelet, membranous, 3 -veined, truncate or obtuse. Palea of lower sterile floret pilose. Fertile lemma elliptic, 3-3.5 mm long, coriaceous, without keel, 7 -veined, more than 3 -veined. Lemma surface pubescent. Lemma margins involute, interlocking with palea keels. Lemma apex lobed, 2 -fid, with lanceolate lobes, incised 0.2 of lemma length, awned, 1 -awned. Principal lemma awn from a sinus, geniculate, flat below, $20-30 \mathrm{~mm}$ long overall, with twisted column, deciduous, abscissing across body of lemma, limb scaberulous. Column of lemma awn 10-13 mm long. Palea 2 -veined.

Flower and Fruit. Anthers 2, 1.5-2.5 mm long.
Distribution (TDWG). Continent. Africa.
Country /Province /State. West Tropical Africa. Guinea, Ivory Coast.

Loudetiopsis chevalieri (Stapf) Conert. Engl. Bot. Jahrb. Ixxvii. 290 (1957).
Accepted by: W.D.Clayton \& K.Harman, GrassBase (2008) and online, U.Quattrocchi, CRC World Dictionary of Grasses (2006).

TYPE from Republic Central Africa. Basionym or Replaced Name: Tristachya chevalieri Stapf, Bull. Soc. Bot. France
. T:<Type of Basionym>: fide TROPICOS and Kew Synonomy Database: Rep. Centr Afr., Wako to Yembere: Chevalier 5756 (K holo).

Recent Synonyms: Diandrostachya chevalieri (Stapf) Jacques-felix, Journ. Agric. Trop. \& Bot. Appliq. 7: 408 (1960).

Illustrations: None found.
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: Tristachyideae.
Habit, Vegetative Morphology. Annual, caespitose. Culms erect, 40-70 cm long, 2-3 -noded. Culminternodes distally glabrous. Culm-nodes glabrous. Leaf-sheaths glabrous on surface. Ligule a fringe of hairs. Leaf-blades flat or involute, $15-30 \mathrm{~cm}$ long, $2-4 \mathrm{~mm}$ wide. Leaf-blade surface pubescent, hairy adaxially. Leaf-blade apex attenuate, filiform.

Inflorescence. Inflorescence a panicle, comprising 6-24 fertile spikelets. Panicle open or contracted, oblong, $8-16 \mathrm{~cm}$ long. Primary panicle branches $1-4$-nate, $3-6 \mathrm{~cm}$ long. Panicle branches capillary, scabrous, villous, hairy at tip, with tubercle-based hairs. Spikelets in threes. Fertile spikelets pedicelled, 3 in the cluster. Pedicels present, subequal, 2-3 mm long, setose.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets lanceolate, laterally compressed, compressed slightly, $18-20 \mathrm{~mm}$ long, breaking up at maturity, disarticulating below each fertile floret. Floret callus evident, 1 mm long, bearded, 2-toothed.

Glumes. Glumes persistent, reaching apex of florets, thinner than fertile lemma. Lower glume lanceolate, $10-12 \mathrm{~mm}$ long, $0.5-0.66$ length of spikelet, chartaceous, yellow, without keels, 3 -veined. Lower glume surface setose, hairy on veins, with tubercle-based hairs. Lower glume hairs white. Lower glume apex obtuse. Upper glume lanceolate, $18-20 \mathrm{~mm}$ long, 1 length of spikelet, chartaceous, yellow, without keels, 3 -veined. Upper glume surface setose, hairy on veins, with tubercle-based hairs. Upper glume apex obtuse.

Florets. Basal sterile florets 1, male, with palea, separately deciduous. Lemma of lower sterile floret similar to upper glume, lanceolate, $12.5-14 \mathrm{~mm}$ long, $0.7-0.8$ length of spikelet, chartaceous, 3 -veined, acute. Palea of lower sterile floret $0.6-0.7$ length of lemma, winged on keels. Fertile lemma linear, 8-8.5 mm long, coriaceous, without keel, 7 -veined, more than 3 -veined. Lemma surface pubescent. Lemma margins involute, interlocking with palea keels. Lemma apex lobed, 2 -fid, with lanceolate lobes, incised 0.1 of lemma length, awned, 1 -awned. Principal lemma awn from a sinus, geniculate, flat below, 70-120 mm long overall, with twisted column, deciduous, abscissing from top of lemma. Column of lemma awn $25-35 \mathrm{~mm}$ long, pubescent. Palea 2 -veined. Palea keels approximate, thickened.

Flower and Fruit. Anthers 2, 3-4 mm long. Caryopsis with adherent pericarp, linear, 5 mm long. Distribution (TDWG). Continent. Africa.
Country /Province/State. West-Central Tropical Africa. Central African Republic.
Loudetiopsis chrysothrix (Nees) Conert. Engl. Bot. Jahrb. 1xxvii. 285 (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 Brazil. Basionym or Replaced Name: Tristachya chrysothrix Nees, Fl. Bras. Enum. Pl. 2(1): 460 (1829)
. T:<Type of Basionym>: fide TROPICOS and Kew Synonomy Database: LT: F. Sellow s.n., Brazil (B). LT designated by Conert, Bot. Jaherb. Syst. 77: 285 (1957).

ST: Martius s.n., Brazil: Prov. Minarum: in campis altis.

Recent Synonyms: Diandrostachya chrysothrix (Nees) Jacques-Felix. Journ. Agric. Trop. \& Bot. Appliq. 7: 408 (1960).

Illustrations (Books): H.Jacques-Felix, Les Graminees d'Afrique tropicale (1962) (1600, Fig. 85 as Diandrostachya fulva), S.A.Renvoize, Gramineas de Bolivia (1998) (564, Fig 131).

Derivation (Clifford \& Bostock 2007): Gk. chrysos, yellow; thrix, hair. Glumes papillose-hispid with spreading golden hairs.

Classification. Subfamily Panicoideae. Tribe: Tristachyideae.
Habit, Vegetative Morphology. Perennial, caespitose. Culms erect, $90-120 \mathrm{~cm}$ long. Culm-nodes glabrous or bearded. Ligule a fringe of hairs. Leaf-blades flat or involute, $15-35 \mathrm{~cm}$ long, 2-4 mm wide. Leaf-blade apex attenuate.

Inflorescence. Inflorescence a panicle. Panicle open, oblong, nodding, $10-20 \mathrm{~cm}$ long. Panicle branches abruptly recurved near tip, scabrous, pilose. Spikelets in threes. Fertile spikelets pedicelled, 3 in the cluster. Pedicels present, filiform, subequal, $1-2 \mathrm{~mm}$ 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, laterally compressed, compressed slightly, $13-20 \mathrm{~mm}$ long, breaking up at maturity, disarticulating below each fertile floret. Floret callus evident, 1 mm long, pilose, hairy in 4 tufts, truncate or unequally 2-toothed.

Glumes. Glumes persistent, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, $8-13 \mathrm{~mm}$ long, $0.5-0.6$ length of upper glume, chartaceous, dark brown, without keels, 3 veined. Lower glume surface setose, hairy on veins (in a continuous encrustation), with tubercle-based hairs. Lower glume hairs dark brown. Lower glume apex acuminate. Upper glume lanceolate, 13-20 mm long, chartaceous, dark brown, without keels, 3 -veined. Upper glume surface hispidulous, hairy above. Upper glume apex acuminate.

Florets. Basal sterile florets 1, male, with palea, separately deciduous. Lemma of lower sterile floret similar to upper glume, lanceolate, $10-18 \mathrm{~mm}$ long, chartaceous, 3 -veined, acuminate. Fertile lemma elliptic, $4.5-7 \mathrm{~mm}$ long, coriaceous, without keel, 7 -veined, more than 3-veined. Lemma surface pubescent. Lemma margins involute, interlocking with palea keels. Lemma apex lobed, 2 -fid, with lanceolate lobes, incised 0.1 of lemma length, acuminate, awned, 1 -awned. Principal lemma awn from a sinus, geniculate, flat below, $40-70 \mathrm{~mm}$ long overall, with twisted column, deciduous, abscissing from top of lemma. Column of lemma awn 14-34 mm long, hispidulous. Palea 2 -veined. Palea keels approximate, thickened.

Flower and Fruit. Anthers 2, 4-6 mm long. Caryopsis with adherent pericarp, glabrous. Hilum linear.
Distribution (TDWG). Continent. Africa, South America.
Country /Province /State. West Tropical Africa, Northeast Tropical Africa. Guinea, Nigeria, Sierre Leone, Togo. Western South America, Brazil, Southern South America. Bolivia. Brazil West Central, Brazil Northeast, Brazil Southeast, Brazil South. Paraguay.

Distrito Federal, Mato Grosso, Goiás, Mato Grosso do Sul. Bahia. Minas Gerais, Sao Paulo. Paraná.

Loudetiopsis falcipes (C. E. Hubbard) Phipps. Kirkia, v. 249 (1966).
Accepted by: W.D.Clayton \& K.Harman, GrassBase (2008) and online, U.Quattrocchi, CRC World Dictionary of Grasses (2006).

TYPE from Liberia. Basionym or Replaced Name: Loudetia falcipes C.E. Hubb., Kew Bull. 12(1): 61-62 (1957)
. T:<Type of Basionym>: fide TROPICOS and Kew Synonomy Database: IT: J.T. Baldwin, Jr. 10058, 1 Nov 1947, Liberia: Western Province: Vonjama District (MO).

Illustrations: None found.
Derivation (Clifford \& Bostock 2007): L. falx, sickle; pes, foot. Beneath each triad of spikelets the subtending axis is recurved so the whole bears a fanciful resemblance to a baited hook.

Classification. Subfamily Panicoideae. Tribe: Tristachyideae.
Habit, Vegetative Morphology. Perennial, caespitose. Rhizomes elongated. Butt sheaths pubescent. Culms erect, $90-120 \mathrm{~cm}$ long, $1-2 \mathrm{~mm}$ diam. Ligule a fringe of hairs. Leaf-blades flat or involute, 15-27 cm long, $2-4.5 \mathrm{~mm}$ wide. Leaf-blade surface scaberulous. Leaf-blade apex attenuate.

Inflorescence. Inflorescence a panicle. Panicle open, ovate, effuse, $10-18 \mathrm{~cm}$ long. Panicle axis bearing deciduous spikelet clusters. Panicle branches capillary, abruptly recurved near tip, pubescent in
axils, with prominent pulvini. Spikelets in threes. Fertile spikelets pedicelled, 3 in the cluster. Pedicels present, fused to each other, united below, filiform, subequal, $1.5-5 \mathrm{~mm}$ 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, laterally compressed, compressed slightly, $4.5-6 \mathrm{~mm}$ long, falling entire, deciduous in a cluster with fused pedicels, readily shedding fertile florets, pedicel base hooked. Floret callus 0.2 mm long, pilose, truncate.

Glumes. Glumes similar, exceeding apex of florets, thinner than fertile lemma, gaping. Lower glume ovate, $3-4 \mathrm{~mm}$ long, 0.8 length of upper glume, chartaceous, dark brown, without keels, 3 -veined. Lower glume surface setose, hairy on veins (along margins), with tubercle-based hairs. Lower glume apex acuminate. Upper glume ovate, $4.5-6 \mathrm{~mm}$ long, 1 length of spikelet, chartaceous, dark brown, without keels, 5-7 -veined. Upper glume surface setose, hairy on veins (along margins), with tubercle-based hairs. Upper glume apex acuminate.

Florets. Basal sterile florets 1, male, with palea. Lemma of lower sterile floret similar to upper glume, oblong, 4.5-6 mm long, 1 length of spikelet, membranous, 7 -veined, acuminate. Palea of lower sterile floret pilose. Fertile lemma elliptic, $3.5-4 \mathrm{~mm}$ long, coriaceous, without keel, 7 -veined, more than 3veined. Lemma surface pilose. Lemma margins involute, interlocking with palea keels. Lemma apex lobed, 2 -fid, with lanceolate lobes, incised 0.33 of lemma length, awned, 1 -awned. Principal lemma awn from a sinus, geniculate, flat below, $4-5 \mathrm{~mm}$ long overall, with twisted column, limb scaberulous. Column of lemma awn $1-1.5 \mathrm{~mm}$ long. Palea 2 -veined. Palea surface pilose, hairy on back.

Flower and Fruit. Anthers 3, 2 mm long.
Distribution (TDWG). Continent. Africa.
Country /Province/State. West Tropical Africa. Liberia.
Loudetiopsis glabrata (K. Schum.) Conert. Engl. Bot. Jahrb. lxxvii. 287 (1957).
Accepted by: W.D.Clayton \& K.Harman, GrassBase (2008) and online, U.Quattrocchi, CRC World Dictionary of Grasses (2006).

TYPE from Cameroons. Basionym or Replaced Name: Trichopteryx glabrata K. Schum., Bot. Jahrb. Syst. 24: 336, 335 (1897)
. T:<Type of Basionym>: fide TROPICOS and Kew Synonomy Database: HT: Zenker 545, Cameroon: Jaunde-Station (B; IT: US-1064156 (ex Manila ex B)).

Illustrations: None found.
Derivation (Clifford \& Bostock 2007): L. glaber, smooth; -ata, possessing. Plant glabrous in whole or in part.

Classification. Subfamily Panicoideae. Tribe: Tristachyideae.
Habit, Vegetative Morphology. Perennial, caespitose. Butt sheaths pubescent or woolly. Culms 50100 cm long. Culm-internodes distally glabrous or pubescent. Ligule a fringe of hairs. Leaf-blades flat, 2040 cm long, $2-5 \mathrm{~mm}$ wide. Leaf-blade surface scaberulous, rough adaxially. Leaf-blade margins cartilaginous.

Inflorescence. Inflorescence a panicle. Panicle open or contracted, lanceolate, 20-40 cm long. Panicle branches straight or flexuous, scaberulous, glabrous. Spikelets in threes. Fertile spikelets pedicelled, 3 in the cluster. Pedicels present, unequal, $0.5-9 \mathrm{~mm}$ 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, laterally compressed, compressed slightly, $7-8 \mathrm{~mm}$ long, breaking up at maturity, disarticulating below each fertile floret. Floret callus evident, $0.5-0.8 \mathrm{~mm}$ long, bearded, truncate.

Glumes. Glumes persistent, reaching apex of florets, thinner than fertile lemma. Lower glume oblong, 5 mm long, $0.5-0.66$ length of spikelet, chartaceous, dark brown, without keels, 3 -veined. Lower glume surface glabrous. Lower glume apex acute, mucronate. Upper glume lanceolate, $7-8 \mathrm{~mm}$ long, 1 length of spikelet, chartaceous, dark brown, without keels, 3 -veined. Upper glume surface glabrous. Upper glume apex acuminate.

Florets. Basal sterile florets 1, male, with palea, separately deciduous. Lemma of lower sterile floret similar to upper glume, lanceolate, $7-8 \mathrm{~mm}$ long, chartaceous, $3-5$-veined, acuminate. Fertile lemma elliptic, 4 mm long, coriaceous, without keel, 7 -veined, more than 3-veined. Lemma surface pubescent.

Lemma margins involute, interlocking with palea keels. Lemma apex lobed, 2 -fid, with lanceolate lobes, incised 0.2 of lemma length, awned, 1 -awned. Principal lemma awn from a sinus, geniculate, flat below, $10-16 \mathrm{~mm}$ long overall, with twisted column, deciduous, abscissing from top of lemma. Column of lemma awn 4-6 mm long. Palea 2 -veined. Palea keels approximate, thickened.

Flower and Fruit. Anthers 2, 2 mm long. Caryopsis with adherent pericarp.
Distribution (TDWG). Continent. Africa.
Country /Province/State. West Tropical Africa, West-Central Tropical Africa. Ghana, Nigeria. Cameroon.

Loudetiopsis kerstingii (Pilger) Conert. Engl. Bot. Jahrb. lxxvii. 289 (1957).
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: Trichopteryx kerstingii Pilg., Bot. Jahrb. Syst. 34(1): 128 (1934)
. T:<Type of Basionym>: fide TROPICOS and Kew Synonomy Database: HT: Kersting 621, Togo (B).
Recent Synonyms: Diandrostachya kerstingii (Pilger) Jacques-Felix, Journ. Agric. Trop. \& Bot. Appliq. 7: 408 (1960).

Illustrations (Books): H.Jacques-Felix, Les Graminees d'Afrique tropicale (1962) (as Diandrostachya kerstingi).

Derivation (Clifford \& Bostock 2007): in honor of Otto Kersting (1863-?) German botanist.
Classification. Subfamily Panicoideae. Tribe: Tristachyideae.
Habit, Vegetative Morphology. Annual, caespitose. Culms geniculately ascending or decumbent, 45100 cm long. Culm-nodes bearded. Ligule a fringe of hairs. Leaf-blades aciculate or linear, flat or involute, $10-20 \mathrm{~cm}$ long, $1.5-2.5 \mathrm{~mm}$ wide.

Inflorescence. Inflorescence a panicle. Panicle open or contracted, oblong, 5-12 cm long. Panicle branches hispid, with tubercle-based hairs. Spikelets in threes. Fertile spikelets pedicelled, 3 in the cluster. Pedicels present, subequal, $2-3 \mathrm{~mm}$ long, setose.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets lanceolate, laterally compressed, compressed slightly, $14-17 \mathrm{~mm}$ long, breaking up at maturity, disarticulating below each fertile floret. Floret callus evident, 1.3 mm long, bearded, 2-toothed.

Glumes. Glumes persistent, reaching apex of florets, thinner than fertile lemma. Lower glume lanceolate, $9-10 \mathrm{~mm}$ long, $0.5-0.66$ length of spikelet, chartaceous, dark brown, without keels, 3 -veined. Lower glume surface glabrous or setose, hairy on veins, with tubercle-based hairs. Lower glume hairs yellow. Lower glume apex obtuse. Upper glume oblong, 14-17 mm long, 1 length of spikelet, chartaceous, dark brown, without keels, 3 -veined. Upper glume surface setose, hairy on veins, with tubercle-based hairs. Upper glume apex truncate.

Florets. Basal sterile florets 1, male, with palea, separately deciduous. Lemma of lower sterile floret similar to upper glume, lanceolate, $9-11 \mathrm{~mm}$ long, chartaceous, 3 -veined, truncate or obtuse. Palea of lower sterile floret winged on keels, pilose. Fertile lemma elliptic, 5-6 mm long, coriaceous, without keel, 7 -veined, more than 3-veined. Lemma surface pubescent. Lemma margins involute, interlocking with palea keels. Lemma apex lobed, 2 -fid, with lanceolate lobes, incised 0.1 of lemma length, awned, 1 -awned. Principal lemma awn from a sinus, geniculate, flat below, $70-120 \mathrm{~mm}$ long overall, with twisted column, deciduous, abscissing from top of lemma. Column of lemma awn 30-40 mm long, pubescent. Palea 2 veined. Palea keels approximate, thickened.

Flower and Fruit. Anthers 2, 2 mm long. Caryopsis with adherent pericarp.
Distribution (TDWG). Continent. Africa.
Country /Province/State. West Tropical Africa, West-Central Tropical Africa. Burkina, Ivory Coast, Mali, Nigeria.

Loudetiopsis scaettae (A. Camus) W. D. Clayton. Kew Bull. xxi. 123 (1967).
Accepted by: W.D.Clayton \& K.Harman, GrassBase (2008) and online, U.Quattrocchi, CRC World Dictionary of Grasses (2006).

TYPE from Mali. Basionym or Replaced Name: Tristachya scaettae A. Camus, Bull. Soc. Bot. France 85: 556 (1939)
. T:<Type of Basionym>: fide TROPICOS and Kew Synonomy Database: HT: Scaetta 556, Mali: Sindou (P).

Recent Synonyms: Diandrostachya scaettae (A. Camus) Phipps, Bol. Soc. Brot., Ser. 2, xli. 202 (1967).

Illustrations: None found.
Derivation (Clifford \& Bostock 2007): in honor of Helios Francesco Antonio Scaetta (1894-1941).
Classification. Subfamily Panicoideae. Tribe: Tristachyideae.
Habit, Vegetative Morphology. Perennial, caespitose. Culms 100-200 cm long. Ligule a fringe of hairs. Leaf-blades convolute, $25-40 \mathrm{~cm}$ long, $2-3 \mathrm{~mm}$ wide.

Inflorescence. Inflorescence a panicle, bearing juvenile spikelets at emergence. Panicle open, lanceolate, $8-25 \mathrm{~cm}$ long. Panicle branches straight or flexuous. Spikelets in threes. Fertile spikelets pedicelled, 3 in the cluster. Pedicels present, subequal, $1-2 \mathrm{~mm}$ 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, laterally compressed, compressed slightly, $9-13 \mathrm{~mm}$ long, breaking up at maturity, disarticulating below each fertile floret. Floret callus evident, 0.7 mm long, pubescent, 2-toothed.

Glumes. Glumes persistent, reaching apex of florets, thinner than fertile lemma. Lower glume lanceolate, $5-8 \mathrm{~mm}$ long, $0.5-0.66$ length of spikelet, chartaceous, dark brown, without keels, 3 -veined. Lower glume surface glabrous or hispid, hairy on veins (sparsely), with tubercle-based hairs. Lower glume apex obtuse. Upper glume lanceolate, $9-13 \mathrm{~mm}$ long, 1 length of spikelet, chartaceous, dark brown, without keels, 3 -veined. Upper glume surface glabrous. Upper glume apex obtuse.

Florets. Basal sterile florets 1, male, with palea, separately deciduous. Lemma of lower sterile floret similar to upper glume, lanceolate, $9-13 \mathrm{~mm}$ long, chartaceous, 3 -veined, acute. Palea of lower sterile floret pilose. Fertile lemma elliptic, 5-7 mm long, coriaceous, without keel, 7 -veined, more than 3-veined. Lemma surface pubescent. Lemma margins involute, interlocking with palea keels. Lemma apex lobed, 2 fid, with lanceolate lobes, incised 0.15 of lemma length, awned, 1 -awned. Principal lemma awn from a sinus, geniculate, flat below, $4-7 \mathrm{~mm}$ long overall, with twisted column, deciduous, abscissing from top of lemma. Palea 2 -veined. Palea keels approximate, thickened.

Flower and Fruit. Anthers 2. Caryopsis with adherent pericarp.
Distribution (TDWG). Continent. Africa.
Country /Province /State. West Tropical Africa. Benin, Burkina, Ghana, Guinea, Ivory Coast, Nigeria, Sierre Leone, Togo.

Loudetiopsis thoroldii (C. E. Hubbard) Phipps. Kirkia, v. 249 (1966).
Accepted by: W.D.Clayton \& K.Harman, GrassBase (2008) and online, U.Quattrocchi, CRC World Dictionary of Grasses (2006).

TYPE from Ghana. Basionym or Replaced Name: Loudetia thoroldii C.E. Hubb., Kew Bull. 1957: 62 (1957)
. T:<Type of Basionym>: fide TROPICOS and Kew Synonomy Database: Ghana, Damonge: Thorold 285 (K holo).

Illustrations: None found.
Derivation (Clifford \& Bostock 2007): in honor of William Grant Thorold (fl. 1890) British surgeonnaturalist who collected in Tibet, China and Ghana.

Classification. Subfamily Panicoideae. Tribe: Tristachyideae.
Habit, Vegetative Morphology. Perennial, caespitose, clumped densely. Butt sheaths glabrous. Culms erect, $170-240 \mathrm{~cm}$ long, $4-6 \mathrm{~mm}$ diam. Culm-internodes distally glabrous or hirsute. Ligule a fringe of hairs. Leaf-blades convolute, $40-80 \mathrm{~cm}$ long, $2-5 \mathrm{~mm}$ wide, stiff.

Inflorescence. Inflorescence a panicle. Peduncle antrorsely scabrous above. Panicle open, oblong or ovate, effuse, $50-70 \mathrm{~cm}$ long, $6-25 \mathrm{~cm}$ wide. Primary panicle branches spreading, whorled at most nodes. Panicle branches straight or flexuous, scaberulous, glabrous. Spikelets in threes. Fertile spikelets pedicelled, 3 in the cluster. Pedicels present, subequal, 2-2.5 mm long, glabrous or setose.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets lanceolate, laterally compressed, compressed slightly, $5-7.5 \mathrm{~mm}$ long, breaking up at maturity, disarticulating below each fertile floret. Floret callus evident, 0.3 mm long, bearded, truncate.

Glumes. Glumes persistent, reaching apex of florets, thinner than fertile lemma. Lower glume elliptic or ovate, $3-4 \mathrm{~mm}$ long, $0.5-0.66$ length of spikelet, chartaceous, dark brown, without keels, 3 -veined. Lower glume surface setose, hairy on veins, with tubercle-based hairs. Lower glume apex truncate or obtuse. Upper glume lanceolate or oblong, $5-7.5 \mathrm{~mm}$ long, 1 length of spikelet, chartaceous, dark brown, without keels, 3 -veined. Upper glume surface glabrous. Upper glume apex truncate.

Florets. Basal sterile florets 1, male, with palea, separately deciduous. Lemma of lower sterile floret similar to upper glume, lanceolate, 5-7.5 mm long, chartaceous, 3 -veined, obtuse or acute. Palea of lower sterile floret pilose. Fertile lemma oblong, $4.5-5.5 \mathrm{~mm}$ long, coriaceous, without keel, 7 -veined, more than 3 -veined. Lemma surface pubescent. Lemma margins involute, interlocking with palea keels. Lemma apex lobed, 2 -fid, with lanceolate lobes, incised 0.15 of lemma length, awned, 1 -awned. Principal lemma awn from a sinus, geniculate, flat below, $14-26 \mathrm{~mm}$ long overall, with twisted column, deciduous, abscissing from top of lemma. Column of lemma awn $7-8 \mathrm{~mm}$ long. Palea 2 -veined. Palea keels approximate, thickened.

Flower and Fruit. Anthers 2, 2-2.5 mm long. Caryopsis with adherent pericarp.
Distribution (TDWG). Continent. Africa.
Country /Province /State. West Tropical Africa. Burkina, Ghana.

## Loudetiopsis trigemina (C. E. Hubbard) Conert. Engl. Bot. Jahrb. 1xxvii. 283 (1957).

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: Loudetia trigemina C.E.Hubb., Kew Bull. 1934, 432 (1934). T:<Type of Basionym>: fide TROPICOS and Kew Synonomy Database: Nigeria, Wana: Hepburn (K holo).

Illustrations: None found.
Derivation (Clifford \& Bostock 2007): L. tria, three; gemina, twin. Spikelets with two florets and arranged in groups of three.

Classification. Subfamily Panicoideae. Tribe: Tristachyideae.
Habit, Vegetative Morphology. Perennial, caespitose. Rootstock evident. Butt sheaths pubescent or villous. Culms geniculately ascending or decumbent, $30-60 \mathrm{~cm}$ long. Culm-internodes distally glabrous. Ligule a fringe of hairs. Leaf-blades flat or convolute, $15-30 \mathrm{~cm}$ long, $1.5-3 \mathrm{~mm}$ wide. Leaf-blade surface glabrous or pilose.

Inflorescence. Inflorescence a panicle. Panicle open, oblong, $5-10 \mathrm{~cm}$ long. Panicle branches capillary, straight or flexuous, scaberulous, glabrous. Spikelets in threes. Fertile spikelets pedicelled, 3 in the cluster. Pedicels present, unequal, $1-1.5 \mathrm{~mm}$ long, setose.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets lanceolate, laterally compressed, compressed slightly, 6-7 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus evident, 0.4 mm long, bearded, truncate.

Glumes. Glumes persistent, reaching apex of florets, thinner than fertile lemma. Lower glume lanceolate, $5.5-7 \mathrm{~mm}$ long, $0.75-1$ length of spikelet, chartaceous, dark brown, without keels, 3 -veined. Lower glume surface glabrous or setose, hairy on veins, with tubercle-based hairs. Lower glume hairs white. Lower glume apex truncate. Upper glume lanceolate, 6-7 mm long, 1 length of spikelet, chartaceous, dark brown, without keels, 3-5 -veined. Upper glume surface glabrous or setose, hairy below, with tubercle-based hairs. Upper glume apex truncate.

Florets. Basal sterile florets 1, male, with palea, separately deciduous. Lemma of lower sterile floret similar to upper glume, lanceolate, 5 mm long, chartaceous, 5-9 -veined, obtuse. Palea of lower sterile floret pilose. Fertile lemma lanceolate, 3.5 mm long, coriaceous, without keel, 5-7 -veined, more than 3veined. Lemma surface pubescent. Lemma margins involute, interlocking with palea keels. Lemma apex lobed, 2 -fid, with lanceolate lobes, incised 0.2 of lemma length, awned, 1 -awned. Principal lemma awn
from a sinus, geniculate, flat below, $15-18 \mathrm{~mm}$ long overall, with twisted column, deciduous, abscissing from top of lemma. Column of lemma awn $5-6 \mathrm{~mm}$ long. Palea 2 -veined. Palea keels approximate, thickened.

Flower and Fruit. Anthers 3. Caryopsis with adherent pericarp.
Distribution (TDWG). Continent. Africa.
Country /Province/State. West Tropical Africa, West-Central Tropical Africa. Nigeria. Cameroon.

Louisiella fluitans C. E. Hubbard \& J. Leonard. Bull. Jard. Bot. Brux. xxii. 317 (1952).
Accepted by: W.D.Clayton \& K.Harman, GrassBase (2008) and online, U.Quattrocchi, CRC World Dictionary of Grasses (2006).

TYPE from Zaire. T:<Type of Basionym>: fide TROPICOS and Kew Synonomy Database: HT: Leonard 1798, Zaire (BR; IT: K).

Illustrations (Books): H.Jacques-Felix, Les Graminees d'Afrique tropicale (1962) (250, Fig. 179).
Derivation (Clifford \& Bostock 2007): L. fluito, float. Leaves or rhizomes floating.
Classification. Subfamily Panicoideae. Tribe: Paniceae. Subtribe Melinidinae.
Habit, Vegetative Morphology. Perennial. Culms prostrate, $10-30 \mathrm{~cm}$ long, $5-7 \mathrm{~mm}$ diam., spongy, rooting from lower nodes. Culm-nodes bearded. Leaf-sheaths reticulately veined. Ligule a ciliolate membrane. Leaf-blades $10-20 \mathrm{~cm}$ long, $7-10 \mathrm{~mm}$ wide.

Inflorescence. Inflorescence composed of racemes, embraced at base by subtending leaf. Racemes 520, borne along a central axis, unilateral, $3-5 \mathrm{~cm}$ long. Central inflorescence axis $2-5 \mathrm{~cm}$ long. Rhachis angular. Spikelets appressed, in pairs or in threes. Fertile spikelets pedicelled, 2-3 in the cluster. Pedicels present, filiform, angular, $1-1.5 \mathrm{~mm}$ 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, 7-8.5 mm long, falling entire.

Glumes. Glumes dissimilar, reaching apex of florets, thinner than fertile lemma. Lower glume oblate, 1 mm long, $0.1-0.2$ length of spikelet, hyaline, without keels, $0-2$-veined. Lower glume lateral veins absent to obscure. Lower glume apex obtuse. Upper glume lanceolate, membranous, without keels, 7-9 veined. Upper glume surface scabrous, rough on veins. Upper glume apex acuminate.

Florets. Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret similar to upper glume, lanceolate, 1 length of spikelet, membranous, 7-9 -veined, scabrous, rough on veins, acuminate. Fertile lemma ovate, $4-5 \mathrm{~mm}$ long, coriaceous, much thinner on margins, without keel, 7 veined, more than 3-veined. Lemma margins involute. Lemma apex acute, pubescent. Palea coriaceous.

Flower and Fruit. Caryopsis with adherent pericarp, oblong, dorsally compressed, plano-convex. Embryo 0.3 length of caryopsis. Hilum linear, 1 length of caryopsis.

Distribution (TDWG). Continent. Africa.
Country /Province /State. West-Central Tropical Africa, Northeast Tropical Africa. DRC.

Loxodera bovonei (Chiov.) Launert. Senck. Biol. xlvi. 122 (1965).
Accepted by: W.D.Clayton \& K.Harman, GrassBase (2008) and online, U.Quattrocchi, CRC World Dictionary of Grasses (2006).

TYPE from Zaire. Basionym or Replaced Name: Rottboellia bovonei Chiov., Ann. Bot. (Rome) 13: 36 (1914)
. T:<Type of Basionym>: fide TROPICOS and Kew Synonomy Database: Zaire, Bianos: Bovone 92.
Illustrations: None found.
Derivation (Clifford \& Bostock 2007): in honor of Ettore Bovone (1880-1922) Italian veterinarian and plant collector in Zaire.

Classification. Subfamily Panicoideae. Tribe: Sacchareae. Subtribe Rottboelliinae.
Habit, Vegetative Morphology. Perennial, caespitose. Rhizomes short. Butt sheaths persistent and investing base of culm. Culms erect, $50-100 \mathrm{~cm}$ long, 2-3 -noded. Lateral branches lacking. Leaf-sheaths glabrous on surface or pilose. Ligule an eciliate membrane, $0.8-1 \mathrm{~mm}$ long. Leaf-blades erect, $3.5-21 \mathrm{~cm}$ long, $2.5-5 \mathrm{~mm}$ wide, mid-green or glaucous. Leaf-blade surface pilose, sparsely hairy, hairy abaxially. Leaf-blade apex acuminate.

Inflorescence. Inflorescence composed of racemes. Racemes 1, single, 6-8 cm long, 2.5 mm wide. Rhachis fragile at the nodes, semiterete, pilose on surface, ciliate on margins. Rhachis internodes columnar or cuneate, $5-8 \mathrm{~mm}$ long. Rhachis internode tip crateriform, with scarious rim. Spikelets in pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, oblong, angular, $4-7 \mathrm{~mm}$ long, pubescent.

Sterile Spikelets. Companion sterile spikelets rudimentary, comprising 2 subequal glumes without lemmas, 1 mm long, persistent. Companion sterile spikelet glumes coriaceous, pubescent, 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 or ovate, dorsally compressed, 7-8 mm long, falling entire, deciduous with accessory branch structures. Spikelet callus cuneate, bearded, base obtuse, inserted.

Glumes. Glumes dissimilar, reaching apex of florets, firmer than fertile lemma. Lower glume oblong or ovate, 1 length of spikelet, coriaceous, without keels, 7-9 -veined. Lower glume lateral veins ribbed. Lower glume surface pilose. Lower glume apex acute. Upper glume elliptic, chartaceous, 3 -veined. Upper glume surface pilose. Upper glume apex acute.

Florets. Basal sterile florets 1, male, with palea. Lemma of lower sterile floret ovate, 6.8 mm long, membranous, 3 -veined, ciliolate on margins, obtuse. Fertile lemma ovate, 6.5 mm long, hyaline, 3 -veined, $0-3$-veined. Lemma apex obtuse. Palea hyaline.

Flower and Fruit. Anthers 3.
Distribution (TDWG). Continent. Africa.
Country /Province/State. West-Central Tropical Africa, South Tropical Africa. DRC. Zambia.

## Loxodera caespitosa (C.E. Hubbard) B.K. Simon. Kirkia 8:8 (1971).

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: Phacelurus caespitosus C.E. Hubb., Bull. Misc. Inform. Kew 1928(1): 35-36 (1928)
. T:<Type of Basionym>: fide TROPICOS and Kew Synonomy Database: HT: Eyles 1940, Nov 1919, Zimbabwe: Salisbury (K).

Illustrations (Books): R.M.Polhill, F.T.E.A., Gramineae (3(1982):839, Fig 196), G.V.Pope et al., Flora Zambesiaca 10.

Derivation (Clifford \& Bostock 2007): L. caespes, grass that has been cut; -osa, abundance. Habit tufted.

Classification. Subfamily Panicoideae. Tribe: Sacchareae. Subtribe Rottboelliinae.
Habit, Vegetative Morphology. Perennial, caespitose. Culms erect, $40-100 \mathrm{~cm}$ long. Ligule an eciliate membrane. Leaf-blades $5-30 \mathrm{~cm}$ long, $2-5 \mathrm{~mm}$ wide.

Inflorescence. Inflorescence composed of racemes. Racemes 1, single, 7-10 cm long. Rhachis fragile at the nodes, semiterete, pubescent on surface. Rhachis internodes oblong. Rhachis internode tip crateriform, with scarious rim. Spikelets 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, containing empty lemmas, elliptic, shorter than fertile, persistent. Companion sterile spikelet glumes coriaceous, muticous. Companion sterile spikelet lemmas 2 , enclosed by glumes.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets elliptic, dorsally compressed, 6-8 mm long, falling entire, deciduous with accessory branch structures. Spikelet callus square, bearded, base truncate, inserted.

Glumes. Glumes dissimilar, reaching apex of florets, firmer than fertile lemma. Lower glume elliptic, 1 length of spikelet, coriaceous, without keels, keel-less except near apex, 7 -veined. Lower glume lateral veins ribbed. Lower glume apex acute. Upper glume elliptic, chartaceous. Upper glume apex acute.

Florets. Basal sterile florets 1, male, with palea. Lemma of lower sterile floret oblong, hyaline. Fertile lemma oblong, hyaline. Palea hyaline.

Distribution (TDWG). Continent. Africa.

Country /Province /State. East Tropical Africa, South Tropical Africa. Tanzania. Zambia, Zimbabwe.

## Loxodera ledermannii (Pilger) Launert. Senck. Biol. xlvi. 121 (1965).

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

TYPE from Cameroons. Basionym or Replaced Name: Elionurus ledermannii Pilg., Bot. Jahrb. Syst. 45: 207 (1910)
. T:<Type of Basionym>: fide TROPICOS and Kew Synonomy Database: HT: Ledermann 3605, May 1909, Cameroon (B (destroyed); IT: K (fragm.)).

Illustrations: None found.
Derivation (Clifford \& Bostock 2007): in honor of Carl Ludwig Ledermann (1875-1958) Swiss-born West African plant collector.

Classification. Subfamily Panicoideae. Tribe: Sacchareae. Subtribe Rottboelliinae.
Habit, Vegetative Morphology. Perennial, caespitose. Culms erect, 30-150 cm long. Ligule an eciliate membrane. Leaf-blades $5-20 \mathrm{~cm}$ long, $2-5 \mathrm{~mm}$ wide.

Inflorescence. Inflorescence composed of racemes. Racemes 1, single, erect, 6-15 cm long. Rhachis fragile at the nodes, semiterete, pubescent on surface. Rhachis internodes oblong or clavate. Rhachis internode tip crateriform, with scarious rim. Spikelets 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, containing empty lemmas, elliptic, 5-7 mm long, as long as fertile, persistent. Companion sterile spikelet glumes coriaceous, muticous. Companion sterile spikelet lemmas 2 , enclosed by glumes.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets elliptic, dorsally compressed, 5-7 mm long, falling entire, deciduous with accessory branch structures. Spikelet callus square, bearded, base truncate, inserted.

Glumes. Glumes dissimilar, reaching apex of florets, firmer than fertile lemma. Lower glume elliptic, 1 length of spikelet, coriaceous, grey, without keels, keel-less except near apex, 7 -veined. Lower glume lateral veins ribbed. Lower glume surface muricate, rough on flanks, glabrous. Lower glume apex acute. Upper glume elliptic, chartaceous. Upper glume apex acute.

Florets. Basal sterile florets 1, male, with palea. Lemma of lower sterile floret oblong, hyaline. Fertile lemma oblong, hyaline. Palea hyaline.

Distribution (TDWG). Continent. Africa.
Country /Province /State. West Tropical Africa, West-Central Tropical Africa, East Tropical Africa. Nigeria, Niger. Cameroon. Uganda.

## Loxodera rhytachnoides (Launert) W.D. Clayton. Kew Bull., 32(3): 580 (1978).

Accepted by: W.D.Clayton \& K.Harman, GrassBase (2008) and online.
TYPE from Angola. Basionym or Replaced Name: Lepargochloa rhytachnoides Launert, Bol. Soc. Brot., ser. 2, 37: 83 (1963)
. T:<Type of Basionym>: fide TROPICOS and Kew Synonomy Database: HT: Carrisso \& Mendonca 363, Angola: Tengo do Rio Paxi (COI).

Illustrations: None found.
Derivation (Clifford \& Bostock 2007): Gk. -oides, resembling. Similar to Rhytachne..
Classification. Subfamily Panicoideae. Tribe: Sacchareae. Subtribe Rottboelliinae.
Habit, Vegetative Morphology. Perennial, caespitose. Butt sheaths pubescent. Culms erect, 50-90 cm long, 2-3 -noded. Culm-internodes scaberulous, distally glabrous or pilose. Culm-nodes bearded. Lateral branches lacking. Leaf-sheaths pubescent. Ligule an eciliate membrane, 2 mm long. Leaf-blades flat or involute, $5-40 \mathrm{~cm}$ long, 3-6 mm wide. Leaf-blade surface pubescent, hairy on both sides. Leaf-blade apex acuminate.

Inflorescence. Inflorescence composed of racemes. Peduncle widened at apex. Racemes 1, single, 6.59 cm long. Rhachis tardily fragile at the nodes, semiterete, pubescent on surface, ciliate on margins. Rhachis internodes cuneate, $7-10 \mathrm{~mm}$ long. Rhachis internode tip crateriform, with simple rim. Spikelets in
pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, oblong, angular, $5-7 \mathrm{~mm}$ long, pubescent.

Sterile Spikelets. Companion sterile spikelets well-developed, male, lanceolate, $6.5-8 \mathrm{~mm}$ long, as long as fertile, persistent. Companion sterile spikelet glumes coriaceous, smooth or muricate, glabrous or pilose, 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 ovate, dorsally compressed, 7-9 mm long, falling entire, deciduous with accessory branch structures. Spikelet callus cuneate, bearded, base obtuse, inserted.

Glumes. Glumes dissimilar, reaching apex of florets, firmer than fertile lemma. Lower glume ovate, 1 length of spikelet, coriaceous, without keels, 7 -veined. Lower glume lateral veins ribbed. Lower glume surface muricate, glabrous. Lower glume margins ciliate or setose. Lower glume apex acute. Upper glume elliptic, chartaceous, 3 -veined. Upper glume primary vein ciliolate (above). Upper glume margins ciliolate. Upper glume apex acute.

Florets. Basal sterile florets 1, male, with palea. Lemma of lower sterile floret elliptic, 6.5 mm long, membranous, 3 -veined, ciliolate on margins, obtuse. Fertile lemma elliptic, 6.5 mm long, hyaline, 3 veined, $0-3$-veined. Lemma margins ciliolate. Lemma apex obtuse. Palea hyaline.

Flower and Fruit. Anthers 3, 4 mm long.
Distribution (TDWG). Continent. Africa.
Country /Province /State. South Tropical Africa. Angola.
Loxodera strigosa (Gledhill) W. D. Clayton. Kew Bull. xxiii. 295 (1969).
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: Urelytrum strigosum Gledhill, Bol. Soc. Brot., ser. 2, 41:58, t. 1 (1967)

T:<Type of Basionym>: fide TROPICOS and Kew Synonomy Database: Sierra Leone: from Loma Mountains, on an accumulation of organic earth amongst boulders in savanna slopes at about 4800 ft , below camp 2, D. Gledhill DG 369 (HT: SL; IT: FHI, GC, IFAN, K, PCU, WAG).

Illustrations: None found.
Derivation (Clifford \& Bostock 2007): L. covered with short, bristle-like hairs. One or more organs covered with bristle-like hairs.

Classification. Subfamily Panicoideae. Tribe: Sacchareae. Subtribe Rottboelliinae.
Habit, Vegetative Morphology. Perennial, caespitose. Butt sheaths persistent and investing base of culm, with fibrous dead sheaths. Culms erect, $50-100 \mathrm{~cm}$ long. Ligule an eciliate membrane. Leaf-blades $20-40 \mathrm{~cm}$ long, $3-5 \mathrm{~mm}$ wide. Leaf-blade apex acuminate.

Inflorescence. Inflorescence composed of racemes. Racemes 1, single, $6-8 \mathrm{~cm}$ long. Rhachis fragile at the nodes, semiterete, pilose on surface, ciliate on margins. Rhachis internodes columnar, $8-10 \mathrm{~mm}$ long. Rhachis internode tip crateriform, with scarious rim. Spikelets in pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, oblong, flattened, 5 mm long, pubescent.

Sterile Spikelets. Companion sterile spikelets well-developed, male, elliptic, $7-8 \mathrm{~mm}$ long, as long as fertile, persistent. Companion sterile spikelet glumes coriaceous, 5-7 -veined, ciliate on margins, acute, awned, one glume awned, with $7-15 \mathrm{~mm}$ 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 ovate, dorsally compressed, 8 mm long, falling entire, deciduous with accessory branch structures. Spikelet callus cuneate, 1 mm long, bearded, base obtuse, inserted. Spikelet callus hairs 3 mm long.

Glumes. Glumes dissimilar, reaching apex of florets, firmer than fertile lemma. Lower glume elliptic, 1 length of spikelet, chartaceous, purple, without keels, keel-less except near apex, 5 -veined. Lower glume lateral veins ribbed. Lower glume apex acute, muticous or mucronate. Upper glume elliptic, chartaceous, 3 -veined. Upper glume apex acute.

Florets. Basal sterile florets 1, male, with palea. Lemma of lower sterile floret obovate, 7 mm long, membranous, 3 -veined, ciliate on margins, obtuse. Palea of lower sterile floret 0.9 length of lemma. Fertile lemma lanceolate, 8 mm long, hyaline, 2 -veined, $0-3$-veined. Lemma apex pubescent. Palea hyaline.

Distribution (TDWG). Continent. Africa.
Country /Province/State. West Tropical Africa. Sierre Leone.

Luziola bahiensis (Steud.) Hitchcock. Contrib. U. S. Nat. Herb. xii. 234 (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. Basionym or Replaced Name: Caryochloa bahiensis Steud., Syn. Pl. Glumac. 1: 5 (1855 [1853])
. T:<Type of Basionym>: fide TROPICOS and Kew Synonomy Database: HT: P. Salzmann s.n., no date, Brazil: Bahia: in palustris (P; IT: MO-2765535, US-80336 (fragm. ex P)).

Illustrations (Books): F.O.Zuloaga, Z.E.Rugolo \& A.M. Anton, Flora Argentina 3 - 1, Aristidoideae a Pharoideae (2012) (242), A.S.Hitchcock, Manual of the Grasses of the West Indies (1936) (151, Fig. 96), S.A.Renvoize, Gramineas de Bolivia (1998) (69, Fig 13), S.A.Renvoize, The Grasses of Bahia, 1984 (45, Fig.15), L.B. Smith, D.C. Wasshausen, R.M. Klein Flora Illustrada Catarinensis Gramineas (1981-1982) (593, 129).

Illustrations (Journals): Ruizia (13:62, Fig.7g-h (1993)).
Derivation (Clifford \& Bostock 2007): L. -ense, denoting origin. From Bahia Province, Brazil.
Classification. Subfamily Ehrhartoideae. Tribe: Zizaniinae.
Habit, Vegetative Morphology. Perennial. Stolons present. Culms slender, 6-12(-30) cm long. Leaves basal and cauline. Ligule an eciliate membrane. Leaf-blades linear or lanceolate, $5-30 \mathrm{~cm}$ long, 2-5 mm wide. Leaf-blade surface glabrous. Leaf-blade apex acute. Monoecious, with male and female spikelets in different inflorescences.

Inflorescence. Inflorescence a panicle, terminal, shorter than basal leaves. Panicle open, oblong or ovate, $4-9 \mathrm{~cm}$ long. Primary panicle branches appressed or ascending or spreading, sparsely divided. 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 ovate, subterete, acuminate, $3-4.5 \mathrm{~mm}$ long, falling entire.

Glumes. Glumes both absent or obscure.
Florets. Fertile florets female. Fertile lemma elliptic, 3-4.5 mm long, membranous, without keel, 9-11 -veined, more than 3-veined. Lemma lateral veins ribbed. Lemma surface smooth. Lemma apex acute. Palea lanceolate, 1 length of lemma, 9-11-veined, without keels. Palea apex acute.

Flower and Fruit. Lodicules absent. Anthers 6. Caryopsis with free brittle pericarp, ovoid, concealed by floret, 1.2 mm long, striate.

Male inflorescence terminal, unlike female, a panicle. Male spikelets distinct from female, 1 flowered, separately deciduous, elliptic or oblong, $5.5-7 \mathrm{~mm}$ long. Male spikelet glumes absent. Male spikelet lemma 7-9 -veined.
$2 n=24$ (FNA).
Distribution (TDWG). Continent. North America, South America.
Country /Province /State. Southeastern USA. Alabama. Mesoamerica, Caribbean, Northern South America, Western South America, Brazil, Southern South America. El Salvador, Honduras, Nicaragua. Cuba, Dominican Republic, Haiti, Jamaica, Puerto Rico. French Guiana, Guyana, Surinam, Venezuela. Bolivia, Colombia, Peru. Brazil West Central, Brazil Northeast, Brazil Southeast, Brazil North, Brazil South. Argentina Northeast, Paraguay.

Roraima, Mato Grosso, Goias, Bahia, Minas Gerais, Rio de Janeiro, Espirito Santo, Sao Paulo Parana, Catarina, Rio Grande do Sul. Mato Grosso do Sul. Alagoas, Bahia, Ceará, Fernando do Noronha, Maranhão, Pernambuco, Paraíba, Piaui, Rio Grande do Norte (RN), Sergipe. Roraima. Sao Paulo. Santa Catarina. Corrientes, Entre Rios, Misiones.

Luziola brasiliana Moric. Pl. Nouv. Am. 94 (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 Brazil. T:<Type of Basionym>: fide TROPICOS and Kew Synonomy Database: IT: J.S. Blanchet 2749, Brazil (K).

Recent Synonyms: Luziola doelliana Prodoehl, Bot. Archiv, i. 240 (1922).
Illustrations (Books): S.A.Renvoize, The Grasses of Bahia, 1984 (45, Fig.15), J.A.Steyermark et al, Flora of the Venezuelan Guayana Vol. 8 (2004) (150, Fig. 106 as Luziola doelliama).

Derivation (Clifford \& Bostock 2007): L. -ana, indicating location. From Brazil.
Classification. Subfamily Ehrhartoideae. Tribe: Zizaniinae.
Habit, Vegetative Morphology. Perennial. Culms erect, 17-60 cm long. Leaves basal and cauline. Ligule an eciliate membrane. Leaf-blades $5-30 \mathrm{~cm}$ long, $2-7 \mathrm{~mm}$ wide. Leaf-blade surface scaberulous, glabrous. Leaf-blade apex acute. Monoecious, with male and female spikelets in different inflorescences.

Inflorescence. Inflorescence a panicle, axillary. Panicle open, ovate, 6-17 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 orbicular, subterete, $1.5-2 \mathrm{~mm}$ long, falling entire.

Glumes. Glumes both absent or obscure.
Florets. Fertile florets female. Fertile lemma orbicular, $1.5-2 \mathrm{~mm}$ long, membranous, mid-green, without keel, 11 -veined, more than 3-veined. Lemma lateral veins ribbed. Lemma surface smooth. Lemma apex acute. Palea lanceolate, 1 length of lemma, 11 -veined, without keels. Palea apex acute.

Flower and Fruit. Lodicules absent. Anthers 12. Caryopsis with free brittle pericarp, ovoid, exposed between gaping lemma and palea at maturity, $1.5-2 \mathrm{~mm}$ long, striate.

Male inflorescence terminal, unlike female, a panicle. Male spikelets distinct from female, 1 flowered, separately deciduous, elliptic or oblong, $4.5-5.5 \mathrm{~mm}$ long. Male spikelet glumes absent. Male spikelet lemma 9 -veined.

Distribution (TDWG). Continent. South America.
Country /Province /State. Northern South America, Brazil. Venezuela. Brazil Northeast.
Bahia, Maranhao, Piaui, Ceara, Rio Grande do Norte, Paraiba, Penambuco, Alagoas, Sergipe. Bahia, Piaui.

Luziola brasiliensis (Trin.) Swallen. Ann. Missouri Bot. Gard. lii. 473 (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 Brazil. Basionym or Replaced Name: Caryochloa brasiliensis Trin., Gram. Panic. 248 (1826)
. T:<Type of Basionym>: fide TROPICOS and Kew Synonomy Database: T: Langsdorff s.n., Brazil: Bahia or Piaui (K (photo)).

Illustrations (Books): L.B. Smith, D.C. Wasshausen, R.M. Klein Flora Illustrada Catarinensis Gramineas (1981-1982) (593, 129).

Derivation (Clifford \& Bostock 2007): L. -ense, denoting origin. From Brazil.
Classification. Subfamily Ehrhartoideae. Tribe: Zizaniinae.
Habit, Vegetative Morphology. Perennial. Culms geniculately ascending or decumbent, 40-80 cm long, spongy, rooting from lower nodes. Leaf-sheaths inflated. Leaf-sheath auricles erect. Ligule an eciliate membrane, 8 mm long. Leaf-blades linear or lanceolate, $30-70 \mathrm{~cm}$ long, $20-30 \mathrm{~mm}$ wide. Monoecious, with male and female spikelets in the same inflorescence.

Inflorescence. Inflorescence a panicle, terminal. Panicle open, lanceolate, 10-22 cm long. Panicle branches capillary. Sexes segregated, on bisexual branches, with male above. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 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 mm long, falling entire.

Glumes. Glumes both absent or obscure.
Florets. Fertile florets female. Fertile lemma elliptic, 2.5 mm long, membranous, without keel, 5-7veined, more than 3-veined. Lemma lateral veins ribbed. Lemma surface smooth. Lemma apex acute. Palea lanceolate, 1 length of lemma, 4 -veined, without keels. Palea apex obtuse.

Flower and Fruit. Lodicules absent. Caryopsis with free brittle pericarp, ovoid, 2 mm long, smooth.
Male spikelets distinct from female, 1 flowered, separately deciduous, ovate, 4 mm long. Male spikelet glumes absent. Male spikelet lemma 7 -veined.

Distribution (TDWG). Continent. South America.
Country /Province /State. Brazil. Brazil Northeast, Brazil Southeast, Brazil South.
Bahia, Minas Gerais, Rio de Janeiro, Espirito Santo, Catarina, Rio Grande do Sul. Alagoas, Bahia, Ceará, Fernando do Noronha, Maranhão, Pernambuco, Paraíba, Piaui, Rio Grande do Norte (RN), Sergipe. Rio de Janeiro, Sao Paulo. Santa Catarina.

## Luziola caespitosa Swallen. Ann. Missouri Bot. Gard. lii. 473 (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 Brazil. T:<Type of Basionym>: fide TROPICOS and Kew Synonomy Database: HT: A. Chase 8102, 29 Dec 1924, Brazil: Bahia: north of Cachoeira, in shallow water below little falls, alt. 225 m , (US-1257165; IT: GH, MO-924318, NY).

Illustrations (Books): S.A.Renvoize, The Grasses of Bahia, 1984 (45, Fig.15).
Illustrations (Journals): Systematic Botany (33, 709, Fig. 5 (2008)).
Derivation (Clifford \& Bostock 2007): L. caespes, grass that has been cut; -osa, abundance. Habit tufted.

Classification. Subfamily Ehrhartoideae. Tribe: Zizaniinae.
Habit, Vegetative Morphology. Perennial, caespitose. Butt sheaths spongy. Culms erect, 15-115 cm long. Ligule an eciliate membrane, $7-8 \mathrm{~mm}$ long. Leaf-blades $11-80 \mathrm{~cm}$ long, $3-18 \mathrm{~mm}$ wide. Monoecious, with male and female spikelets in the same inflorescence.

Inflorescence. Inflorescence a panicle, embraced at base by subtending leaf. Panicle open, oblong, 836 cm long. Primary panicle branches 1 -nate, $2-5 \mathrm{~cm}$ long. Panicle branches angular. Sexes segregated, on bisexual branches, with male above. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, tip cupuliform.

Fertile Spikelets. Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets orbicular, laterally compressed, 1.5 mm long, falling entire.

Glumes. Glumes both absent or obscure.
Florets. Fertile florets female. Fertile lemma orbicular, 1.5 mm long, membranous, without keel, 5 veined, more than 3-veined. Lemma lateral veins ribbed. Lemma apex obtuse. Palea 1 length of lemma, 4 veined, without keels.

Flower and Fruit. Lodicules absent. Anthers 6. Caryopsis with free brittle pericarp, ovoid.
Male spikelets distinct from female, 1 flowered, separately deciduous, elliptic, $2.5-3 \mathrm{~mm}$ long, glabrous. Male spikelet glumes absent. Male spikelet lemma 5 -veined.

Distribution (TDWG). Continent. South America.
Country /Province /State. Brazil. Brazil Northeast.
Bahia. Bahia.

Luziola divergens Swallen. Ann. Missouri Bot. Gard. lii. 475 (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 Brazil. T:<Type of Basionym>: fide TROPICOS and Kew Synonomy Database: HT: A. Macado 2165, 18 Feb 1950, Brazil: Minas Gerais, Ituiutaba Mun. (US-1982914; IT: NY, US-1982915).

Illustrations: None found.
Derivation (Clifford \& Bostock 2007): L. divergo, go in different directions.
Classification. Subfamily Ehrhartoideae. Tribe: Zizaniinae.
Habit, Vegetative Morphology. Perennial. Culms erect, $15-35 \mathrm{~cm}$ long. Leaf-sheaths longer than adjacent culm internode, glabrous on surface. Ligule an eciliate membrane, 5 mm long. Leaf-blades 15-25 cm long, $2-3 \mathrm{~mm}$ wide. Leaf-blade surface scabrous, rough adaxially. Leaf-blade margins scabrous. Monoecious, with male and female spikelets in different inflorescences.

Inflorescence. Inflorescence a panicle, axillary. Panicle open, ovate, 10 cm long. Primary panicle branches spreading or reflexed. Spikelets spreading, 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 elliptic, subterete, $2.5-3.5 \mathrm{~mm}$ long, falling entire.

Glumes. Glumes both absent or obscure.
Florets. Fertile florets female. Fertile lemma elliptic, $2.5-3.5 \mathrm{~mm}$ long, membranous, purple, without keel, 7 -veined, more than 3-veined. Lemma lateral veins ribbed. Lemma surface smooth. Lemma apex acute. Palea lanceolate, 1 length of lemma, 5 -veined, without keels. Palea apex acute.

Flower and Fruit. Lodicules absent. Caryopsis with free brittle pericarp, ovoid, 2.2 mm long, dark brown, striate.

Male inflorescence terminal, unlike female, a panicle. Male spikelets distinct from female, 1 flowered, separately deciduous, linear, 5 mm long. Male spikelet glumes absent.

Distribution (TDWG). Continent. South America.
Country /Province /State. Brazil. Brazil Southeast.
Minas Gerais.

Luziola fluitans (Michx.) Terrell \& H. Robinson. Bull. Torrey Bot. Club., 101(5): 244 (1974).
Accepted by: R.J.Soreng et al., Catalogue of New World Grasses (2000-2003) and online, W.D.Clayton \& K.Harman, GrassBase (2008) and online, U.Quattrocchi, CRC World Dictionary of Grasses (2006).

TYPE from USA. Basionym or Replaced Name: Zizania fluitans Michx., Fl. Bor.-Amer. 1: 75 (1803)
. T:<Type of Basionym>: fide TROPICOS and Kew Synonomy Database: HT: Michaux s.n., USA: in stagnantibus Carolinae Georgiae ae alibi copiosissime juxta Charleston (P). Terrell \& Robinson, Bull. Torrey Bot. Club 101: 244 (1974) noted that the locality on the type specimen is Charleston, South Carolina.

Illustrations (Books): M.E.Barkworth et al, Flora of North America north of Mexico Vol 24 Poaceae, part 1 (2007) (56), F.W.Gould, The Grasses of Texas (1975) (51, Fig. 15 as Hydrochloa caroliniensis).

Derivation (Clifford \& Bostock 2007): L. fluito, float. Leaves or rhizomes floating.
Classification. Subfamily Ehrhartoideae. Tribe: Zizaniinae.
Habit, Vegetative Morphology. Perennial. Culms prostrate, slender, $30-100 \mathrm{~cm}$ long, rooting from lower nodes. Leaf-sheaths $1-3 \mathrm{~cm}$ long. Ligule an eciliate membrane, 1 mm long. Leaf-blades floating, 2-4 cm long, $2-4 \mathrm{~mm}$ wide. Leaf-blade apex acute or acuminate. Monoecious, with male and female spikelets in different inflorescences.

Inflorescence. Inflorescence composed of racemes or comprising only a few spikelets, comprising 1-3 fertile spikelets, axillary, embraced at base by subtending leaf. Racemes 1 , single, bearing few fertile spikelets, bearing 1-3 fertile spikelets on each. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 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, subterete, 4 mm long, falling entire.

Glumes. Glumes both absent or obscure.
Florets. Fertile florets female. Fertile lemma elliptic, 4 mm long, membranous, without keel, 5-7veined, more than 3-veined. Lemma lateral veins ribbed. Lemma apex acute. Palea lanceolate, 1 length of lemma, 5 -veined, without keels. Palea apex acute.

Flower and Fruit. Lodicules absent. Anthers 6. Caryopsis with free brittle pericarp, ovoid.
Male inflorescence terminal, unlike female, a single raceme. Male spikelets distinct from female, 1 flowered, separately deciduous, lanceolate, 2 mm long. Male spikelet glumes absent. Male spikelet lemma 7 -veined.
$2 n=24$ (FNA).
Distribution (TDWG). Continent. North America, South America.
Country /Province/State. North-central USA, South-central USA, Southeastern USA, Mexico. Central Mexico, Northeast Mexico, Southwest Mexico. Mesoamerica. Guatemala.

Mexico State. Aguascalientes, Guanajuato, Queretaro, San Luis Potosi, Zacatecas. Jalisco, Nayarit.

Luziola fragilis Swallen. Ann. Missouri Bot. Gard. lii. 474 (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 Brazil. T:<Type of Basionym>: fide TROPICOS and Kew Synonomy Database: HT: J.R. Swallen 9538, 24 Jun 1946, Brazil: Mato Grosso: Aquidauna, forming dense mats on water, inflrescence small, only slightly above the water, very common in banhado (US-1961009; IT: MO-3732612, NY, US1961008).

Illustrations (Books): S.A.Renvoize, Gramineas de Bolivia (1998) (Fig. 13), W.Burger, Flora Costaricensis 15, Gramineae: Fieldiana Botany New Series 4 (1980) (315, Fig 115).

Derivation (Clifford \& Bostock 2007): L. weak. Inflorescences readily disarticulating.
Classification. Subfamily Ehrhartoideae. Tribe: Zizaniinae.
Habit, Vegetative Morphology. Perennial, mat forming. Culms decumbent, slender, 5-10 cm long. Lateral branches ample. Leaf-sheaths longer than adjacent culm internode, pilose. Ligule an eciliate membrane, 2 mm long. Leaf-blades $1-4.5 \mathrm{~cm}$ long, $1-2 \mathrm{~mm}$ wide. Leaf-blade surface scaberulous, rough adaxially. Monoecious, with male and female spikelets in different inflorescences.

Inflorescence. Inflorescence composed of racemes, axillary. Racemes 2, paired, deflexed, $0.5-1 \mathrm{~cm}$ long, bearing few fertile spikelets, bearing $2-6$ fertile spikelets on each. Spikelets appressed, 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 elliptic, subterete, $1.5-2 \mathrm{~mm}$ long, falling entire.

Glumes. Glumes both absent or obscure.
Florets. Fertile florets female. Fertile lemma elliptic, 1.5-2 mm long, membranous, purple, without keel, 7 -veined, more than 3-veined. Lemma lateral veins ribbed. Lemma surface smooth, eventually splitting into fibres. Lemma apex acute. Palea lanceolate, 1 length of lemma, 5 -veined, without keels. Palea apex acute.

Flower and Fruit. Lodicules absent. Caryopsis with free brittle pericarp, ovoid, 1 mm long, dark brown, striate.

Male inflorescence terminal, unlike female, a single raceme. Male spikelets distinct from female, 1 flowered, separately deciduous, linear, $4-5 \mathrm{~mm}$ long. Male spikelet glumes absent.
$2 n=24$ ( 1 ref TROPICOS).
Distribution (TDWG). Continent. South America.
Country /Province /State. Mesoamerica, Northern South America, Western South America, Brazil. Costa Rica. Venezuela. Bolivia. Brazil Southeast.

Minas Gerais, Rio de Janeiro, Espirito Santo, Sao Paulo Parana. Mato Grosso.
Luziola gracillima Prodoehl. Bot. Archiv, i. 241 (1922).
Accepted by: R.J.Soreng et al., Catalogue of New World Grasses (2000-2003) and online, W.D.Clayton \& K.Harman, GrassBase (2008) and online, U.Quattrocchi, CRC World Dictionary of Grasses (2006).

TYPE from Mexico. T:<Type of Basionym>: fide TROPICOS and Kew Synonomy Database: HT: C.G. Pringle 3867, 2 Oct 1891, Mexico: Jalisco: shallow water near Guadalajara (M(photo); IT: ENCB, GH, MEXU, MO-2765514, NY, US-822700, US-745023).

Illustrations (Books): F.O.Zuloaga, Z.E.Rugolo \& A.M. Anton, Flora Argentina 3 - 1, Aristidoideae a Pharoideae (2012) (242).

Derivation (Clifford \& Bostock 2007): L. very delicate. Of slender habit.
Classification. Subfamily Ehrhartoideae. Tribe: Zizaniinae.
Habit, Vegetative Morphology. Perennial, caespitose. Culms decumbent, 30-40 cm long. Leaf-sheath auricles erect. Ligule an eciliate membrane, $5-10 \mathrm{~mm}$ long. Leaf-blades $10-20 \mathrm{~cm}$ long, $2-3 \mathrm{~mm}$ wide. Leaf-blade surface scaberulous. Monoecious, with male and female spikelets in different inflorescences.

Inflorescence. Inflorescence a panicle, axillary, shorter than basal leaves. Panicle open, ovate, 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 orbicular, subterete, obtuse, 1 mm long, falling entire.

Glumes. Glumes both absent or obscure.
Florets. Fertile florets female. Fertile lemma orbicular, 1 mm long, membranous, without keel, 9 veined, more than 3-veined. Lemma lateral veins ribbed. Lemma surface scabrous, rough on veins. Lemma apex obtuse. Palea oblong, 1 length of lemma, 5 -veined, without keels. Palea apex acute.

Flower and Fruit. Lodicules absent. Anthers 6-9, 4 mm long. Caryopsis with free brittle pericarp, ovoid, 0.8 mm long, striate.

Male inflorescence terminal, unlike female, a panicle. Male spikelets distinct from female, 1 flowered, separately deciduous, lanceolate, 5-7 mm long. Male spikelet glumes absent.

Distribution (TDWG). Continent. North America, South America.
Country /Province /State. Mexico. Northeast Mexico, Northwest Mexico, Southwest Mexico. Southern South America. Paraguay.

Salta. Formosa. Guanajuato. Sonora. Jalisco.

Luziola peruviana J. F. Gmel. Syst. 637. (1791).
Accepted by: R.J.Soreng et al., Catalogue of New World Grasses (2000-2003) and online, W.D.Clayton \& K.Harman, GrassBase (2008) and online, U.Quattrocchi, CRC World Dictionary of Grasses (2006).

TYPE from Peru. T:<Type of Basionym>: fide TROPICOS and Kew Synonomy Database: HT: Dombey 8, Peru (BM (possible); IT: K).

Illustrations (Books): F.O.Zuloaga, Z.E.Rugolo \& A.M. Anton, Flora Argentina 3 - 1, Aristidoideae a Pharoideae (2012) (243), M.E.Barkworth et al, Flora of North America north of Mexico Vol 24 Poaceae, part 1 (2007), A.S.Hitchcock, Manual of the Grasses of the West Indies (1936) (150, Fig. 95), S.A.Renvoize, Gramineas de Bolivia (1998) (69, Fig. 13), S.A.Renvoize, The Grasses of Bahia, 1984 (45, Fig. 15), E.G.Nicora, Los Generos de Gramineas de America Austral (1987) (160, Fig. 40), L.B. Smith, D.C. Wasshausen, R.M. Klein Flora Illustrada Catarinensis Gramineas (1981-1982) (593, Fig. 129 \& 594, Fig. 130), A.Burkat, Flora Ilustrada de Entre Rios (Argentina), Pt II, Gramineas (1969) (38, Fig. 6), A.L.Cabrera, Flora de la Provincia de Buenos Aires, IV Pt 2 Gramineas (1970) (44, Fig. 8), B.Rosengurtt, Gramineas UruguayasI (1970) (277, Fig. 114), R.Pilger, Die Naturlichen Pflanzenfamilien 14d (1956) (156, Fig. 42).

Illustrations (Journals): Ruizia (13:62, Fig.7f (1993)).
Derivation (Clifford \& Bostock 2007): L. -ana, indicating location. From Peru.
Classification. Subfamily Ehrhartoideae. Tribe: Zizaniinae.
Habit, Vegetative Morphology. Perennial. Culms geniculately ascending or decumbent, slender, 1067 cm long. Lateral branches ample. Leaves basal and cauline. Ligule an eciliate membrane. Leaf-blades 826 cm long, 2-6 mm wide. Leaf-blade surface glabrous. Leaf-blade apex acuminate. Monoecious, with male and female spikelets in different inflorescences.

Inflorescence. Inflorescence a panicle, axillary, shorter than basal leaves. Panicle open, ovate, 2.5-9 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 ovate, subterete, 2-2.5 mm long, falling entire.

Glumes. Glumes both absent or obscure.

Florets. Fertile florets female. Fertile lemma elliptic, $2-2.5 \mathrm{~mm}$ long, membranous, without keel, 7 veined, more than 3 -veined. Lemma lateral veins ribbed. Lemma surface scaberulous, rough on veins. Lemma apex acute. Palea lanceolate, 1 length of lemma, 4 -veined, without keels. Palea apex acute.

Flower and Fruit. Lodicules absent. Anthers 8. Caryopsis with free brittle pericarp, ovoid, 1.5 mm long, smooth.

Male inflorescence terminal, unlike female, a panicle. Male spikelets distinct from female, 1 flowered, separately deciduous, oblong, $5.5-9 \mathrm{~mm}$ long. Male spikelet glumes absent. Male spikelet lemma 7 -veined.

Distribution (TDWG). Continent. North America, South America.
Country /Province/State. Southeastern USA, Mexico. Central Mexico, Northeast Mexico, Gulf (Mexico), Southwest Mexico, Southeast Mexico. Mesoamerica, Caribbean, Western South America, Brazil, Southern South America. El Salvador, Guatemala, Honduras. Cuba. Bolivia, Colombia, Ecuador, Peru. Brazil Southeast, Brazil South. Argentina Northeast, Argentina Northwest, Paraguay, Uruguay.

Bahia, Sao Paulo Parana, Catarina, Rio Grande do Sul. Sao Paulo. Santa Catarina. Jujuy, Salta, Tucuman. Buenos Aires, Chaco, Cordoba, Corrientes, Entre Rios, Formosa, Misiones, Santa Fe. Mexico State. Hidalgo. Veracruz. Guerrero, Jalisco, Oaxaca. Campeche, Chiapas, Tabasco.

Luziola pittieri Luces. Journ. Wash. Acad. Sci. ii. 159 (1942).
TYPE from Venezuela. T:<Type of Basionym>: fide TROPICOS and Kew Synonomy Database: HT: H. Pittier 12530, 12 Sep 1927, Venezuela: Guárico (VEN; IT: US-1343994).

Illustrations: None found.
Derivation (Clifford \& Bostock 2007): in honor of Henry Frangois de Fabrega Pittier (1857-1950) Swiss botanist and civil engineer.

Classification. Subfamily Ehrhartoideae. Tribe: Zizaniinae.
Habit, Vegetative Morphology. Perennial, caespitose. Rhizomes elongated, spongy. Culms geniculately ascending or decumbent, weak, $30-50 \mathrm{~cm}$ long. Culm-nodes glabrous. Leaves basal and cauline. Leaf-sheaths keeled, reticulately veined, antrorsely scabrous, glabrous on surface. Ligule an eciliate membrane, $10-13 \mathrm{~mm}$ long, acuminate. Leaf-blades $10-35 \mathrm{~cm}$ long, $2-6 \mathrm{~mm}$ wide, flaccid. Leafblade surface scabrous, rough on both sides, glabrous. Leaf-blade margins scabrous. Leaf-blade apex acuminate. Monoecious, with male and female spikelets in different inflorescences.

Inflorescence. Inflorescence a panicle, axillary, shorter than basal leaves. Panicle open, pyramidal, 4-8 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 oblong, subterete, 1.5 mm long, falling entire.

Glumes. Glumes both absent or obscure.
Florets. Fertile florets female. Fertile lemma oblong, 1.5 mm long, membranous, pallid, without keel, 9-11 -veined, more than 3-veined. Lemma lateral veins ribbed. Lemma surface scaberulous, rough on veins. Lemma apex truncate. Palea 1 length of lemma, 9-11-veined, without keels. Palea apex truncate.

Flower and Fruit. Lodicules absent. Anthers 8-10. Caryopsis with free brittle pericarp, orbicular, isodiametric, exposed between gaping lemma and palea at maturity, $1.4-1.5 \mathrm{~mm}$ long, striate.

Male inflorescence terminal, similar to female, a panicle. Male spikelets distinct from female, 1 flowered, separately deciduous, oblong, 4 mm long, glabrous. Male spikelet glumes absent. Male spikelet lemma 4 mm long, $7-9$-veined, muticous.

Distribution (TDWG). Continent. South America.
Country /Province/State. Northern South America. Venezuela.

Luziola spruceana Benth. ex Doell. Mart. Fl. Bras. ii. II. 18. (1871).
Accepted by: R.J.Soreng et al., Catalogue of New World Grasses (2000-2003) and online, W.D.Clayton \& K.Harman, GrassBase (2008) and online, U.Quattrocchi, CRC World Dictionary of Grasses (2006).

TYPE from Brazil. T:<Type of Basionym>: fide TROPICOS and Kew Synonomy Database: HT: Spruce 103 [536], Dec, Brazil: Par? rio Aripecur?(K; IT: BM, GH, US).

Illustrations (Journals): Systematic Botany (33, 715, Fig. 8 (2008)).

Derivation (Clifford \& Bostock 2007): L. -ana, indicating connection. In honor of Richard Spruce (1817-1893) English botanist in South America.

Classification. Subfamily Ehrhartoideae. Tribe: Zizaniinae.
Habit, Vegetative Morphology. Perennial. Culms prostrate, $50-90 \mathrm{~cm}$ long, spongy, rooting from lower nodes. Lateral branches ample. Leaf-sheaths inflated, $15-30 \mathrm{~cm}$ long. Leaf-sheath auricles erect. Ligule an eciliate membrane, $20-30 \mathrm{~mm}$ long. Leaf-blades $25-50 \mathrm{~cm}$ long, $10-20 \mathrm{~mm}$ wide. Monoecious, with male and female spikelets in different inflorescences.

Inflorescence. Inflorescence a panicle, axillary, shorter than basal leaves, embraced at base by subtending leaf. Panicle contracted, oblong, 3-6 cm long. Primary panicle branches reflexed, bearing spikelets almost to the base, sterile at the tips. 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 or lanceolate, subterete, acuminate, 5 mm long, falling entire.

Glumes. Glumes both absent or obscure.
Florets. Fertile florets female. Fertile lemma lanceolate, 5 mm long, membranous, without keel, 7-9 veined, more than 3 -veined. Lemma lateral veins ribbed. Lemma surface scabrous, rough on veins, eventually splitting into fibres. Lemma apex acute. Palea lanceolate, 1 length of lemma, 5 -veined, without keels. Palea apex acute.

Flower and Fruit. Lodicules absent. Anthers 6. Caryopsis with free brittle pericarp, ovoid, 2 mm long, striate.

Male inflorescence terminal, unlike female, a panicle. Male spikelets distinct from female, 1 flowered, separately deciduous, lanceolate, 5 mm long. Male spikelet glumes absent.

Distribution (TDWG). Continent. South America.
Country /Province /State. Mesoamerica, Caribbean, Northern South America, Brazil. Honduras. Cuba, Dominican Republic, Haiti, Jamaica, Trinidad-Tobago. Surinam, Venezuela. Brazil West Central, Brazil North, Brazil South.

Para, Amapa. Mato Grosso do Sul. Acre, Amapa, Amazonas. Paraná.
Luziola subintegra Swallen. Ann. Missouri Bot. Gard. ::165 (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 Panama. T:<Type of Basionym>: fide TROPICOS and Kew Synonomy Database: HT: H.H. Bartlett \& T. Lasser 16816, 22 Aug 1940, Panama: Canal Zone: vicinity of Juan Mina, monocoecious mat grass (US-1911208; IT: MO-2129408, US-1911205).

Illustrations (Books): F.O.Zuloaga, Z.E.Rugolo \& A.M. Anton, Flora Argentina 3 - 1, Aristidoideae a Pharoideae (2012) (243), S.A.Renvoize, Gramineas de Bolivia (1998) (69, Fig. 13), J.A.Steyermark et al, Flora of the Venezuelan Guayana Vol. 8 (2004) (150, Fig. 107), W.Burger, Flora Costaricensis 15, Gramineae: Fieldiana Botany New Series 4 (1980) (318, Fig. 116), E.Judziewicz, Flora of the Guianas, 187. Poaceae (1990) (324, Fig. 58).

Classification. Subfamily Ehrhartoideae. Tribe: Zizaniinae.
Habit, Vegetative Morphology. Perennial, mat forming. Stolons present. Culms prostrate, $30-60 \mathrm{~cm}$ long, 2-4 mm diam., rooting from lower nodes. Culm-nodes brown, glabrous. Leaf-sheaths inflated. Leafsheath auricles erect, $30-40 \mathrm{~mm}$ long. Ligule an eciliate membrane, $30-40 \mathrm{~mm}$ long, acuminate. Leafblades $10-35 \mathrm{~cm}$ long, $5-12 \mathrm{~mm}$ wide. Monoecious, with male and female spikelets in different inflorescences.

Inflorescence. Inflorescence a panicle, axillary, shorter than basal leaves. Peduncle nodding. Panicle open, ovate, 4 cm long. Primary panicle branches 5 -nate. Panicle branches angular, with prominent pulvini. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, tip cupuliform.

Fertile Spikelets. Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets oblanceolate, subterete, 5-5.5 mm long, falling entire.

Glumes. Glumes both absent or obscure.

Florets. Fertile florets female. Fertile lemma elliptic, $5-5.5 \mathrm{~mm}$ long, membranous, without keel, 7 veined, more than 3 -veined. Lemma lateral veins ribbed (not becoming fibrous). Lemma apex acute. Palea lanceolate, 1 length of lemma, 5 -veined, without keels. Palea apex acute.

Flower and Fruit. Lodicules absent. Anthers $6,3.5-4 \mathrm{~mm}$ long. Caryopsis with free brittle pericarp, ovoid, $1.5-2 \mathrm{~mm}$ long.

Male inflorescence terminal, unlike female, a panicle. Male spikelets distinct from female, 1 flowered, separately deciduous, linear, $5-6 \mathrm{~mm}$ long. Male spikelet glumes absent. Male spikelet lemma 5 -veined.

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. El Salvador, Guatemala, Honduras, Nicaragua, Panama. Cuba, Puerto Rico, Trinidad-Tobago. Guyana, Surinam. Bolivia, Colombia, Ecuador, Peru. Brazil North. Paraguay.

Para, Amapa. Mato Grosso do Sul. Amapa, Roraima. Formosa. Veracruz. Chiapas, Tabasco.
Lycochloa avenacea G. Samuelsson. Arkiv Bot., Stockh. xxv. A. No. 8, 4 (1933).
Accepted by: W.D.Clayton \& K.Harman, GrassBase (2008) and online, U.Quattrocchi, CRC World Dictionary of Grasses (2006).

TYPE from Syria. T:<Type of Basionym>: fide TROPICOS and Kew Synonomy Database: ST: Coll. Ukn. 1228, 13 May 1932, Syria: (US-1538278).

Illustrations: None found.
Derivation (Clifford \& Bostock 2007): L. -acea, resembling. With inflorescences and/or spikelets similar to those of Avena..

Classification. Subfamily Pooideae. Tribe: Meliceae.
Habit, Vegetative Morphology. Perennial. Culms 30-50 cm long. Ligule an eciliate membrane, 4-5 mm long, truncate. Leaf-blades $10-30 \mathrm{~cm}$ long, $2-5 \mathrm{~mm}$ wide. Leaf-blade surface pilose, hairy adaxially.

Inflorescence. Inflorescence composed of racemes. Racemes 1, single, unilateral, $5-15 \mathrm{~cm}$ long, bearing few fertile spikelets, bearing 3-8 fertile spikelets on each. Spikelet packing distant. Spikelets deflexed, solitary. Fertile spikelets pedicelled. Pedicels present, cuneate, $1-2 \mathrm{~mm}$ long, pubescent.

Fertile Spikelets. Spikelets comprising 2 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets cuneate, laterally compressed, $15-20 \mathrm{~mm}$ long, breaking up at maturity, disarticulating above glumes but not between florets. Rhachilla internodes pilose, hairy at tip. Floret callus pilose.

Glumes. Glumes persistent, similar, shorter than spikelet, thinner than fertile lemma, gaping. Lower glume lanceolate, 0.66-0.75 length of upper glume, membranous, 1-keeled, 5 -veined. Lower glume apex acuminate. Upper glume lanceolate, $13-16 \mathrm{~mm}$ long, $0.9-1.1$ length of adjacent fertile lemma, membranous, 1-keeled, 5 -veined. Upper glume apex acuminate.

Florets. Fertile lemma elliptic, 12-15 mm long, chartaceous, keeled, 11 -veined, more than 3-veined. Lemma lateral veins ribbed. Lemma apex dentate, 2 -fid, awned, 1 -awned. Principal lemma awn dorsal, arising $0.6-0.7$ way up back of lemma, curved, $15-25 \mathrm{~mm}$ long overall. Palea 2 -veined. Palea keels winged, narrowly winged, ciliolate. Apical sterile florets $1-3$ in number, barren, in a clump, lanceolate, 8-9 mm long. Apical sterile lemmas awned.

Flower and Fruit. Lodicules 2, united, fleshy, truncate. Anthers 3, 5 mm long.
Distribution (TDWG). Continent. Temperate Asia.
Country /Province /State. Western Asia. Lebanon-Syria.

Lygeum spartum L. Gen. Pl., ed. 5, Addend. p. [522]. (1754).
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 Spain. T:<Type of Basionym>: fide TROPICOS and Kew Synonomy Database: Spain: Coll?.

Illustrations (Books): L.Boulos, Flora of Egypt 4 (2005) (130, Fig 37), N.L.Bor, The grasses of Burma, Ceylon, India and Pakistan (1960) (588, Fig 63).

Images: L.Boulos, Flora of Egypt 4 (2005);.

Derivation (Clifford \& Bostock 2007): Gk. spartos, broom (Spartium junceum) used for making rope. Name transferred to the grass because it too is a source of fibre.

Classification. Subfamily Pooideae. Tribe: Nardeae.
Habit, Vegetative Morphology. Perennial. Rhizomes short, scaly. Culms $25-75 \mathrm{~cm}$ long. Ligule an eciliate membrane, 5 mm long. Leaf-blades filiform, convolute, $10-30 \mathrm{~cm}$ long, $1-1.5 \mathrm{~mm}$ wide, coriaceous, stiff. Leaf-blade apex attenuate, filiform.

Inflorescence. Inflorescence comprising only a few spikelets, comprising 1 fertile spikelets, subtended by a spatheole, enclosed. Spatheole lanceolate, $3-5 \mathrm{~cm}$ long, chartaceous. Spikelets solitary.

Fertile Spikelets. Spikelets comprising 2(-3) 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, urceolate, laterally compressed, $30-45 \mathrm{~mm}$ long, falling entire. Spikelet callus bearded. Spikelet callus hairs 0.2 length of spikelet.

Glumes. Glumes both absent or obscure.
Florets. Fertile lemma ovate, $20-30 \mathrm{~mm}$ long, coriaceous, much thinner above, pallid, without keel, 79 -veined, more than 3-veined. Lemma surface villous. Lemma margins fused below to those of opposing floret forming an urn. Lemma hairs $7-10 \mathrm{~mm}$ long. Lemma apex caudate. Palea fused below to lemma margins (forming a septum between lemmas), linear, 2 length of lemma.

Flower and Fruit. Lodicules absent. Anthers 3, 15-22 mm long. Stigmas 1, papillose. Caryopsis with adherent pericarp, oblong, $8-9 \mathrm{~mm}$ long. Embryo $0.25-0.33$ length of caryopsis. Hilum linear, 2 length of caryopsis.

Distribution (TDWG). Continent. Europe, Africa, Tropical Asia.
Region. Southwestern Europe, Southeastern Europe.
Country /Province /State. : Baleares, Sardinia, Spain. : Italy, Crete, Malta, Sicily. Northern Africa. Algeria, Egypt, Libya, Morocco, Tunisia. Indian Subcontinent. Pakistan (*).

Jammu Kashmir.

