

## **Narduroides salzmannii** (Boiss.) Rouy.

**Accepted by:** W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), T.G.Tutin et al, *Flora Europaea* 5 (1980).

**Basionym or Replaced Name:** *Nardurus salzmannii* Boiss., *Voy. Bot. Espagne* 2: 667, t. 178B. (1844).

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

**Derivation** (Clifford & Bostock 2007): in honor of Philipp Salzmänn (1781–1851) German-born physician, naturalist and traveller.

**Classification.** Subfamily Pooideae. Tribe: Poeae.

**Habit, Vegetative Morphology.** Annual. Culms erect, 20–40 cm long. Leaf-sheaths smooth. Ligule an eciliate membrane, 1–2 mm long, lacerate, truncate. Leaf-blades flat or convolute, 1–5 cm long, 0.5 mm wide.

**Inflorescence.** Inflorescence composed of racemes. Racemes 1, single, smoothly terete, unilateral, 2–23 cm long. Rhachis subcylindrical and excavated. Spikelet packing broadside to rhachis, distant, regular, 2 -rowed. Spikelets sunken, solitary. Fertile spikelets sessile.

**Fertile Spikelets.** Spikelets comprising 4–6 fertile florets, with a barren rhachilla extension. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets oblong, laterally compressed, (2.2–)4–7 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes collateral, persistent, similar, shorter than spikelet, firmer than fertile lemma. Lower glume oblong, 1.5–2.7 mm long, 0.8 length of upper glume, coriaceous, 1-keeled, (1–)3(–5) -veined. Lower glume apex emarginate. Upper glume oblong, 1.8–3.2 mm long, 0.8 length of adjacent fertile lemma, coriaceous, 1-keeled, 5 -veined. Upper glume apex emarginate.

**Florets.** Fertile lemma elliptic, 2.2–3.2 mm long, chartaceous, without keel, 5 -veined, more than 3-veined. Lemma apex entire or dentate, 2 -fid, emarginate, muticous or mucronate.

**Flower and Fruit.** Anthers 3, 0.8–1.2 mm long. Ovary glabrous. Caryopsis with adherent pericarp, ellipsoid, 1–1.8 mm long. Hilum punctiform.

$2n = 14$  (2 refs TROPICOS).

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

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

**Country /Province /State.** : GB Aliens (Ryves et al). : France, Spain. Northern Africa. Algeria. Western Asia. Turkey.

## **Nardus stricta** L. Sp. Pl. 53. (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).

**TYPE** from Europe. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: LT: *Anon.*, Europe (LINN-73.5). LT designated by Cope in Jarvis et al., *Regnum Veg.* 127: 69 (1993).

**Illustrations (Books):** C.E.Hubbard, *Grasses* (1968) (344), N.N.Tsvelev, *Grasses of the Soviet Union* (1983) (913 (601), Pl.11), A.Wilson (ed.), *Flora of Australia*, Vol 44A. *Poaceae* (2009) (100, Fig 14), 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) (63, Fig. 4), M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 24 *Poaceae*, part 1 (2007) (63).

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

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

**Classification.** Subfamily Pooideae. Tribe: Nardeae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Rhizomes short. Butt sheaths persistent and investing base of culm, with compacted dead sheaths. Culms erect, 25–60 cm long, wiry, 1 -noded. Leaves mostly basal. Leaf-sheaths smooth. Ligule an eciliate membrane, 1–2 mm long, membranous, translucent, truncate. Leaf-blades filiform, involute, 4–30 cm long, 0.5–1 mm wide, coriaceous, stiff.

**Inflorescence.** Inflorescence composed of racemes. Racemes 1, single, unilateral, 3–8 cm long. Rhachis semiterete, 0.8 mm wide, scaberulous on margins, terminating in a barren extension, extension bristle-like. Spikelet packing abaxial, regular, 2 -rowed. Spikelets appressed, solitary. Fertile spikelets sessile.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, dorsally compressed, 5–9 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes one the upper absent or obscure, persistent. Lower glume ovate, 0.25–1 mm long, 0.1–0.5 length of spikelet.

**Florets.** Fertile lemma lanceolate, 5–9 mm long, coriaceous, keeled, 3 -veined, 0–3 -veined. Lemma midvein scaberulous. Lemma lateral veins prominent. Lemma surface scaberulous, rough on veins. Lemma apex acute, awned, 1 -awned. Principal lemma awn 1–3 mm long overall. Palea 0.9 length of lemma, 2 -veined. Palea surface smooth, pubescent.

**Flower and Fruit.** Lodicules absent. Anthers 3, 3.5–4 mm long. Stigmas 1, papillose. Caryopsis with adherent pericarp, fusiform, 3–4 mm long. Embryo 0.15 length of caryopsis. Hilum linear.

$N = 13$  (1 ref TROPICOS).  $2n = 24$  (1 ref TROPICOS), or 26 (6 refs TROPICOS).

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

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

**Country /Province /State.** : Denmark, Finland, Foroyar, Great Britain, Iceland, Ireland, Northern Ireland, Norway, Sweden. : Austria, Liechtenstein, Belgium, Luxembourg, Czechoslovakia, Germany, Hungary, Netherlands, Poland, Switzerland. : Corsica, Channel Islands, France, Monaco, Portugal, Andorra, Gibraltar, Spain, Azores. : Albania, Bulgaria, Greece, Italy, San Marino, Vatican, Romania, Malta, Sicily, Yugoslavia. Belarus, Estonia, Kaliningrad, Latvia, Lithuania, Baltic States, Central European Russia, East European Russia, North European Russia, South European Russia, Northwest European Russia, Moldova, Ukraine. **Northern Africa, Macaronesia.** Morocco. Azores. Siberia, **Caucasus, Western Asia, Mongolia.** Irkutsk, Tuva. **Australia, New Zealand.** Tasmania (\*). New Zealand North I, New Zealand South I. **Subarctic America, Eastern Canada, Northwest USA, Northeast USA.** Greenland. Newfoundland, Nova Scotia, Ontario. Oregon, Washington. New Hampshire, Vermont. **Mesoamerica.** Costa Rica.

**TDWG4.**

**Nassella airoides** (Ekman) M.E. Barkworth. *Taxon*, 39(4): 609: (1990).

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

**TYPE** from Argentina. **Basionym or Replaced Name:** *Stipa airoides* Ekman, *Ark. Bot.* 11(4): 31, t. 4, f. 2 (1912). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *H.M.E. Ekman 688*, 17 Nov 1907, Argentina: Misiones (S; IT: US-602602, US-87186 (fragm. ex S)).

**Illustrations (Books):** A.L.Cabrera, *Flora de la Provincia de Buenos Aires, IV Pt 2 Gramineas* (1970) (277, Fig. 72 as *Stipa*).

**Derivation** (Clifford & Bostock 2007): Gk. -oides, resembling. Inflorescences resemble those of *Aira*.

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Rhizomes short. Culms erect, 70–90 cm long. Culm-internodes distally pubescent. Lateral branches lacking. Leaf-sheaths glabrous on surface or hirsute, outer margin hairy. Leaf-sheath oral hairs lacking. Ligule an eciliate membrane, 0.3 mm long, truncate. Leaf-blades flat or convolute, 25–35 cm long, 2–4 mm wide. Leaf-blade surface scaberulous, rough abaxially, puberulous, hairy adaxially.

**Inflorescence.** Inflorescence a panicle. Panicle open, nodding, 25–35 cm long, bearing few spikelets. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 4–5 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus evident, 0.4–0.8 mm long, pubescent, obtuse.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 4–5 mm long, 1 length of upper glume, hyaline, without keels, 3 -veined. Lower glume surface asperulous, rough on veins. Lower glume apex acuminate. Upper glume lanceolate, 4–5 mm long, 2 length of adjacent fertile lemma, hyaline, without keels, 3 -veined. Upper glume surface asperulous, rough on veins. Upper glume apex acuminate.

**Florets.** Fertile lemma linear, subterete, 2.5–3.2 mm long, coriaceous, pallid, without keel, 5 -veined, more than 3-veined. Lemma surface papillose, puberulous. Lemma margins convolute, covering most of palea. Lemma apex with a membranous corona, with this appendage 0.4–0.5 mm long, awned, 1 -awned. Principal lemma awn bigenulate, 17–33 mm long overall, with 10–15 mm long limb, with twisted column, deciduous. Column of lemma awn 7–9 mm long, pubescent. Palea 0.3–0.6 mm long, 0 -veined, without keels.

**Flower and Fruit.** Lodicules 2. Anthers 3, 1.4–1.6 mm long, anther tip penicillate. Stigmas 2. Ovary glabrous. Caryopsis with adherent pericarp, linear, 1.7–2 mm long. Hilum linear, 0.66 length of caryopsis.

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

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

**TDWG4.** Sao Paulo Parana, Catarina, Rio Grande do Sul. Buenos Aires, Corrientes, Entre Rios, Misiones.

**Nassella ancoraimensis** F.Rojas. *Gayana, Bot.* 54(2) : 165 (1998).

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

**TYPE** from Bolivia. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: Bolivia: Dpto. La Paz: Prov. Omasuyos: localidad Ancoraimis, cerro del Calvario, 3970 m, 30 Jan 1992, *F. Rojas* 592 (HT: LPB; IT: CONC).

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

**Derivation** (Clifford & Bostock 2007): *L. -ensis*, denoting origin. From Ancoraimis, La Paz Department, Bolivia.

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Culms erect, 30–50 cm long. Culm-nodes brown. Lateral branches lacking. Leaf-sheaths smooth or scaberulous. Ligule an eciliate membrane. Leaf-blades flat or convolute, 5–15 cm long, 1.5–2 mm wide. Leaf-blade surface pilose, hairy adaxially. Leaf-blade apex attenuate, filiform.

**Inflorescence.** Inflorescence a panicle. Panicle open, linear, 4–10 cm long. Primary panicle branches appressed. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 6–8 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus evident, pubescent, pungent.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 6–8 mm long, 1 length of upper glume, hyaline, without keels. Lower glume apex acute. Upper glume lanceolate, 6–8 mm long, hyaline, without keels. Upper glume apex acute.

**Florets.** Fertile lemma linear, subterete, 4.2–5 mm long, coriaceous, without keel, 5 -veined, more than 3-veined. Lemma surface pubescent. Lemma margins convolute, covering most of palea. Lemma apex with a membranous corona, awned, 1 -awned. Principal lemma awn bigeniculate, 15–20 mm long overall, with twisted column. Column of lemma awn pubescent. Palea without keels.

**Flower and Fruit.** Anthers 3. Stigmas 2. Caryopsis with adherent pericarp, fusiform. Hilum linear.

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

**Country /Province /State.** Western South America. Bolivia, Peru.

**Nassella arcaensis** (Speg.) M.A. Torres. *Monogr. Comis. Invest. Ci. Prov. Buenos Aires*, 13: 13: (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 (as *Stipa*), U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

**TYPE** from Argentina. **Basionym or Replaced Name:** *Stipa arcaensis* Speg., *Anales Mus. Hist. Nat. Montevideo* 4(2): 131–132, f. 37 (1901)

. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: LT: *C. Spegazzini s.n.*, Jan 1897, Argentina: Cuesta de Las Arcas (LP). LT designated by ?; cited by Torres, *CIC* 13: 13 (1997).

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

**Derivation** (Clifford & Bostock 2007): *L. -ensis*, denoting origin. From Cuesta de Arca, Tucuman Province, Argentina.

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Culms erect, robust, 100–150 cm long. Culm-internodes distally pubescent. Leaf-sheaths glabrous on surface. Leaf-sheath oral hairs pubescent. Ligule an eciliate membrane, 1 mm long, truncate. Leaf-blades 25–50 cm long, 3–6 mm wide. Leaf-blade surface ribbed, scaberulous, rough adaxially. Leaf-blade apex attenuate.

**Inflorescence.** Inflorescence a panicle. Panicle open, ovate, 25–50 cm long. Primary panicle branches spreading, whorled at most nodes, 7–15 cm long. Panicle axis smooth. Panicle branches scaberulous, rough distally. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, puberulous.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 11–12 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus evident, 1 mm long, pubescent, acute.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 1 length of upper glume, membranous, without keels, 3 -veined. Lower glume apex acuminate. Upper glume lanceolate, 11–12 mm long, membranous, without keels, 3 -veined. Upper glume apex acuminate.

**Florets.** Fertile lemma lanceolate, subterete, 8–9 mm long, coriaceous, without keel, 5 -veined, more than 3-veined. Lemma surface pilose. Lemma margins convolute, covering most of palea. Lemma apex awned, 1 -awned. Principal lemma awn bigeniculate, 40 mm long overall, with a straight or slightly twisted column. Palea without keels.

**Flower and Fruit.** Anthers 3. Stigmas 2. Ovary glabrous. Caryopsis with adherent pericarp, fusiform. Hilum linear.

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

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

**TDWG4.** Catamarca, Jujuy, Salta, Tucuman.

**Nassella arcuata** (R.E. Fr.) M.A. Torres. *Monogr. Comis. Invest. Ci. Prov. Buenos Aires*, 13: 13: (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 (as *Stipa*), U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

**TYPE** from Argentina. **Basionym or Replaced Name:** *Stipa arcuata* R.E. Fr., *Nova Acta Regiae Soc. Sci. Upsal.*, ser. 4 1: 172 (1905). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: IT: *R.E. Fries 944*, 20 Dec 1901, Argentina: Jujuy: Moreno, 3500 m (CORD, US-993445, US-87188 (fragm.)).

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

**Derivation** (Clifford & Bostock 2007): *L. arcus*, curve; -ata, possessing. Inflorescence branches curved.

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Culms erect, 15–40 cm long, 2–3 -noded. Ligule an eciliate membrane, 1–2 mm long. Leaf-blades convolute, 5–10 cm long, 1 mm wide. Leaf-blade surface ribbed, pubescent.

**Inflorescence.** Inflorescence a panicle, embraced at base by subtending leaf. Panicle open, linear, 10–20 cm long. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, 0.4–10 mm long, glabrous.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 13–15 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus elongated, 2 mm long, pubescent, acute.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 13–15 mm long, 1.3 length of upper glume, membranous, purple, without keels, 3 -veined. Lower glume apex acuminate. Upper glume lanceolate, 10–12 mm long, membranous, purple, without keels, 3 -veined. Upper glume apex acuminate.

**Florets.** Fertile lemma lanceolate, subterete, 8–9 mm long, coriaceous, without keel, 5 -veined, more than 3-veined. Lemma midvein pubescent, hairy below. Lemma surface pubescent, hairy above. Lemma margins convolute, covering most of palea. Lemma apex awned, 1 -awned. Principal lemma awn geniculate or bigeniculate, 50–70 mm long overall, with twisted column, deciduous. Column of lemma awn ciliate, with 2 mm long hairs. Palea 1.7–2 mm long, 0.5 length of lemma, 1 -veined, without keels.

**Flower and Fruit.** Lodicules 2, 0.8 mm long. Anthers 3. Stigmas 2. Ovary glabrous. Caryopsis with adherent pericarp, fusiform. Hilum linear.

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

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

**TDWG4.** Jujuy, Salta, Tucuman. Tarapaca, Antofagasta.

**Nassella arechavaletae** (Speg.) M.E. Barkworth. *Taxon*, 39(4): 609: (1990).

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

**TYPE** from Uruguay. **Basionym or Replaced Name:** *Stipa arechavaletae* Speg., *Anal. Mus. Montevideo*. 4: II. 85. (1901). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: ST: *Arechevalata s.n.*, Uruguay: prope Montevideo

ST: *Spegazzini s.n.*, Mar 1892, in rupestribus Sierra del Tandil.

**Illustrations (Books):** B.Rosengurtt, *Gramineas Uruguayas I* (1970) (66, Fig. 22 as *Stipa*).

**Derivation** (Clifford & Bostock 2007): in honor of Josi Arechavaleta y Balpardo (1838–1912) Uruguayan botanist.

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial, caespitose, clumped loosely. Butt sheaths persistent and investing base of culm, with fibrous dead sheaths. Basal innovations extravaginal. Culms erect, 35–90 cm long, 1–2 mm diam., 2–3 -noded. Culm-internodes smooth, distally glabrous. Culm-nodes glabrous or pubescent. Lateral branches lacking. Leaf-sheaths striately veined, pubescent, outer margin hairy. Leaf-sheath oral hairs bearded. Ligule an eciliate membrane. Leaf-blades convolute, 10–40 cm long, 2–4 mm wide. Leaf-blade venation with 22–40 secondary veins. Leaf-blade surface scabrous, rough adaxially, glabrous or pilose, sparsely hairy, hairy abaxially. Leaf-blade apex acute.

**Inflorescence.** Inflorescence a panicle, subtended by an inflated leaf-sheath, embraced at base by subtending leaf. Panicle open, linear, 10–25 cm long. Primary panicle branches 2 -nate, bearing 1–5 fertile spikelets on each lower branch. Panicle axis smooth. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, angular, 5–25 mm long, scabrous, tip widened.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 32–38 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus elongated, curved, 5–6 mm long, pubescent, pungent.

**Glumes.** Glumes persistent, similar, with lower narrower than upper, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 32–38 mm long, 1.3 length of upper glume, membranous, purple, 1-keeled, 3 -veined. Lower glume apex setaceously acuminate. Upper glume lanceolate, 25–30 mm long, membranous, purple, without keels, 5 -veined. Upper glume apex setaceously acuminate.

**Florets.** Fertile lemma lanceolate, subterete, 7.5–8 mm long, coriaceous, pallid, without keel, more than 3-veined. Lemma midvein pubescent, hairy below. Lemma surface asperulous. Lemma margins convolute, covering most of palea. Lemma apex with a membranous corona or surmounted by a ring of hairs, with this appendage 2 mm long, awned, 1 -awned. Principal lemma awn bigeniculate, constricted at base (of corona), 135–150 mm long overall, with twisted column. Column of lemma awn pubescent. Palea 2 mm long, hyaline, 0 -veined, without keels.

**Flower and Fruit.** Lodicules 2. Anthers 3. Stigmas 2. Ovary glabrous. Caryopsis with adherent pericarp, fusiform, 11–16 mm long. Hilum linear.

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

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

**TDWG4.** Buenos Aires.

**Nassella argentinensis** (Speg.) Penailillo. *Gayana, Bot.* 55: 86 (1999).

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

**TYPE** from Argentina. **Basionym or Replaced Name:** *Stipa argentinensis* Speg., *Ret Argent. Bot.* i. 45 (1925). T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: Argentina: Prov. Sta. Fe: En las praderas cerca de la Estacion Galvez: Jan 1906..

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

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

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Culms 25–65 cm long, 0.7–1 mm diam., 3–5 -noded. Culm-nodes pubescent. Leaf-sheaths glabrous on surface. Leaf-sheath oral hairs ciliate. Ligule an eciliate membrane, erose. Leaf-blades flat or convolute, 3–3.5 mm wide, glaucous. Leaf-blade venation with 8–10 secondary veins.

**Inflorescence.** Inflorescence a panicle, embraced at base by subtending leaf. Panicle open, linear, secund, 10–20 cm long. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 12–13 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus elongated, curved, 2 mm long, pubescent, pungent.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 12–13 mm long, 1.2 length of upper glume, membranous, pallid or purple, without keels, 3 -veined. Lower glume apex setaceously acuminate. Upper glume lanceolate, 10–11.5 mm long, membranous, pallid or purple, without keels, 5 -veined. Upper glume apex setaceously acuminate.

**Florets.** Fertile lemma lanceolate, subterete, 7–8 mm long, coriaceous, pallid, without keel, 5 -veined, more than 3-veined. Lemma midvein eciliate or ciliolate. Lemma surface papillose. Lemma margins convolute, covering most of palea. Lemma apex with a membranous corona or surmounted by a ring of hairs, with this appendage 0.5–1 mm long, awned, 1 -awned. Principal lemma awn bigeniculate, 55–70 mm long overall, with

twisted column, persistent. Middle segment of lemma awn 10 mm long. Column of lemma awn 30 mm long, hispidulous. Palea 0.5 length of lemma.

**Flower and Fruit.** Caryopsis with adherent pericarp.

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

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

**TDWG4.** Chaco, Cordoba, Santa Fe.

**Nassella asperifolia** Rojas. *Gayana, Bot.* 54(2): 166 (1999).

Regarded by K as a synonym (*N. turcumana*).

**TYPE** from Bolivia. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: IT: *T. Killeen* 2529, 10 June 1987, Bolivia (MO).

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

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

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Culms 30–50 cm long. Ligule an eciliate membrane. Leaf-blades flat or convolute, 4–20 cm long, 4–8 mm wide, stiff. Leaf-blade apex filiform.

**Inflorescence.** Inflorescence a panicle. Panicle open, oblong, dense or loose, 10–20 cm long. Primary panicle branches appressed. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets oblong, laterally compressed, 3.2–3.7 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus brief, pilose, obtuse.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume oblong, 3.2–3.7 mm long, 1 length of upper glume, membranous, without keels. Lower glume apex acuminate. Upper glume oblong, 3.2–3.7 mm long, membranous, without keels. Upper glume apex acuminate.

**Florets.** Fertile lemma oblong, subterete, 2–2.5 mm long, coriaceous, shiny, without keel, 5 -veined, more than 3-veined. Lemma surface smooth, puberulous, hairy on veins. Lemma margins convolute, covering most of palea. Lemma apex awned, 1 -awned. Principal lemma awn eccentric, bigeniculate, 8–15 mm long overall, with twisted column. Palea without keels.

**Flower and Fruit.** Caryopsis with adherent pericarp. Hilum linear.

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

**Country /Province /State. Western South America.** Bolivia.

**Nassella asplundii** Hitchcock. *Contrib. U. S. Nat. Herb.* xxiv. 394 (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 Bolivia. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *E. Asplund* 6548, 25 Mar 1921, Bolivia: Potosi: Uyuni, 3700 m (US-1099355).

**Illustrations (Books):** S.A.Renvoize, *Gramineas de Bolivia* (1998) (91, Fig. 18).

**Derivation** (Clifford & Bostock 2007): *L.* in honor of Erik Asplund (1888–1974) Swedish botanist.

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Culms erect, 30–60 cm long, 2 -noded. Lateral branches lacking. Ligule an eciliate membrane, 1–2 mm long. Leaf-blades filiform, involute, 1–6 cm long, 1 mm wide. Leaf-blade surface glabrous. Leaf-blade apex attenuate.

**Inflorescence.** Inflorescence a panicle. Panicle open, oblong, 8–15 cm long. Primary panicle branches spreading, 2–5 cm long. Panicle axis smooth. Panicle branches capillary, smooth. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, scabrous.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets ovate, subterete, 4 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus evident, acute.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 4 mm long, 1 length of upper glume, membranous, 1-keeled, 3 -veined. Lower glume primary vein ciliate. Lower glume apex acute. Upper glume lanceolate, 4 mm long, 1.6 length of adjacent fertile lemma, membranous, 1-keeled, 3 -veined. Upper glume apex acute.

**Florets.** Fertile lemma oblong, subterete, 2.5 mm long, coriaceous, keeled, lightly keeled. Lemma surface pilose. Lemma margins convolute, covering most of palea. Lemma apex obtuse, awned, 1 -awned. Principal

lemma awn eccentric, bigenulate, 15 mm long overall, with twisted column, deciduous. Column of lemma awn ciliate. Palea membranous, 0 -veined, without keels.

**Flower and Fruit.** Anthers 3.

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

**Country /Province /State.** **Western South America, Southern South America.** Bolivia, Ecuador, Peru. Chile North.

Tarapaca, Antofagasta.

**Nassella ayacuchensis** (Tovar) M.E. Barkworth. *Taxon*, 39(4): 609: (1990).

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

**TYPE** from Peru. **Basionym or Replaced Name:** *Stipa ayacuchensis* O. Tovar, *Opusc. Bot. Pharm. Complutensis*, 4: 85 (1988). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *O. Tovar 5492*, 13 Apr 1966, Peru: Ayacucho: Huamanga Prov. (US-3029243).

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

**Derivation** (Clifford & Bostock 2007): L. *-ensis*, denoting origin. From Ayacucho, Humanga Province, Peru.

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Culms 45–55 cm long. Leaf-sheath oral hairs ciliate. Ligule an eciliate membrane, 1–1.5 mm long. Leaf-blades filiform, involute, 9–18 cm long, 1–2 mm wide. Leaf-blade surface ribbed, puberulous, hairy adaxially.

**Inflorescence.** Inflorescence a panicle. Panicle open, elliptic, 20–30 cm long. Primary panicle branches ascending or spreading. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, pubescent.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 4.5–5.5 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus evident, pubescent, acute.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume linear, 4.5–5.5 mm long, 1.1–1.2 length of upper glume, membranous, without keels. Lower glume apex acuminate. Upper glume linear, 4–4.5 mm long, membranous, without keels. Upper glume apex acuminate.

**Florets.** Fertile lemma lanceolate, subterete, 1.9–2.1 mm long, coriaceous, without keel, 5 -veined, more than 3-veined. Lemma surface pilose, hairy below. Lemma margins convolute, covering most of palea. Lemma hairs 1–1.5 mm long. Lemma apex awned, 1 -awned. Principal lemma awn geniculate, 17–20 mm long overall, with twisted column. Palea without keels.

**Flower and Fruit.** Anthers 3. Stigmas 2. Ovary glabrous. Caryopsis with adherent pericarp, fusiform. Hilum linear.

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

**Country /Province /State.** **Western South America.** Peru.

**Nassella bonariensis** (Henrard & Parodi) M.E. Barkworth. *Taxon*, 39(4): 609: (1990).

Regarded by K as a synonym (*N. melanosperma*).

**TYPE** from Argentina. **Basionym or Replaced Name:** *Stipa bonariensis* Henrard & Parodi, *Repert. Spec. Nov. Regni Veg.* 23: 178. (1926). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: IT: *L.R. Parodi 6806*, 1926, Argentina: Buenos Aires (L, US-1295682).

**Illustrations (Books):** A.L.Cabrera, *Flora de la Provincia de Buenos Aires, IV Pt 2 Gramineas* (1970) (267, Fig. 69 as *Stipa*).

**Derivation** (Clifford & Bostock 2007): L. *-ensis*, denoting origin. From Provincia de Buenos Aires, Argentina.

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

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

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

**TDWG4.** Buenos Aires.

**Nassella brachychaetoides** (Speg.) M.E. Barkworth. *Taxon*, 39(4): 609: (1990).

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

**TYPE** from Argentina. **Basionym or Replaced Name:** *Stipa brachychaetoides* Speg., *Revista Argent. Bot.* 1(1): 29. (1925). T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: HT: *C. Spegazzini s.n.*, Argentina: Pdo. de Patagones, El Carbón (LP; IT: BAA).

**Illustrations (Books):** A.Burkat, *Flora Ilustrada de Entre Rios (Argentina)*, Pt II, Gramineas (1969) (as *Stipa*), A.L.Cabrera, *Flora de la Provincia de Buenos Aires, IV Pt 2 Gramineas* (1970) (285, Fig. 73 as *Stipa*), B.Rosengurtt, *Gramineas Uruguayas I* (1970) (66, Fig. 22 & 78, Fig. 25 as *Stipa brachychaeta*).

**Derivation** (Clifford & Bostock 2007): Gk *-oides*, resembling. Spikelets resemble those of *Stipa brachychaeta*, which is in a closely related genus.

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Culms 30–45 cm long, 5–6 -noded. Leaf-sheaths smooth. Ligule an eciliate membrane. Leaf-blades curved, filiform, convolute, 20–35 cm long, 0.5–0.75 mm wide. Leaf-blade surface smooth. Leaf-blade apex attenuate.

**Inflorescence.** Inflorescence a panicle, embraced at base by subtending leaf. Panicle contracted, linear, interrupted, 10–20 cm long. Panicle branches scaberulous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, 2–8 mm long, scaberulous, tip widened.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 5 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus brief, curved, 0.5 mm long, pilose, acute.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 5 mm long, 1.1 length of upper glume, membranous, 1-keeled, 1–3 -veined. Lower glume lateral veins absent or obscure. Lower glume apex acuminate. Upper glume lanceolate, 4.5 mm long, membranous, without keels, 3 -veined. Upper glume apex acuminate.

**Florets.** Fertile lemma linear, subterete, 3.5 mm long, coriaceous, without keel, 5 -veined, more than 3-veined. Lemma surface papillose, puberulous. Lemma margins convolute, covering most of palea. Lemma apex with an annular corona or surmounted by a ring of hairs, awned, 1 -awned. Principal lemma awn bigeniculate, 12–14 mm long overall, with twisted column, persistent. Middle segment of lemma awn 2 mm long. Column of lemma awn 5 mm long, puberulous. Palea 0.5 length of lemma.

**Flower and Fruit.** Caryopsis with adherent pericarp.

**Distribution (TDWG). Continent.** Europe (\*), South America.

**Region. Northern Europe** (\*).

**Country /Province /State.** : GB Aliens (Ryves et al). **Southern South America.** Argentina Northeast.

**TDWG4.** Catamarca, Tucuman. Buenos Aires.

***Nassella brachyphylla*** (A. Hitchc.) M.E. Barkworth. *Taxon*, 39(4): 609: (1990).

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

**TYPE** from Bolivia. **Basionym or Replaced Name:** *Stipa brachyphylla* Hitchc., *Contr. U.S. Natl. Herb.* 24(7): 275. (1925). T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: HT: *Buchtien* 858, 28 Mar 1907, Bolivia: La Paz: 3800 m, mountain slopes (US-1099323).

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

**Derivation** (Clifford & Bostock 2007): Gk. *brachys*, short; *phyllon*, leaf. Leaf-blades short.

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Culms erect, 20–40 cm long. Culm-internodes distally glabrous. Leaf-sheaths glabrous on surface. Ligule an eciliate membrane, 2–5 mm long. Leaf-blades involute, 3–5 cm long, 1 mm wide, stiff. Leaf-blade surface ribbed, scabrous, rough adaxially. Leaf-blade apex pungent.

**Inflorescence.** Inflorescence a panicle. Panicle open, linear, 3–10 cm long. Primary panicle branches ascending, 2–4 cm long, bearing 1–3 fertile spikelets on each lower branch. Panicle branches smooth, glabrous in axils or pubescent in axils. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 10 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus evident, 1.5 mm long, pubescent, pungent.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 1 length of upper glume, membranous, much thinner above, purple, without keels, 3 -veined. Lower glume apex acuminate. Upper glume lanceolate, 10 mm long, membranous, much thinner above, purple, without keels, 5 -veined. Upper glume apex acuminate.



**Florets.** Fertile lemma lanceolate, subterete, 6 mm long, coriaceous, light brown, without keel, 5 -veined, more than 3-veined. Lemma surface pubescent. Lemma margins convolute, covering most of palea. Lemma apex surmounted by a ring of hairs, with this appendage 3 mm long, awned, 1 -awned. Principal lemma awn bigeniculate, 20 mm long overall, with twisted column. Middle segment of lemma awn 5 mm long, puberulous. Column of lemma awn 5 mm long, pubescent. Palea without keels.

**Flower and Fruit.** Lodicules 3. Anthers 3. Stigmas 2. Ovary glabrous. Caryopsis with adherent pericarp, fusiform. Hilum linear.

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

**Country /Province /State.** Western South America, Southern South America. Bolivia, Colombia, Ecuador, Peru.

**TDWG4.** Salta, Tucuman.

**Nassella brasiliensis** (Zanin & Longhi-Wagner) Penailillo. *Gayana, Bot.* 55:85 (1999).

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

**TYPE** from Brazil. **Basionym or Replaced Name:** *Stipa brasiliensis* A. Zanin & Longhi-Wagner *Bradea* 5(33): 342–343, f. 1. (1990). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: A. Zanin 17, 18 Dec 1987, Brazil: Rio Grande Do Sul: Cambara Do Sul Mun: Itaimbezinho (CEN; IT: CEN, HBR, ICN, MBM, MVFA, US-3358928).

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

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

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Rhizomes absent or short. Culms 44–135 cm long, 3–5 -noded. Leaf-sheaths smooth, glabrous on surface, outer margin hairy. Leaf-sheath oral hairs ciliate, 1–1.5 mm long. Ligule an eciliate membrane, 2–3 mm long, erose, truncate. Leaf-blades 17–50 cm long, 3–8 mm wide. Leaf-blade surface scabrous, rough adaxially, glabrous or pilose, hairy abaxially. Leaf-blade margins scabrous. Leaf-blade apex attenuate.

**Inflorescence.** Inflorescence a panicle. Panicle open, elliptic, 18–50 cm long. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 11–14.5 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus elongated, 1–2 mm long, pubescent, pungent.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 11–14.5 mm long, 1.1 length of upper glume, membranous, without keels, 3 -veined. Lower glume surface scabrous, rough on veins. Lower glume apex acuminate. Upper glume lanceolate, 10–12 mm long, 1.4 length of adjacent fertile lemma, membranous, without keels, 3 -veined. Upper glume surface scabrous, rough on veins. Upper glume apex acuminate.

**Florets.** Fertile lemma lanceolate, subterete, 7–8.5 mm long, coriaceous, yellow, without keel, 5 -veined, more than 3-veined. Lemma surface papillose, pilose, hairy all along. Lemma margins convolute, covering most of palea. Lemma hairs white. Lemma apex with a membranous corona or surmounted by a ring of hairs, with this appendage 0.7–1 mm long, awned, 1 -awned. Principal lemma awn bigeniculate, 50–82 mm long overall, with twisted column, deciduous. Column of lemma awn pubescent. Palea 0.7–1.5 mm long, 2 -veined, without keels.

**Flower and Fruit.** Lodicules 3. Anthers 3, 3.5–4 mm long, yellow, anther tip penicillate. Stigmas 2. Ovary glabrous. Caryopsis with adherent pericarp. Hilum linear.

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

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

**Nassella burkartii** (Torres) M.E. Barkworth & M.A. Torres. *Taxon*, 50(2): 453 : (2001).

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

**TYPE** from Argentina. **Basionym or Replaced Name:** *Stipa burkartii* Torres, *Comis. Invest. Ci. [Buenos Aires]* 12: 17, f. 2, C,c, f. 4,b. (1993). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Argentina: Prov. Buenos Aires, Pdo. Campana, Campana, 5 Nov 1933, A. Burkart 5660 (HT:SI (a & b)).

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

**Derivation** (Clifford & Bostock 2007): in honor of Arturo Ehrardo Burkart (1906–1975) Argentine botanist. *Bromus burkartii*.

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Culms erect or geniculately ascending, 35–175 cm long. Culm-internodes distally glabrous. Culm-nodes pubescent. Leaf-sheaths glabrous on surface or pubescent. Leaf-sheath oral hairs ciliate. Ligule an eciliate membrane, 0.5–3 mm long, truncate. Leaf-blades convolute, 9–27 cm long, 2.5–4.5 mm wide. Leaf-blade surface glabrous or pubescent.

**Inflorescence.** Inflorescence a panicle, terminal or terminal and axillary. Panicle open, equilateral, 10–26 cm long, bearing many spikelets or few spikelets. Panicle branches scabrous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, pubescent, hairy at tip.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 12–21.5 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus elongated, curved, 2.5–4.5 mm long, pubescent, pungent.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 12–21.5 mm long, 1 length of upper glume, hyaline, yellow or purple, without keels, 3–5 -veined (close to midvein). Lower glume apex acuminate, mucronate. Upper glume lanceolate, 12–21.5 mm long, 1.5–2 length of adjacent fertile lemma, hyaline, yellow or purple, without keels, 3–5 -veined (close to midvein). Upper glume apex acuminate, mucronate.

**Florets.** Fertile lemma lanceolate, subterete, gibbous, 8–12 mm long, chartaceous, without keel, 5 -veined, more than 3-veined. Lemma midvein ciliate, hairy below. Lemma surface asperulous, pubescent, hairy below or at base, hairy on veins. Lemma margins convolute, covering most of palea. Lemma apex with a membranous corona or surmounted by a ring of hairs (on membrane), with this appendage 0.4–0.9 mm long (plus ciliolae), awned, 1 -awned. Principal lemma awn bigeniculate, constricted at base (of corona), 65–120 mm long overall, with 37–50 mm long limb, with twisted column. Column of lemma awn 30–53 mm long, pubescent. Palea 1.2–3 mm long, 0 -veined, without keels.

**Flower and Fruit.** Lodicules 2. Anthers 3, 3–3.5 mm long, anther tip penicillate. Stigmas 2. Ovary glabrous. Caryopsis with adherent pericarp, ellipsoid, 4–5 mm long, yellow. Hilum linear, 0.66 length of caryopsis.

Cleistogenes present, in upper sheaths.

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

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

**TDWG4.** Buenos Aires, Entre Rios.

**Nassella cabreræ** Torres. *Comis. Invest. Ci. [Buenos Aires]* 13: 14–15, f. 1, I, i. (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. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Argentina: Prov. Jujuy: Dep. Cochinoca: Cochinoca, 17 Jan 1948, *Cabrera 9299* (HT: LP; IT: BAA).

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

**Derivation** (Clifford & Bostock 2007): In honor of Angel Lulio Cabrera (1908–1999) Argentinian botanist.

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Basal innovations extravaginal. Culms erect or geniculately ascending, 35–60 cm long. Culm-internodes distally glabrous. Culm-nodes glabrous. Lateral branches lacking. Leaf-sheaths mostly shorter than adjacent culm internode, striately veined, glabrous on surface. Leaf-sheath oral hairs ciliate. Ligule an eciliate membrane, 0.3–0.5 mm long, erose, truncate. Collar glabrous. Leaf-blades flat or convolute, 5–17 cm long, 2–3.5 mm wide. Leaf-blade surface glabrous.

**Inflorescence.** Inflorescence a panicle, exerted or embraced at base by subtending leaf. Panicle open, equilateral or nodding, 8–20 cm long. Panicle axis glabrous. Panicle branches glabrous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, pubescent.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 6–7 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus elongated, curved, 1–1.3 mm long, pubescent, pungent.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 6–7 mm long, 1 length of upper glume, membranous, purple, without keels, 3 -veined. Lower glume apex acuminate. Upper glume lanceolate, 6–7 mm long, membranous, purple, without keels, 3 -veined. Upper glume apex acuminate.

**Florets.** Fertile lemma oblong, subterete, 3–3.5 mm long, coriaceous, without keel, 5 -veined, more than 3-veined. Lemma surface papillose, pubescent. Lemma margins convolute, covering most of palea. Lemma apex with a membranous corona or surmounted by a ring of hairs, with this appendage 0.9–1.5 mm long, awned, 1 -

awned. Principal lemma awn bigeniculate, constricted at base (of corona), 18–29 mm long overall, with 9–15 mm long limb, with twisted column, deciduous. Column of lemma awn 5.5–8 mm long, puberulous. Palea 1.3 mm long, 0 -veined, without keels.

**Flower and Fruit.** Lodicules 2. Anthers 3. Stigmas 2. Caryopsis with adherent pericarp, ellipsoid, 2 mm long, truncate. Hilum linear, 0.75 length of caryopsis.

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

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

**TDWG4.** Jujuy, Tucuman.

### **Nassella caespitosa** Griseb. *Goett. Abh.* xix. 258. (1874).

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

**TYPE** from Argentina. **Basionym or Replaced Name:** *Stipa caespitosa* (Griseb.) Speg., *Rev. Argent. Bot.* 1: 36 (1925). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *P.G. Lorentz & G. Hieronymus* 78, 25–31 Mar 1872, Argentina: Tucumán: auf Alpenweiden bei Ciénaga, Sierra de Tucumán (GOET; IT: BAA, CORD, US-866173 (fragm.)).

**Recent Synonyms:** *Stipa plagiostephana* Speg., *Ret. Argent. Bot.* i. 36 (1925).

**Illustrations (Books):** H.Jacques-Felix, *Les Graminees d'Afrique tropicale* (1962) (as *Oryzopsis caeruleascens*).

**Derivation** (Clifford & Bostock 2007): *L. caespes*, grass that has been cut; -osa, abundance. Habit tufted.

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Basal innovations extravaginal. Culms erect, 15–75 cm long, 0.5–1.25 mm diam., 1–3 -noded. Culm-internodes smooth, distally glabrous. Culm-nodes swollen, brown, glabrous or pubescent. Lateral branches lacking. Leaf-sheaths striately veined, glabrous on surface or puberulous. Leaf-sheath oral hairs scanty or ciliate. Ligule an eciliate membrane, erose, truncate or obtuse. Leaf-blades filiform or linear, convolute, 2.5–20 cm long, 0.5–5 mm wide. Leaf-blade midrib scarcely raised beneath. Leaf-blade venation with 6–20 secondary veins. Leaf-blade surface ribbed, scabrous, rough abaxially, glabrous or puberulous, hairy abaxially. Leaf-blade margins ciliate. Leaf-blade apex attenuate.

**Inflorescence.** Inflorescence a panicle, exserted or embraced at base by subtending leaf. Panicle open, linear or elliptic, 5–25 cm long. Primary panicle branches 3 -nate, naked below or bearing spikelets almost to the base. Panicle axis smooth. Panicle branches smooth or scaberulous. Spikelets appressed, solitary. Fertile spikelets pedicelled. Pedicels present, 1–10 mm long, scabrous.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 4–5.5 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus brief, 0.2–0.3 mm long, pubescent, acute.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 4–4.5 mm long, 1 length of upper glume, membranous, without keels, 3 -veined. Lower glume apex acute. Upper glume lanceolate, 4–5 mm long, membranous, without keels, 3 -veined. Upper glume apex acute.

**Florets.** Fertile lemma elliptic, subterete, 2–3.5 mm long, 0.5–1 mm wide, coriaceous, dark brown, without keel, 5 -veined, more than 3-veined. Lemma surface smooth, pubescent, hairy on back. Lemma margins convolute, covering most of palea. Lemma apex with a membranous corona or surmounted by a ring of hairs, awned, 1 -awned. Principal lemma awn bigeniculate, 5–9.5 mm long overall, with 2–8 mm long limb, with twisted column, persistent. Middle segment of lemma awn 1–4 mm long. Column of lemma awn 1–4 mm long. Palea lanceolate, 0.5–0.75 mm long, 0.2–0.33 length of lemma, 0 -veined, without keels.

**Flower and Fruit.** Lodicules 2. Anthers 3. Stigmas 2. Caryopsis with adherent pericarp. Hilum linear.

**Distribution (TDWG). Continent.** Europe (\*), South America.

**Region.** Northern Europe (\*).

**Country /Province /State.** : GB Aliens (Ryves et al). Western South America, Southern South America. Bolivia. Argentina Northwest.

**TDWG4.** Catamarca, Jujuy, La Rioja, Salta, Tucuman.

### **Nassella carettei** (Hauman) M.A. Torres. *Monogr. Comis. Invest. Ci. Prov. Buenos Aires*, 13: 16: (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 (as *Stipa*), U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

**TYPE** from Argentina. **Basionym or Replaced Name:** *Stipa carettei* Hauman, *Anales Mus. Nac. Buenos Aires* 29: 399, f. 2. (1917). T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: ST: *Edouard Carotte s.n.*, end Dec 1906, Argentina: Mendoza: Dep. de Las Heras

ST: *Hauman s.n.*, Jan 1910, Argentina: Mendoza: Cacheuta, 1200 m alt (?).

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

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Culms 50–60 cm long. Leaf-sheaths 4–7 cm long. Ligule an eciliate membrane, 1.5–3 mm long. Leaf-blades filiform, convolute, 20–40 cm long, 0.5 mm wide. Leaf-blade apex attenuate.

**Inflorescence.** Inflorescence a panicle. Panicle open, linear, 8–15 cm long, 1–1.5 cm wide. Primary panicle branches 7-nate, whorled at most nodes, 6–7 cm long. Panicle axis 5–7 noded. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 7–8 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus evident, 0.5–1 mm long, pubescent, acute.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 7–8 mm long, 1 length of upper glume, membranous, purple, without keels, 1-veined. Lower glume lateral veins absent. Lower glume apex attenuate. Upper glume lanceolate, 7–8 mm long, membranous, purple, without keels, 3-veined. Upper glume apex attenuate.

**Florets.** Fertile lemma lanceolate, subterete, 4–5 mm long, 0.75 mm wide, coriaceous, without keel, 5-veined, more than 3-veined. Lemma margins convolute, covering most of palea. Lemma apex surmounted by a ring of hairs, awned, 1-awned. Principal lemma awn bigeniculate, 30–50 mm long overall, with twisted column. Column of lemma awn glabrous. Palea absent or minute.

**Flower and Fruit.** Anthers 3, 2 mm long, purple. Ovary pubescent on apex. Caryopsis with adherent pericarp.

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

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

**TDWG4.** Catamarca, La Rioja, Mendoza, San Juan.

***Nassella catamarcensis*** M.A. Torres. *Monogr. Comis. Invest. Ci. Prov. Buenos Aires*, 13: 17 (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. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: Argentina: Prov. Catamarca: Dep. Ancasti/Dep. Capayán, cumbre de Ancasti, 1600 m, 6 Feb 1941, *Parodi 14174* (HT: BAA).

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

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

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Basal innovations intravaginal. Culms erect, slender, 35–40 cm long. Culm-internodes distally glabrous. Lateral branches lacking. Leaf-sheaths mostly shorter than adjacent culm internode, striately veined, smooth, glabrous on surface. Leaf-sheath oral hairs lacking. Ligule an eciliate membrane, 1.5 mm long. Leaf-blades filiform, convolute, 12–15 cm long, 0.3–0.5 mm wide. Leaf-blade surface scaberulous, glabrous.

**Inflorescence.** Inflorescence a panicle, embraced at base by subtending leaf. Panicle contracted, linear, 8–10 cm long, bearing few spikelets. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 14–24 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus elongated, 1.2–1.5 mm long, pubescent, acute.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 14–24 mm long, 1 length of upper glume, membranous, without keels, 3-veined. Lower glume apex attenuate. Upper glume lanceolate, 14–24 mm long, membranous, without keels, 3-veined. Upper glume apex attenuate.

**Florets.** Fertile lemma elliptic, subterete, 4.5–5.5 mm long, coriaceous, without keel, 5-veined, more than 3-veined. Lemma midvein pubescent, hairy below. Lemma surface scaberulous or papillose, glabrous. Lemma margins convolute, covering most of palea. Lemma apex with a membranous corona or surmounted by a ring of hairs, with this appendage 1.2–1.4 mm long, awned, 1-awned. Principal lemma awn bigeniculate, constricted at

base (of corona), 70–90 mm long overall, with 50–55 mm long limb, with twisted column, persistent. Column of lemma awn 20–25 mm long, puberulous. Palea 1.4 mm long, 0 -veined, without keels.

**Flower and Fruit.** Lodicules 2. Anthers 3. Stigmas 2. Caryopsis with adherent pericarp. Hilum linear.

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

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

**TDWG4.** Catamarca.

**Nassella cernua** (Stebbins & Love) M.E. Barkworth. *Taxon*, 39(4): 609: (1990).

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

**TYPE** from USA. **Basionym or Replaced Name:** *Stipa cernua* Stebbins & Love, *Madrono* 6(4): 137–141, f. 1, pl. 13, f. 1, 3. (1941). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: USA: California: West side of Cedar Mountain Ridge, Alameda County, *G. L. Stebbins 2732* (HT: UC-641631).

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

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

**Derivation** (Clifford & Bostock 2007): *L. nodding*. Panicle branches pendant.

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial, caespitose, clumped densely. Culms erect, 60–90 cm long. Leaf-sheaths glabrous on surface. Ligule an eciliate membrane, 2 mm long. Leaf-blades flat or involute, 1.2–2.4 mm wide, glaucous. Leaf-blade surface pilose, hairy adaxially or on both sides.

**Inflorescence.** Inflorescence a panicle, exerted or embraced at base by subtending leaf. Panicle open, linear, 30–50 cm long. Primary panicle branches ascending or spreading. Panicle branches flexuous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 12–19 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus elongated, 2 mm long, pubescent, pungent.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume linear or lanceolate, 12–19 mm long, 1.1–1.7 length of upper glume, membranous, without keels, 3 -veined. Lower glume apex acuminate. Upper glume linear or lanceolate, 11 mm long, 1.1–2 length of adjacent fertile lemma, membranous, without keels, 3 -veined. Upper glume apex acuminate.

**Florets.** Fertile lemma elliptic, subterete, 5–10 mm long, chartaceous, without keel, more than 3-veined. Lemma surface papillose, pilose, hairy below. Lemma margins convolute, covering most of palea. Lemma apex awned, 1 -awned. Principal lemma awn bigeniculate, 60–110 mm long overall, with twisted column. Column of lemma awn glabrous or hispidulous. Palea ovate, 1–1.5 mm long, 0 -veined, without keels. Palea apex obtuse.

**Flower and Fruit.** Anthers 3. Stigmas 2. Caryopsis with adherent pericarp, trigonous, 4 mm long, light brown. Hilum linear.

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

**Country /Province /State.** North-central Pacific. Hawaii. Southwestern USA, Mexico. California. Northwest Mexico.

Baja California.

**Nassella charruana** (Arech.) M.E. Barkworth. *Taxon*, 39(4): 609: (1990).

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

**TYPE** from Uruguay. **Basionym or Replaced Name:** *Stipa charruana* Arechav., *Anales Mus. Nac. Buenos Aires* 4: 181, f. 3 (1895). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: IT: *J. Arechavaleta s.n.*, Oct, Uruguay: Montevideo (US-993455).

**Illustrations (Books):** A.Wilson (ed.), *Flora of Australia*, Vol 44A. *Poaceae* (2009) (63, Fig 9), D.Sharp & B.K.Simon, *AusGrass*. Grasses of Australia. CD-Rom Version 1.0. (2002), A.Burkat, *Flora Ilustrada de Entre Rios (Argentina)*, Pt II, Gramineas (1969) (148, Fig 49 as *Stipa*), A.L.Cabrera, *Flora de la Provincia de Buenos Aires, IV Pt 2 Gramineas* (1970) (277, Fig. 72as *Stipa*), B.Rosengurtt, *Gramineas Uruguayas I* (1970) (66, Fig. 22 & 78, Fig. 25 as *Stipa*).

**Derivation** (Clifford & Bostock 2007): *L. -ana*, indicating connection. In honor of the Charrzas, a group of Indian tribes in Uruguay.

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Culms erect, 25–80 cm long. Ligule an eciliate membrane, 0.8–2 mm long. Leaf-blades conduplicate or convolute, 5–20 cm long, 0.5–1 mm wide, stiff. Leaf-blade apex acuminate.

**Inflorescence.** Inflorescence a panicle. Panicle open, oblong, effuse, 6–30 cm long. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 16–20 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus elongated, 2–2.5 mm long, pubescent, pungent.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume linear, 16–20 mm long, 1.3 length of upper glume, hyaline, without keels, 3 -veined. Lower glume apex attenuate. Upper glume lanceolate, 12–15 mm long, 1.4–1.5 length of adjacent fertile lemma, hyaline, without keels, 3 -veined. Upper glume apex attenuate.

**Florets.** Fertile lemma lanceolate, subterete, 8–10.5 mm long, coriaceous, dark brown, without keel, 5 -veined, more than 3-veined. Lemma surface papillose. Lemma margins convolute, covering most of palea. Lemma apex with a membranous corona, with this appendage 5–6 mm long, awned, 1 -awned. Principal lemma awn bigenulate, 50–80 mm long overall, with twisted column. Palea elliptic, 0.2–0.3 length of lemma, hyaline, 2 -veined, without keels.

**Flower and Fruit.** Lodicules 3, oblanceolate, membranous. Anthers 3. Stigmas 2. Ovary glabrous. Caryopsis with adherent pericarp, linear, 3.5 mm long, dark brown. Hilum linear.

**Distribution (TDWG). Continent.** Europe (\*), Australasia (\*), South America.

**Region. Northern Europe** (\*).

**Country /Province /State.** : GB Aliens (Ryves et al). **Australia.** Victoria (\*). **Brazil, Southern South America.** Brazil South. Argentina Northeast, Uruguay.

**TDWG4.** Catarina, Rio Grande do Sul. Buenos Aires, Corrientes, Entre Rios, Santa Fe.

**Nassella chaparensis** F.Rojas. *Gayana, Bot.* 54(2): 165 (1998).

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

**TYPE** from Bolivia. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: Bolivia: Dpto. Cochabamba: Prov. Chapare: localidad Buena Vista, 3800 m, 30 Apr 1990, *Aleman 3000* (HT: LPB; IT: HRF-La Violeta).

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

**Derivation** (Clifford & Bostock 2007): L. *-ensis*, denoting origin. From Chapare Province, Department Cocha-bamba, Bolivia.

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Culms erect, 50–80 cm long, 2–4 -noded. Leaf-sheaths subequal to internodes, antrorsely scabrous. Leaf-sheath oral hairs ciliate. Ligule an eciliate membrane, 1 mm long, truncate. Leaf-blades flat or convolute, 7–35 cm long, 1.2–6 mm wide. Leaf-blade surface pubescent, hairy adaxially. Leaf-blade apex attenuate.

**Inflorescence.** Inflorescence a panicle, embraced at base by subtending leaf. Panicle open or contracted, linear or elliptic, 10–15 cm long. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 3.3–3.8 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus brief, 0.2 mm long, pubescent, obtuse.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 3.2–3.5 mm long, 1 length of upper glume, membranous, without keels, 3 -veined. Lower glume surface pubescent, hairy on veins. Lower glume apex acuminate. Upper glume lanceolate, 3.3–3.8 mm long, membranous, without keels, 3 -veined. Upper glume surface pubescent, hairy on veins. Upper glume apex acuminate.

**Florets.** Fertile lemma oblong, subterete, 2–2.5 mm long, coriaceous, without keel, 5 -veined, more than 3-veined. Lemma surface papillose, pubescent, hairy on veins. Lemma margins convolute, covering most of palea. Lemma apex with a membranous corona, awned, 1 -awned. Principal lemma awn geniculate, 10–15 mm long overall, with twisted column. Palea lanceolate, 1 mm long, 0 -veined, without keels.

**Flower and Fruit.** Lodicules 2, 1 mm long. Anthers 1, 0.5 mm long, retained within floret. Staminodes present. Caryopsis with adherent pericarp, oblong or obovoid, laterally compressed, 1.6–2 mm long. Hilum linear.

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

**Country /Province /State.** Western South America. Bolivia.

**Nassella chilensis** (Trin.) E.Desv. C. Gay, *Fl. Chil.* 6: 267 (1853).

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

**TYPE** from Chile. **Basionym or Replaced Name:** *Urachne chilensis* Trin., *Mem. Acad. Imp. Sci. Saint-Petersbourg, Ser. 6, Sci. Math., Seconde Pt. Sci. Nat.* 3,1(2–3): 123. (1834). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: ST: *Poeppig I.* 40, 1827, Chile: Concon (LE-TRIN-1461.01; US-77375 a (fragm. ex LE-TRIN-1461.01)).

LT: *Poeppig I.* 40, *Sprengel sub no.* 28, Chile: Concon (US-77375 (fragm. ex P)). LT designated by Muñoz-Schick, *Gayana, Bot.* 47: 18 (1990).

ST: *Cuming s.n.*, Chile (LE-TRIN-1461.02; US-77374 (fragm. ex LE-TRIN-1461.02)). "Chile Cumming dt am Prescott 1832." Note on US-fragm. "Trinius confused two species under this name. The spikelets description applies to this, but T. cites the ms name *Caryochloa chilensis* Spr.. The Trinius specimen bearing that name (Poeppig Chile I. 40) is a different species."

ST: *Poeppig 29*, Chile: in arvis montanis pr. Concon (LE-TRIN-1461.04 left pl.; IST: US-77375 b (fragm. ex LE-TRIN-1461.04 left pl.)). apparently this is an Echinopogon species; *fide* M. Muñoz-Schick (1990).

**Recent Synonyms:** *Nassella major* (Trin. & Rupr.) E.Desv., C. Gay, *Fl. Chil.* 6: 265. (1853).

**Illustrations (Books):** M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 24 *Poaceae*, part 1 (2007) (175), M.N.Correa, *Flora Patagonica* Parte III, Gramineae (1978) (328, Fig 221).

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

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial. Rhizomes short. Culms 30–100 cm long, 1 mm diam., 4–12 -noded. Ligule an eciliate membrane. Leaf-blades spreading, flat or convolute, 3–10 cm long, 1–1.5 mm wide.

**Inflorescence.** Inflorescence a panicle. Panicle contracted, linear, 2–15 cm long. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets ovate, subterete, 3–4.5 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume ovate, 3–4.5 mm long, 1 length of upper glume, membranous, 1-keeled, 3 -veined. Lower glume apex acuminate, awned, 1 -awned, awn 0.2–0.3 mm long. Upper glume ovate, 3–4.5 mm long, 2 length of adjacent fertile lemma, membranous, 1-keeled, 3 -veined. Upper glume apex acuminate, awned, 1 -awned, awn 0.2–0.3 mm long.

**Florets.** Fertile lemma ovate, laterally compressed, 1.6–2.2 mm long, coriaceous, shiny, keeled, lightly keeled. Lemma margins convolute, covering most of palea. Lemma apex obtuse, awned, 1 -awned. Principal lemma awn eccentric, bigenulate, 7–10 mm long overall, with a straight or slightly twisted column, deciduous. Palea 0.5 length of lemma, membranous, 0 -veined, without keels.

**Flower and Fruit.** Lodicules 2. Anthers 3, 0.3–0.4 mm long.

**Distribution (TDWG). Continent.** Europe (\*), South America.

**Region. Northern Europe** (\*).

**Country /Province /State.** : GB Aliens (Ryves et al). **Western South America, Southern South America.** Ecuador. Argentina South, Chile North, Chile Central.

**TDWG4.** Chubut, Neuquén, Río Negro. Tarapaca, Antofagasta, Atacama, Coquimbo, Rest of Chile-Biobio, La Auracania, Maule, O'Higgins, Santado, Valparaiso. Antofagasta, Atacama. Coquimbo, Valparaiso, Santiago, O'Higgins, Maule, Biobio, La Araucania.

**Nassella clarazii** (Ball) M.E. Barkworth. *Taxon*, 39(4): 609: (1990).

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

**TYPE** from Argentina. **Basionym or Replaced Name:** *Stipa clarazii* Ball, *J. Linn. Soc., Bot.* 21: 237. (1884). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *M.G. Claraz 21*, no date, Argentina: Buenos Aires: Bahía Blanca (K; IT: BAA (fragm.), US-866131 (fragm.)).

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

**Derivation** (Clifford & Bostock 2007): in honor of Georges Claraz (1832–1930), Swiss plant collector, sometime resident of Argentina.

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Culms erect or geniculately ascending, 50–90 cm long. Culm-internodes distally glabrous. Leaf-sheaths glabrous on surface to pubescent, outer margin hairy. Leaf-sheath oral hairs ciliate, 1–2 mm long. Ligule an eciliate membrane, 2–3 mm long, truncate or obtuse. Leaf-blades curved or flexuous, flat or convolute, 7–20 cm long, 1–3.5 mm wide. Leaf-blade surface scabrous, rough adaxially, glabrous.

**Inflorescence.** Inflorescence a panicle, embraced at base by subtending leaf. Panicle open, equilateral, 10–25 cm long, bearing few spikelets. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 25–37 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus elongated, curved, 3–6 mm long, pubescent, pungent.

**Glumes.** Glumes persistent, similar, with lower wider than upper, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 25–37 mm long, 1 length of upper glume, hyaline, purple, without keels, 3–5 -veined. Lower glume apex setaceously acuminate. Upper glume lanceolate, 25–37 mm long, 2–2.5 length of adjacent fertile lemma, hyaline, purple, without keels, 3–5 -veined. Upper glume apex setaceously acuminate.

**Florets.** Fertile lemma lanceolate, subterete, 9–14 mm long, coriaceous, without keel, 5 -veined, more than 3-veined. Lemma surface papillose, pilose, hairy on veins. Lemma margins convolute, covering most of palea. Lemma apex with a membranous corona or surmounted by a ring of hairs (on membrane), with this appendage 0.8–1.2 mm long (plus 1–2mm hairs), awned, 1 -awned. Principal lemma awn bigeniculate, constricted at base (of corona), 150–170 mm long overall, with 55–110 mm long limb, with twisted column. Column of lemma awn 17–40 mm long, hirsute. Palea 2–3 mm long, hyaline, 0 -veined, without keels.

**Flower and Fruit.** Lodicules 2. Anthers 3, 3.5–7.5 mm long, anther tip penicillate. Stigmas 2. Ovary glabrous. Caryopsis with adherent pericarp, linear, 6–7 mm long, dark brown. Hilum linear, 1 length of caryopsis.

Cleistogenes present, in lower sheaths.

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

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

**TDWG4.** Catamarca, Jujuy, Salta, San Luis, Tucuman. Buenos Aires, Cordoba, La Pampa, Santa Fe. Río Negro.

**Nassella coquimbensis** (Matthei) Penailillo. *Gayana, Bot.* 55:86 (1999).

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

**TYPE** from Chile. **Basionym or Replaced Name:** *Stipa coquimbensis* O. R. Matthei, *Gayana, Bot.*, No. 13, 35 (1965). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Chile: Prov. Coquimbo: Carrertera Pamamericana, 8 km al norte de la Quebrada del Teniente, 13 Oct 1963, *Martcorena-Matthei 163* (HT: CONC-29361).

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

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

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Culms erect, 30–50 cm long, 3 -noded. Culm-nodes glabrous. Ligule a ciliolate membrane, 0.2–0.5 mm long on basal shoots. Leaf-blades convolute, 4–10 cm long, 0.5–3 mm wide. Leaf-blade surface ribbed.

**Inflorescence.** Inflorescence a panicle, embraced at base by subtending leaf. Panicle open, linear, 8–15 cm long. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, 5–20 mm long.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 23 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus elongated, curved, 2.5–3 mm long, pubescent, pungent.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 23 mm long, 1.2 length of upper glume, membranous, without keels, 5 -veined. Lower glume apex acuminate. Upper glume lanceolate, 19 mm long, membranous, without keels, 3 -veined. Upper glume apex acuminate.

**Florets.** Fertile lemma lanceolate, subterete, 10 mm long, coriaceous, light brown, without keel, 5 -veined, more than 3-veined. Lemma midvein pubescent, hairy below. Lemma surface asperulous. Lemma margins convolute, covering most of palea. Lemma apex surmounted by a ring of hairs, with this appendage 1–1.5 mm



long, awned, 1 -awned. Principal lemma awn bigeniculate, 45–50 mm long overall, with twisted column, deciduous. Column of lemma awn 13 mm long, plumose. Palea 3 mm long, 2 -veined, without keels.

**Flower and Fruit.** Lodicules 3, 0.5 mm long. Anthers 3. Stigmas 2. Ovary glabrous. Caryopsis with adherent pericarp, fusiform. Hilum linear.

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

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

Coquimbo.

**Nassella cordobensis** (Speg.) M.E. Barkworth. *Taxon*, 39(4): 609: (1990).

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

**TYPE** from Argentina. **Basionym or Replaced Name:** *Stipa cordobensis* Speg., *Anales Mus. Nac. Montevideo* 4(2): 141–143, f. 42. (1901). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: LT: *C. Spegazzini s.n.*, Dec 1887, Argentina: Córdoba: ad ripas Río Primero (LP). LT designated by ?; cited by Torres, *CIC* 13: 18 (1997).

ST: *T. Stuckert*, Jan 1896, Argentina: Córdoba: in collinis circumvicinis (LP).

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

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

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Rhizomes short. Basal innovations extravaginal. Culms erect, 30–110 cm long. Culm-internodes distally glabrous. Lateral branches lacking. Leaf-sheaths glabrous on surface, outer margin hairy. Leaf-sheath oral hairs ciliate. Ligule an eciliate membrane, 2–6 mm long, obtuse. Leaf-blades filiform, convolute, 10–35 cm long, 0.6–1 mm wide. Leaf-blade surface smooth, puberulous, hairy adaxially.

**Inflorescence.** Inflorescence a panicle, embraced at base by subtending leaf. Panicle open, linear, equilateral, 15–35 cm long, bearing few spikelets. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 11–22 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus elongated, curved, 1.5–2.2 mm long, pubescent, pungent.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 11–22 mm long, 1 length of upper glume, hyaline, pallid or purple, without keels, 3–5 -veined. Lower glume primary vein smooth or scaberulous. Lower glume margins eciliate or ciliate. Lower glume apex setaceously acuminate. Upper glume lanceolate, 11–22 mm long, 1.5–2 length of adjacent fertile lemma, hyaline, pallid or purple, without keels, 3–5 -veined. Upper glume apex setaceously acuminate.

**Florets.** Fertile lemma linear, subterete, 6.8–9.5 mm long, chartaceous, without keel, 5 -veined, more than 3-veined. Lemma surface papillose, glabrous. Lemma margins convolute, covering most of palea. Lemma apex with a membranous corona or surmounted by a ring of hairs (on membrane), with this appendage 0.5–0.8 mm long (plus hairs 0.5mm), awned, 1 -awned. Principal lemma awn bigeniculate, simple at base, 45–88 mm long overall, with 30–60 mm long limb, with twisted column. Column of lemma awn 11–19 mm long, puberulous. Palea 2 mm long, 0 -veined, without keels.

**Flower and Fruit.** Lodicules 2. Anthers 3, 4–5 mm long, anther tip penicillate. Stigmas 2. Ovary glabrous. Caryopsis with adherent pericarp, fusiform, 4–7 mm long, light brown. Hilum linear, 1 length of caryopsis.

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

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

**TDWG4.** Catamarca, La Rioja, Mendoza, San Luis, Buenos Aires, Cordoba, La Pampa.

**Nassella crassiflora** (Roseng. & Arrill.) M.E. Barkworth. *Taxon*, 39(4): 609: (1990).

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

**TYPE** from Uruguay. **Basionym or Replaced Name:** *Stipa crassiflora* Roseng. & B.R. Arrill., *Bol. Fac. Agron. Univ. Montevideo* 72: 30, t. 8 (1964). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Uruguay: Maldonado, Cerro de las Animas, diciembre 1940, *Chebataroff* 500/575 (HT: MVFA).

**Illustrations (Books):** B.Rosengurt, *Gramineas Uruguayas I* (1970) (66, Fig. 22 as *Stipa*).

**Derivation** (Clifford & Bostock 2007): L. crassus, thick; flos, flower. Spikelets thick.

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Basal innovations extravaginal. Culms erect, 60–110 cm long, 3–4 -noded. Lateral branches lacking. Leaf-sheaths scaberulous. Ligule an eciliate membrane, 1 mm long. Leaf-blades 30–50 cm long, 3–7 mm wide. Leaf-blade surface ribbed.

**Inflorescence.** Inflorescence a panicle. Panicle open, elliptic, 25–32 cm long. Panicle branches puberulous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 26–32 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus elongated, curved, 3.2–5 mm long, pilose, pungent.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 26–32 mm long, 1.05 length of upper glume, membranous, without keels, 3–5 -veined. Lower glume apex setaceously acuminate. Upper glume lanceolate, 25–30 mm long, membranous, without keels, 5 -veined. Upper glume apex setaceously acuminate.

**Florets.** Fertile lemma lanceolate, subterete, 14–16.5 mm long, coriaceous, without keel, 5 -veined, more than 3-veined. Lemma surface pilose. Lemma margins convolute, covering most of palea. Lemma apex with a membranous corona, with this appendage 0.8–1 mm long, awned, 1 -awned. Principal lemma awn bigeniculate, 102–157 mm long overall, with twisted column. Column of lemma awn 75–110 mm long, pubescent. Palea 0.5–2 mm long, without keels.

**Flower and Fruit.** Lodicules 2, 1.7–2 mm long. Anthers 3, 5 mm long. Stigmas 2. Ovary glabrous. Caryopsis with adherent pericarp, fusiform, 7–8.5 mm long. Hilum linear.

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

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

**Nassella curamalalensis** (Speg.) M.E. Barkworth. *Taxon*, 39(4): 609: (1990).

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

**TYPE** from ?Uruguay. **Basionym or Replaced Name:** *Stipa curamalalensis* Speg., *Anales Mus. Nac. Montevideo* 4(2): 160–162, f. 49 (1901). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Habitat non rara in rupestribus ad basin montis Curámálal grande vocate, Dec 1899, *Spegazzini s.n.*

**Illustrations (Books):** A.L.Cabrera, *Flora de la Provincia de Buenos Aires, IV Pt 2 Gramineas* (1970) (285, Fig. 73 as *Stipa*), B.Rosengurt, *Gramineas Uruguayas I* (1970) (66, Fig. 22 as *Stipa*).

**Derivation** (Clifford & Bostock 2007): L. -ensis, denoting origin. From Mt Curamalal, Argentina.

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Culms erect, slender, 15–70 cm long. Culm-internodes distally glabrous. Leaf-sheaths glabrous on surface. Leaf-sheath oral hairs lacking. Ligule an eciliate membrane, 0.5–1 mm long, obtuse. Leaf-blades filiform, conduplicate, 15–20 cm long, 0.3–0.4 mm wide. Leaf-blade surface scaberulous. Leaf-blade apex acute, pungent.

**Inflorescence.** Inflorescence a panicle, terminal or terminal and axillary. Panicle open, linear, equilateral, 5–10 cm long, bearing few spikelets. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, laterally compressed, 6–12 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus evident or elongated, curved, 0.6–1.2 mm long, pubescent, obtuse.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 6–12 mm long, 1 length of upper glume, hyaline, purple, without keels, 3 -veined. Lower glume surface scabrous, rough on veins. Lower glume apex setaceously acuminate. Upper glume lanceolate, 6–12 mm long, 2–2.5 length of adjacent fertile lemma, hyaline, purple, without keels, 3 -veined. Upper glume surface scabrous, rough on veins. Upper glume apex setaceously acuminate.

**Florets.** Fertile lemma linear, laterally compressed, gibbous, 3.5–5 mm long, chartaceous or coriaceous, without keel, 5 -veined, more than 3-veined. Lemma surface papillose, glabrous. Lemma margins convolute, covering most of palea. Lemma apex awned, 1 -awned. Principal lemma awn eccentric, bigeniculate, 30–50 mm long overall, with 23–30 mm long limb, with twisted column. Column of lemma awn 10–15 mm long, glabrous. Palea 1–1.9 mm long, 0 -veined, without keels.

**Flower and Fruit.** Lodicules 2. Anthers 3, 2 mm long, anther tip penicillate. Stigmas 2. Ovary glabrous. Caryopsis with adherent pericarp, fusiform. Hilum linear.

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

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

**TDWG4.** Buenos Aires, La Pampa.

**Nassella curviseta** (A. Hitchc.) M.E. Barkworth. *Taxon*, 39(4): 609: (1990).

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

**TYPE** from Bolivia. **Basionym or Replaced Name:** *Stipa curviseta* Hitchc., *Contr. U.S. Natl. Herb.* 24(7): 282 (1925). T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: HT: Asplund 6551, 24 Mar 1921, Bolivia: Potosí: Uyuni, 3700 m (US-1099338).

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

**Derivation** (Clifford & Bostock 2007): *L. curvus*, bent; seta, bristle. Lemma with a curved awn.

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Butt sheaths glabrous or sparsely hairy. Culms erect or geniculately ascending, 30–60 cm long. Culm-internodes distally glabrous. Lateral branches lacking. Leaf-sheaths glabrous on surface. Leaf-sheath oral hairs ciliate. Ligule an eciliate membrane, 1–3 mm long. Leaf-blades involute, 10–20 cm long, 1 mm wide, stiff. Leaf-blade surface smooth or scaberulous, rough abaxially, pubescent, hairy adaxially. Leaf-blade margins ciliate. Leaf-blade apex pungent.

**Inflorescence.** Inflorescence a panicle. Panicle open, pyramidal, nodding, 15–20 cm long. Primary panicle branches whorled at most nodes, 5–10 cm long. Panicle axis with lower internodes 5–10 cm long, puberulous. Panicle branches flexuous, puberulous. Spikelets appressed, solitary. Fertile spikelets pedicelled. Pedicels present, 2 mm long.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 15 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus elongated, 3.5 mm long, pubescent, pungent.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 15 mm long, 1 length of upper glume, membranous, much thinner above, purple, without keels, 3 -veined. Lower glume apex attenuate. Upper glume lanceolate, 15 mm long, membranous, much thinner above, purple, without keels, 3 -veined. Upper glume apex attenuate.

**Florets.** Fertile lemma linear, subterete, 8 mm long, coriaceous, without keel, 5 -veined, more than 3-veined. Lemma surface puberulous or pubescent. Lemma margins convolute, covering most of palea. Lemma apex surmounted by a ring of hairs, awned, 1 -awned. Principal lemma awn bigenulate, 50–70 mm long overall, with 30–50 mm long limb, with twisted column, deciduous, limb ciliate, glabrescent towards tip. Middle segment of lemma awn ciliate. Column of lemma awn 10 mm long, hirtellous, with 2 mm long hairs. Palea 0 -veined, without keels.

**Flower and Fruit.** Lodicules 2. Anthers 3. Stigmas 2. Caryopsis with adherent pericarp. Hilum linear.

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

**Region. Northern Europe.**

**Country /Province /State. :** GB Aliens (Ryves et al). **Western South America, Southern South America.** Bolivia. Argentina Northwest.

**TDWG4.** Catamarca, Jujuy, Salta.

**Nassella dasycarpa** (Hitchc.) M.A. Torres. *Monogr. Comis. Invest. Ci. Prov. Buenos Aires*, 13: 19: (1997).

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

**Recent Synonyms:** *Stipa rupestris* Phil., *Anal. Mus. nac. Chile* 81. (1891).

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

**Derivation** (Clifford & Bostock 2007): *Gk. dasys*, hairy; *karpos*, fruit. Lemma villous all over.

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

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

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

**TDWG4.** Jujuy, Salta.

**Nassella depauperata** (Pilger) M.E. Barkworth. *Taxon*, 39(4): 609: (1990).

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

**TYPE** from Peru. **Basionym or Replaced Name:** *Stipa depauperata* Pilg., *Bot. Jahrb. Syst.* 56(Beibl. 123): 23 (1920). T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: HT: A. Weberbauer 6903, 3 Apr 1914, Peru: Arequipa/Puno: südlich von Sumbay (B; US-1645160, US-1108623, US-1517220).

**Illustrations (Journals):** *Ruizia* (13:70, Fig 8t-u (1993) as *Stipa*).

**Derivation** (Clifford & Bostock 2007): L. reduced. Small compared with related species.

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Basal innovations intravaginal. Culms 20–40 cm long, 2 -noded. Culm-nodes glabrous. Leaf-sheaths 3–4 cm long, glabrous on surface or puberulous. Leaf-sheath oral hairs ciliate. Ligule an eciliate membrane, truncate. Leaf-blades 2–7(–9) cm long. Leaf-blade surface pubescent, hairy adaxially. Leaf-blade margins pubescent.

**Inflorescence.** Inflorescence a panicle. Panicle contracted, linear, 7–15 cm long. Primary panicle branches 4–5 cm long, bearing spikelets almost to the base. Panicle axis with lower internodes 3–6 cm long. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 6 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus evident, pubescent, acute.

**Glumes.** Glumes similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 6 mm long, 1 length of upper glume, hyaline, without keels. Upper glume lanceolate, 6 mm long, 1.5 length of adjacent fertile lemma, hyaline, without keels. Upper glume apex acute.

**Florets.** Fertile lemma lanceolate, subterete, 4 mm long, coriaceous, without keel, more than 3-veined. Lemma surface pubescent. Lemma margins convolute, covering most of palea. Lemma apex surmounted by a ring of hairs, awned, 1 -awned. Principal lemma awn bigeniculate, 13 mm long overall, with twisted column. Column of lemma awn pubescent.

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

**Country /Province /State.** Western South America and Southern South America. Bolivia, Colombia, Ecuador, Peru. Argentina Northwest.

**TDWG4.** Jujuy, Salta, Tucuman.

**Nassella duriuscula** (Phil.) M.E. Barkworth. *Taxon*, 39(4): 610: (1990).

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

**TYPE** from Chile. **Basionym or Replaced Name:** *Stipa duriuscula* Phil., *Linnaea* 33(3–4): 282 (1864). T:<Type of Basionym>; *vide* TROPICOS and Kew Synonymy Database: IT: Landbeck s.n., Chile: Prov. Colchagua (SGO-37403, SGO-63152, US-866120A (fragm.)).

**Recent Synonyms:** *Stipa barbinodis* Phil., *Anal. Univ. Chil.* 93: 721. (1896).

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

**Derivation** (Clifford & Bostock 2007): L. *durius*, harder; -ula, diminutive. Foliage somewhat harsh.

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Culms erect, 40–75 cm long, 2 -noded. Culm-nodes pubescent. Ligule an eciliate membrane, 0.8–1 mm long. Leaf-blades convolute, 2–15 cm long, 1.5 mm wide. Leaf-blade surface ribbed, pubescent, hairy on both sides.

**Inflorescence.** Inflorescence a panicle. Panicle open, 10–15 cm long. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, 0.5–1.5 mm long, pubescent.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 13–18 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus elongated, 2.3–5 mm long, pubescent, pungent.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 13–18 mm long, 1 length of upper glume, membranous, purple, without keels, 3 -veined. Lower glume surface puberulous, hairy on veins. Lower glume apex acuminate. Upper glume lanceolate, 12–17 mm long, membranous, purple, without keels, 5 -veined. Upper glume surface puberulous, hairy on veins. Upper glume apex acuminate.

**Florets.** Fertile lemma lanceolate, subterete, 8–8.7 mm long, coriaceous, dark brown, without keel, 5 -veined, more than 3-veined. Lemma midvein pubescent, hairy below. Lemma surface papillose, rough above. Lemma margins convolute, covering most of palea. Lemma apex with a membranous corona or surmounted by a ring of hairs, with this appendage 0.5–1 mm long (plus hairs 0.5–1mm), awned, 1 -awned. Principal lemma awn geniculate, 47–68 mm long overall, with twisted column. Column of lemma awn 18–20 mm long, pubescent. Palea 1–1.5 mm long, 0.25 length of lemma, without keels.

**Flower and Fruit.** Lodicules 2, 1 mm long. Anthers 3. Stigmas 2. Ovary glabrous. Caryopsis with adherent pericarp, oblong or obovoid, 4 mm long. Hilum linear.

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

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

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

**Nassella elata** (Speg.) M.A. Torres. *Monogr. Comis. Invest. Ci. Prov. Buenos Aires*, 13: 20: (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 Chile. **Basionym or Replaced Name:** *Stipa caespitosa* var. *elata* Speg., *Anales Mus. Nac. Montevideo* 4(2): 119–120, f. 31g-i (1901). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: E. Holmberg s.n., Feb 1900, Chile: in Puna de Atacama (LP).

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

**Derivation** (Clifford & Bostock 2007): L. tall. Culms taller than those of most species of the genus.

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Basal innovations extravaginal. Culms erect, 15–75 cm long, 0.5–1.25 mm diam., 1–3 -noded. Culm-internodes smooth, distally glabrous. Culm-nodes swollen, brown, glabrous or pubescent. Lateral branches lacking. Leaf-sheaths striately veined, glabrous on surface or puberulous. Leaf-sheath oral hairs scanty or ciliate. Ligule an eciliate membrane, erose, truncate or obtuse. Leaf-blades filiform, convolute, 2.5–20 cm long, 0.5–5 mm wide. Leaf-blade surface ribbed, glabrous or puberulous, hairy abaxially. Leaf-blade apex attenuate.

**Inflorescence.** Inflorescence a panicle. Panicle open, linear or elliptic, 5–25 cm long. Primary panicle branches spreading or drooping, 2–3 -nate. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 5.5 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus brief, 0.2–0.3 mm long, pubescent, acute.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 5.5 mm long, 1 length of upper glume, membranous, without keels, 3 -veined. Lower glume apex acute. Upper glume lanceolate, 5 mm long, membranous, without keels, 3 -veined. Upper glume apex acute.

**Florets.** Fertile lemma oblong, subterete, 3–4 mm long, 0.75–1 mm wide, coriaceous, without keel, 5 -veined, more than 3-veined. Lemma surface papillose, pubescent, hairy on veins. Lemma margins convolute, covering most of palea. Lemma apex with a membranous corona, awned, 1 -awned. Principal lemma awn bigenulate, 12–15 mm long overall, with twisted column, deciduous. Palea lanceolate, 0.2–0.33 length of lemma, 0 -veined, without keels.

**Flower and Fruit.** Lodicules 2. Anthers 3. Stigmas 2. Caryopsis with adherent pericarp. Hilum linear.

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

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

**TDWG4.** Jujuy, Salta.

**Nassella entrerriensis** (Burkart) Penailillo. *Gayana, Bot.* 55:86 (1999).

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

**TYPE** from Argentina. **Basionym or Replaced Name:** *Stipa entrerriensis* Burkat, *Bol. Soc. Argent. Bot.* 12: 285, f. 1 (1968). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Argentina: Entre Ríos: Depto. La Paz: Bovril, 10 Oct 1946, J.M. Jozami 8 (HT: SI).

**Illustrations (Books):** A.Burkat, *Flora Ilustrada de Entre Rios (Argentina)*, Pt II, Gramineas (1969) (158 & 160, Fig 54 & 55 as *Stipa*).

**Derivation** (Clifford & Bostock 2007): L. -ensis, denoting origin. From Entre Rios Province, Argentina.

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial, caespitose, clumped densely. Culms 30–60 cm long, 3–4 -noded. Culm-nodes constricted, pubescent. Ligule an eciliate membrane, 0.5–2 mm long, obtuse. Leaf-blades convolute, 15–25 cm long, 0.5–1 mm wide. Leaf-blade surface ribbed.

**Inflorescence.** Inflorescence a panicle, subtended by an inflated leaf-sheath, embraced at base by subtending leaf. Panicle open, elliptic. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, pubescent, hairy above.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 21–32 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus elongated, 4–4.2 mm long, bearded, pungent.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 21–32 mm long, 1.1–1.4 length of upper glume, membranous, purple, without keels, 3 -veined. Lower glume surface glabrous or puberulous, hairy on veins. Lower glume apex acuminate. Upper glume lanceolate, 20–23 mm long, membranous, purple, without keels, 5–6 -veined. Upper glume surface glabrous or puberulous, hairy on veins. Upper glume apex acuminate.

**Florets.** Fertile lemma lanceolate, subterete, 9–12.5 mm long, coriaceous, without keel, 5 -veined, more than 3-veined. Lemma surface tuberculate, rough above, pubescent, hairy below, hairy on veins. Lemma margins convolute, covering most of palea. Lemma apex with a membranous corona or surmounted by a ring of hairs, with this appendage 1–1.5 mm long, awned, 1 -awned. Principal lemma awn geniculate, 75–95 mm long overall, with twisted column. Column of lemma awn 15–25 mm long, pubescent. Palea 2 mm long, without keels.

**Flower and Fruit.** Anthers 3, 5 mm long, anther tip penicillate. Stigmas 2. Ovary glabrous. Caryopsis with adherent pericarp, fusiform. Hilum linear.

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

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

**TDWG4.** Corrientes, Entre Rios.

**Nassella fabrisii** M.A. Torres. *Monogr. Comis. Invest. Ci. Prov. Buenos Aires*, 13: 20 (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. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Argentina: Prov. Tucumán: Dep. ex Tafí, Quebrada del Barón, Los Planchones, 7 Feb 1958, H.A. Fabris 1374 (HT: LP).

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

**Derivation** (Clifford & Bostock 2007): In honor of Umberto Antonio Fabris (1924–1976) Argentinian botanist.

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Basal innovations intravaginal. Culms erect, 40–110 cm long. Culm-internodes 35–65 cm long, distally glabrous. Culm-nodes pubescent. Lateral branches lacking. Leaf-sheaths glabrous on surface. Leaf-sheath oral hairs ciliate. Ligule an eciliate membrane, truncate or obtuse. Collar glabrous. Leaf-blades filiform or linear, flat or convolute, 0.8–4 mm wide. Leaf-blade surface glabrous.

**Inflorescence.** Inflorescence a panicle, exerted or embraced at base by subtending leaf. Panicle open, pyramidal, equilateral or nodding, 10–15 cm long. Panicle axis glabrous. Panicle branches hispidulous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, puberulous.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 14–16 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus elongated, straight, 2.5–3.5 mm long, pubescent, pungent.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 14–16 mm long, 1 length of upper glume, membranous, without keels, 3–5 -veined. Lower glume surface pilose, hairy on veins. Lower glume apex attenuate. Upper glume lanceolate, 14–16 mm long, membranous, without keels, 3–5 -veined. Upper glume surface pilose, hairy on veins. Upper glume apex attenuate.

**Florets.** Fertile lemma oblong, subterete (tetragonal), 8–10 mm long, coriaceous, keeled, 5 -veined, more than 3-veined. Lemma midvein ciliate, hairy below. Lemma surface scaberulous, puberulous, hairy above. Lemma margins convolute, covering most of palea. Lemma apex with a membranous corona or surmounted by a ring of hairs, with this appendage 0.7–1 mm long, awned, 1 -awned. Principal lemma awn bigeniculate, 45–60 mm long overall, with 18–28 mm long limb, with twisted column, persistent. Column of lemma awn 17–20 mm long, pubescent. Palea 1.5–2 mm long, 0.2 length of lemma, 0 -veined, without keels.

**Flower and Fruit.** Lodicules 2 or 3. Anthers 3. Stigmas 2. Caryopsis with adherent pericarp, ellipsoid, 3.5 mm long. Hilum linear, 1 length of caryopsis.

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

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

**TDWG4.** Tucuman.

**Nassella famatinensis** M.A. Torres. *Monogr. Comis. Invest. Ci. Prov. Buenos Aires*, 13: 21 (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. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: *Comis. Invest. Ci. [Buenos Aires]* 13: 21, f. 1, H (1997).

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

**Derivation** (Clifford & Bostock 2007): *L. -ensis*, denoting origin. From Sierra Famatina, Rioja Province, Argentina.

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Butt sheaths yellow or light brown. Basal innovations intravaginal. Culms erect or geniculately ascending, 20–57 cm long. Culm-internodes distally glabrous. Culm-nodes glabrous. Lateral branches lacking. Leaf-sheaths mostly shorter than adjacent culm internode, glabrous on surface. Leaf-sheath oral hairs ciliate. Ligule an eciliate membrane or a ciliate membrane, 0.3 mm long. Leaf-blades filiform or linear, flat or convolute, 3–15 cm long, 2–3 mm wide. Leaf-blade surface puberulous, hairy adaxially.

**Inflorescence.** Inflorescence a panicle, exerted or embraced at base by subtending leaf. Panicle open, pyramidal, equilateral or nodding, 10–20 cm long. Primary panicle branches ascending. Panicle branches glabrous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, puberulous, hairy above.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 4–6 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus brief, 0.2–0.3 mm long, glabrous, acute.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 4–6 mm long, 1 length of upper glume, membranous, purple, without keels, 3–4 -veined. Lower glume apex acuminate. Upper glume lanceolate, 4–6 mm long, membranous, without keels, 3 -veined. Upper glume apex acuminate.

**Florets.** Fertile lemma elliptic, subterete, 2.5–3 mm long, chartaceous, without keel, 5 -veined, more than 3-veined. Lemma surface smooth, glabrous. Lemma margins convolute, covering most of palea. Lemma apex with a membranous corona, with this appendage 0.2 mm long, awned, 1 -awned. Principal lemma awn bigeniculate, constricted at base (of corona), 4.5–5.5 mm long overall, with 2.5–3 mm long limb, with twisted column, deciduous. Column of lemma awn 2 mm long. Palea 1–1.5 mm long, 0.4–0.5 length of lemma, 0 -veined, without keels.

**Flower and Fruit.** Lodicules 2. Anthers 1 or 3. Staminodes absent or present. Stigmas 2. Caryopsis with adherent pericarp, ellipsoid, 1.9–2 mm long. Hilum linear, 1 length of caryopsis.

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

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

**TDWG4.** La Rioja.

**Nassella filiculmis** (Delile) M.E. Barkworth. *Taxon*, 39(4): 610: (1990).

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

**Basionym or Replaced Name:** *Stipa filiculmis* Delile, *Ann. Sci. Nat., Bot.*, sér. 3 12: 367 (1849). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: T: Cultivated in the Botanic Garden at Montpellier.

**Recent Synonyms:** *Stipa trichocaulos* R.Phil., *Anal. Univ. Chil.* 93: 718. (1896).

**Illustrations (Books):** A.Burkat, *Flora Ilustrada de Entre Rios (Argentina)*, Pt II, Gramineas (1969) (153, Fig 52 as *Stipa*), A.L.Cabrera, *Flora de la Provincia de Buenos Aires, IV Pt 2 Gramineas* (1970) (265, Fig 68 as *Stipa*), M.N.Correa, *Flora Patagonica Parte III, Gramineae* (1978) (320, Fig 212 as *Stipa*), B.Rosengurtt, *Gramineas Uruguayas I* (1970) (66, Fig. 22 as *Stipa*).

**Derivation** (Clifford & Bostock 2007): *L. filum*, thread; culmus, stalk. Culms slender.

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Culms erect, slender, 25–90 cm long, 0.5–0.9 mm diam. Culm-internodes distally glabrous. Lateral branches lacking. Leaf-sheaths glabrous on surface, outer margin hairy. Leaf-sheath oral hairs lacking. Ligule an eciliate membrane, 1–3 mm long, obtuse. Leaf-blades straight or curved, filiform, convolute, 10–50 cm long, 0.3–0.5 mm wide. Leaf-blade surface scaberulous, rough abaxially, puberulous, hairy adaxially. Leaf-blade apex acute, pungent.

**Inflorescence.** Inflorescence a panicle, deciduous as a whole, exerted or embraced at base by subtending leaf. Peduncle deflexed, disarticulating, disarticulating above uppermost sheath. Panicle open, linear, effuse, nodding, 5–20 cm long, bearing few spikelets. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile

or the upper sterile. Spikelets lanceolate, subterete, 14–25 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus elongated, curved, 1.5–2.5 mm long, pubescent, pungent.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 14–25 mm long, 1.1–1.2 length of upper glume, hyaline, without keels, 3 -veined. Lower glume surface asperulous, rough on veins. Lower glume apex setaceously acuminate. Upper glume lanceolate, 14–25 mm long, 2–3 length of adjacent fertile lemma, hyaline, without keels, 3 -veined. Upper glume surface asperulous, rough between veins. Upper glume apex setaceously acuminate.

**Florets.** Fertile lemma linear, subterete, 6–9(–12) mm long, chartaceous, yellow, shiny, without keel, 5 -veined, more than 3-veined. Lemma surface papillose, rough generally or above, glabrous. Lemma margins convolute, covering most of palea. Lemma apex awned, 1 -awned. Principal lemma awn bigenulate, 60–90 mm long overall, with 30–45 mm long limb, with twisted column. Column of lemma awn 10–22 mm long, pubescent. Palea 2 mm long, 0 -veined, without keels.

**Flower and Fruit.** Lodicules 2 or 3. Anthers 3, 2–3 mm long, anther tip penicillate. Stigmas 2. Ovary glabrous. Caryopsis with adherent pericarp, linear, 4 mm long, dark brown. Hilum linear, 0.75 length of caryopsis.

**Distribution (TDWG).** Continent. Europe (\*), South America.

**Region.** Northern Europe (\*).

**Country /Province /State.** : GB Aliens (Ryves et al). **Brazil, Southern South America.** Brazil South. Argentina Northeast, Argentina South, Chile Central, Chile South, Uruguay.

**TDWG4.** Mendoza, San Luis. Buenos Aires, Cordoba, Corrientes, Entre Rios, La Pampa, Misiones, Santa Fe. Chubut, Neuquén, Río Negro. Rest of Chile- Biobio, La Araucania, Maule, O'Higgins, Santado, Valpariso. Maule, La Araucania. Los Lagos.

**Nassella formicarum** (Delile) M.E. Barkworth. *Taxon*, 39(4): 610: (1990).

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

**TYPE** from France (cult.). **Basionym or Replaced Name:** *Stipa formicarum* Delile, *Ann. Sci. Nat., Bot.*, sér. 3 27: 367 (1849). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: IT: Coll. Ukn. s.n., no date, France: cult. (US-81947 (fragm.)). From zurich, a. thellung herb. patria ignota, hort. monsp..

**Illustrations (Books):** A.Burkat, *Flora Ilustrada de Entre Rios (Argentina)*, Pt II, Gramineas (1969) (153, Fig 52 as *Stipa*), A.L.Cabrera, *Flora de la Provincia de Buenos Aires, IV Pt 2 Gramineas* (1970) (277, Fig. 72 as *Stipa*), M.N.Correa, *Flora Patagonica* Parte III, Gramineae (1978) (325, Fig 220 as *Stipa*).

**Derivation** (Clifford & Bostock 2007): *L. formica*, ant; -arum, belonging to. The twisting of the hygroscopic awns causes the dispersed floret to move across the ground with irregular ant-like movements.

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial. Rhizomes elongated. Culms erect, 40–80 cm long, 2 mm diam. Leaf-sheaths glabrous on surface. Leaf-sheath oral hairs lacking or ciliate. Ligule an eciliate membrane, 0.8–1 mm long, truncate. Leaf-blades flat or convolute, 10–35 cm long, 1–2.5 mm wide. Leaf-blade surface glabrous.

**Inflorescence.** Inflorescence a panicle. Panicle open, equilateral or nodding, 10–20 cm long. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 9–11 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus elongated, curved, 0.7–2 mm long, pubescent, pungent.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 9–11 mm long, 1.1 length of upper glume, hyaline, purple, without keels, 1–3 -veined. Lower glume lateral veins absent or distinct. Lower glume apex attenuate. Upper glume lanceolate, 9–11 mm long, 1.4–1.8 length of adjacent fertile lemma, hyaline, purple, without keels, 3 -veined. Upper glume apex attenuate.

**Florets.** Fertile lemma linear, subterete, 5.5–7.8 mm long, coriaceous, yellow, without keel, 5 -veined, more than 3-veined. Lemma midvein ciliate, hairy below. Lemma surface papillose, glabrous. Lemma margins convolute, covering most of palea. Lemma apex with a membranous corona or surmounted by a ring of hairs (on membrane), with this appendage 1.2–2 mm long (plus ciliolae), awned, 1 -awned. Principal lemma awn bigenulate, constricted at base (of corona), 25–40 mm long overall, with 15–25 mm long limb, with twisted column. Column of lemma awn 3–5 mm long, puberulous. Palea 1–1.7 mm long, 0 -veined, without keels.

**Flower and Fruit.** Lodicules 2. Anthers 3, 2.3–2.8 mm long, anther tip penicillate. Stigmas 2. Ovary glabrous. Caryopsis with adherent pericarp, fusiform, 2.5–2.8 mm long, dark brown. Hilum linear, 0.66 length of caryopsis.

**Distribution (TDWG).** Continent. Europe (\*), South America.

**Region.** Northern Europe (\*).



**Country /Province /State.** : GB Aliens (Ryves et al). **Southern South America.** Argentina Northeast, Argentina South, Uruguay.

**TDWG4.** Buenos Aires, Entre Rios, La Pampa. Río Negro.

**Nassella fuscescens** R. Phil. *Anal. Univ. Chil.* xciii. 729 (1895).

Regarded by K as a synonym (*N. gigantea*).

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

**Derivation** (Clifford & Bostock 2007): *L. fuscisco*, become dark. Lemma brown.

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Culms erect, 40–80 cm long, 3–5 -noded. Culm-internodes terete, distally glabrous. Leaf-sheaths tight, striately veined, smooth, glabrous on surface. Ligule an eciliate membrane. Leaf-blades convolute, 5–15 cm long, 1.5–2 mm wide. Leaf-blade surface pubescent, hairy adaxially. Leaf-blade apex acuminate.

**Inflorescence.** Inflorescence a panicle. Panicle open, oblong or pyramidal, 5–15 cm long, 3–4 cm wide. Primary panicle branches 2–3 -nate. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, glabrous.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets ovate, subterete, 4.5 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus pubescent, obtuse.

**Glumes.** Glumes persistent, similar, with lower wider than upper, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 4.5 mm long, 1 length of upper glume, membranous, purple, 1-keeled, 3 -veined. Lower glume apex acuminate. Upper glume lanceolate, 4.5 mm long, membranous, purple, 1-keeled, 3 -veined. Upper glume apex acuminate.

**Florets.** Fertile lemma elliptic, laterally compressed, 2.7–3 mm long, 0.8–1 mm wide, coriaceous, yellow or light brown, shiny, keeled, lightly keeled. Lemma margins convolute, covering most of palea. Lemma apex obtuse, awned, 1 -awned. Principal lemma awn eccentric, geniculate, 12–15 mm long overall, with a straight or slightly twisted column, persistent or deciduous (tardily). Column of lemma awn puberulous. Palea 0.5 length of lemma, membranous, 2 -veined, 2-keeled.

**Flower and Fruit.** Anthers 3.

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

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

**Nassella gibba** (Phil.) M. Munoz-Schick. *Gayana, Bot.*, 47:26 (1990).

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

**TYPE** from Chile. **Basionym or Replaced Name:** *Piptochaetium gibbum* Phil., *Anales Univ. Chile* 93: 731 (1896). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: *Anales Univ. Chile* 93: 731 (1896).

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

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

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial, caespitose, clumped densely. Culms erect, 33 cm long. Culm-internodes smooth, distally glabrous. Lateral branches lacking. Leaves mostly basal. Ligule absent. Leaf-blades filiform, convolute, 10–20 cm long, 0.5 mm wide. Leaf-blade apex attenuate.

**Inflorescence.** Inflorescence a panicle, embraced at base by subtending leaf. Panicle contracted, linear, 7 cm long, bearing few spikelets. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 4.5 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume ovate, 4.5 mm long, 1 length of upper glume, membranous, 1-keeled. Lower glume apex cuspidate. Upper glume ovate, 4.5 mm long, 2–2.2 length of adjacent fertile lemma, membranous, 1-keeled. Upper glume apex cuspidate.

**Florets.** Fertile lemma obovate, laterally compressed, gibbous, 2 mm long, coriaceous, pallid, shiny, keeled, lightly keeled. Lemma surface rugulose, pubescent, hairy at base. Lemma margins convolute, covering most of

palea. Lemma apex awned, 1 -awned. Principal lemma awn eccentric, flexuous, 16 mm long overall, deciduous. Palea membranous, 0 -veined, without keels.

**Flower and Fruit.** Lodicules 2. Anthers 3. Caryopsis with adherent pericarp.

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

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

Valparaiso, Santiago, O'Higgins, Maule, Biobio.

**Nassella gigantea** (Steud.) M. Munoz-Schick. *Gayana, Bot.*, 47: 23: (1990).

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

**TYPE** from Chile. **Basionym or Replaced Name:** *Urachne gigantea* Steud., *Syn. Pl. Glumac.* 1: 123 (1854). T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: HT: W. Lechler s.n., no date, Chile (P; IT: US-81766). see *Urachne aemulans* Steud. ex Lechler.

**Recent Synonyms:** *Nassella exserta* Phil., *Linnaea* 33: 278. (1865).

**Illustrations (Books):** M.N.Correa, *Flora Patagonica* Parte III, Gramineae (1978) (328, Fig 222 as *Nassella exserta*).

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

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Culms 70–100 cm long, 2–3 mm diam. Lateral branches ample. Ligule an eciliate membrane. Leaf-blades convolute, 4–8 cm long, 1–1.5 mm wide, glaucous. Leaf-blade surface pubescent, hairy adaxially. Leaf-blade apex acuminate.

**Inflorescence.** Inflorescence a panicle, exserted or embraced at base by subtending leaf. Panicle open or contracted, linear or lanceolate, 3–10 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 ovate, subterete, 3–4 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus pilose, obtuse.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 3–4 mm long, 1 length of upper glume, membranous, 1-keeled, 3 -veined. Lower glume apex setaceous acuminate. Upper glume lanceolate, 3–4 mm long, 1.6 length of adjacent fertile lemma, membranous, 1-keeled, 3 -veined. Upper glume apex acuminate.

**Florets.** Fertile lemma orbicular, asymmetrical, laterally compressed, gibbous, 1.8–2.5 mm long, 1.2–1.4 mm wide, coriaceous, yellow or grey, keeled, lightly keeled. Lemma surface glabrous. Lemma margins convolute, covering most of palea. Lemma apex obtuse, awned, 1 -awned. Principal lemma awn eccentric, geniculate, 9–15 mm long overall, with a straight or slightly twisted column, deciduous. Palea membranous, 0 -veined, without keels.

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

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

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

**TDWG4.** Chubut, Neuquén, Río Negro. Tarapaca, Antofagasta, Atacama, Coquimbo, Chiloe, Aisen, Magallanes. Coquimbo, Valparaiso, Santiago, O'Higgins, Maule, Biobio, La Araucania. Los Lagos.

**Nassella glabripoda** M.A. Torres. *Monogr. Comis. Invest. Ci. Prov. Buenos Aires*, 13: 22 (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. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: Argentina: Prov. Jujuy: dep. Yaví: Pumahuasi, 3500 m, T. Meyer s.n. (hb. LIL 14901) (HT: LIL; IT: BAA).

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

**Derivation** (Clifford & Bostock 2007): L. *glaber*, smooth; Gk *pous*, foot. Callus of spikelet glabrous.

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Basal innovations intravaginal. Culms erect, 10–55 cm long. Culm-internodes distally glabrous. Lateral branches lacking. Leaf-sheaths mostly shorter than adjacent culm internode, glabrous on surface, outer margin glabrous or hairy. Leaf-sheath oral hairs lacking or ciliate. Ligule an eciliate membrane. Collar glabrous. Leaf-blades convolute, 2–14 cm long, 0.3–0.6 mm wide. Leaf-blade surface puberulous, hairy adaxially.

**Inflorescence.** Inflorescence a panicle. Panicle open, 4–14 cm long, bearing few spikelets. Panicle axis glabrous. Panicle branches glabrous or puberulous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, glabrous or puberulous.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 2.5–4.5 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus brief or evident, 0.3–0.5 mm long, glabrous, acute.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 2.5–4.5 mm long, 1 length of upper glume, membranous, yellow or purple, without keels, 3 -veined. Lower glume apex acuminate. Upper glume lanceolate, 2.5–4.5 mm long, membranous, yellow or purple, without keels, 3 -veined. Upper glume apex acuminate.

**Florets.** Fertile lemma elliptic, subterete, 2–3 mm long, chartaceous, dark brown, without keel, 5 -veined, more than 3-veined. Lemma surface pilose. Lemma margins convolute, covering most of palea. Lemma apex with a membranous corona, with this appendage 0.2 mm long, awned, 1 -awned. Principal lemma awn geniculate or bigeniculate, 5–8 mm long overall, with 3 mm long limb, with twisted column, deciduous. Column of lemma awn 2.5 mm long. Palea 1 mm long, 0.4–0.5 length of lemma, 0 -veined, without keels.

**Flower and Fruit.** Lodicules 2. Anthers 1 or 3. Staminodes absent or present. Stigmas 2. Caryopsis with adherent pericarp, ellipsoid, 1.9–2 mm long. Hilum linear, 0.66 length of caryopsis.

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

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

**TDWG4.** Jujuy, La Rioja.

**Nassella hirtifolia** (A. Hitchc.) M.E. Barkworth. *Taxon*, 39(4): 610: (1990).

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

**TYPE** from Chile. **Basionym or Replaced Name:** *Stipa hirtifolia* Hitchc., *Contr. U.S. Natl. Herb.* 24(7): 285 (1925). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: R.A. Philippi hb. 407, no date, Chile: Santiago (US-825118).

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

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

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Culms erect, 30–70 cm long. Culm-internodes scaberulous. Leaf-sheaths puberulous. Ligule an eciliate membrane, 1 mm long. Leaf-blades flat or involute, 5–15 cm long, 2 mm wide. Leaf-blade surface hirsute.

**Inflorescence.** Inflorescence a panicle. Panicle open, linear, 8–12 cm long. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, pubescent.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 9–10 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus evident, 0.5–1 mm long, bearded, obtuse. Floret callus hairs 0.33 length of lemma.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 9–10 mm long, 1 length of upper glume, membranous, purple, without keels, 3 -veined. Lower glume surface scabrous, rough on veins. Lower glume apex acute. Upper glume lanceolate, 9–10 mm long, membranous, purple, without keels, 3 -veined. Upper glume surface scabrous, rough on veins. Upper glume apex acute.

**Florets.** Fertile lemma oblong, asymmetrical, laterally compressed, 3.7–5 mm long, coriaceous, shiny, without keel, 5 -veined, more than 3-veined. Lemma surface glabrous. Lemma margins convolute, covering most of palea. Lemma apex awned, 1 -awned. Principal lemma awn eccentric, geniculate, 20–35 mm long overall, with a straight or slightly twisted column. Column of lemma awn pubescent. Palea 1.5 mm long, 0.5 length of lemma, hyaline, without keels.

**Flower and Fruit.** Lodicules 2, linear or oblanceolate, 1.5 mm long. Anthers 3. Stigmas 2. Ovary glabrous. Caryopsis with adherent pericarp.

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

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

Coquimbo, Santiago.

**Nassella holwayii** (A. Hitchc.) M.E. Barkworth. *Taxon*, 39(4): 610: (1990).

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

**TYPE** from Bolivia. **Basionym or Replaced Name:** *Stipa holwayi* Hitchc., *Contr. U.S. Natl. Herb.* 24(7): 287 (1925). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: Holway & Holway 380, 08 March 1920, Bolivia: Cochabamba (HT: US-1108419; IT: K).

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

**Derivation** (Clifford & Bostock 2007): in honor of Edward Willet Dorlan Holway (1853–1923) and Mary Ellen Holway (1872) United States plant collectors in North and South America.

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Culms erect, 60–80 cm long, 4 -noded. Culm-internodes distally glabrous. Leaf-sheaths glabrous on surface. Leaf-sheath oral hairs ciliate. Ligule an eciliate membrane, 1–2 mm long, acute. Leaf-blades flat or involute, 20–40 cm long, 1–3 mm wide. Leaf-blade surface ribbed, puberulous, hairy adaxially.

**Inflorescence.** Inflorescence a panicle. Panicle open, elliptic, 10–20 cm long. Primary panicle branches spreading. Panicle axis smooth. Panicle branches scabrous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 10 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus evident, 1 mm long, pubescent, pungent.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 1 length of upper glume, membranous, without keels, 3 -veined. Lower glume apex acuminate. Upper glume lanceolate, 10 mm long, membranous, without keels, 3 -veined. Upper glume apex acuminate.

**Florets.** Fertile lemma lanceolate, subterete, 5–6 mm long, coriaceous, grey, without keel, 5 -veined, more than 3-veined. Lemma surface pilose. Lemma margins convolute, covering most of palea. Lemma hairs 1–1.5 mm long. Lemma apex awned, 1 -awned. Principal lemma awn bigeniculate, 35–45 mm long overall, with twisted column, deciduous. Middle segment of lemma awn 8 mm long, puberulous. Column of lemma awn 8 mm long, puberulous. Palea without keels.

**Flower and Fruit.** Anthers 3. Stigmas 2. Ovary glabrous. Caryopsis with adherent pericarp, fusiform. Hilum linear.

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

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

**TDWG4.** Jujuy.

**Nassella huallancaensis** (Tovar) M.E. Barkworth. *Taxon*, 39(4): 610: (1990).

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

**TYPE** from Peru. **Basionym or Replaced Name:** *Stipa huallancaensis* Tovar, *Publ. Mus. Hist. Nat. Javier Prado, Ser. B, Bot.* 33: 10–11 (1985). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: IT: O. Tovar, S. Rivas, C. Arnaiz & J. Loidi 9880, 23 Mar 1983, Peru: Huánuco: Dos de Mayo prov. (MO, US-3029245).

**Illustrations (Journals):** *Ruizia* (13:70, Fig 8g (1993) as *Stipa*).

**Derivation** (Clifford & Bostock 2007): *L. -ensis*, denoting origin. From Huallanca, also called Huanuco, Peru.

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Culms 30–60 cm long. Ligule an eciliate membrane. Leaf-blades filiform, involute, 2–8 cm long, 0.5–1 mm wide. Leaf-blade surface ribbed, scabrous, rough adaxially.

**Inflorescence.** Inflorescence a panicle. Panicle open, elliptic, 7–15 cm long. Primary panicle branches ascending, 3–7 cm long. Panicle branches capillary, flexuous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 3.5–4 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus evident, pilose, pungent.

**Glumes.** Glumes persistent, similar, shorter than spikelet or reaching apex of florets or exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 1 length of upper glume, membranous, without keels. Lower glume apex acuminate. Upper glume lanceolate, 3.5–4 mm long, membranous, without keels. Upper glume apex acuminate.

**Florets.** Fertile lemma lanceolate, subterete, 2.4–6 mm long, coriaceous, without keel, 5 -veined, more than 3-veined. Lemma surface tuberculate. Lemma margins convolute, covering most of palea. Lemma apex surmounted by a ring of hairs, awned, 1 -awned. Principal lemma awn flexuous or geniculate, 10–12 mm long overall, without a column or with a straight or slightly twisted column. Palea without keels.

**Flower and Fruit.** Anthers 3. Stigmas 2. Ovary glabrous. Caryopsis with adherent pericarp, fusiform. Hilum linear.

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

**Country /Province /State.** Western South America. Peru.

**Nassella hunzikeri** (Caro) M.E. Barkworth. *Taxon*, 39(4): 610: (1990).

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

**TYPE** from Argentina. **Basionym or Replaced Name:** *Stipa hunzikeri* Caro, *Kurtziana* 3: 75–79, f. 14. 1966. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: Argentina: San Luis: Cerro El Morro, Estancia La Morena, 1100–1400 m, 19 Dec 1957, A.T. Hunziker 12566 (HT: CORD).

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

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

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Basal innovations intravaginal. Culms erect, 40–60 cm long, 2–3 -noded. Culm-internodes terete, scaberulous. Culm-nodes glabrous. Lateral branches lacking. Leaf-sheaths scaberulous. Ligule an eciliate membrane, 5–7 mm long, scaberulous on abaxial surface, entire or lacerate, acute. Leaf-blades filiform, convolute, 4–30 cm long, 0.3–0.5 mm wide. Leaf-blade surface ribbed, scaberulous, rough abaxially, puberulous, densely hairy, hairy adaxially.

**Inflorescence.** Inflorescence a panicle, embraced at base by subtending leaf. Panicle open, linear, 10–20 cm long. Primary panicle branches 2 -nate. Panicle branches scaberulous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, laterally compressed, 8.5–11.5 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus brief, 0.2–0.3 mm long, pilose, obtuse.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 5.5–11.5 mm long, 1.2 length of upper glume, membranous, without keels, 3–5 -veined. Lower glume primary vein scaberulous. Lower glume apex setaceously acuminate. Upper glume lanceolate, 7–10 mm long, membranous, without keels, 3–5 -veined. Upper glume primary vein scaberulous. Upper glume apex setaceously acuminate.

**Florets.** Fertile lemma oblong, laterally compressed, gibbous, 2.3–3 mm long, coriaceous, without keel, 5 -veined, more than 3-veined. Lemma surface papillose. Lemma margins convolute, covering most of palea. Lemma apex surmounted by a ring of hairs, with this appendage 0.25 mm long, awned, 1 -awned. Principal lemma awn eccentric, bigeniculate, conically expanded at base, 53–72 mm long overall, with a straight or slightly twisted column. Palea 0.8–1 mm long, 0 -veined, without keels.

**Flower and Fruit.** Lodicules 2, 0.75 mm long. Anthers 3. Stigmas 2. Ovary glabrous. Caryopsis with adherent pericarp, obovoid, 2 mm long, dark brown. Hilum linear, 0.66 length of caryopsis.

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

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

**TDWG4.** San Luis. Cordoba.

**Nassella hyalina** (Nees) M.E. Barkworth. *Taxon*, 39(4): 610: (1990).

**Accepted by:** R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online (as *Stipa*), U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), D.Sharp, D. & B.K.Simon, *AusGrass* (2002).

**TYPE** from Brazil. **Basionym or Replaced Name:** *Stipa hyalina* Nees, *Fl. Bras. Enum. Pl.* 2(1): 378 (1829). T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: HT: *F. Sellow*, *Brasilia meridionalis* (B; IT: LE-TRIN-1404.01 (& fig. ex herb. Chamiss.)). de Schlechtendal 1827; herb. Chamiss.. HT: *F. Sellow 636d*, no date, Uruguay: Montevideo (B; IT: BAA-3088 (fragm. ex B), US-87201 (fragm.), US-81929 (fragm.)).

**Illustrations (Books):** N.Walsh & T.Entwistle, *Flora of Victoria* Vol 2 (1994) (379, Fig 74 as *Stipa*), S.W.L.Jacobs, R.D.B.Whalley & D.J.B.Wheeler., *Grasses of New South Wales*, 4th edn (2008) (304), A.Wilson

(ed.), *Flora of Australia*, Vol 44A. *Poaceae* (2009) (63, Fig 9), D.Sharp & B.K.Simon, *AusGrass*. Grasses of Australia. CD-Rom Version 1.0. (2002), A.Burkat, *Flora Illustrada de Entre Rios (Argentina)*, Pt II, Gramineas (1969) (150, Fig 51 as *Stipa*), B.Rosengurtt, *Gramineas Uruguayas I* (1970) (66, Fig. 22 as *Stipa*).

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

**Derivation** (Clifford & Bostock 2007): Gk. hyalos, glass; -ina, belonging to. Glumes hyaline.

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Culms erect or geniculately ascending, 25–120 cm long. Lateral branches lacking or sparse. Leaf-sheaths glabrous on surface. Leaf-sheath oral hairs ciliate. Ligule an eciliate membrane, 0.3–0.5 mm long, truncate or obtuse. Collar glabrous or pubescent. Leaf-blades flat or convolute, 4–30 cm long, 3–5.5 mm wide. Leaf-blade surface scabrous. Leaf-blade apex acute.

**Inflorescence.** Inflorescence a panicle. Panicle open, equilateral or nodding, 5–30 cm long. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 5.5–11.5 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus evident, 0.4–0.9 mm long, pubescent, obtuse.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 5.5–11.5 mm long, 1 length of upper glume, hyaline, without keels, 1–3 -veined. Lower glume lateral veins absent or distinct. Lower glume surface smooth or asperulous. Lower glume apex attenuate. Upper glume lanceolate, 5.5–11.5 mm long, 1.5–2 length of adjacent fertile lemma, hyaline, without keels, 1–3 -veined. Upper glume lateral veins absent or distinct. Upper glume surface smooth or asperulous. Upper glume apex attenuate.

**Florets.** Fertile lemma linear, subterete, 3–5.5 mm long, coriaceous, without keel, 5 -veined, more than 3-veined. Lemma midvein ciliate, hairy below. Lemma surface scaberulous, glabrous. Lemma margins convolute, covering most of palea. Lemma apex with a membranous corona or with a membranous corona or surmounted by a ring of hairs (on membrane), with this appendage 0.4–1 mm long, awned, 1 -awned. Principal lemma awn curved or geniculate or bigeniculate, constricted at base (of corona), 20–45 mm long overall, without a column or with a straight or slightly twisted column. Column of lemma awn glabrous. Palea 0.8–1 mm long, 0 -veined, without keels.

**Flower and Fruit.** Lodicules 2. Anthers 3, 1.3–2.5 mm long, anther tip penicillate. Stigmas 2. Ovary glabrous. Caryopsis with adherent pericarp, fusiform, 1.8–2.3 mm long, dark brown. Hilum linear, 0.9 length of caryopsis.

**Distribution (TDWG).** Continent. Europe (\*), Australasia (\*), South America.

**Region.** Northern Europe (\*).

**Country /Province /State.** : GB Aliens (Ryves et al). **Australia.** New South Wales, Victoria. **Brazil, Southern South America.** Brazil South. Argentina Northeast, Paraguay, Uruguay.

**TDWG4.** Coast, Tablelands, Western Slopes. Jujuy, La Rioja, Mendoza, Santiago del Estero, San Luis, Tucuman. Buenos Aires, Cordoba, Distrito Federal, Entre Rios, La Pampa, Santa Fe.

**Nassella ibarrensis** (Kunth) S. Laegaard. *Novon*, 8(1): 30 (1998).

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

**TYPE** from Ecuador. **Basionym or Replaced Name:** *Stipa ibarrensis* Kunth, Nov. Gen. Sp. (quarto ed.) 1: 125 (1815) [1816]. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: Humboldt, F.W.H. & A.J.A. Bonpland s.n., no date, Ecuador: Imbabura: 1184 m (P; US-866103 (fragm. ex P)).

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

**Derivation** (Clifford & Bostock 2007): L. -ense, denoting origin. From Villa de Iberra, near Quito, Ecuador.

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Culms erect, 30–70 cm long. Lateral branches lacking. Ligule an eciliate membrane. Leaf-blades 5–12 cm long, 1–2 mm wide.

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

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets linear, subterete, 8–10 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus 0.5 mm long, pilose, acute.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 8–10 mm long, 1 length of upper glume, hyaline, purple, without keels. Lower glume apex

acuminate. Upper glume lanceolate, 8–10 mm long, hyaline, purple, without keels. Upper glume apex acuminate.

**Florets.** Fertile lemma linear, subterete, 4 mm long, coriaceous, without keel, 5 -veined, more than 3-veined. Lemma surface pilose. Lemma margins convolute, covering most of palea. Lemma apex truncate, surmounted by a ring of hairs, with this appendage 1 mm long, awned, 1 -awned. Principal lemma awn geniculate or bigeniculate, 15–20 mm long overall, with twisted column. Palea without keels.

**Flower and Fruit.** Anthers 3. Stigmas 2. Caryopsis with adherent pericarp, fusiform. Hilum linear.

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

**Country /Province /State.** Western South America. Ecuador.

**Nassella inconspicua** (Presl) M.E. Barkworth. *Taxon*, 39(4): 610: (1990).

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

**TYPE** from Peru. **Basionym or Replaced Name:** *Stipa inconspicua* J. Presl, *Reliq. Haenk.* 1(4–5): 227 (1830). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: T. Haenke s.n., no date, Peru (PR; IT: LE-TRIN-1407.01 (fragm.), US-3168625 (fragm.)).

**Illustrations (Books):** S.A.Renouze, *Gramineas de Bolivia* (1998) (74, Fig 14 as *Stipa*).

**Illustrations (Journals):** *Ruizia* (13:70, Fig 8c-d (1993) as *Stipa*).

**Derivation** (Clifford & Bostock 2007): L. inconspicuous. Easily overlooked.

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Culms 20–50 cm long. Ligule an eciliate membrane, 0.5–1 mm long, erose. Leaf-blades 4–10 cm long, 2.5–3.5 mm wide. Leaf-blade surface ribbed, glabrous. Leaf-blade apex abruptly acute.

**Inflorescence.** Inflorescence a panicle. Panicle contracted, linear or lanceolate, interrupted, 7–10 cm long. Primary panicle branches appressed or ascending, bearing spikelets almost to the base. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, pubescent.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 3.5–4 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus evident, pubescent, acute.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 1 length of upper glume, membranous, without keels. Lower glume apex acuminate. Upper glume lanceolate, 3.5–4 mm long, membranous, without keels. Upper glume apex acuminate.

**Florets.** Fertile lemma lanceolate, subterete, 2.6–3 mm long, coriaceous, without keel, 5 -veined, more than 3-veined. Lemma surface puberulous. Lemma margins convolute, covering most of palea. Lemma apex surmounted by a ring of hairs, awned, 1 -awned. Principal lemma awn bigeniculate, 5–8 mm long overall, with twisted column. Palea without keels.

**Flower and Fruit.** Anthers 3. Stigmas 2. Ovary glabrous. Caryopsis with adherent pericarp, fusiform. Hilum linear.

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

**Country /Province /State.** Western South America, Southern South America. Bolivia, Colombia, Ecuador, Peru. Argentina Northwest.

**TDWG4.** Jujuy, Salta, Tucuman.

**Nassella johnstonii** L. Parodi. *Darwiniana*, vii. 373 (1947).

Regarded by K as a synonym (*N. pungens*).

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

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

**Derivation** (Clifford & Bostock 2007): in honor of Ivan Murray Johnston (1898–1960) United States botanist.

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial. Rhizomes short. Culms erect, 50–60 cm long. Lateral branches ample. Leaf-sheaths tight, striately veined, pubescent. Ligule an eciliate membrane. Leaf-blades convolute, 3–6 cm long, 1.5–2 mm wide. Leaf-blade surface pubescent, hairy adaxially. Leaf-blade apex attenuate.

**Inflorescence.** Inflorescence a panicle. Panicle contracted, linear, interrupted, 7–14 cm long, 1 cm wide. Primary panicle branches appressed, 1–3 cm long, bearing spikelets almost to the base. Panicle axis angular, glabrous. Panicle branches angular, glabrous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, glabrous.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets ovate, subterete, 4.5 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus pubescent, obtuse. Floret callus hairs 0.5 mm long.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 4.5 mm long, 1 length of upper glume, membranous, purple, 1-keeled, 3 -veined. Lower glume apex setaceously acuminate. Upper glume lanceolate, 4.5 mm long, membranous, purple, 1-keeled, 3 -veined. Upper glume apex setaceously acuminate.

**Florets.** Fertile lemma oblong, laterally compressed, 2.5 mm long, 0.8 mm wide, coriaceous, light brown or dark brown, keeled, lightly keeled. Lemma surface pubescent. Lemma margins convolute, covering most of palea. Lemma apex obtuse, awned, 1 -awned. Principal lemma awn eccentric, bigenulate, 12–14 mm long overall, with twisted column, deciduous. Column of lemma awn pubescent, with 0.3–0.5 mm long hairs. Palea 0.5 length of lemma, membranous, 0 -veined, without keels.

**Flower and Fruit.** Anthers 3. Caryopsis with adherent pericarp, oblong or obovoid, without sulcus, 1.5 mm long. Embryo 0.33 length of caryopsis. Hilum linear.

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

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

**Nassella juergensii** (Hack.) M.E. Barkworth. *Taxon*, 39(4): 610 (1990).

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

**TYPE** from Brazil. **Basionym or Replaced Name:** *Stipa juergensii* Hack., *Repert. Spec. Nov. Regni Veg.* 7: 314 (1909). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: C. Jürgens s.n., Nov 1905, Brazil: Rio Grande do Sul: Mun. Rio Pardo: Fazenda Soledade, 70 m (W; IT: B, BAA-3107 (fragm. ex B)).

**Illustrations (Books):** A.Burkat, *Flora Ilustrada de Entre Rios (Argentina)*, Pt II, Gramineas (1969) (153, Fig 52 as *Stipa*), B.Rosengurt, *Gramineas Uruguayas I* (1970) (66, Fig. 22 as *Stipa jurgensii*).

**Derivation** (Clifford & Bostock 2007): in honor of Carlo Juergens (fl. 1905) who collected in Brazil.

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Basal innovations extravaginal. Culms 30–50 cm long. Ligule an eciliate membrane. Leaf-blades flat or convolute, 1–2 mm wide. Leaf-blade surface ribbed.

**Inflorescence.** Inflorescence a panicle. Panicle open, lanceolate or elliptic, 7–20 cm long. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 7.5–12 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus evident, 1–2 mm long, pilose, acute.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 7.5–12 mm long, 1.2 length of upper glume, membranous, without keels, 3–5 -veined. Lower glume apex acuminate. Upper glume lanceolate, 6.2–10 mm long, membranous, without keels, 3–5 -veined. Upper glume apex acuminate.

**Florets.** Fertile lemma lanceolate, subterete, 4.5–6.7 mm long, coriaceous, without keel, 5 -veined, more than 3-veined. Lemma surface tuberculate, rough above. Lemma margins convolute, covering most of palea. Lemma apex with a membranous corona or surmounted by a ring of hairs, with this appendage 0.5–0.8 mm long, awned, 1 -awned. Principal lemma awn bigenulate, 25–45 mm long overall, with a straight or slightly twisted column. Palea 0.9 mm long, without keels.

**Flower and Fruit.** Anthers 3. Stigmas 2. Ovary glabrous. Caryopsis with adherent pericarp, fusiform, 2.8 mm long. Hilum linear.

**Distribution (TDWG).** Continent. Europe (\*), South America.

**Region.** Northern Europe (\*).

**Country /Province /State.** : GB Aliens (Ryves et al). **Brazil, Southern South America.** Brazil South. Uruguay.

**TDWG4.** Catarina, Rio Grande do Sul. Corrientes, Entre Rios.

**Nassella juncea** Phil. *Linnaea*, ii: 277. (1865).

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



**TYPE** from Chile. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: LT: H. Krause s.n., Chile: Corral (SGO-45589, pro parte; ILT: K, US- (photo SGO-45589)). LT designated by Munoz-Schick, *Gayana, Bot.* 47: 22 (1990)..

HT: Krause s.n., Chile: cerca de Corral (SGO-PHIL-67b; IT: US-556636 ( fragm. ex SGO-PHIL-67b & photo), US-994131 (fragm. ex hb P Bot Gar), US-823167 (fragm. ex herb Iowa State University ex herb Philippi), US- (fragm.)).

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

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

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial. Basal innovations intravaginal. Culms 70–100 cm long, 2 mm diam. Lateral branches ample. Leaf-sheaths tight, mostly shorter than adjacent culm internode, smooth, glabrous on surface. Ligule an eciliate membrane, truncate. Leaf-blades convolute, 4–8 cm long, 1–1.5 mm wide. Leaf-blade surface puberulous, hairy adaxially. Leaf-blade margins glabrous or ciliate. Leaf-blade apex acuminate.

**Inflorescence.** Inflorescence a panicle, exerted or embraced at base by subtending leaf. Panicle open or contracted, linear to ovate, 3–5 cm long, bearing few spikelets. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets ovate, subterete, 4.5 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus glabrous, obtuse.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 4.5 mm long, 1.1 length of upper glume, membranous, 1-keeled, 3 -veined. Lower glume margins ciliolate. Lower glume apex acuminate. Upper glume lanceolate, 4 mm long, membranous, 1-keeled, 3 -veined. Upper glume apex acuminate.

**Florets.** Fertile lemma obovate, laterally compressed, 2.5–2.9 mm long, 1.1–1.3 mm wide, coriaceous, pallid or yellow or light brown, shiny, keeled, lightly keeled. Lemma margins convolute, covering most of palea. Lemma apex obtuse, awned, 1 -awned. Principal lemma awn eccentric, geniculate, 12–15 mm long overall, with a straight or slightly twisted column, deciduous. Column of lemma awn glabrous. Palea membranous, 0 -veined, without keels.

**Flower and Fruit.** Anthers 3.

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

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

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

**Nassella karstenii** (Hitchc.) Penailillo. *Gayana, Bot.* 55:86 (1999).

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

**TYPE** from Colombia. **Basionym or Replaced Name:** *Stipa karstenii* Hitchc, *Contr. U.S. Natl. Herb.* 24(7): 274 (1925). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: H. Karsten s.n., no date, Colombia: Córdoba and Cundinamarca (US-1126745).

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

**Derivation** (Clifford & Bostock 2007): in honor of Gustav Karl Wilhelm Hermann Karsten (1817–1908) German botanist.

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial, caespitose, clumped loosely. Culms erect, 5–60 cm long, 3 -noded. Culm-internodes distally glabrous. Leaf-sheaths mostly shorter than adjacent culm internode, glabrous on surface. Leaf-sheath oral hairs pubescent. Ligule an eciliate membrane, 0.3 mm long. Leaf-blade base broadly rounded. Leaf-blades flat or involute, 10–15 cm long, 2–4 mm wide. Leaf-blade surface scabrous, rough adaxially. Leaf-blade apex attenuate.

**Inflorescence.** Inflorescence a panicle. Panicle open, elliptic, loose, 8–15 cm long. Primary panicle branches ascending, 4–8 cm long. Panicle axis terete, glabrous. Panicle branches angular, glabrous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, 1–2 mm long, scabrous, pubescent.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, laterally compressed, 9 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus evident, 1 mm long, pubescent, acute.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 9 mm long, 1 length of upper glume, membranous, without keels, 3 -veined. Lower glume apex acuminate. Upper glume lanceolate, 9 mm long, membranous, without keels, 3 -veined. Upper glume apex acuminate.

**Florets.** Fertile lemma lanceolate, subterete, 4.5 mm long, coriaceous, without keel, 5 -veined, more than 3-veined. Lemma surface pubescent, with conspicuous apical hairs. Lemma margins convolute, covering most of palea. Lemma hairs 1 mm long. Lemma apex with a short cylindrical neck, with this appendage 0.3 mm long, awned, 1 -awned. Principal lemma awn bigeniculate, 15 mm long overall, with twisted column. Column of lemma awn 3 mm long, ciliate. Palea without keels.

**Flower and Fruit.** Caryopsis with adherent pericarp, fusiform. Hilum linear.

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

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

**Nassella lachnophylla** (Trin.) M.E. Barkworth. *Taxon*, 39(4) 610: (1990).

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

**TYPE** from Chile. **Basionym or Replaced Name:** *Stipa lachnophylla* Trin., *Mem. Acad. Imp. Sci. Saint-Petersbourg, Ser. 6, Sci. Math., Seconde Pt. Sci. Nat.* 4,2(1): 39 (1836). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: Cuming and Prescott, 1832, Chile (LE-TRIN-1411.02; IT: US-866098 (fragm. ex LE)).

**Recent Synonyms:** *Stipa leiocarpa* Nees ex Steud., *Syn. Pl. Gram.* 124. (1854).

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

**Derivation** (Clifford & Bostock 2007): Gk. lachnos, wool; phyllon, leaf. Leaf-blades densely hairy.

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Culms erect, 25–60 cm long. Culm-internodes distally hispid. Ligule an eciliate membrane, 0.3–0.8 mm long. Leaf-blades flat or convolute, 3–15 cm long, 1–2 mm wide. Leaf-blade surface ribbed, hirsute.

**Inflorescence.** Inflorescence a panicle, embraced at base by subtending leaf. Panicle open, linear or elliptic, 7–10 cm long. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, 5–30 mm long, scabrous.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 8–12 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus evident, 0.5–1.5 mm long, pubescent, acute.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 8–12 mm long, 1 length of upper glume, membranous, purple, without keels, 3 -veined. Lower glume surface scabrous. Lower glume apex acuminate. Upper glume lanceolate, 8–12 mm long, membranous, purple, without keels, 5 -veined. Upper glume surface scabrous. Upper glume apex acuminate.

**Florets.** Fertile lemma lanceolate or obovate, subterete, gibbous, 4–6.5 mm long, coriaceous, without keel, 5 -veined, more than 3-veined. Lemma surface papillose, pubescent. Lemma margins convolute, covering most of palea. Lemma apex with a membranous corona, awned, 1 -awned. Principal lemma awn bigeniculate, 40–60 mm long overall, with twisted column, deciduous. Column of lemma awn 10–15 mm long, hispidulous. Palea 1–1.5 mm long, 0.5 length of lemma, without keels.

**Flower and Fruit.** Lodicules 2, 1 mm long. Anthers 3. Stigmas 2. Ovary glabrous. Caryopsis with adherent pericarp, fusiform or obovoid, 3 mm long. Hilum linear, 0.75 length of caryopsis.

Cleistogenes present, in lower sheaths.

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

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

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

**Nassella laevisissima** (Phil.) M.E. Barkworth. *Taxon*, 39(4): 610: (1990).

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

**TYPE** from Chile. **Basionym or Replaced Name:** *Piptochaetium laevisissimum* Phil., *Linnaea* 33(3–4): 280 (1864). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: Landbeck s.n., Chile: provincia de Colchagua (SGO-PHIL-37; IT: SGO-45679, SGO-37147, US- (fragm ex SGO-PHIL-37)).

**Recent Synonyms:** *Stipa collina* R.Phil., *Anal. Univ. Chil.* 93: 720 (1896).

**Illustrations (Books):** M.N.Correa, *Flora Patagonica* Parte III, Gramineae (1978) (317, Fig 210 as *Stipa*).

**Derivation** (Clifford & Bostock 2007): *L. laevis*, smooth; -issima, most. Plants usually quite glabrous.

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial, caespitose, clumped densely. Culms erect, slender, 10–40 cm long, 0.25 mm diam. Lateral branches lacking. Leaves mostly basal. Ligule an eciliate membrane, 1–2 mm long. Leaf-blades filiform, conduplicate, 10–20 cm long, 0.5 mm wide. Leaf-blade surface scabrous, rough adaxially. Leaf-blade apex attenuate.

**Inflorescence.** Inflorescence a panicle, comprising 3–12 fertile spikelets. Panicle contracted, linear, 3–10 cm long, bearing few spikelets. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, 1.5–10 mm long, scabrous.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 7–8 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus evident, curved, bearded, acute. Floret callus hairs 0.7–1 mm long.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 7–8 mm long, 1–1.2 length of upper glume, membranous, purple, 1-keeled, 3 -veined. Lower glume surface pubescent. Lower glume apex attenuate, awned, 1 -awned, awn 1.5–2 mm long. Upper glume lanceolate, 1.5–2 mm long, 2–2.2 length of adjacent fertile lemma, membranous, purple, 1-keeled, 3 -veined. Upper glume surface pubescent. Upper glume apex attenuate, awned, 1 -awned, awn 1.5–2 mm long.

**Florets.** Fertile lemma obovate, laterally compressed, 2.5–3 mm long, coriaceous, shiny, keeled, lightly keeled. Lemma surface glabrous. Lemma margins convolute, covering most of palea. Lemma apex truncate, awned, 1 -awned. Principal lemma awn eccentric, flexuous, 16–22 mm long overall, deciduous. Palea 1.5 mm long, membranous, 0 -veined, without keels.

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

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

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

**TDWG4.** La Pampa. Chubut. Rest of Chile- Biobio, La Auracania, Maule, O'Higgins, Santado, Valpariso. Coquimbo, Valparaiso, Santiago, O'Higgins, Maule, Biobio, La Araucania.

**Nassella lepida** (A. Hitchc.) M.E. Barkworth. *Taxon*, 39(4): 610: (1990).

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

**TYPE** from USA. **Basionym or Replaced Name:** *Stipa lepida* Hitchcock, *Amer. Journ. Bot.* 2: 302. (1915). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: A. Chase 5611, 19 Apr 1910, USA: California: Santa Barbara Co. (US-733683).

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

**Derivation** (Clifford & Bostock 2007): *L. pretty*. Plants with an attractive appearance as with colored spikelets.

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial. Culms slender, 60–100 cm long. Culm-internodes distally pubescent. Leaf-sheaths smooth, glabrous on surface or puberulous. Leaf-sheath oral hairs ciliate. Ligule an eciliate membrane, 0.5–1 mm long. Leaf-blades filiform or linear, conduplicate or involute, 10–30 cm long, 1–3 mm wide. Leaf-blade surface pubescent, hairy adaxially.

**Inflorescence.** Inflorescence a panicle. Panicle open or contracted, linear or elliptic, 4–20 cm long. Primary panicle branches appressed or ascending or spreading. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 6–10 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus evident, curved, 0.5 mm long, pubescent, pungent.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 6–10 mm long, 1.2–1.5 length of upper glume, membranous, without keels, 3 -veined. Lower glume apex acuminate. Upper glume lanceolate, 4–8 mm long, 1.1–1.3 length of adjacent fertile lemma, hyaline, without keels, 3 -veined. Upper glume apex acuminate.

**Florets.** Fertile lemma lanceolate, subterete, 3.5–6 mm long, coriaceous, dark brown, without keel, 5 -veined, more than 3-veined. Lemma surface papillose, pilose. Lemma margins convolute, covering most of palea. Lemma apex surmounted by a ring of hairs, awned, 1 -awned. Principal lemma awn bigenulate, 25–40 mm long overall, with twisted column, deciduous. Palea 0.33 length of lemma, 2 -veined, without keels.

**Flower and Fruit.** Anthers 3. Stigmas 2. Ovary glabrous. Caryopsis with adherent pericarp. Hilum linear.

**Distribution (TDWG). Continent.** North America.  
**Country /Province /State. Southwestern USA, Mexico.** California. Northwest Mexico.  
Baja California, Baja California Sur.

**Nassella leptocoronata** (Roseng. & Arill.) M.E. Barkworth. *Taxon*, 39(4): 610: (1990).

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

**TYPE** from Uruguay. **Basionym or Replaced Name:** *Stipa leptocoronata* Roseng. & B.R. Arrill., *Bol. Fac. Agron. Univ. Montevideo* 72: 16, t. 2–3 (1964). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: D. García 2145, primavera 1957, Uruguay: Salto: San Antonio, Escuela de Agronomía (MVFA; IT: US-2524272).

**Illustrations (Books):** B.Rosengurtt, *Gramineas Uruguayas I* (1970) (74, Fig. 23 as *Stipa*).

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Butt sheaths pilose. Basal innovations intravaginal. Culms erect, 40–80 cm long, 3-noded. Lateral branches lacking. Leaf-sheaths glabrous on surface. Leaf-sheath oral hairs pubescent, 1 mm long. Ligule an eciliate membrane, 0.5–1.5 mm long. Leaf-blades 5–20 cm long, 2 mm wide. Leaf-blade surface ribbed.

**Inflorescence.** Inflorescence a panicle, comprising 7–25 fertile spikelets. Panicle open, linear, 8–16 cm long. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 19–30 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus elongated, curved, 3–3.5 mm long, pilose, pungent.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 19–30 mm long, 1.1 length of upper glume, membranous, 1-keeled, 3-veined. Lower glume apex setaceously acuminate. Upper glume lanceolate, 16–23 mm long, membranous, without keels, 5-veined. Upper glume apex setaceously acuminate.

**Florets.** Fertile lemma lanceolate, subterete, 11–16.2 mm long, coriaceous, without keel, 5-veined, more than 3-veined. Lemma midvein ciliate, hairy below. Lemma surface asperulous. Lemma margins convolute, covering most of palea, ciliate, hairy at base. Lemma apex with a membranous corona, with this appendage 1.5–2.5 mm long, awned, 1-awned. Principal lemma awn bigeniculate, 65–135 mm long overall, with twisted column. Palea 2–2.5 mm long, without keels.

**Flower and Fruit.** Lodicules 2, 1–2 mm long. Anthers 3, 3.4–6.5 mm long, anther tip penicillate. Stigmas 2. Ovary glabrous. Caryopsis with adherent pericarp, fusiform, 5.5–8 mm long. Hilum linear.

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

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

**Nassella leptothera** (Speg.) M.A. Torres. *Monogr. Comis. Invest. Ci. Prov. Buenos Aires*, 13: 25: (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 (as *Stipa*), U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

**TYPE** from Argentina. **Basionym or Replaced Name:** *Stipa leptothera* Speg., *Anal. Mus. Montevid.* iv. II. 133. (1901). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: LT: C. Spegazzini s.n., Jan 1897, Argentina: Cuesta del Arca-Trancas (LP). LT designated by ?; cited by Torres, CIC 13: 25 (1997).

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

**Derivation** (Clifford & Bostock 2007): Gk. leptos, narrow; ather, ear or spike of wheat. Inflorescence a spicate panicle.

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial, caespitose, clumped loosely. Culms erect or geniculately ascending, 35–50 cm long, 1–1.25 mm diam., 2–4-noded. Culm-internodes striate, distally glabrous. Culm-nodes flush with internodes, brown, glabrous. Leaf-sheath oral hairs lacking or ciliate. Ligule an eciliate membrane, erose. Leaf-blades convolute, 2.5–15 cm long, 1.25–2.5 mm wide. Leaf-blade venation with 6–8 secondary veins. Leaf-blade surface scaberulous, rough abaxially, puberulous, hairy adaxially. Leaf-blade apex acute.

**Inflorescence.** Inflorescence a panicle, subtended by an inflated leaf-sheath, embraced at base by subtending leaf. Panicle open, elliptic, secund, 15–20 cm long. Primary panicle branches ascending or drooping. Panicle axis smooth. Panicle branches scabrous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, 1–10 mm long, scaberulous.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 8–9 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus evident, 0.75–0.9 mm long, pubescent, acute.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 8–9 mm long, 1.05 length of upper glume, membranous, without keels, 3 -veined. Lower glume apex acuminate. Upper glume lanceolate, 7.5–8.5 mm long, membranous, without keels, 3(–5) -veined. Upper glume apex acuminate.

**Florets.** Fertile lemma lanceolate, subterete, 4.75–5.25 mm long, membranous, pallid, without keel, 5 -veined, more than 3-veined. Lemma surface pubescent. Lemma margins convolute, covering most of palea. Lemma apex with an annular corona, awned, 1 -awned. Principal lemma awn bigenulate, 23–36 mm long overall, with twisted column, deciduous. Middle segment of lemma awn 6–9 mm long. Column of lemma awn 6–9 mm long, pubescent. Palea 1.5 mm long, 0 -veined, without keels.

**Flower and Fruit.** Caryopsis with adherent pericarp.

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

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

**TDWG4.** Salta, Tucuman.

**Nassella leucotricha** (Trin. & Rupr.) Pohl. *Taxon*, 39(4): 610: (1990).

**Accepted by:** R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online (as *Stipa*), U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), D.Sharp, D. & B.K.Simon, *AusGrass* (2002).

**TYPE** from USA. **Basionym or Replaced Name:** *Stipa leucotricha* Trin. & Rupr., *Sp. Gram. Stipac.* 54 (1842). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: [*Drummond?*], USA: Texas I,5 (LE-TRIN-1414.01; IT: US-557432).

**Illustrations (Books):** J.P.Jessop, G.R.M. Dashorst & F.M.James, *Grasses of South Australia* (2006) (107, Fig 69), N.Walsh & T.Entwistle, *Flora of Victoria* Vol 2 (1994) (379, Fig 74 as *Stipa*), A.Wilson (ed.), *Flora of Australia*, Vol 44A. *Poaceae* (2009) (63, Fig 9), D.Sharp & B.K.Simon, *AusGrass*. Grasses of Australia. CD-Rom Version 1.0. (2002), M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 24 *Poaceae*, part 1 (2007), F.W.Gould, *The Grasses of Texas* (1975) (72, Fig. 29 as *Stipa*).

**Derivation** (Clifford & Bostock 2007): Gk. *leukos*, white, *thrix*, hair. Apex of lemma white with a ring of hairs about the base of the awn.

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial, caespitose, clumped densely. Cataphylls inconspicuous. Culms erect or decumbent (slightly), 20–50 cm long, 1.5–3 mm diam., without nodal roots. Culm-internodes ridged, distally glabrous. Culm-nodes pubescent. Leaves basal and cauline, differentiated into sheath and blade. Leaf-sheaths smooth to scaberulous, outer margin glabrous to hairy. Leaf-sheath oral hairs pubescent. Leaf-sheath auricles erect, 1–2 mm long. Ligule an eciliate membrane, 0.4–0.7 mm long, truncate. Leaf-blades flat or involute, 10–30 cm long, 2–5 mm wide. Leaf-blade surface ribbed, glabrous or pubescent, sparsely hairy, hairy on both sides. Leaf-blade apex filiform. Bisexual.

**Inflorescence.** Synflorescence simple.

Inflorescence a panicle. Panicle contracted, 15 cm long, 1–3 cm wide, bearing few spikelets. Primary panicle branches ascending or spreading, 2 -nate. Panicle branches angular, scabrous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, angular.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets elliptic, laterally compressed, 10–17 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus elongated, 1.2–3.3 mm long, pilose.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 10–17 mm long, 1 length of upper glume, membranous, without keels, 3 -veined. Lower glume surface glabrous or puberulous, hairy on veins. Lower glume apex acute or acuminate. Upper glume lanceolate, 10–16 mm long, 1.5–1.8 length of adjacent fertile lemma, membranous, without keels, 3(–5) -veined. Upper glume apex acute or acuminate.

**Florets.** Fertile lemma linear, subterete, 5.3–5.7 mm long, coriaceous, without keel, rounded throughout. Lemma surface granulose, pubescent, hairy in the middle. Lemma margins convolute, covering most of palea. Lemma apex emarginate or truncate, with a membranous corona, with this appendage 1.5–2.5 mm long, awned, 1 -awned. Principal lemma awn bigenulate, 50–60 mm long overall, with twisted column, limb scaberulous. Column of lemma awn 20–30 mm long, with 0.8 mm long hairs. Palea elliptic, 0.35–0.5 length of lemma, membranous, without keels. Palea surface smooth, glabrous.

**Flower and Fruit.** Lodicules 2, oblong, membranous. Anthers 3. Stigmas 2. Ovary glabrous. Caryopsis with adherent pericarp, fusiform. Embryo 0.2–0.35 length of caryopsis. Hilum linear.

**Distribution (TDWG). Continent.** Australasia (\*), North America.

**Country /Province /State.** **Australia.** Victoria (\*). **North-central USA, South-central USA, Southeastern USA, Mexico.** Oklahoma, South Dakota. Texas. Louisiana. Central Mexico, Northeast Mexico, Southwest Mexico, Southeast Mexico.

Mexico State, Puebla. Coahuila, Durango, Guanajuato, Hidalgo, Neuvo Leon, San Luis Potosi, Tamaulipas, Zacatecas. Oaxaca. Chiapas.

**Nassella ligularis** (Griseb.) M.E. Barkworth & M.A. Torres. *Taxon*, 50(2): 456 : (2001).

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

**TYPE** from Argentina. **Basionym or Replaced Name:** *Stipa neesiana* var. *ligularis* Griseb., *Abh. Konigl. Ges. Wiss. Göttingen* 24: 298 (1879). T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: LT: Lorentz 458, 31 Oct 1875, Argentina: Entre Ríos: Concepción del Uruguay, häufig Campgrass (GOET; ILT: CORD). LT designated by Caro, *Kurtziana* 2: 110 (1965).

LT: P.G. Lorentz 1158, Oct 1877, Argentina: Entre Ríos: Concepción del Uruguay, en praderas (GOET; IT: CORD, US-2946527 (fragm. ex GOET)). LT designated by Hitchcock, *Contr. U.S. Natl. Herb.* 24(7): 277 (1925).

**Recent Synonyms:** *Stipa ligularis* (Griseb.) Speg., *Anal. Mus. Montevid.* 4,2: 91. (1901).

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

**Derivation** (Clifford & Bostock 2007): L. ligula, small tongue; -aris, pertaining to. Ligule conspicuous.

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial, caespitose, clumped loosely. Culms 30–75 cm long, 1.75 mm diam., 2–3 -noded. Culm-internodes smooth. Culm-nodes swollen, pubescent. Leaf-sheaths glabrous on surface. Leaf-sheath oral hairs ciliate. Ligule an eciliate membrane, 1–5 mm long, truncate. Leaf-blades flat or convolute, 10–40 cm long, 2–5 mm wide. Leaf-blade venation with 9–17 secondary veins. Leaf-blade surface ribbed, pilose, hairy on both sides.

**Inflorescence.** Inflorescence a panicle, subtended by an inflated leaf-sheath, embraced at base by subtending leaf. Panicle open, elliptic, 15–25 cm long. Primary panicle branches 2 -nate. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, 2–15 mm long, pubescent, hairy at tip.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 18–20 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus elongated, curved, 3.75–4 mm long, pilose, pungent.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 18–20 mm long, 1.1 length of upper glume, membranous, without keels, 3 -veined. Lower glume primary vein ciliolate. Lower glume margins ciliolate. Lower glume apex acuminate. Upper glume lanceolate, 16–18 mm long, membranous, without keels, 5 -veined. Upper glume primary vein ciliolate. Upper glume margins ciliolate. Upper glume apex acuminate.

**Florets.** Fertile lemma lanceolate, subterete, 11–12 mm long, coriaceous, without keel, 5 -veined, more than 3-veined. Lemma midvein pubescent, hairy below. Lemma surface papillose, rough above. Lemma margins convolute, covering most of palea. Lemma apex with a membranous corona, with this appendage 0.5–0.7 mm long, awned, 1 -awned. Principal lemma awn bigeniculate, 9–10 mm long overall, with twisted column. Column of lemma awn pubescent. Palea 1–1.25 mm long, 0 -veined, without keels.

**Flower and Fruit.** Anthers 3. Stigmas 2. Ovary glabrous. Caryopsis with adherent pericarp, fusiform. Hilum linear.

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

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

**TDWG4.** Entre Rios.

**Nassella linearifolia** (Fourn.) R.W. Pohl. *Fieldiana, Bot., n.s.*, 4: 336 (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 Mexico. **Basionym or Replaced Name:** *Stipa linearifolia* E. Fourn., *Mexic. Pl.* 2: 73 (1886). T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: HT: J.G. Schaffner 89, no date, Mexico: prope Tacubaya (P; IT: US-2946525 (fragm. ex P)).

ST: Schaffner 172, Mexico (?). Pl. ed. Hohen..

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

**Derivation** (Clifford & Bostock 2007): *L. linea*, linen thread; -aris, pertaining to; folium, leaf. Leaf-blades narrow.

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial, caespitose, clumped densely. Culms erect, 50–60 cm long. Culm-internodes distally glabrous. Culm-nodes glabrous. Lateral branches ample, arising from lower culm. Leaf-sheaths glabrous on surface. Ligule an eciliate membrane, 0.5 mm long, white. Leaf-blades involute, 5–17 cm long, 2–3 mm wide, stiff. Leaf-blade surface ribbed, glabrous.

**Inflorescence.** Inflorescence a panicle. Peduncle 6–12 cm long. Panicle open, ovate, 8–17 cm long. Primary panicle branches 2-nate, 4–6 cm long. Panicle branches capillary. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets oblong, subterete, 4.2–5 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus pubescent.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume ovate, 4.2–5 mm long, 1 length of upper glume, membranous, purple, without keels, 3-veined. Lower glume apex acuminate. Upper glume ovate, 4.2–5 mm long, 1.5 length of adjacent fertile lemma, membranous, purple, without keels, 3-veined. Upper glume apex acuminate.

**Florets.** Fertile lemma obovate, laterally compressed, 2.8–3 mm long, coriaceous, without keel. Lemma surface asperulous, pubescent. Lemma margins convolute, covering most of palea. Lemma apex truncate, awned, 1-awned. Principal lemma awn bigeniculate, 13–15 mm long overall, with twisted column, deciduous. Column of lemma awn puberulous. Palea 1 length of lemma, membranous, without keels.

**Flower and Fruit.** Lodicules 3. Anthers 1, 0.5 mm long, retained within floret.

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

**Country /Province /State.** **Mexico.** Central Mexico, Northeast Mexico, Gulf (Mexico), Southwest Mexico, Southeast Mexico. **Mesoamerica, Western South America, Southern South America.** Costa Rica, Guatemala. Bolivia, Colombia, Peru. Chile North.

Antofagasta. Distrito Federal, Mexico State, Puebla, Tlaxcala. Hidalgo. Veracruz. Oaxaca. Chiapas.

**Nassella longicoronata** (Roseng. & Arr.) M.E. Barkworth. *Taxon*, 39(4): 610: (1990).

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

**TYPE** from Uruguay. **Basionym or Replaced Name:** *Stipa longicoronata* Roseng. & B.R. Arrill., *Bol. Fac. Agron. Univ. Montevideo* 72: 20, t. 4–5 (1964). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: D. García 2150, primavera 1957, Uruguay: Salto: San Antonio, Escuela de Agronomía, en campo virgen (US-2524316).

**Illustrations (Books):** B.Rosengurt, *Gramineas Uruguayas I* (1970) (78, Fig. 25 as *Stipa*).

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial, caespitose, clumped loosely. Basal innovations intravaginal. Culms erect, 40–80 cm long, 4–5-noded. Culm-nodes glabrous or pubescent. Lateral branches lacking. Leaf-sheaths outer margin hairy. Ligule an eciliate membrane, 0.5 mm long. Leaf-blades flat or convolute, 10–15 cm long, 1.5–2 mm wide. Leaf-blade surface ribbed.

**Inflorescence.** Inflorescence a panicle. Panicle open, elliptic, 10–20 cm long. Primary panicle branches 2-nate. Panicle branches scaberulous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 12–17.5 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus elongated, curved, 2–3 mm long, pilose, pungent.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 12–17.5 mm long, 1.1 length of upper glume, membranous, without keels, 3-veined. Lower glume primary vein ciliate. Lower glume margins ciliate. Lower glume apex setaceously acuminate. Upper glume lanceolate, 11–16 mm long, membranous, without keels. Upper glume primary vein ciliate. Upper glume apex setaceously acuminate.

**Florets.** Fertile lemma lanceolate, subterete, 7.5–10.5 mm long, coriaceous, without keel, 5-veined, more than 3-veined. Lemma midvein ciliate, hairy below. Lemma surface asperulous. Lemma margins convolute, covering most of palea. Lemma apex with a membranous corona, with this appendage 1.5–3 mm long, awned, 1-awned. Principal lemma awn bigeniculate, 65–75 mm long overall, with twisted column. Column of lemma awn pubescent. Palea 1.5 mm long, without keels.

**Flower and Fruit.** Lodicules 2. Anthers 3, 3–4 mm long, anther tip penicillate. Stigmas 2. Ovary glabrous. Caryopsis with adherent pericarp, fusiform, 4 mm long. Hilum linear.

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

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

**Nassella longiglumis** (Phil.) M.E. Barkworth. *Taxon*, 39(4): 610: (1990).

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

**TYPE** from Chile. **Basionym or Replaced Name:** *Stipa longiglumis* Phil., *Linnaea* 33(3–4): 286 (1864). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: Landbeck s.n., Dec 1861, Chile: Colchagua (SGO-45631; IT: US-A886091 (fragm.)).

**Illustrations (Books):** M.N.Correa, *Flora Patagonica Parte III, Gramineae* (1978) (325, Fig 218 as *Stipa*), B.Rosengurt, *Gramineas Uruguayas I* (1970) (74, Fig. 23 as *Stipa*).

**Derivation** (Clifford & Bostock 2007): *L. longus*, long; gluma, husk. Spikelets with long glumes and or lemmas.

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Rhizomes short. Butt sheaths sparsely hairy. Culms 50–60 cm long, 2–3 mm diam., 2–3 -noded. Culm-internodes distally glabrous. Culm-nodes swollen, brown, glabrous. Leaf-sheaths glabrous on surface. Leaf-sheath oral hairs ciliate. Ligule an eciliate membrane, 2–3 mm long, truncate or obtuse. Leaf-blades flexuous, flat or convolute, 10–20 cm long, 1.5–2 mm wide. Leaf-blade surface ribbed, scaberulous, glabrous. Leaf-blade margins ciliate. Leaf-blade apex attenuate.

**Inflorescence.** Inflorescence a panicle. Panicle open, lanceolate, 10–25 cm long. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, 5–20 mm long, scabrous.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 30–35 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus elongated, 4–4.5 mm long, pubescent, pungent.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 30–35 mm long, 1.1–1.2 length of upper glume, membranous, without keels, 3 -veined. Lower glume apex attenuate. Upper glume lanceolate, 25–30 mm long, membranous, without keels, 5 -veined. Upper glume apex attenuate.

**Florets.** Fertile lemma lanceolate, subterete, 10–12 mm long, coriaceous, without keel, 5 -veined, more than 3-veined. Lemma surface tuberculate, pubescent, hairy all along, hairy on veins. Lemma margins convolute, covering most of palea, ciliate. Lemma apex with a membranous corona or surmounted by a ring of hairs, awned, 1 -awned. Principal lemma awn bigeniculate, 90–125 mm long overall, with twisted column. Middle segment of lemma awn 20–25 mm long. Column of lemma awn 12–20 mm long, pubescent. Palea 2–2.5 mm long, 0 -veined, without keels.

**Flower and Fruit.** Lodicules 3. Anthers 3. Stigmas 2. Ovary glabrous. Caryopsis with adherent pericarp, fusiform, 6–7 mm long, dark brown. Hilum linear.

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

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

**TDWG4.** Río Negro. Coquimbo, Maule, Biobio.

**Nassella macrathera** (Phil.) M.E. Barkworth. *Taxon*, 39(4): 610: (1990).

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

**TYPE** from Chile. **Basionym or Replaced Name:** *Stipa macrathera* Phil., *Anales Univ. Chile* 93: 720 (1896). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: R.A. Philippi s.n., Chile: Santiago (SGO-PHIL-76; IT: SGO-37400, SGO-63163, US-A866089 (fragm. ex SGO-PHIL-76 & photo)).

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

**Derivation** (Clifford & Bostock 2007): Gk. makros, large; ather, spike as of ear of wheat. Spikelets large.

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Culms erect, 40–70 cm long, 2 -noded. Culm-nodes pubescent. Ligule an eciliate membrane, 0.1–0.5 mm long. Leaf-blades filiform, convolute, 10–18 cm long, 0.3–1 mm wide. Leaf-blade surface pubescent, hairy on both sides.

**Inflorescence.** Inflorescence a panicle, exserted or embraced at base by subtending leaf. Panicle open, linear, dense, 10–20 cm long. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, 2–12 mm long, pubescent.



**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 24 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus elongated, 3–4 mm long, pubescent, acute.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 24 mm long, 1.1 length of upper glume, membranous, without keels, 3 -veined. Lower glume surface scabrous, rough on veins. Lower glume apex acuminate. Upper glume lanceolate, 21 mm long, membranous, without keels, 5 -veined. Upper glume surface scabrous, rough on veins. Upper glume apex acuminate.

**Florets.** Fertile lemma lanceolate, subterete, 10–11 mm long, coriaceous, light brown, without keel, 5 -veined, more than 3-veined. Lemma surface papillose, glabrous. Lemma margins convolute, covering most of palea. Lemma apex with a membranous corona or surmounted by a ring of hairs, with this appendage 1.2–2 mm long, awned, 1 -awned. Principal lemma awn geniculate, 80–100 mm long overall, with twisted column. Column of lemma awn pubescent. Palea 1 mm long, 0.1 length of lemma, hyaline, without keels.

**Flower and Fruit.** Anthers 3. Stigmas 2. Ovary glabrous. Caryopsis with adherent pericarp.

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

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

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

**Nassella manicata** (Desv.) M.E. Barkworth. *Taxon*, 39(4): 610: (1990).

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

**TYPE** from Chile. **Basionym or Replaced Name:** *Stipa manicata* E. Desv., *Flora Chil.* 6: 288 (1854). T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: HT: C. Gay s.n., Sep 1829, Chile: Santiago (P; IT: US-866088 (fragm.)).

**Illustrations (Books):** M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 24 *Poaceae*, part 1 (2007) (173).

**Derivation** (Clifford & Bostock 2007): *L. manicae*, long sleeves; -atum, possessing. With long leaf-sheaths the upper of which may enclose the base of the inflorescence.

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Culms erect or geniculately ascending, 50–70 cm long, 2–3 -noded. Culm-nodes glabrous. Ligule an eciliate membrane, 0.1–0.3 mm long. Leaf-blades flat or convolute, 10–30 cm long, 1.5–2.5 mm wide. Leaf-blade surface ribbed, pubescent.

**Inflorescence.** Inflorescence a panicle. Panicle open, elliptic, 10–20 cm long. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, 2–25 mm long, pubescent.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 12–15 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus elongated, 1.5–2.5 mm long, pubescent, pungent.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 12–15 mm long, 1.1 length of upper glume, membranous, without keels, 3 -veined. Lower glume apex acuminate. Upper glume lanceolate, 11–14 mm long, membranous, without keels, 3 -veined. Upper glume apex acuminate.

**Florets.** Fertile lemma lanceolate, subterete, 6–8 mm long, coriaceous, without keel, 5 -veined, more than 3-veined. Lemma surface papillose, rough above. Lemma margins convolute, covering most of palea. Lemma apex with a membranous corona or surmounted by a ring of hairs, with this appendage 1 mm long (plus hairs 1–15mm), awned, 1 -awned. Principal lemma awn geniculate, 40–50 mm long overall, with a straight or slightly twisted column. Column of lemma awn 10–15 mm long, puberulous. Palea 1.5 mm long, without keels.

**Flower and Fruit.** Lodicules 2, 0.5 mm long. Anthers 3. Stigmas 2. Ovary glabrous. Caryopsis with adherent pericarp, fusiform. Hilum linear.

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

**Country /Province /State.** Southwestern USA. California. Western South America, Southern South America. Ecuador. Chile North, Chile Central.

**TDWG4.** Mendoza. Buenos Aires. Chubut. Atacama. Coquimbo, Valparaiso, Santiago, Maule, Biobio, La Araucania.

**Nassella megapotamia** (Spreng. ex Trin.) M.E. Barkworth. *Taxon*, 39(4): 610: (1990).

**Accepted by:** R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online (as *Stipa*), U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), D.Sharp, D. & B.K.Simon, *AusGrass* (2002).

**TYPE** from Uruguay. **Basionym or Replaced Name:** *Stipa megapotamia* Spreng. ex Trin., *Mem. Acad. Imp. Sci. St.-Petersbourg, Ser. 6, Sci. Math.* 1(1): 77 (1830). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: [Sellow] [mis.] Otto, Uruguay: ad Monte Video (LE-TRIN-1415.01 (& fig.)).

**Recent Synonyms:** *Stipa filifolia* Nees, *Agrost. Bras.* 379. (1829). *Jarava megapotamica* (Spreng.) Penail., *Gayana, Bot.* 59(1): 31 (2002).

**Illustrations (Books):** S.W.L.Jacobs, R.D.B.Whalley & D.J.B.Wheeler., *Grasses of New South Wales*, 4th edn (2008) (305), A.Wilson (ed.), *Flora of Australia*, Vol 44A. *Poaceae* (2009) (63, Fig 9), D.Sharp & B.K.Simon, *AusGrass*. Grasses of Australia. CD-Rom Version 1.0. (2002), L.B. Smith, D.C. Wasshausen, R.M. Klein *Flora Illustrada Catarinensis Gramineas* (1981–1982) (540, Fig.117 as *Stipa*), A.Burkat, *Flora Illustrada de Entre Rios (Argentina)*, Pt II, Gramineas (1969) (158, Fig 54 as *Stipa*), A.L.Cabrera, *Flora de la Provincia de Buenos Aires, IV Pt 2 Gramineas* (1970) (277, Fig. 72 & 285, Fig 73 as *Stipa*), B.Rosengurt, *Gramineas Uruguayas I* (1970) (66, Fig. 22 & 74, Fig. 23 & 78, Fig. 25 as *Stipa*).

**Derivation** (Clifford & Bostock 2007): Gk. megas, large; potamos, river; -ike, belonging to. Mostly from Rio Grande do Sul, now La Platte. Otherwise from the Amazon or Rio Grande, a district in southern Brazil.

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Rhizomes short. Culms erect or geniculately ascending, 50–150 cm long. Culm-internodes distally glabrous. Culm-nodes brown. Leaf-sheaths glabrous on surface, outer margin hairy. Ligule an eciliate membrane, 0.2 mm long, truncate. Leaf-blades 30–60 cm long, 6–14 mm wide. Leaf-blade surface scabrous, glabrous or pilose, hairy adaxially. Leaf-blade margins glabrous or ciliate.

**Inflorescence.** Inflorescence a panicle. Panicle open, equilateral or nodding, 30–40 cm long. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 7–10 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus elongated, curved, 1–2 mm long, pubescent, acute.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 7–10 mm long, 1 length of upper glume, hyaline, mid-green to purple, without keels, 3 -veined. Lower glume surface asperulous, rough on veins. Lower glume apex acuminate. Upper glume lanceolate, 7–10 mm long, 2 length of adjacent fertile lemma, hyaline, mid-green or purple, without keels, 3 -veined. Upper glume surface asperulous, rough on veins. Upper glume apex acuminate.

**Florets.** Fertile lemma linear, subterete, 4–5 mm long, coriaceous, without keel, 5 -veined, more than 3-veined. Lemma surface papillose, pubescent, hairy all along, hairy on veins. Lemma margins convolute, covering most of palea. Lemma apex with a membranous corona, with this appendage 0.5–0.6 mm long, awned, 1 -awned. Principal lemma awn bigenulate, 30–50 mm long overall, with twisted column, deciduous. Column of lemma awn glabrous. Palea 0.8–1 mm long, 0 -veined, without keels.

**Flower and Fruit.** Lodicules 2. Anthers 3, 2–2.8 mm long, anther tip penicillate. Stigmas 2. Ovary glabrous. Caryopsis with adherent pericarp, fusiform, 2.7–3 mm long, dark brown. Hilum linear, 0.66 length of caryopsis.

**Distribution (TDWG). Continent.** Australasia (\*), South America.

**Country /Province /State.** **Australia.** New South Wales (\*). **Brazil, Southern South America.** Brazil South. Argentina Northeast, Uruguay.

**TDWG4.** Tablelands. Catarina, Rio Grande do Sul. San Luis, Tucuman. Buenos Aires, Cordoba, Entre Rios.

**Nassella melanosperma** (J. Presl) M.E. Barkworth. *Taxon*, 39(4): 611: (1990).

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

**TYPE** from South America. **Basionym or Replaced Name:** *Stipa melanosperma* J. Presl, *Rel. Haenk.* 1: 226. (1830). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: T. Haenke s.n., no date, South America (PR; IT: US-866083 (fragm.)).

**Illustrations (Books):** L.B. Smith, D.C. Wasshausen, R.M. Klein *Flora Illustrada Catarinensis Gramineas* (1981–1982) (540, Fig.117 as *Stipa*), A.Burkat, *Flora Illustrada de Entre Rios (Argentina)*, Pt II, Gramineas (1969) (150, Fig. 51 as *Stipa*), A.L.Cabrera, *Flora de la Provincia de Buenos Aires, IV Pt 2 Gramineas* (1970) (267, Fig. 69 as *Stipa*), B.Rosengurt, *Gramineas Uruguayas I* (1970) (74, Fig. 23 as *Stipa*).

**Derivation** (Clifford & Bostock 2007): Gk. melas, black; sperma, seed. Lemma dark, investing the grain.

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Butt sheaths persistent and investing base of culm, with fibrous dead sheaths. Culms erect, 20–100 cm long. Lateral branches lacking. Leaf-sheaths smooth, glabrous on surface. Leaf-sheath oral hairs ciliate. Ligule an eciliate membrane, 1–3 mm long. Leaf-blades conduplicate or convolute, 7–30 cm long, 0.5–1 mm wide. Leaf-blade surface scabrous, rough adaxially, glabrous or puberulous, hairy abaxially. Leaf-blade apex acute.

**Inflorescence.** Inflorescence a panicle. Panicle open, equilateral or nodding, 6–20 cm long, bearing few spikelets. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, ciliate.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 24–40 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus elongated, curved, 4–8 mm long, pubescent, pungent.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 24–40 mm long, 1–1.3 length of upper glume, hyaline, yellow, without keels, 3–5 -veined. Lower glume primary vein ciliate. Lower glume apex attenuate. Upper glume lanceolate, 24–40 mm long, 2–2.5 length of adjacent fertile lemma, hyaline, without keels, 3–5 -veined. Upper glume apex attenuate.

**Florets.** Fertile lemma linear, subterete, 10.5–19 mm long, coriaceous, dark brown, shiny, without keel, 5 -veined, more than 3-veined. Lemma surface papillose, rough above, glabrous. Lemma margins convolute, covering most of palea. Lemma apex with a membranous corona or surmounted by a ring of hairs (on membrane), with this appendage 0.5–1 mm long (plus ciliolae), awned, 1 -awned. Principal lemma awn bigenulate, constricted at base (of corona), 100–160 mm long overall, with 15–65 mm long limb, with twisted column. Column of lemma awn 30–75 mm long, pubescent. Palea 0.7–2.5 mm long, 0 -veined, without keels.

**Flower and Fruit.** Lodicules 2 or 3. Anthers 3, 4–7 mm long. Stigmas 2. Ovary glabrous. Caryopsis with adherent pericarp, linear, 5.5–9 mm long, light brown. Hilum linear, 0.9–1 length of caryopsis.

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

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

**TDWG4.** Sao Paulo Parana, Catarina, Rio Grande do Sul. Buenos Aires, Cordoba, Corrientes, Entre Rios, La Pampa, Misiones, Santa Fe.

**Nassella mexicana** (A. Hitchc.) Pohl. *Taxon*, 39(4): 611: (1990).

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

**TYPE** from Mexico. **Basionym or Replaced Name:** *Stipa mexicana* Hitchc., *Contr. U.S. Natl. Herb.* 24(7): 247, t. 52, f. 5–6 (1925). T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: HT: C.G. Pringle 4299, 1 Oct 1892, Mexico: México: mountain meadows, Sierra de las Cruces (US-993386; IT: MO-3055690).

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

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

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Culms geniculately ascending or decumbent, 20–30 cm long. Leaf-sheaths glabrous on surface. Leaf-sheath oral hairs lacking. Ligule an eciliate membrane. Leaf-blades filiform, involute, 5–20 cm long, 0.2–0.3 mm wide. Leaf-blade surface scabrous, rough adaxially. Leaf-blade apex pungent.

**Inflorescence.** Inflorescence a panicle. Panicle open, linear, 5–10 cm long. Primary panicle branches appressed or ascending. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 10 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus evident, pubescent (white), obtuse.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 1 length of upper glume, membranous, without keels, 3 -veined. Lower glume apex acute. Upper glume lanceolate, 10 mm long, membranous, without keels, 3 -veined. Upper glume apex acute.

**Florets.** Fertile lemma oblong, subterete, 4 mm long, coriaceous, dark brown, without keel, 5 -veined, more than 3-veined. Lemma surface pubescent, hairy all along. Lemma margins convolute, covering most of palea. Lemma apex surmounted by a ring of hairs, with this appendage 0.5 mm long, awned, 1 -awned. Principal lemma awn bigenulate, 10 mm long overall, with a straight or slightly twisted column. Column of lemma awn puberulous. Palea 2 -veined, without keels.

**Flower and Fruit.** Lodicules 3. Anthers 3. Stigmas 2. Ovary glabrous. Caryopsis with adherent pericarp. Hilum linear.

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

**Country /Province /State.** Mexico. Central Mexico, Northeast Mexico, Southeast Mexico. **Mesoamerica, Northern South America, Western South America, Southern South America.** Guatemala. Venezuela. Bolivia, Colombia, Ecuador, Peru. Argentina Northwest.

**TDWG4.** Jujuy, La Rioja, Salta, Tucuman. Distrito Federal, Mexico State, Puebla. Hidalgo. Chiapas.

**Nassella meyeniana** (Trin. & Rupr.) L. Parodi. *Darwiniana*, vii. 379 (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 Peru. **Basionym or Replaced Name:** *Urachne meyeniana* Trin. & Rupr., *Sp. Gram. Stipac.* 20 (1842). T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: HT: Meyen, Peru: circa Piracurna, 14500 ft (LE-TRIN-1464.02; US- (fragm. ex LE-TRIN-1464.02)).

**Illustrations (Books):** S.A.Renvoize, *Gramineas de Bolivia* (1998) (91, Fig. 18), E.G.Nicora, *Los Generos de Gramineas de America Austral* (1987) (208, Fig. 61).

**Derivation** (Clifford & Bostock 2007): L. -ana, indicating connection. In honor of Franz Julius Ferdinand Meyen (1804–1840) German physician, traveller and plant collector.

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Culms erect or geniculately ascending, 30–60 cm long. Leaf-sheaths glabrous on surface. Ligule an eciliate membrane, 1 mm long. Leaf-blades flat or convolute, 10–20 cm long, 2–4 mm wide. Leaf-blade surface glabrous or pubescent, hairy adaxially. Leaf-blade apex acuminate.

**Inflorescence.** Inflorescence a panicle. Panicle contracted, linear, interrupted, nodding, 10–25 cm long. Primary panicle branches 1–10 cm long, naked below or bearing spikelets almost to the base. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets ovate, subterete, 3.5–4.5 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus glabrous or pubescent, obtuse.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 3.5–4.5 mm long, 1 length of upper glume, membranous, 1-keeled, 3 -veined. Lower glume apex acuminate, awned, 1 -awned, awn 0.2–0.3 mm long. Upper glume lanceolate, 3.5–4 mm long, 1.8–2 length of adjacent fertile lemma, membranous, 1-keeled, 3 -veined. Upper glume apex acuminate.

**Florets.** Fertile lemma obovate, laterally compressed, 1.8–2.2 mm long, 0.6–0.8 mm wide, coriaceous, pallid or grey, shiny, keeled, lightly keeled. Lemma surface glabrous. Lemma margins convolute, covering most of palea. Lemma apex obtuse, awned, 1 -awned. Principal lemma awn eccentric, flexuous, 10–15 mm long overall, deciduous. Palea membranous, 0 -veined, without keels.

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

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

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

**TDWG4.** Jujuy. Tarapaca.

**Nassella meyeri** M.A. Torres. *Monogr. Comis. Invest. Ci. Prov. Buenos Aires*, 13: 26 (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. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: Argentina: Prov. Jujuy: Dep. Tilcara: Tilcara, 2461 m, 9 Feb 1940, T. Meyer 14886 (HT: LIL; IT: BAA).

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

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Basal innovations extravaginal. Culms erect, 25–45 cm long. Culm-internodes distally glabrous. Culm-nodes glabrous. Lateral branches lacking. Leaf-sheaths mostly shorter than adjacent culm internode, puberulous, outer margin hairy. Leaf-sheath oral hairs ciliate. Ligule a ciliolate membrane, 0.5–0.8 mm long, truncate. Collar ciliate. Leaf-blades straight or curved, convolute, 5–11 cm long, 0.6–0.9 mm wide. Leaf-blade surface scaberulous, rough abaxially, puberulous, hairy adaxially.

**Inflorescence.** Inflorescence a panicle. Panicle open, linear, 5–10 cm long, bearing few spikelets. Panicle branches capillary, puberulous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, filiform, puberulous.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 10–12 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus elongated, 1.6–2 mm long, pubescent, pungent.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 10–12 mm long, 1.1 length of upper glume, membranous, without keels, 4–6 -veined. Lower glume apex acuminate. Upper glume lanceolate, 9–11 mm long, membranous, without keels, 3–5 -veined. Upper glume apex acuminate.

**Florets.** Fertile lemma linear, subterete, 6.5–8 mm long, coriaceous, without keel, 5 -veined, more than 3-veined. Lemma midvein pubescent, hairy below. Lemma surface pilose. Lemma margins convolute, covering most of palea, ciliate, hairy below. Lemma apex with a membranous corona or surmounted by a ring of hairs, with this appendage 0.5 mm long, awned, 1 -awned. Principal lemma awn bigenulate, constricted at base (of corona), 40–50 mm long overall, with 20–30 mm long limb, with twisted column, deciduous. Middle segment of lemma awn puberulous. Column of lemma awn 10–14 mm long, puberulous. Palea 2 mm long, 0.25 length of lemma, 0 -veined, without keels.

**Flower and Fruit.** Lodicules 2. Anthers 3. Stigmas 2. Caryopsis with adherent pericarp. Hilum linear.

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

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

**TDWG4.** Catamarca, Jujuy, La Rioja, Salta, San Juan, Tucuman.

**Nassella mucronata** (H.B.K.) Pohl. *Taxon*, 39(4): 611: (1990).

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

**TYPE** from Mexico. **Basionym or Replaced Name:** *Stipa mucronata* Kunth, *Nov. Gen. Sp. (quarto ed.)* 1: 125–126 (1815) [1816]. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: LT: Humboldt & Bonpland s.n., only the upper part of a culm with a small panicle, Jun, Actopan regni Mexicani. alt. 1040 hexap. (P; ILT: US-296533 (fragm.)). LT designated by Hitchcock, *Contr. U.S. Natl. Herb.* 24(7): 223 (1925).

**Recent Synonyms:** *Stipa setigera* J.Presl, *Rel. Haenk.* i. 226. (1830).

**Illustrations (Books):** S.A.Renvoize, *Gramineas de Bolivia* (1998) (74, Fig 14 as *Nassella*).

**Illustrations (Journals):** *Ruizia* (13:70, Fig 8p-q (1993) as *Stipa*).

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

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial. Culms erect or geniculately ascending, 60–100 cm long. Culm-nodes pubescent. Leaf-sheaths glabrous on surface, outer margin hairy. Leaf-sheath oral hairs ciliate. Ligule an eciliate membrane, 0.5–1 mm long. Leaf-blades flat or involute, 10–20 cm long, 1–3 mm wide. Leaf-blade surface pubescent, sparsely hairy, hairy on both sides.

**Inflorescence.** Inflorescence a panicle. Panicle open, linear, dense, nodding, 10–30 cm long. Primary panicle branches appressed or ascending, 1–2 -nate. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 8–10 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus elongated, 2 mm long, pubescent (tawny), acute.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume oblong, 1 length of upper glume, membranous, purple, without keels, 3 -veined. Lower glume primary vein scabrous. Lower glume apex acuminate. Upper glume oblong, 25–40 mm long, membranous, purple, without keels, 5 -veined. Upper glume apex acuminate.

**Florets.** Fertile lemma oblong, subterete, 5–6 mm long, 1 mm wide, coriaceous, dark brown, without keel, 5 -veined, more than 3-veined. Lemma surface papillose, rough above, pubescent, hairy below. Lemma margins convolute, covering most of palea. Lemma apex with a short cylindrical neck and surmounted by a ring of hairs, with this appendage 0.5 mm long, awned, 1 -awned. Principal lemma awn bigenulate, 35–50 mm long overall, with twisted column. Middle segment of lemma awn 8–9 mm long. Column of lemma awn 10 mm long, hispidulous. Palea 2 -veined, without keels.

**Flower and Fruit.** Lodicules 3. Anthers 3. Stigmas 2. Ovary glabrous. Caryopsis with adherent pericarp. Hilum linear.

**Distribution (TDWG). Continent.** 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, Brazil, and Southern South America.** Guatemala. Venezuela. Bolivia, Colombia, Ecuador, Peru. Brazil Southeast, Brazil South. Chile South.

**TDWG4.** Tucuman. Buenos Aires. Chubut. Rest of Chile- Biobio, La Auracania, Maule, O'Higgins, Santado, Valpariso. Biobio. Distrito Federal, Mexico State, Morelos, Puebla, Tlaxcala. Aguascalientes, Coahuila, Durango, Guanajuato, Hidalgo, Neuvo Leon, Queretaro, San Luis Potosi, Tamaulipas, Zacatecas. Veracruz. Oaxaca. Chiapas.

**Nassella nardoides** (Phil.) M.E. Barkworth. *Taxon*, 39(4): 611: (1990).

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

**TYPE** from Chile. **Basionym or Replaced Name:** *Danthonia nardoides* Phil., *Verz. Antofagasta Pfl.* 84 (1891). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: F. Philippi, 25 Feb 1885, Chile: Tarapacá: inter Amincha et Paroma (SGO-PHIL-263; IT: BAA-3176, SGO-37119, SGO-63157, SGO-71540, US-556466 (fragm. ex SGO-PHIL-263 & photo), US-A865618 (fragm. ex W ex SGO), US- (photo SGO-37119), W (mis. F. Phil. 1888)).

**Recent Synonyms:** *Stipa nardoides* (Phil.) Hackel ex Hitchcock. *Stipa calchaquia* Speg., *Anal. Mus. Montevid.* 4, 2: 107 (1925).

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

**Derivation** (Clifford & Bostock 2007): Gk. -oides, resembling. With an inflorescence resembling that of *Nardus*.

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Culms erect, 8–10 cm long. Ligule a fringe of hairs, 0.2–1 mm long. Leaf-blades filiform, convolute, 2–4 cm long, 0.5 mm wide, stiff. Leaf-blade surface ribbed, pubescent, hairy adaxially.

**Inflorescence.** Inflorescence a panicle. Panicle open, lanceolate, 2–3 cm long, bearing few spikelets. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, 10–20 mm long, glabrous.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 7–11 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus evident, 0.8 mm long, pubescent, hairy in a ring above, acute.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 7–11 mm long, 1.1 length of upper glume, membranous, without keels, 3 -veined. Lower glume apex acuminate. Upper glume lanceolate, 6–10 mm long, membranous, without keels, 3 -veined. Upper glume apex acuminate.

**Florets.** Fertile lemma lanceolate, subterete, 4 mm long, coriaceous, without keel, 5 -veined, more than 3-veined. Lemma surface pubescent, with conspicuous apical hairs. Lemma margins convolute, covering most of palea. Lemma hairs 2–3 mm long. Lemma apex awned, 1 -awned. Principal lemma awn bigeniculate, 8–14 mm long overall, with twisted column. Column of lemma awn 3.5 mm long, puberulous. Palea 1.3 mm long, without keels.

**Flower and Fruit.** Lodicules 2, 0.5 mm long. Anthers 3. Stigmas 2. Ovary glabrous. Caryopsis with adherent pericarp, fusiform, 3.4 mm long. Hilum linear.

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

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

**TDWG4.** Catamarca, Jujuy, La Rioja, Salta. Tarapaca, Antofagasta, Atacama, Coquimbo. Tarapaca, Antofagasta, Atacama.

**Nassella neesiana** (Trinius & Ruprecht) M.E. Barkworth. *Taxon*, 39(4): 611: (1990).

**Accepted by:** R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online (as *Stipa*), U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), D.Sharp, D. & B.K.Simon, *AusGrass* (2002), E.Edgar, & H.Connor, *Flora of New Zealand Gramineae* 5 (2000).

**TYPE** from Brazi. **Basionym or Replaced Name:** *Stipa neesiana* Trin. & Rupr., *Sp. Gram. Stipac.* 27–28 (1842). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *F. Sello s.n., de Schlechtendal*, 1827, *Brazilia meridionalis* [Uruguay] (LE-TRIN; IT: US-557439 (ex LE-TRIN)).

**Recent Synonyms:** *Stipa fernandeziana* (Trin. & Rupr.) Steud., *Syn. Pl. Gram.* 124 (1854). *Stipa eminens* Nees, *Fl. Bras. Enum. Pl.* 2(1): 374 (1829).

**Illustrations (Books):** J.P.Jessop, G.R.M. Dashorst & F.M.James, *Grasses of South Australia* (2006) (109, Fig 71 as subsp. *neesiana*), N.Walsh & T.Entwistle, *Flora of Victoria* Vol 2 (1994) (379, Fig 74 as *Stipa*), S.W.L.Jacobs, R.D.B.Whalley & D.J.B.Wheeler., *Grasses of New South Wales*, 4th edn (2008) (305), A.Wilson (ed.), *Flora of Australia*, Vol 44A. *Poaceae* (2009) (63, Fig 9), 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) (173), E.G.Nicora, *Los Generos de Gramineas de America Austral* (1987) (205, Fig. 60 as *Stipa neesiana*), L.B. Smith, D.C. Wasshausen, R.M. Klein *Flora Illustrada Catarinensis Gramineas* (1981–1982) (540, Fig.117 as *Stipa*), A.Burkat, *Flora Illustrada de Entre Rios (Argentina)*, Pt II, Gramineas (1969) (155, Fig. 53 & 160, Fig. 55 as varieties *hirsuta*, *neesiana*, *longiaristata*), A.L.Cabrera, *Flora de la Provincia de Buenos Aires, IV Pt 2 Gramineas* (1970) (285, Fig. 73 as *Stipa* ), B.Rosengurt, *Gramineas Uruguayas I* (1970) (76, Fig. 24 & 78, Fig. 25 as *Stipa neesiana* var. *longiaristata* & *S. neesiana* var. *neesiana*).

**Illustrations (Journals):** *Ruizia* (13:70, Fig.8r-s (1993) as *Stipa*).

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

**Derivation** (Clifford & Bostock 2007): L. -ana, indicating connection. In honor of Christian Gottfried Daniel Nees von Esenbeck (1766–1858) German botanist.

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Culms erect, 30–100 cm long, 3–4 -noded. Culm-internodes distally glabrous. Lateral branches lacking. Leaf-sheaths glabrous on surface to pubescent. Ligule an eciliate membrane. Leaf-blades flat or convolute, 2–5.5 mm wide. Leaf-blade surface ribbed, glabrous to pubescent.

**Inflorescence.** Inflorescence a panicle. Panicle open, lanceolate, 5–30 cm long. Primary panicle branches ascending. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 10–22 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus elongated, curved, 4 mm long, pubescent, pungent.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 1 length of upper glume, membranous, purple, without keels. Lower glume apex setaceous acuminate. Upper glume lanceolate, 10–22 mm long, 1.4–2 length of adjacent fertile lemma, membranous, purple, without keels. Upper glume apex setaceous acuminate.

**Florets.** Fertile lemma linear, subterete, 7–11 mm long, coriaceous, without keel, 5 -veined, more than 3-veined. Lemma surface papillose, rough above, pilose, hairy at base. Lemma margins convolute, covering most of palea. Lemma apex with a membranous corona or surmounted by a ring of hairs, with this appendage 1 mm long, awned, 1 -awned. Principal lemma awn bigeniculate, 40–50 mm long overall, with twisted column. Palea without keels.

**Flower and Fruit.** Anthers 3. Stigmas 2. Ovary glabrous. Caryopsis with adherent pericarp, fusiform. Hilum linear.

**Distribution (TDWG). Continent.** Europe (\*), Africa, Australasia (\*), North America, South America.

**Region. Northern Europe** (\*).

**Country /Province /State.** : GB Aliens (Ryves et al). **Northern Africa, Southern Africa** (\*). Free State, Eastern Cape. **Australia, New Zealand.** South Australia (\*), Queensland (\*), New South Wales (\*), A.C.T. (\*), Victoria (\*). New Zealand North I, New Zealand South I. **Southeastern USA.** Alabama. **Western South America, Brazil, Southern South America.** Bolivia, Colombia, Ecuador, Peru. Brazil North. Argentina Northeast, Argentina Northwest, Chile Central, Juan Fernandez Is, Paraguay, Uruguay.

**TDWG4.** Southern. South East. Coast, Tablelands. Catamarca, Jujuy, La Rioja, Mendoza, Salta, San Juan, San Luis, Tucuman. Buenos Aires, Chaco, Cordoba, Corrientes, Distrito Federal, Entre Rios, Formosa, La Pampa, Misiones, Santa Fe. Rest of Chile- Biobio, La Araucania, Maule, O'Higgins, Santado, Valpariso. Coquimbo, Valparaiso, Santiago, Biobio, La Araucania. Los Lagos.

**Nassella nidulans** (Mez) M.E. Barkworth. *Taxon*, 39(4): 611: (1990).

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

**TYPE** from Argentina. **Basionym or Replaced Name:** *Stipa nidulans* Mez, *Repert. Spec. Nov. Regni Veg.* 17(13–18): 205 (1921). T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: HT: G. Hieronymus s.n., 8 Jan 1876, Argentina: Córdoba: Cuesta de Copina, Las Envenadas, Sierra de Achala de Córdoba (B); IT: BAA-3182 (fragm. ex B), CORD, US-866045 (fragm. ex B)).

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

**Derivation** (Clifford & Bostock 2007): *L. nidular*, build a nest. Dwarf plant whose fascicled culms form a structure resembling a bird's nest.

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Basal innovations intravaginal. Culms erect, 13–80 cm long, 2–3 -noded. Culm-nodes glabrous. Leaf-sheaths smooth or scaberulous. Ligule an eciliate membrane, 1–3 mm long, glabrous on abaxial surface, entire or lacerate, obtuse. Leaf-blades filiform, convolute, 4–30 cm long, 0.3 mm wide. Leaf-blade surface ribbed, scaberulous, rough on both sides.

**Inflorescence.** Inflorescence a panicle, embraced at base by subtending leaf. Panicle contracted, linear, 3–25 cm long. Primary panicle branches 1–2 -nate. Panicle branches scaberulous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, laterally compressed, 4.5–7 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus brief, 0.1–0.25 mm long, pubescent, obtuse.

**Glumes.** Glumes persistent, similar, with lower wider than upper, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 4.5–7 mm long, 1 length of upper glume, membranous, without keels, 3 -veined. Lower glume primary vein smooth or scaberulous. Lower glume apex setaceously acuminate. Upper glume lanceolate, 4.5–5 mm long, membranous, without keels, 3 -veined. Upper glume apex setaceously acuminate.

**Florets.** Fertile lemma obovate, laterally compressed, gibbous, 2–2.5 mm long, coriaceous, without keel, 5 -veined, more than 3-veined. Lemma surface papillose, pubescent. Lemma margins convolute, covering most of palea. Lemma apex surmounted by a ring of hairs, awned, 1 -awned. Principal lemma awn median or eccentric, geniculate or bigeniculate, 25–75 mm long overall, with a straight or slightly twisted column, persistent or deciduous. Palea 0.8–1 mm long, 0 -veined, without keels.

**Flower and Fruit.** Lodicules 2, 0.5 mm long. Anthers 3. Stigmas 2. Ovary glabrous. Caryopsis with adherent pericarp, obovoid, 1.2–1.5 mm long, dark brown. Hilum linear, 0.66 length of caryopsis.

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

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

**TDWG4.** San Luis. Cordoba.

**Nassella niduloides** (Caro) M.E. Barkworth. *Taxon*, 39(4): 611: (1990).

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

**TYPE** from Argentina. **Basionym or Replaced Name:** *Stipa niduloides* Caro, *Kurtziana* 3: 86–90, f. 17 (1966). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Argentina: Córdoba: al pie del Champaquí, en las inmediaciones de la casa de T. domínguez, 13 Jan 1952, A.T. Hunziker 9553 (HT: CORD).

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

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Basal innovations intravaginal. Culms erect, 45–50 cm long, 2–3 -noded. Culm-internodes distally glabrous. Culm-nodes flush with internodes, glabrous. Lateral branches lacking. Leaf-sheaths scaberulous. Ligule an eciliate membrane, 1.5–2 mm long, glabrous on abaxial surface, entire or lacerate, obtuse. Leaf-blades filiform, convolute, 6–20 cm long, 0.3 mm wide. Leaf-blade surface ribbed, scaberulous, rough on both sides. Leaf-blade apex attenuate.

**Inflorescence.** Inflorescence a panicle, embraced at base by subtending leaf. Panicle contracted, linear, 5–10 cm long. Primary panicle branches 2 -nate. Panicle branches scaberulous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, laterally compressed, 6–7 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus brief, 0.3–0.4 mm long, pubescent, obtuse.

**Glumes.** Glumes persistent, similar, with lower wider than upper, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 6–7 mm long, 1.3 length of upper glume, membranous, dark brown, without keels, 3 -veined. Lower glume apex setaceously acuminate. Upper glume lanceolate, 4.5–5.5 mm long, membranous, dark brown, without keels. Upper glume primary vein scabrous. Upper glume apex setaceously acuminate.

**Florets.** Fertile lemma obovate, laterally compressed, gibbous, 2–2.2 mm long, coriaceous, without keel, 5 -veined, more than 3-veined. Lemma surface striate, pubescent. Lemma margins convolute, covering most of palea. Lemma apex with a membranous corona, awned, 1 -awned. Principal lemma awn eccentric, bigeniculate,



30–45 mm long overall, with a straight or slightly twisted column. Middle segment of lemma awn 5–7 mm long. Column of lemma awn 8–15 mm long. Palea 0.8–1 mm long, 0 -veined, without keels.

**Flower and Fruit.** Lodicules 2, 0.5 mm long. Anthers 3. Stigmas 2. Ovary glabrous. Caryopsis with adherent pericarp, obovoid, 1.5 mm long, dark brown. Hilum linear, 0.66 length of caryopsis.

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

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

**TDWG4.** Catamarca, La Rioja, San Luis. Cordoba.

**Nassella novarii** M.A. Torres. *Monogr. Comis. Invest. Ci. Prov. Buenos Aires*, 13: 29 (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. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Argentina: Prov. Jujuy: Dep. Tumbaya: camino de Purmamarca a Abra de Pives, 15 Mar 1967, A. L. Cabrera 18524 (HT: LP).

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

**Derivation** (Clifford & Bostock 2007): commemorating the "Novara" Expedition (1857–1859).

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Basal innovations extravaginal and intravaginal. Culms erect or geniculately ascending, 15–65 cm long. Culm-internodes distally glabrous. Lateral branches lacking. Leaf-sheaths mostly shorter than adjacent culm internode, glabrous on surface or puberulous. Leaf-sheath oral hairs ciliate. Ligule an eciliate membrane, 1–2.5 mm long, 0.5 mm long on basal shoots. Leaf-blades flat or convolute, 4–14 cm long, 1.5–2.5 mm wide. Leaf-blade surface pubescent, hairy adaxially or on both sides.

**Inflorescence.** Inflorescence a panicle, embraced at base by subtending leaf. Panicle open, 10–35 cm long. Panicle axis glabrous. Panicle branches glabrous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, glabrous or puberulous.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 8.5–12 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus elongated, 1.5–2 mm long, pubescent, pungent.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 8.5–12 mm long, 1 length of upper glume, membranous, purple, without keels, 3 -veined. Lower glume apex attenuate. Upper glume lanceolate, 8.5–12 mm long, membranous, purple, without keels, 3 -veined. Upper glume apex attenuate.

**Florets.** Fertile lemma linear, subterete, 6.5–7 mm long, coriaceous, light brown, without keel, 5 -veined, more than 3-veined. Lemma midvein ciliate, hairy below. Lemma surface scaberulous, rough above, glabrous or pilose, hairy above and at base. Lemma margins convolute, covering most of palea. Lemma apex surmounted by a ring of hairs, with this appendage 0.8–1.2 mm long, awned, 1 -awned. Principal lemma awn bigeniculate, 38–55 mm long overall, with 25–39 mm long limb, with twisted column, deciduous. Middle segment of lemma awn pubescent. Column of lemma awn 9–13 mm long, ciliate, with 2 mm long hairs. Palea 2–3 mm long, 0.5 length of lemma, 0 -veined, without keels.

**Flower and Fruit.** Lodicules 2. Anthers 3. Stigmas 2. Caryopsis with adherent pericarp, linear, 4.3–5.5 mm long. Hilum linear, 1 length of caryopsis.

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

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

**TDWG4.** Jujuy, Salta.

**Nassella nubicola** (Speg.) M.A. Torres. *Monogr. Comis. Invest. Ci. Prov. Buenos Aires*, 13: 30: (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 (as *Stipa*), U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

**TYPE** from Argentina. **Basionym or Replaced Name:** *Stipa nubicola* Sprg., *Anales Mus. Nac. Montevideo* 4(2): 129–131, f. 36 (1901). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: LT: Spegazzini s.n., Jan 1897, Argentina: Salta: in alpinis inter Cuesta de las Arcas et Trancas (LP). LT designated by ?; cited by Torres, CIC 13: 30 (1997).

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

**Derivation** (Clifford & Bostock 2007): L. nubes, cloud; -cola, dweller. Growing on high mountains.

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Butt sheaths persistent and investing base of culm, with fibrous dead sheaths. Culms erect, 15–25 cm long, 1–1.25 mm diam., 1–2 -noded. Culm-internodes smooth, distally glabrous. Culm-nodes glabrous. Lateral branches lacking. Leaf-sheaths glabrous on surface. Leaf-sheath oral hairs lacking. Ligule an eciliate membrane. Leaf-blades convolute, 3–10 cm long, 1.5–3 mm wide, stiff, dark green. Leaf-blade surface smooth, glabrous. Leaf-blade apex acute.

**Inflorescence.** Inflorescence a panicle, comprising 15–25 fertile spikelets, embraced at base by subtending leaf. Panicle open, linear or elliptic, 7.5–10 cm long. Panicle branches scaberulous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, 3–15 mm long, scaberulous.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 13–14 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus evident, 1.25–1.5 mm long, pubescent, acute.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume elliptic, 13–14 mm long, 1.1 length of upper glume, membranous, purple, 1-keeled, 3 -veined. Lower glume apex attenuate. Upper glume elliptic, 12–13 mm long, membranous, purple, 1-keeled, 3 -veined. Upper glume apex attenuate.

**Florets.** Fertile lemma linear, subterete, 6.75–7 mm long, coriaceous, without keel, 5 -veined, more than 3-veined. Lemma surface pubescent. Lemma margins convolute, covering most of palea. Lemma apex with a membranous corona or surmounted by a ring of hairs, with this appendage 0.35–0.5 mm long, awned, 1 -awned. Principal lemma awn bigeniculate, constricted at base (of corona), 25–30 mm long overall, with 12–15 mm long limb, with twisted column, persistent. Middle segment of lemma awn 6–7 mm long. Column of lemma awn 6–7 mm long, pubescent. Palea 0 -veined, without keels.

**Flower and Fruit.** Lodicules 2. Anthers 3. Stigmas 2. Caryopsis with adherent pericarp. Hilum linear.

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

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

**TDWG4.** Jujuy, Salta, Tucuman.

**Nassella nutans** (Hack.) M.E. Barkworth. *Taxon*, 39(4): 611: (1990).

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

**TYPE** from Brazil. **Basionym or Replaced Name:** *Stipa nutans* Hack., *Repert. Spec. Nov. Regni Veg.* 7: 315 (1909). T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: HT: C. Jürgens s.n., Dec 1905, Brazil: Rio Grande do Sul: Mun. Rio Pardo (W; IT: RB, US-81906, US-87203 (fragm.), US-1295959 (fragm.)).

**Illustrations (Books):** B.Rosengurt, *Gramineas Uruguayas I* (1970) (74, Fig. 23 & 78, Fig. 25 as *Stipa nutans* var. *quinqueciliata*).

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

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Basal innovations extravaginal. Culms erect, 50–70 cm long, 3 -noded. Lateral branches lacking. Leaf-sheaths glabrous on surface. Ligule an eciliate membrane. Leaf-blades flat or involute, 10–40 cm long, 1.5–2.5 mm wide, stiff. Leaf-blade surface ribbed, puberulous, hairy adaxially. Leaf-blade margins smooth. Leaf-blade apex acuminate.

**Inflorescence.** Inflorescence a panicle. Panicle open, elliptic, nodding, 15–25 cm long, 4–8 cm wide. Primary panicle branches 2 -nate, 5–10 cm long. Panicle branches capillary, scabrous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, 1–2 mm long.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 12 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus elongated, curved, 1.5 mm long, pilose, pungent.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 1 length of upper glume, membranous, without keels, 3 -veined. Lower glume surface scabrous, rough on veins. Lower glume apex acuminate. Upper glume lanceolate, 12 mm long, membranous, without keels, 3 -veined. Upper glume surface scabrous, rough on veins. Upper glume apex acuminate.

**Florets.** Fertile lemma lanceolate, subterete, 7 mm long, coriaceous, without keel, 5 -veined, more than 3-veined. Lemma midvein ciliolate, hairy below. Lemma lateral veins prominent. Lemma surface scabrous. Lemma margins convolute, covering most of palea. Lemma apex surmounted by a ring of hairs, awned, 1 -awned. Principal lemma awn geniculate, 65 mm long overall, with twisted column. Column of lemma awn 40 mm long, ciliate, hairy on the spiral. Palea 0.8 mm long, without keels.

**Flower and Fruit.** Anthers 3, 5 mm long, anther tip penicillate. Stigmas 2. Ovary glabrous. Caryopsis with adherent pericarp, fusiform. Hilum linear.

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

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

**TDWG4.** Corrientes.

**Nassella pampagrandensis** (Speg.) M.E. Barkworth. *Taxon*, 39(4): 611: (1990).

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

**TYPE** from Argentina. **Basionym or Replaced Name:** *Stipa pampagrandensis* Speg., *Anales Mus. Nac. Montevideo* 4(2): 158–160, f. 48 (1901). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: LT: C. Spegazzini 2419, Jan 1879, Argentina: Salta: Dept. Guachipas: in pratis montanis Cuesta San Antonio Pampa Grande (LP; ILT: US-81894). LT designated by ?; cited by Torres, *CIC* 13: 31 (1997).

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

**Derivation** (Clifford & Bostock 2007): L. -ensis, denoting origin. From Pampagrande Mountains, Argentina.

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Culms 25–50 cm long, 0.75–1 mm diam. Culm-internodes smooth. Ligule an eciliate membrane, 0.5–1.5 mm long. Leaf-blades filiform, conduplicate, 20–25 cm long, 0.3 mm wide. Leaf-blade surface ribbed, scabrous, glabrous. Leaf-blade apex attenuate.

**Inflorescence.** Inflorescence a panicle, embraced at base by subtending leaf. Panicle open, linear, 10–25 cm long. Primary panicle branches 1–2 -nate. Panicle branches scabrous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, laterally compressed, 7–8 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus brief, 0.15 mm long, pubescent, acute.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 7–8 mm long, 1.3–1.4 length of upper glume, membranous, without keels, 3 -veined. Lower glume primary vein scabrous. Lower glume apex setaceously acuminate. Upper glume lanceolate, 5–6 mm long, membranous, without keels, 3 -veined. Upper glume primary vein scabrous. Upper glume apex setaceously acuminate.

**Florets.** Fertile lemma obovate, subterete, gibbous, 1.75–2 mm long, coriaceous, without keel, 5 -veined, more than 3-veined. Lemma surface papillose, glabrous. Lemma margins convolute, covering most of palea. Lemma apex dentate, 2 -fid, awned, 1 -awned. Principal lemma awn eccentric, geniculate, 48–78 mm long overall, with twisted column, deciduous. Palea without keels.

**Flower and Fruit.** Anthers 3. Stigmas 2. Ovary glabrous. Caryopsis with adherent pericarp, fusiform. Hilum linear.

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

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

**TDWG4.** Catamarca, Jujuy, La Rioja, Salta, San Luis, Tucuman.

**Nassella pampeana** (Speg.) M.E. Barkworth. *Taxon*, 39(4): 611: (1990).

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

**TYPE** from Argentina. **Basionym or Replaced Name:** *Stipa pampeana* Speg., *Contr. Fl. Sierra Vent.* 64 (1896). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: IT: C. Spegazzini 2420, no date, Argentina: Buenos Aires (US-81895).

**Illustrations (Books):** A.L.Cabrera, *Flora de la Provincia de Buenos Aires, IV Pt 2 Gramineas* (1970) (267, Fig. 69 as *Stipa*), M.N.Correa, *Flora Patagonica Parte III, Gramineae* (1978) (317, Fig. 209 as *Stipa*).

**Derivation** (Clifford & Bostock 2007): Spanish American, pampas. From the Pampas, that is grasslands of South America.

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Culms erect, slender, 25–60 cm long. Culm-internodes distally pubescent (below nodes). Leaf-sheaths glabrous on surface. Leaf-sheath oral hairs lacking. Ligule an eciliate membrane, 3–10 mm long, acute. Leaf-blades filiform, 5–20 cm long, 0.5–1 mm wide, stiff. Leaf-blade surface smooth or scaberulous. Leaf-blade apex pungent.

**Inflorescence.** Inflorescence a panicle, exerted or embraced at base by subtending leaf. Panicle open or contracted, linear, equilateral, 6–10 cm long, bearing few spikelets. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, laterally compressed, 6–8 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus evident, 0.5–1 mm long, bearded, acute. Floret callus hairs 4–5 mm long, 0.6–1.4 length of lemma.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 6–8 mm long, 1 length of upper glume, hyaline, purple, without keels, 3 -veined. Lower glume apex attenuate. Upper glume lanceolate, 6–8 mm long, 2–3 length of adjacent fertile lemma, hyaline, purple, without keels, 3 -veined. Upper glume apex attenuate.

**Florets.** Fertile lemma obovate, laterally compressed, gibbous, 2.5–3.5 mm long, chartaceous or coriaceous, without keel, 5 -veined, more than 3-veined. Lemma surface asperulous, rough above, glabrous. Lemma margins convolute, covering most of palea. Lemma apex surmounted by a ring of hairs, with this appendage 1–2 mm long (on membrane 0.1–0.2mm), awned, 1 -awned. Principal lemma awn eccentric, bigeniculate, 23–38 mm long overall, with 12–14 mm long limb, with twisted column, deciduous. Column of lemma awn 9–10 mm long, glabrous. Palea 1–1.5 mm long, 0 -veined, without keels.

**Flower and Fruit.** Lodicules 2. Anthers 3, 1.8–2 mm long, anther tip penicillate. Stigmas 2. Ovary glabrous. Caryopsis with adherent pericarp, obovoid, 2–2.5 mm long, dark brown. Hilum linear, 0.66 length of caryopsis.

**Distribution (TDWG). Continent.** Europe (\*), South America.

**Region. Northern Europe** (\*).

**Country /Province /State.** : GB Aliens (Ryves et al). **Southern South America.** Argentina Northeast, Argentina South.

**TDWG4.** Mendoza. Buenos Aires, La Pampa. Chubut, Santa Cruz.

**Nassella paramilloensis** (Speg.) Torres. *Comis.Invest.Ci.[Buenos Aires]* 13: 31 (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 (as *Stipa*), U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

**TYPE** from Argentina. **Basionym or Replaced Name:** *Stipa paramilloensis* Speg., *Anales Mus. Nac. Montevideo* 4(2): 139–141, f. 41 (1901). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: LT: C. Spegazzini s.n., Jan 1895, Argentina: non rara rupestribus alpinis, 2000–3000 m alt., Cerro de los Cordobeses, Cerro Ximenes, Paramillo de Uspallata prope Mendoza (LPS-2422). LT designated by ?; cited by Torres, *CIC* 13: 31 (1997).

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

**Derivation** (Clifford & Bostock 2007): L. -ensis, denoting origin. From Paramillo de Uspallata, Chile.

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial, caespitose, clumped loosely. Culms erect, 15–35 cm long, 1–1.5 mm diam. Leaf-sheaths glabrous on surface or puberulous, outer margin hairy. Leaf-sheath oral hairs ciliate. Ligule an eciliate membrane. Leaf-blades flat or convolute, 5–20 cm long, 1.5–2 mm wide, stiff. Leaf-blade venation with 5–11 secondary veins. Leaf-blade surface ribbed, puberulous, hairy adaxially.

**Inflorescence.** Inflorescence a panicle, subtended by an inflated leaf-sheath, embraced at base by subtending leaf. Panicle contracted, linear, 5–12 cm long, 0.5–0.7 cm wide. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 7–10 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus evident, 0.5–1 mm long, pubescent, acute.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 7–9 mm long, 1 length of upper glume, membranous, without keels, 3 -veined. Lower glume apex acute. Upper glume lanceolate, 7.5–10 mm long, membranous, without keels, 3 -veined. Upper glume apex acute.

**Florets.** Fertile lemma lanceolate, subterete, 6–7 mm long, coriaceous, without keel, 5 -veined, more than 3-veined. Lemma midvein pubescent, hairy below. Lemma surface smooth or asperulous. Lemma margins convolute, covering most of palea. Lemma apex surmounted by a ring of hairs, with this appendage 0.5 mm long, awned, 1 -awned. Principal lemma awn bigeniculate, 18–24 mm long overall, with twisted column. Column of lemma awn 5–6 mm long, pubescent. Palea 0.25 length of lemma, 0 -veined, without keels.

**Flower and Fruit.** Anthers 3. Stigmas 2. Ovary glabrous. Caryopsis with adherent pericarp, fusiform. Hilum linear.

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

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

**TDWG4.** La Rioja, Mendoza, San Juan.

**Nassella parodii** (Math.) M.E. Barkworth. *Taxon*, 39(4): 611: (1990).

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

**TYPE** from Chile. **Basionym or Replaced Name:** *Stipa parodii* matthei, *Gayana, Bot.* 13: 89 (1965). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Chile: Prov. Nuble, 3 km pasado de San Nicolas, Camino oa Quirihue, Matthei 245 (HT: CONC).

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

**Derivation** (Clifford & Bostock 2007): in honor of Lorenzo Raimondo Parodi (1895–1966) Argentinian agrostologist.

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Culms erect, 20–45 cm long. Ligule an eciliate membrane, 0.2–0.5 mm long on basal shoots. Leaf-blades conduplicate, 5–18 cm long, 1–2 mm wide. Leaf-blade surface ribbed, glabrous.

**Inflorescence.** Inflorescence a panicle, embraced at base by subtending leaf. Panicle open, lanceolate. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, 3–20 mm long, puberulous.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 22–25 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus elongated, 4–4.5 mm long, pungent.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 1 length of upper glume, membranous, purple, without keels, 3 -veined. Lower glume apex acuminate. Upper glume lanceolate, 22–25 mm long, membranous, without keels, 5 -veined. Upper glume apex acuminate.

**Florets.** Fertile lemma lanceolate, subterete, 11–14 mm long, coriaceous, light brown or red, shiny, without keel, 5 -veined, more than 3-veined. Lemma surface papillose, rough above. Lemma margins convolute, covering most of palea. Lemma apex surmounted by a ring of hairs, with this appendage 0.5 mm long, awned, 1 -awned. Principal lemma awn geniculate, 50–72 mm long overall, with twisted column. Column of lemma awn 20–25 mm long, puberulous. Palea 1–1.2 mm long, without keels. Palea apex ciliate.

**Flower and Fruit.** Lodicules 2, 2 mm long. Anthers 3, 5–5.5 mm long, anther tip penicillate. Stigmas 2. Ovary glabrous. Caryopsis with adherent pericarp, fusiform, 5–6 mm long. Hilum linear.

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

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

Biobio.

**Nassella parva** M.A. Torres. *Monogr. Comis. Invest. Ci. Prov. Buenos Aires*, 13: 32 (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. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Argentina: Prov. Catamarca: Dep. Ambato: Cerro El Manchazo, 3100 m, 24 Feb 1967, A. Türpe 1148 (HT: LIL-513135).

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

**Derivation** (Clifford & Bostock 2007): L. small. Of dwarf stature.

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Basal innovations intravaginal. Culms erect or geniculately ascending, slender, 6–20 cm long. Culm-internodes distally glabrous. Lateral branches lacking. Leaf-sheaths mostly shorter than adjacent culm internode, glabrous on surface. Leaf-sheath oral hairs lacking or ciliate. Ligule an eciliate membrane. Collar glabrous. Leaf-blades filiform, flat or convolute, 2–5 cm long, 0.3–0.4 mm wide. Leaf-blade surface glabrous.

**Inflorescence.** Inflorescence a panicle, exerted or embraced at base by subtending leaf. Panicle open, linear, 7–18 cm long. Primary panicle branches appressed. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, puberulous.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile

or the upper sterile. Spikelets lanceolate, subterete, 3.5–5 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus brief, 0.2–0.4 mm long, sparsely hairy, acute.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 3.5–5 mm long, 1 length of upper glume, membranous, without keels, 3–5 -veined. Lower glume apex acuminate. Upper glume lanceolate, 3.5–5 mm long, membranous, without keels, 3–5 -veined. Upper glume apex acuminate.

**Florets.** Fertile lemma elliptic, subterete, 2.5–3 mm long, chartaceous, without keel, 5 -veined, more than 3-veined. Lemma surface papillose, rough generally or above, pilose. Lemma margins convolute, covering most of palea. Lemma apex with a membranous corona or surmounted by a ring of hairs, with this appendage 0.3–0.4 mm long, awned, 1 -awned. Principal lemma awn bigenulate, 7–12 mm long overall, with 3–5 mm long limb, with twisted column, deciduous. Column of lemma awn 2–2.5 mm long, glabrous. Palea 1 mm long, 0.2–0.33 length of lemma, 0 -veined, without keels.

**Flower and Fruit.** Lodicules 2. Anthers 3. Stigmas 2. Caryopsis with adherent pericarp. Hilum linear.

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

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

**TDWG4.** Catamarca, Jujuy, Tucuman.

**Nassella pauciliata** (Roseng. & Izag.) M.E. Barkworth. *Taxon*, 39(4): 611: (1990).

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

**TYPE** from Uruguay. **Basionym or Replaced Name:** *Stipa megapotamia* var. *pauciliata* Roseng. & Izag., *Bol. Soc. Argent. Bot.* 9: 288, 290, f. 3, 17–20, t. 1, f. 5–6 (1961). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: B. Rosengurt B-5261, 21 Nov 1948, Uruguay: Maldonado: Abra de Perdomo (MVFA; IT: US-2461645, US-2011403).

**Illustrations (Books):** B.Rosengurt, *Gramineas Uruguayas I* (1970) (as *Stipa*).

**Derivation** (Clifford & Bostock 2007): *L. paucus*, few; *cilium*, hair; *-atum*, possessing. Glabrous or the lower internodes puberulent.

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Rhizomes short. Culms erect or geniculately ascending, 50–150 cm long. Culm-internodes distally glabrous. Leaf-sheaths glabrous on surface, outer margin hairy. Ligule an eciliate membrane, 0.2 mm long, truncate. Leaf-blades 30–60 cm long, 6–14 mm wide. Leaf-blade surface scabrous, glabrous or pilose, hairy adaxially. Leaf-blade margins glabrous or ciliate.

**Inflorescence.** Inflorescence a panicle. Panicle open, equilateral or nodding, 30–40 cm long. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 11–12 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus elongated, curved, 1.5–2.5 mm long, pubescent, acute.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 11–12 mm long, 1 length of upper glume, hyaline, without keels, 3 -veined. Lower glume surface asperulous, rough on veins. Lower glume apex acuminate. Upper glume lanceolate, 11–12 mm long, 2 length of adjacent fertile lemma, hyaline, without keels, 3 -veined. Upper glume surface asperulous, rough on veins. Upper glume apex acuminate.

**Florets.** Fertile lemma linear, subterete, 4.8–7.5 mm long, coriaceous, without keel, 5 -veined, more than 3-veined. Lemma midvein ciliate, hairy below. Lemma surface glabrous. Lemma margins convolute, covering most of palea. Lemma apex with a membranous corona, with this appendage 0.5–0.6 mm long, awned, 1 -awned. Principal lemma awn bigenulate, 60–70 mm long overall, with twisted column, deciduous. Column of lemma awn glabrous. Palea 0 -veined, without keels.

**Flower and Fruit.** Lodicules 2. Anthers 3. Stigmas 2. Ovary glabrous. Caryopsis with adherent pericarp, fusiform. Hilum linear.

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

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

Catarina, Rio Grande do Sul.

**Nassella pfisteri** (Matthei) M.E. Barkworth. *Taxon*, 39(4): 611: (1990).

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

**TYPE** from Chile. **Basionym or Replaced Name:** *Stipa pfisteri* Matthei, Gayana, Bot. 13: 89 (1965). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Chile: Prov. Maule, Camino de Parral a Cauquenes, Km 36, Marticorena-Matthei 488 (CONC).

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

**Derivation** (Clifford & Bostock 2007): In honor of Augusto Pfister (fl. 1941–1943) who collected in Chile.

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Culms erect, 30–50 cm long, 2–3 -noded. Culm-internodes distally hirsute. Culm-nodes pubescent. Ligule an eciliate membrane, 0.1–0.3 mm long. Leaf-blades involute, 10–25 cm long, 1–2 mm wide. Leaf-blade surface ribbed, hirsute.

**Inflorescence.** Inflorescence a panicle. Panicle open, elliptic, 10–15 cm long. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, 0.3–10 mm long, scabrous.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 12–18 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus elongated, 2.6–3 mm long, pubescent, pungent.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 12–18 mm long, 1 length of upper glume, membranous, without keels, 3 -veined. Lower glume apex acuminate. Upper glume lanceolate, 18–19 mm long, membranous, without keels, 5 -veined. Upper glume apex acuminate.

**Florets.** Fertile lemma lanceolate, subterete, 9.5–11 mm long, coriaceous, without keel, 5 -veined, more than 3-veined. Lemma surface woolly. Lemma margins convolute, covering most of palea. Lemma apex with a membranous corona, with this appendage 1 mm long, awned, 1 -awned. Principal lemma awn bigeniculate, 60–80 mm long overall, with twisted column. Column of lemma awn hispidulous. Palea 2–3.2 mm long, 0.5 length of lemma, without keels.

**Flower and Fruit.** Lodicules 2, 2 mm long. Anthers 3, 3.5–4 mm long, anther tip penicillate. Stigmas 2. Ovary glabrous. Caryopsis with adherent pericarp, fusiform. Hilum linear.

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

**Country /Province /State.** Western South America, Southern South America. Colombia. Chile Central. Biobio.

**Nassella philippii** (Steudel) M.E. Barkworth. *Taxon*,39(4): 611: (1990).

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

**TYPE** from Chile. **Basionym or Replaced Name:** *Stipa philippii* Steud., *Syn. Pl. Glumac.* 1: 125 (1854). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: 2 T: Martio, 1852, Chile: Ozorno: in pascuis (LE). R.A.Philippi: pl. chilenses ed. R.F. Hohenacker.ST: E. Hohenacker s.n., no date, Chile: Osorno (US-866073 (fragm. ex SGO)). From philippi herb. Lechler festuca coll. no. 97.

**Illustrations (Books):** A.Burkat, *Flora Ilustrada de Entre Rios (Argentina)*, Pt II, Gramineas (1969) (as *Stipa*), A.L.Cabrera, *Flora de la Provincia de Buenos Aires, IV Pt 2 Gramineas* (1970) (267, Fig. 69 as *Stipa*), B.Rosengurt, *Gramineas Uruguayas I* (1970) (76, Fig. 24 as *Stipa*).

**Derivation** (Clifford & Bostock 2007): in honor of Rudolf Amandus Philippi (1808–1904) German-born Chilean biologist and museum director.

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Culms erect, 40–100 cm long. Leaf-sheaths glabrous on surface. Leaf-sheath oral hairs lacking. Ligule an eciliate membrane, 0.3–1 mm long, truncate. Leaf-blades flat or convolute, 15–20 cm long, 1.8–2 mm wide. Leaf-blade surface glabrous.

**Inflorescence.** Inflorescence a panicle, terminal or terminal and axillary. Panicle open, equilateral, 8–25 cm long, bearing few spikelets. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 5–8 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus elongated, curved, 0.5–0.8 mm long, pubescent, obtuse.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 5–8 mm long, 1 length of upper glume, hyaline, without keels, 3 -veined. Lower glume apex acuminate. Upper glume lanceolate, 5–8 mm long, 1.5–2 length of adjacent fertile lemma, hyaline, without keels, 3 -veined. Upper glume apex acuminate.

**Florets.** Fertile lemma linear, subterete, 3–4 mm long, coriaceous, dark brown, without keel, 5 -veined, more than 3-veined. Lemma surface pubescent. Lemma margins convolute, covering most of palea. Lemma apex with a membranous corona or surmounted by a ring of hairs (on membrane), with this appendage 0.3–0.5

mm long (plus ciliolae), awned, 1 -awned. Principal lemma awn bigeniculate, constricted at base (of corona), 23–35 mm long overall, with 15–18 mm long limb, with twisted column. Column of lemma awn 3.5–6 mm long, glabrous. Palea 0.6–1 mm long, 0 -veined, without keels.

**Flower and Fruit.** Lodicules 2. Anthers 3, 2 mm long, anther tip penicillate. Stigmas 2. Ovary glabrous. Caryopsis with adherent pericarp, ellipsoid, 2–2.4 mm long, light brown. Hilum linear, 0.66 length of caryopsis.

**Distribution (TDWG). Continent.** Europe (\*), South America.

**Region. Northern Europe** (\*).

**Country /Province /State.** : GB Aliens (Ryves et al). **Brazil, Southern South America.** Brazil South. Argentina Northeast, Chile Central, Chile South, Uruguay.

**TDWG4.** Buenos Aires, Corrientes, Entre Rios, Santa Fe. Rest of Chile- Biobio, La Auracania, Maule, O'Higgins, Santado, Valpariso. Maule, Biobio, La Araucania. Los Lagos.

**Nassella pittieri** (Hitchc.) Penailillo. *Gayana, Bot.* 55:86 (1999).

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

**TYPE** from Colombia. **Basionym or Replaced Name:** *Stipa pittieri* Hitchc., *Contr. U.S. Natl. Herb.* 24(7): 289 (1925). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: H. Pittier 1438, Feb 1906, Colombia: Cauca: below Pitaio (US-531634).

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

**Derivation** (Clifford & Bostock 2007): in honor of Henry Francois de Fabrega Pittier (1857–1950) Swiss botanist and civil engineer.

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial, culms solitary or caespitose, clumped loosely. Culms geniculately ascending, 60–100 cm long, 4 -noded. Culm-internodes distally glabrous. Leaf-sheaths glabrous on surface. Leaf-sheath oral hairs pubescent. Ligule an eciliate membrane, 0.3–1 mm long, truncate. Leaf-blades 15–25 cm long, 2–3 mm wide. Leaf-blade surface hispid, sparsely hairy, hairy on both sides. Leaf-blade apex attenuate.

**Inflorescence.** Inflorescence a panicle. Panicle open, elliptic, loose, 15–25 cm long. Primary panicle branches ascending. Panicle axis scaberulous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, laterally compressed, 7 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus evident, 1 mm long, pilose, acute.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 7 mm long, 1 length of upper glume, membranous, pallid, without keels, 3 -veined. Lower glume apex acuminate. Upper glume lanceolate, 7 mm long, membranous, pallid, without keels, 3 -veined. Upper glume apex acuminate.

**Florets.** Fertile lemma lanceolate, subterete, 6 mm long, coriaceous, pallid, without keel, 5 -veined, more than 3-veined. Lemma surface pubescent, with conspicuous apical hairs. Lemma margins convolute, covering most of palea. Lemma apex awned, 1 -awned. Principal lemma awn bigeniculate, 20 mm long overall, with twisted column. Column of lemma awn scabrous. Palea without keels.

**Flower and Fruit.** Caryopsis with adherent pericarp, fusiform. Hilum linear.

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

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

**Nassella planaltina** (Zanin & Longhi-Wagner) Penailillo. *Gayana, Bot.* 55:87 (1999).

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

**TYPE** from Brazil. **Basionym or Replaced Name:** *Stipa planaltina* A. Zanin & Longhi-Wagner, *Bradea, Boletim do Herbarium Bradeanum* 5(33): 344–345, f. 4 (1990). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Brasil: Rio Grande do Sul: Cambará do Sul, Itaimbezinho, 18 Nov 1988, A. Zanin & F.A. Silva Filho 151a (HT: ICN; IT: CEN).

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

**Derivation** (Clifford & Bostock 2007): Port. planalto, plateau. Growing on plateaux in southern Brazil.

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Rhizomes absent or short. Culms 25–65 cm long, 3–6 -noded. Leaf-sheaths smooth, glabrous on surface, outer margin hairy. Leaf-sheath oral hairs ciliate, 1.5 mm



long. Ligule 0.1–0.3 mm long, erose, truncate. Leaf-blades flat or conduplicate, 4–25 cm long, 0.5–1.5 mm wide. Leaf-blade surface smooth or scaberulous, rough adaxially, glabrous. Leaf-blade apex attenuate.

**Inflorescence.** Inflorescence a panicle. Panicle open, linear, 4–14 cm long. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 14–20 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus elongated, 1.5–2.7 mm long, pubescent, pungent.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume linear, 14–20 mm long, 1.1 length of upper glume, membranous, without keels, 3 -veined. Lower glume surface smooth or asperulous, rough on veins. Lower glume apex acuminate. Upper glume linear, 13.5–16 mm long, 2–2.2 length of adjacent fertile lemma, membranous, without keels, 3 -veined. Upper glume surface smooth or asperulous, rough on veins. Upper glume apex acuminate.

**Florets.** Fertile lemma lanceolate, subterete, 6.5–9 mm long, coriaceous, yellow, without keel, 5 -veined, more than 3-veined. Lemma surface papillose, pubescent, hairy on veins. Lemma margins convolute, covering most of palea. Lemma apex with a membranous corona or surmounted by a ring of hairs, with this appendage 0.5–1 mm long, awned, 1 -awned. Principal lemma awn bigeniculate, 30–60 mm long overall, with twisted column. Palea 0.7–1.4 mm long, 2 -veined, without keels.

**Flower and Fruit.** Lodicules 3. Anthers 3, 2.5–4 mm long, yellow or red, anther tip penicillate. Stigmas 2. Ovary glabrous. Caryopsis with adherent pericarp, 3.5–4 mm long. Hilum linear.

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

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

**Nassella poeppigiana** (Trin. & Rupr.) M.E. Barkworth. *Taxon*, 39(4): 611: (1990).

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

**TYPE** from Chile. **Basionym or Replaced Name:** *Stipa poeppigiana* Trin. & Rupr., *Sp. Gram. Stipac.* 29 (1842). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: E.F. Poeppig s.n., 1834, Chile (LE-TRIN-1431.01; IT: US-866070 (fragm. ex LE)).

**Recent Synonyms:** *Stipa amethystina* Steud., *Syn. Pl. Gram.* 124. (1854).

**Illustrations (Books):** A.L.Cabrera, *Flora de la Provincia de Buenos Aires, IV Pt 2 Gramineas* (1970) (277, Fig. 72 as *Stipa*), M.N.Correa, *Flora Patagonica Parte III, Gramineae* (1978) (322, Fig 217 as *Stipa*), B.Rosengurt, *Gramineas Uruguayas I* (1970) (76, Fig. 24 as *Stipa*).

**Derivation** (Clifford & Bostock 2007): L. -ana, indicating connection. In honor of Eduard Friedrich Poeppig (1798–1868) German botanist.

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Rhizomes short. Culms erect, 50–100 cm long. Culm-internodes distally glabrous. Leaf-sheaths glabrous on surface or pilose. Leaf-sheath oral hairs ciliate. Ligule an eciliate membrane, 0.4–0.8 mm long, truncate. Leaf-blades 10–30 cm long, 3–10 mm wide. Leaf-blade surface glabrous or pubescent, hairy abaxially.

**Inflorescence.** Inflorescence a panicle. Panicle open, equilateral or nodding, 15–30 cm long. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 10–17 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus elongated, curved, 2–2.5 mm long, pubescent, acute.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 10–17 mm long, 1 length of upper glume, hyaline, purple, without keels, 3–5 -veined. Lower glume surface asperulous, rough on veins. Lower glume apex attenuate. Upper glume lanceolate, 10–17 mm long, 2 length of adjacent fertile lemma, hyaline, purple, without keels, 3–5 -veined. Upper glume surface asperulous, rough on veins. Upper glume apex attenuate.

**Florets.** Fertile lemma linear, subterete, (5.8–)6–8.5 mm long, coriaceous, without keel, 5 -veined, more than 3-veined. Lemma surface papillose, pubescent, hairy below, hairy on veins. Lemma margins convolute, covering most of palea. Lemma apex with a membranous corona, with this appendage 0.5–0.7 mm long, awned, 1 -awned. Principal lemma awn bigeniculate, simple at base, 50–90 mm long overall, with twisted column. Column of lemma awn pubescent. Palea 1.5–2 mm long, 0 -veined, without keels.

**Flower and Fruit.** Lodicules 2. Anthers 3, 2.5–3.5 mm long, purple, anther tip penicillate. Stigmas 2. Ovary glabrous. Caryopsis with adherent pericarp, fusiform, 4–6 mm long, dark brown. Hilum linear, 0.66 length of caryopsis.

**Distribution (TDWG). Continent.** Europe (\*), South America.

**Region. Northern Europe** (\*).

**Country /Province /State.** : GB Aliens (Ryves et al). **Southern South America.** Argentina Northeast, Argentina South, Chile Central, Chile South, Uruguay.

**TDWG4.** San Luis. Buenos Aires, Cordoba, La Pampa. Chubut, Neuquén, Río Negro. Rest of Chile-Biobio, La Araucania, Maule, O'Higgins, Santado, Valparaiso. Valparaiso, O'Higgins, Maule, Biobio, La Araucania. Los Lagos.

**Nassella pseudopampagrandensis** (Caro) M.E. Barkworth. *Taxon*, 39(4): 611: (1990).

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

**TYPE** from Argentina. **Basionym or Replaced Name:** *Stipa pseudopampagrandensis* Caro, *Kurtziana* 3: 71–75, f. 13 (1966). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: ST: A.T. Hunziker 9464, 14 Dec 1951, Argentina: Córdoba: Sierra Grande, puente sobre el río Yuspe, más allá del desvío a Los Gigantes (CORD).

ST: Stuckert 16804, 12 Jan 1907, Argentina: Córdoba: Capilla del Monte (CORD).

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

**Derivation** (Clifford & Bostock 2007): Gk. pseudos, false. Resembling *Stipa pampagrandensis*.

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Basal innovations intravaginal. Culms erect, 30–40 cm long, 3 -noded. Culm-internodes terete, scaberulous. Culm-nodes swollen, glabrous. Lateral branches lacking. Leaf-sheaths scaberulous. Ligule an eciliate membrane, 1.5–4 mm long, scaberulous on abaxial surface, obtuse. Leaf-blades filiform, convolute, 2.5–20 cm long, 0.3–0.5 mm wide. Leaf-blade surface ribbed, scaberulous, rough abaxially, puberulous, densely hairy, hairy adaxially.

**Inflorescence.** Inflorescence a panicle, embraced at base by subtending leaf. Panicle contracted, linear, 12–15 cm long. Primary panicle branches 2 -nate. Panicle branches scaberulous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, laterally compressed, 8–9 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus brief, 0.3 mm long, pubescent, acute.

**Glumes.** Glumes persistent, similar, with lower wider than upper, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 8–9 mm long, 1.3–1.6 length of upper glume, membranous, dark brown, without keels, 3 -veined. Lower glume apex setaceously acuminate. Upper glume lanceolate, 5–7 mm long, membranous, dark brown, without keels, 3 -veined. Upper glume apex setaceously acuminate.

**Florets.** Fertile lemma obovate, laterally compressed, gibbous, 2 mm long, coriaceous, without keel, 5 -veined, more than 3-veined. Lemma midvein ciliolate. Lemma surface papillose. Lemma margins convolute, covering most of palea. Lemma apex surmounted by a ring of hairs, awned, 1 -awned. Principal lemma awn eccentric, geniculate or bigeniculate, simple at base, 55–70 mm long overall, with a straight or slightly twisted column. Middle segment of lemma awn 5–8 mm long. Column of lemma awn 14–20 mm long. Palea 0.8 mm long, without keels.

**Flower and Fruit.** Lodicules 2, 0.4 mm long. Anthers 3. Stigmas 2. Ovary glabrous. Caryopsis with adherent pericarp, obovoid, 1.5 mm long, dark brown. Hilum linear, 0.66 length of caryopsis.

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

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

**TDWG4.** Salta, Tucuman. Cordoba.

**Nassella psittacorum** (Speg.) Penailillo. *Gayana, Bot.* 55:87 (1999).

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

**TYPE** from Argentina. **Basionym or Replaced Name:** *Stipa psittacorum* Speg., *Anales Mus. Nac. Montevideo* 4(2): 165–167 (1901). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: C. Spegazzini 2445, 25 Nov 1901, Argentina: Mendoza (LP ex LPS-2445; IT: US-1721313, US-141663).

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

**Derivation** (Clifford & Bostock 2007): L. psittacus, parrot. Origin uncertain, not given by author but may be favored as a food by parrots.

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial, caespitose, clumped loosely. Culms 25–120 cm long, 1–2.5 mm diam., 1–3 -noded. Culm-nodes glabrous. Lateral branches lacking. Leaf-sheaths smooth. Leaf-sheath oral hairs bearded. Ligule a fringe of hairs. Leaf-blades involute, 5–35 cm long, 2–4 mm wide, stiff. Leaf-blade venation with 5–6 secondary veins. Leaf-blade surface ribbed, glabrous to puberulous, hairy adaxially. Leaf-blade apex attenuate, pungent.

**Inflorescence.** Inflorescence a panicle. Panicle open, lanceolate or elliptic, 20–50 cm long. Primary panicle branches 3–5 -nate. Panicle branches bearded in axils. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, 2–2.5 mm long.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 18–22 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus evident, 1–1.35 mm long, pubescent, acute.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 18–22 mm long, 1.3–1.5 length of upper glume, membranous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume apex setaceously acuminate. Upper glume lanceolate, 14–15 mm long, membranous, without keels, 3 -veined. Upper glume apex setaceously acuminate.

**Florets.** Fertile lemma lanceolate, subterete, 7.5–8.5 mm long, coriaceous, without keel, 5 -veined, more than 3-veined. Lemma midvein pubescent, hairy below. Lemma margins convolute, covering most of palea. Lemma apex with a membranous corona or surmounted by a ring of hairs, with this appendage 1–1.25 mm long, awned, 1 -awned. Principal lemma awn bigeniculate, 70–94 mm long overall, with twisted column, deciduous. Middle segment of lemma awn pubescent. Column of lemma awn pubescent. Palea without keels.

**Flower and Fruit.** Anthers 3. Stigmas 2. Ovary glabrous. Caryopsis with adherent pericarp, fusiform. Hilum linear.

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

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

**TDWG4.** Mendoza.

**Nassella pubiflora** (Trin. & Rupr.) E.Desv. *C. Gay, Fl. Chil.* vi. 264. (1853).

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

**TYPE** from Peru. **Basionym or Replaced Name:** *Urachne pubiflora* Trin. & Rupr., *Sp. Gram. Stipac.* 21 (1842). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: Meyen s.n., Peru (LE-TRIN-1465.01 (right-hand plant)).

**Recent Synonyms:** *Nassella flaccidula*. *Stipa meiziana* Hicken, *Darwiniana*, 1: 167 (1924).

**Illustrations (Books):** S.A.Renouze, *Gramineas de Bolivia* (1998) (82, Fig 17).

**Illustrations (Journals):** *Ruizia* (13:85 Fig.9i-j (1993)).

**Derivation** (Clifford & Bostock 2007): L. pubes, signs of puberty; flos, flower. With some or all parts of the inflorescence or spikelets densely hairy.

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Culms erect or geniculately ascending, 50–90 cm long, 2–4 -noded. Lateral branches lacking. Leaf-sheaths smooth or scaberulous, glabrous on surface. Ligule an eciliate membrane. Leaf-blades flat or convolute, 10–20 cm long, 2–3 mm wide. Leaf-blade surface glabrous. Leaf-blade apex attenuate.

**Inflorescence.** Inflorescence a panicle. Panicle open or contracted, linear or lanceolate, 10–20 cm long. Primary panicle branches appressed or ascending. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets ovate, subterete, 3.5–5 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus pubescent, obtuse.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 3.5–5 mm long, 1 length of upper glume, membranous, 1-keeled, 3 -veined. Lower glume apex acuminate, awned, 1 -awned, awn 0.2–0.3 mm long. Upper glume lanceolate, 3.5–5 mm long, 1.75–2 length of adjacent fertile lemma, membranous, 1-keeled, 3 -veined. Upper glume apex acuminate.

**Florets.** Fertile lemma obovate, subterete, 2–2.4 mm long, 1 mm wide, coriaceous, dark brown or black, keeled, lightly keeled. Lemma surface pilose. Lemma margins convolute, covering most of palea. Lemma apex obtuse, awned, 1 -awned. Principal lemma awn eccentric, flexuous, 15 mm long overall, deciduous. Palea membranous, 0 -veined, without keels.

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

**Distribution (TDWG). Continent.** Europe (\*), South America.

**Region. Northern Europe** (\*).

**Country /Province /State.** : GB Aliens (Ryves et al). **Western South America, Brazil, Southern South America.** Bolivia, Ecuador, Peru. Brazil South. Argentina Northwest, Chile North, Chile Central.

**TDWG4.** Sao Paulo Parana, Catarina, Rio Grande do Sul. Catamarca, Jujuy, La Rioja, Salta, San Juan, Tucuman. Tarapaca, Antofagasta, Atacama, Coquimbo, Rest of Chile- Biobio, La Auracania, Maule, O'Higgins, Santado, Valpariso. Tarapaca. Coquimbo.

**Nassella pulchra** (A. Hitchc.) M.E. Barkworth. *Taxon*, 39(4): 611: (1990).

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

**TYPE** from USA. **Basionym or Replaced Name:** *Stipa pulchra* Hitchc., *Amer. J. Bot.* 2: 301 (1915). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: A.A. Heller 5252, 9 Apr 1902, USA: California: Sonoma Co. (US-416590, IT: L).

**Illustrations (Books):** M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 24 *Poaceae*, part 1 (2007) (173).

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

**Derivation** (Clifford & Bostock 2007): L. beautiful. Attractive in appearance, usually the inflorescence.

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial. Culms 60–100 cm long. Culm-internodes distally pubescent (below nodes). Ligule an eciliate membrane, 1 mm long. Leaf-blades flat or involute, 10–25 cm long, 2–6 mm wide.

**Inflorescence.** Inflorescence a panicle. Panicle open, loose, nodding, 15 cm long. Primary panicle branches spreading, 2.5–5 cm long. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 15–25 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus evident, curved, 2 mm long, pubescent, pungent.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 15–25 mm long, 1.1–1.2 length of upper glume, membranous, purple, without keels, 3–5 -veined. Lower glume apex acuminate. Upper glume lanceolate, 13–21 mm long, 2 length of adjacent fertile lemma, hyaline, purple, without keels, 3–5 -veined. Upper glume apex acuminate.

**Florets.** Fertile lemma lanceolate, subterete, 7.5–12 mm long, coriaceous, without keel, 5 -veined, more than 3-veined. Lemma surface pubescent. Lemma margins convolute, covering most of palea. Lemma apex without appendage or surmounted by a ring of hairs or with a short cylindrical neck, awned, 1 -awned. Principal lemma awn bigeniculate, stiff, 60–90 mm long overall, with twisted column. Column of lemma awn 15–20 mm long, pubescent. Palea 1–2 mm long, 2 -veined, without keels.

**Flower and Fruit.** Anthers 3. Stigmas 2. Ovary glabrous. Caryopsis with adherent pericarp. Hilum linear.

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

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

**Nassella punensis** M.A. Torres. *Monogr. Comis. Invest. Ci. Prov. Buenos Aires*, 13: 34 (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. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Argentina: Prov. Jujuy: Dep. Humahuaca: Mina Aguilar, 4000 m, 17 Feb 1969, A. L. Cabrera et al. 19778 (HT: LP; IT: BAA).

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

**Derivation** (Clifford & Bostock 2007): L. *-ensis*, denoting origin. From the Puna or Altiplano region of north-west Argentina.

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Basal innovations intravaginal. Culms erect, 13–55 cm long. Culm-internodes distally glabrous. Lateral branches lacking. Leaf-sheaths mostly shorter than adjacent culm internode, glabrous on surface to pubescent. Leaf-sheath oral hairs ciliate. Ligule a ciliolate membrane, pubescent on abaxial surface, truncate. Collar glabrous. Leaf-blades erect, straight or curved, filiform, convolute, 3–7 cm long, 0.5–0.9 mm wide. Leaf-blade surface puberulous, hairy adaxially.

**Inflorescence.** Inflorescence a panicle, exerted or embraced at base by subtending leaf. Panicle open, linear or pyramidal, 5–10 cm long, bearing few spikelets. Primary panicle branches appressed or ascending. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 3.5–5 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus brief or evident, 0.3–0.5 mm long, pubescent, obtuse.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 3.5–5 mm long, 1 length of upper glume, membranous, purple, without keels, 3 -veined. Lower glume primary vein eciliate or ciliolate. Lower glume apex acuminate. Upper glume lanceolate, 3.5–5 mm long, membranous, purple, without keels, 3 -veined. Upper glume primary vein eciliate or ciliolate. Upper glume apex acuminate.

**Florets.** Fertile lemma elliptic, subterete, 2.5–3.5 mm long, coriaceous, dark brown, without keel, 5 -veined, more than 3-veined. Lemma surface smooth, pilose. Lemma margins convolute, covering most of palea. Lemma hairs 0.5 mm long. Lemma apex with a membranous corona or surmounted by a ring of hairs, with this appendage 1–2 mm long, awned, 1 -awned. Principal lemma awn bigeniculate, 5–9 mm long overall, with a straight or slightly twisted column, deciduous. Middle segment of lemma awn puberulous. Column of lemma awn puberulous. Palea 1–1.7 mm long, 0.4–0.5 length of lemma, 0 -veined, without keels.

**Flower and Fruit.** Lodicules 2. Anthers 1 or 3, purple. Staminodes absent or present. Stigmas 2. Caryopsis with adherent pericarp, ellipsoid, 2–2.7 mm long. Hilum linear, 0.66 length of caryopsis.

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

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

**TDWG4.** Jujuy, Salta.

**Nassella pungens** E.Desv. *C. Gay, Fl. Chil.* vi. 258. (1853).

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

**TYPE** from Chile. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: HT: Gay s.n. [69], Feb 1831, Chile: San Fernando in collibus (P-DESV-71a; IT: US (fragm. ex P-DESV-71a)).

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

**Derivation** (Clifford & Bostock 2007): *L. pungo*, prick. Leaf-blades sharp-pointed.

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Culms 15–50 cm long, 5–10 -noded. Lateral branches ample. Leaf-sheaths glabrous on surface. Ligule an eciliate membrane. Leaf-blades convolute, 2–6 cm long, 1 mm wide, glaucous. Leaf-blade surface scabrous, rough abaxially, pubescent, hairy adaxially. Leaf-blade apex acuminate, pungent.

**Inflorescence.** Inflorescence a panicle. Panicle contracted, linear, interrupted, 3–10 cm long, 1 cm wide. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets ovate, subterete, 4 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus obtuse.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 4 mm long, 1 length of upper glume, membranous, 1-keeled, 3 -veined. Lower glume apex acuminate, awned, 1 -awned, awn 0.2–0.3 mm long. Upper glume lanceolate, 4 mm long, 2 length of adjacent fertile lemma, membranous, 1-keeled, 3 -veined. Upper glume apex acuminate.

**Florets.** Fertile lemma obovate, laterally compressed, 2 mm long, 1 mm wide, coriaceous, yellow or light brown, keeled, lightly keeled. Lemma surface pubescent. Lemma margins convolute, covering most of palea. Lemma apex obtuse, awned, 1 -awned. Principal lemma awn eccentric, flexuous, 12 mm long overall, deciduous. Palea membranous, 0 -veined, without keels.

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

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

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

Tarapaca, Antofagasta, Atacama, Coquimbo. Tarapaca, Antofagasta, Atacama. Coquimbo, O'Higgins.

**Nassella quinqueciliata** (Roseng. & Izag.) Barkworth & Torres. *Taxon* 50: 458 (2001).

Regarded by K as a synonym (*N. nutans*).

**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 Uruguay. **Basionym or Replaced Name:** *Stipa nutans* var. *quinqueciliata* Roseng. & Izag., *Bol. Soc. Argent. Bot.* 9: 285, f. 1, t. 1, f. 1–2 (1961). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: B. Rosengurt B-5271, no date, Uruguay: Maldonado: Abra de Perdomo (MVFA; IT: US-3168617).

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

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Basal innovations extravaginal. Culms erect, 50–70 cm long, 3-noded. Lateral branches lacking. Leaf-sheaths glabrous on surface. Ligule an eciliate membrane. Leaf-blades flat or involute, 10–40 cm long, 1.5–2.5 mm wide, stiff. Leaf-blade surface ribbed, puberulous, hairy adaxially. Leaf-blade margins smooth. Leaf-blade apex acuminate.

**Inflorescence.** Inflorescence a panicle. Panicle open, elliptic, nodding, 15–25 cm long, 4–8 cm wide. Primary panicle branches 2-nate, 5–10 cm long. Panicle branches capillary, scaberulous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets lanceolate, subterete, 12 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Nassella ragonesei** M.A. Torres. *Monogr. Comis. Invest. Ci. Prov. Buenos Aires*, 13: 35 (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. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Argentina: Prov. Catamarca: Sierra de Ancasti, entre El Portezuelo y Los Morteros, 20 Dec 1963, Ragonese & Piccinini 9777 (HT: BAA).

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

**Derivation** (Clifford & Bostock 2007): In honor of Arturo E. Ragonese (fl. 1934–1946) who collected in Argentina.

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial, caespitose, clumped loosely. Basal innovations intravaginal. Culms erect or geniculately ascending, 40–65 cm long. Culm-internodes distally glabrous. Lateral branches lacking. Leaf-sheaths mostly shorter than adjacent culm internode, glabrous on surface, outer margin hairy. Leaf-sheath oral hairs ciliate. Ligule an eciliate membrane. Collar glabrous. Leaf-blades filiform or linear, flat or convolute, 8–15 cm long, 2–3 mm wide. Leaf-blade surface glabrous. Leaf-blade margins ciliate.

**Inflorescence.** Inflorescence a panicle. Panicle open, elliptic, 10–25 cm long. Panicle axis scaberulous, glabrous. Panicle branches pubescent. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, pubescent.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 25–29 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus elongated, curved, 3–4 mm long, pubescent (tawny), pungent.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 20–25 mm long, 0.75–0.9 length of upper glume, membranous, without keels, 3-veined. Lower glume apex attenuate. Upper glume lanceolate, 25–29 mm long, membranous, without keels, 3-veined. Upper glume apex attenuate.

**Florets.** Fertile lemma linear, subterete, 11–12 mm long, coriaceous, without keel, 5-veined, more than 3-veined. Lemma surface asperulous, pubescent. Lemma margins convolute, covering most of palea. Lemma apex with a membranous corona and surmounted by a ring of hairs, with this appendage 1–1.3 mm long, awned, 1-awned. Principal lemma awn bigeniculate, constricted at base (of corona), 90–100 mm long overall, with 40–60 mm long limb, with twisted column, persistent. Column of lemma awn 18–20 mm long, pubescent. Palea 0-veined, without keels.

**Flower and Fruit.** Lodicules 2. Anthers 3. Stigmas 2. Caryopsis with adherent pericarp. Hilum linear.

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

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

**TDWG4.** Catamarca.

**Nassella rhizomata** (Zanin & Longhi-Wagner) Penailillo. *Gayana, Bot.* 55:87 (1999).

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

**TYPE** from Brazil. **Basionym or Replaced Name:** *Stipa rhizomata* A. Zanin & Longhi-Wagner, *Bradea* 5(33): 345–346, f. 3 (1990). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Brasil: Santa Catarina: Irani, 28 Nov 1986, Valls et al. 10561 (HT: FLOR, ICN, CEN, IT: MVFA).

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

**Derivation** (Clifford & Bostock 2007): Gk. rhizoma, a root. Rhizomes well developed.

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Rhizomes elongated. Culms 50–105 cm long, 3–5 -noded. Leaf-sheaths smooth, glabrous on surface or puberulous, outer margin hairy. Leaf-sheath oral hairs ciliate, 0.5–1 mm long. Ligule an eciliate membrane, 0.2–0.3 mm long, erose, truncate. Leaf-blades flat or convolute, 4–35 cm long, 1–4.5 mm wide. Leaf-blade surface pubescent. Leaf-blade apex attenuate.

**Inflorescence.** Inflorescence a panicle. Panicle open, oblong, 7–40 cm long. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 6.3–10 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus elongated, curved, 1–1.5 mm long, pubescent, pungent.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume linear, 6.3–10 mm long, 1.1 length of upper glume, membranous, without keels, 3 -veined. Lower glume surface smooth or asperulous, rough on veins. Lower glume apex acuminate. Upper glume linear, 5.5–8.5 mm long, 1.4–1.5 length of adjacent fertile lemma, membranous, without keels, 3 -veined. Upper glume surface smooth or asperulous, rough on veins. Upper glume apex acuminate.

**Florets.** Fertile lemma lanceolate, subterete, 4.5–5.5 mm long, coriaceous, dark brown, without keel, 5 -veined, more than 3-veined. Lemma surface papillose, pubescent. Lemma margins convolute, covering most of palea. Lemma apex with a membranous corona or surmounted by a ring of hairs, with this appendage 0.3–0.5 mm long, awned, 1 -awned. Principal lemma awn bigeniculate, 34–48 mm long overall, with twisted column. Column of lemma awn pubescent. Palea 0.5–1.3 mm long, 2 -veined, without keels. Palea surface glabrous or pilose, hairy on back. Palea apex erose.

**Flower and Fruit.** Lodicules 2. Anthers 1, 0.3–0.5 mm long, yellow. Staminodes present (2 of them). Stigmas 2. Ovary glabrous. Caryopsis with adherent pericarp, linear, 2.5–3 mm long. Hilum linear.

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

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

**Nassella rosenfurtii** (Chase) M.E. Barkworth. *Taxon*, 39(4): 611 (1990).

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

**TYPE** from Uruguay. **Basionym or Replaced Name:** *Stipa rosenfurtii* Chase, *J. Wash. Acad. Sci.* 33(10): 316 (1943). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: G. Vasey PE-5120, 3 Dec 1942, Uruguay (US-1819591).

**Illustrations (Books):** B.Rosenfurt, *Gramineas Uruguayas I* (1970) (76, Fig. 24 as *Stipa*).

**Derivation** (Clifford & Bostock 2007): in honor of Bernardo Rosenfurt (1916-) who collected in South America.

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Butt sheaths pubescent. Culms erect, 25–85 cm long, 2–3 -noded. Culm-nodes pubescent. Leaves mostly basal. Leaf-sheaths glabrous on surface. Ligule an eciliate membrane, 1 mm long. Leaf-blades filiform, involute, 6–12 cm long, 1 mm wide. Leaf-blade surface ribbed, scaberulous.

**Inflorescence.** Inflorescence a panicle. Panicle open, lanceolate, 4–6 cm long. Panicle branches scabrous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, 1.5–3 mm long, puberulous.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 6–7 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus brief, pilose, acute.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 6–7 mm long, 1.2 length of upper glume, membranous, without keels, 3 -veined. Lower glume apex acuminate. Upper glume lanceolate, 5–5.5 mm long, membranous, without keels, 3 -veined. Upper glume apex acuminate.

**Florets.** Fertile lemma obovate, subterete, 3.3–3.4 mm long, coriaceous, without keel, 5 -veined, more than 3-veined. Lemma midvein pubescent. Lemma surface tuberculate. Lemma margins convolute, covering most of palea. Lemma apex surmounted by a ring of hairs, awned, 1 -awned. Principal lemma awn bigeniculate, 18–20 mm long overall, with twisted column. Palea without keels.

**Flower and Fruit.** Anthers 3. Stigmas 2. Ovary glabrous. Caryopsis with adherent pericarp, fusiform. Hilum linear.

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

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

**Nassella rupestris** (Phil.) M.A. Torres. *Monogr. Comis. Invest. Ci. Prov. Buenos Aires*, 13: 36: (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 (as *Stipa*), U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

**TYPE** from Chile. **Basionym or Replaced Name:** *Stipa rupestris* Phil., *Verz. Antofagasta Pfl.* 81 (1891). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: R.A. Philippi s.n., 25 Feb 1885, Chile: Prov. Tarapaca (SGO-PHIL-108; IT: BAA-3237, SGO-63159, SGO-37387, US-866062 (fragm. ex SGO-PHIL-108 & photo)).

**Recent Synonyms:** *Stipa rupestris*.

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

**Derivation** (Clifford & Bostock 2007): *L. rupestris*, rock; -estre, place of growth; Growing amongst rocks.

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial, caespitose, clumped densely. Culms erect, slender, 30–40 cm long. Culm-internodes distally glabrous. Leaf-sheaths glabrous on surface. Leaf-sheath oral hairs pubescent. Ligule an eciliate membrane. Leaf-blades filiform, involute, 8–15 cm long, 0.3 mm wide. Leaf-blade surface ribbed, puberulous, hairy adaxially.

**Inflorescence.** Inflorescence a panicle. Panicle open, linear, 10–15 cm long. Primary panicle branches appressed or ascending. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 5 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus brief, 0.5 mm long, acute.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 1 length of upper glume, membranous, purple, without keels, 3 -veined. Lower glume apex acuminate. Upper glume lanceolate, 5 mm long, membranous, purple, without keels, 5 -veined. Upper glume apex acuminate.

**Florets.** Fertile lemma lanceolate, subterete, 3 mm long, coriaceous, pallid, without keel, 5 -veined, more than 3-veined. Lemma surface pubescent, hairy all along. Lemma margins convolute, covering most of palea. Lemma apex awned, 1 -awned. Principal lemma awn bigeniculate, 20 mm long overall, with twisted column, deciduous. Middle segment of lemma awn 4 mm long, pubescent. Column of lemma awn 5 mm long, pubescent. Palea without keels.

**Flower and Fruit.** Lodicules 3. Anthers 3. Stigmas 2. Ovary glabrous. Caryopsis with adherent pericarp, fusiform. Hilum linear.

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

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

**TDWG4.** Salta, Tucuman. Tarapaca, Antofagasta.

**Nassella sanluisensis** (Speg.) M.E. Barkworth. *Taxon*, 39(4): 611: (1990).

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

**TYPE** from Argentina. **Basionym or Replaced Name:** *Stipa sanluisensis* Speg., *Anales Mus. Nac. Montevideo* 4(2): 156–158, f. 47 (1901). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: LT: Spegazzini s.n., Argentina: San Luis (LP; ILT: BAA-3241 (fragm.)). LT designated by?; cited by Torres, *CIC* 13: 36 (1997).

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

**Derivation** (Clifford & Bostock 2007): *L. -ensis*, denoting origin. From San Luis Province, Cordoba.

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Culms erect, 30–100 cm long. Culm-internodes distally pubescent. Lateral branches lacking. Leaf-sheaths scaberulous, glabrous on surface. Leaf-sheath oral



hairs lacking. Ligule an eciliate membrane, 6–10 mm long, acute. Leaf-blades filiform, convolute, 5.5–60 cm long, 0.5–0.7 mm wide. Leaf-blade surface scaberulous, rough abaxially, puberulous, hairy adaxially. Leaf-blade apex pungent.

**Inflorescence.** Inflorescence a panicle. Panicle open, equilateral, 5–30 cm long. Primary panicle branches appressed or ascending. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, laterally compressed, 4–7 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus evident, 0.2 mm long, pilose, acute.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 4–7 mm long, 1.1–1.3 length of upper glume, hyaline, without keels, 3 -veined. Lower glume apex setaceously acuminate. Upper glume lanceolate, 4–7 mm long, 2–3 length of adjacent fertile lemma, hyaline, without keels, 3 -veined. Upper glume apex setaceously acuminate.

**Florets.** Fertile lemma elliptic, laterally compressed, 1.8–3 mm long, coriaceous, yellow or light brown, shiny, without keel, 5 -veined, more than 3-veined. Lemma midvein pubescent, hairy below. Lemma surface smooth or papillose, rough above, glabrous. Lemma margins convolute, covering most of palea. Lemma apex with a membranous corona, with this appendage 0.1–0.2 mm long, awned, 1 -awned. Principal lemma awn geniculate or bigeniculate, simple at base, 20–35 mm long overall, with a straight or slightly twisted column, persistent or deciduous. Column of lemma awn glabrous. Palea 0.6–0.7 mm long, 0 -veined, without keels.

**Flower and Fruit.** Lodicules 2 or 3. Anthers 3, 1.2–1.5 mm long, anther tip penicillate. Stigmas 2. Ovary glabrous. Caryopsis with adherent pericarp, ellipsoid, 1.5 mm long. Hilum linear, 0.5 length of caryopsis.

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

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

**TDWG4.** Catamarca, Jujuy, La Rioja, Mendoza, San Juan, San Luis. Buenos Aires, Cordoba, La Pampa. Neuquén, Río Negro.

**Nassella sellowiana** (Nees ex Trin. & Rupr.) Penailillo. *Gayana, Bot.* 55:87 (1999).

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

**TYPE** from Brazil. **Basionym or Replaced Name:** *Stipa sellowiana* Nees ex Trin. & Rupr., *Sp. Gram. Stipac.* 38 (1842). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: F. Sellow s.n., Brazil (LE-TRIN; IT: US-866060 (fragm. ex B)).

**Illustrations (Books):** L.B. Smith, D.C. Wasshausen, R.M. Klein *Flora Illustrada Catarinensis Gramineas* (1981–1982) (540, Fig.117as *Stipa*).

**Derivation** (Clifford & Bostock 2007): L. -ana, indicating connection. In honor of Friedrich Sellow (1789–1831) German botanist.

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Rhizomes short. Culms geniculately ascending, 80–150 cm long. Culm-internodes distally glabrous. Lateral branches lacking. Ligule an eciliate membrane. Leaf-blades flat or convolute, 30–60 cm long, 4–6 mm wide. Leaf-blade surface ribbed.

**Inflorescence.** Inflorescence a panicle. Panicle open, linear or lanceolate, 10–30 cm long. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 7–12 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus elongated, curved, 2 mm long, pubescent, pungent.

**Glumes.** Glumes persistent, similar, shorter than spikelet or reaching apex of florets, thinner than fertile lemma. Lower glume lanceolate, 1 length of upper glume, membranous, purple, without keels. Lower glume apex acuminate. Upper glume lanceolate, 7–12 mm long, membranous, purple, without keels. Upper glume apex acuminate.

**Florets.** Fertile lemma lanceolate, subterete, 10–11 mm long, coriaceous, without keel, 5 -veined, more than 3-veined. Lemma surface villous, hairy all along. Lemma margins convolute, covering most of palea. Lemma apex awned, 1 -awned. Principal lemma awn geniculate, 40–50 mm long overall, with twisted column. Column of lemma awn 30–40 mm long. Palea without keels.

**Flower and Fruit.** Anthers 3. Stigmas 2. Ovary glabrous. Caryopsis with adherent pericarp, fusiform. Hilum linear.

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

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

**TDWG4.** Sao Paulo Parana, Catarina, Rio Grande do Sul. Misiones.

**Nassella smithii** (A. Hitchc.) M.E. Barkworth. *Taxon*, 39(4): 612: (1990).

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

**TYPE** from Peru. **Basionym or Replaced Name:** *Stipa smithii* Hitchc., *J. Wash. Acad. Sci.* 20(15): 382 (1930). T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: HT: E.P. Killip & A.C. Smith 30669, 15 Apr 1929–17 Apr 1929, Peru: Lima: on open hillside, Río Blanco, alt. 3000–3500 m (US-1357804).

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

**Derivation** (Clifford & Bostock 2007): in honor of Albert Charles Smith (1906–) United States botanist.

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Culms 25–60 cm long, 3-noded. Ligule an eciliate membrane, 1–1.5 mm long. Leaf-blades involute, 8–15 cm long, 1–2 mm wide. Leaf-blade surface ribbed. Leaf-blade apex pungent.

**Inflorescence.** Inflorescence a panicle. Panicle contracted, linear, 8–15 cm long. Primary panicle branches appressed. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 6–7 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus evident, pubescent, pungent.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 1 length of upper glume, membranous, purple, without keels. Lower glume apex acuminate. Upper glume lanceolate, 6–7 mm long, membranous, purple, without keels. Upper glume apex acuminate.

**Florets.** Fertile lemma lanceolate, subterete, 3.5–4.2 mm long, coriaceous, without keel, 5-veined, more than 3-veined. Lemma surface pubescent. Lemma margins convolute, covering most of palea. Lemma apex with a membranous corona, awned, 1-awned. Principal lemma awn bigenulate, 12–14 mm long overall, with twisted column. Column of lemma awn puberulous. Palea without keels.

**Flower and Fruit.** Anthers 3. Stigmas 2. Ovary glabrous. Caryopsis with adherent pericarp, fusiform. Hilum linear.

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

**Country /Province /State.** Western South America, Southern South America. Peru. Uruguay.

**Nassella soukupii** (Tovar) M.E. Barkworth. *Taxon*, 39(4): 612: (1990).

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

**TYPE** from Peru. **Basionym or Replaced Name:** *Stipa soukupii* Tovar, *Opusc. Bot. Pharm. Complut.* 4: 90 (1988). T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: Peru: Depto Junin: Huancayo: arriba de Huancayo, estepa de gramíneas con arbustos dispersos, valle de Mantaro, 3800 m alt., 27 Apr 1957, Tovar 2814 (HT: USM; IT: MO, US).

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

**Derivation** (Clifford & Bostock 2007): In honor of Jasolev Soukup (1903–1989) Czech missionary and ethno-botanist who collected in Peru.

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Culms decumbent, 50–70 cm long. Leaf-sheath oral hairs ciliate. Ligule an eciliate membrane, 1–1.5 mm long. Leaf-blades 8–18 cm long, 2–4 mm wide. Leaf-blade surface ribbed, scabrous, rough adaxially.

**Inflorescence.** Inflorescence a panicle, embraced at base by subtending leaf. Panicle open, elliptic, 16–25 cm long, 1.5–2 cm wide. Primary panicle branches ascending, 3–7 cm long. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 4–4.8 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus brief, 0.4 mm long, pilose, acute.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 1 length of upper glume, membranous, without keels. Lower glume apex acuminate. Upper glume lanceolate, 4–4.8 mm long, membranous, without keels. Upper glume apex acuminate.

**Florets.** Fertile lemma lanceolate, subterete, 2.5–3 mm long, coriaceous, without keel, 5-veined, more than 3-veined. Lemma margins convolute, covering most of palea. Lemma apex with a membranous corona or

surmounted by a ring of hairs, with this appendage 0.3 mm long, awned, 1 -awned. Principal lemma awn geniculate or bigeniculate, 13–15 mm long overall, with twisted column. Palea without keels.

**Flower and Fruit.** Anthers 3. Stigmas 2. Ovary glabrous. Caryopsis with adherent pericarp, fusiform. Hilum linear.

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

**Country /Province /State.** Western South America. Peru.

***Nassella spegazzinii*** (Arech.) M.E. Barkworth. *Taxon*, 39(4): 612: (1990).

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

**TYPE** from Uruguay. **Basionym or Replaced Name:** *Stipa spegazzinii* Arechav., *Anales Mus. Nac. Montevideo* 4(1): 68–69, f. a-c. (1902) [1903]. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Uruguay: Vive enterrenos arenosis, florece en enero y febrero, orillas del Río Negro, frente a Mercedes,.

**Illustrations (Books):** B.Rosengurt, *Gramineas Uruguayas I* (1970) (76, Fig. 24 as *Stipa*).

**Derivation** (Clifford & Bostock 2007): in honor of Carlo Luigi Spegazzini (1858–1926) Italian-born Argentinian botanist.

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Butt sheaths pubescent. Basal innovations extravaginal. Culms erect, 75–150 cm long, 1–3 mm diam., 4–5 -noded. Culm-internodes distally glabrous. Lateral branches lacking. Leaf-sheaths glabrous on surface. Ligule an eciliate membrane. Leaf-blades flat or convolute, 15–30 cm long, 3–5 mm wide. Leaf-blade venation with 20–25 secondary veins. Leaf-blade surface scabrous, rough adaxially, pilose, hairy on both sides. Leaf-blade margins scabrous.

**Inflorescence.** Inflorescence a panicle. Panicle open, elliptic, nodding, 30–35 cm long. Primary panicle branches 5–10 cm long. Panicle axis smooth. Panicle branches scabrous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, scabrous.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 20–40 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus elongated, curved, 3.5–4.5 mm long, pilose, pungent.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 20–40 mm long, 1.1–1.2 length of upper glume, membranous, 1-keeled, 5 -veined. Lower glume surface asperulous, rough on veins. Lower glume apex acuminate. Upper glume lanceolate, 17–39 mm long, membranous, without keels, 3 -veined. Upper glume surface asperulous, rough on veins. Upper glume apex acuminate.

**Florets.** Fertile lemma lanceolate, subterete, 8.5–9 mm long, coriaceous, yellow, dull or shiny, without keel, more than 3-veined. Lemma midvein ciliate, hairy below. Lemma surface smooth. Lemma margins convolute, covering most of palea. Lemma apex awned, 1 -awned. Principal lemma awn geniculate, 95–130 mm long overall, with 60–70 mm long limb, with twisted column. Column of lemma awn 50–60 mm long. Palea 4–4.5 mm long, hyaline, without keels.

**Flower and Fruit.** Lodicules 2. Anthers 3. Stigmas 2. Ovary glabrous. Caryopsis with adherent pericarp, fusiform, 6–6.5 mm long. Hilum linear.

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

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

***Nassella stuckertii*** (Hack.) M.E. Barkworth. *Taxon*, 39(4): 612: (1990).

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

**TYPE** from Argentina. **Basionym or Replaced Name:** *Stipa stuckertii* Hack, *Anales Mus. Nac. Buenos Aires* 21: 81, t. 3, f. A,B,C, a-f. (1911). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: T.J.V. Stuckert 20737, 19 Dec 1909, Argentina: Córdoba: Quebrada, Oyada, Estancia Pampa de San Luis (W; IT: CORD, US-3168613 (fragm. ex W)).

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

**Derivation** (Clifford & Bostock 2007): in honor of Teodoro Juan Vicente Stuckert (1852–1932) Swiss-born Argentinian botanist.

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Basal innovations intravaginal. Culms erect, 30–95 cm long, 3–4 -noded. Culm-internodes terete, distally pubescent. Culm-nodes flush with internodes, glabrous.

Lateral branches lacking. Leaf-sheaths scaberulous, outer margin hairy. Ligule an eciliate membrane, 4–10 mm long, glabrous on abaxial surface, entire or lacerate, acute. Leaf-blades filiform, convolute, 14–38 cm long, 0.4–0.6 mm wide. Leaf-blade surface ribbed, puberulous, hairy adaxially.

**Inflorescence.** Inflorescence a panicle, embraced at base by subtending leaf, with 1–3 peduncles per sheath. Panicle open, linear, 10–40 cm long. Panicle branches scaberulous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 6.5–8 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus brief, 0.3–0.4 mm long, pubescent, obtuse.

**Glumes.** Glumes persistent, similar, subequal in width, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 6.5–8 mm long, 1.1 length of upper glume, membranous, without keels, 3 -veined. Lower glume primary vein scaberulous. Lower glume apex attenuate or setaceously acuminate. Upper glume lanceolate, 5.5–7 mm long, membranous, without keels, 3 -veined. Upper glume primary vein scaberulous. Upper glume apex attenuate or setaceously acuminate.

**Florets.** Fertile lemma elliptic, laterally compressed, 2.5–4 mm long, coriaceous, without keel, 5 -veined, more than 3-veined. Lemma surface pilose, hairy below. Lemma margins convolute, covering most of palea. Lemma apex awned, 1 -awned. Principal lemma awn bigeniculate, 21–35 mm long overall, with twisted column. Middle segment of lemma awn 4–6 mm long. Column of lemma awn 5–9 mm long. Palea 1 mm long, 0 -veined, without keels. Palea surface glabrous.

**Flower and Fruit.** Lodicules 2, 0.5 mm long. Anthers 3. Stigmas 2. Ovary glabrous. Caryopsis with adherent pericarp, fusiform, 1.8–2 mm long, dark brown. Hilum linear, 0.66–0.75 length of caryopsis.

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

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

**TDWG4.** Cordoba.

### **Nassella tenuiculmis** (Hack.) Penailillo. *Gayana, Bot.* 55:87 (1999).

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

**TYPE** from Brazil. **Basionym or Replaced Name:** *Stipa tenuiculmis* Hack., *Verh. K.K. Zool.-Bot. Ges. Wien* 65(1–2): 75 (1915). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: C. Juergens s.n., Dec 1910, Brazil: Rio Grande do Sul: Mun. Soledade: in campis prope Lagão (W; IT: US-3168612 (fragm. ex W)).

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

**Derivation** (Clifford & Bostock 2007): L. tenuis, thin; culmis, stem. Culms thin.

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial, caespitose, clumped loosely. Rhizomes short. Basal innovations extravaginal. Culms erect, 70 cm long, 0.8 mm diam., 2–3 -noded, with 0.5 of their length below uppermost node. Lateral branches lacking. Leaf-sheaths outer margin hairy. Ligule an eciliate membrane. Leaf-blades filiform, flat or convolute, 10–20 cm long, 0.8 mm wide. Leaf-blade surface ribbed, scabrous, rough abaxially.

**Inflorescence.** Inflorescence a panicle. Panicle open, lanceolate, 10 cm long. Primary panicle branches 1–2 -nate. Panicle axis scabrous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 18–20 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus elongated, curved, 2.5 mm long, pubescent, pungent.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 18–20 mm long, 1.2–1.3 length of upper glume, membranous, purple, without keels, 3 -veined. Lower glume apex acuminate. Upper glume lanceolate, 15 mm long, membranous, purple, without keels, 3 -veined. Upper glume apex acuminate.

**Florets.** Fertile lemma lanceolate, subterete, 9–10 mm long, coriaceous, without keel, 5 -veined, more than 3-veined. Lemma surface asperulous, pubescent, hairy below, hairy on veins. Lemma margins convolute, covering most of palea. Lemma apex awned, 1 -awned. Principal lemma awn geniculate, 60 mm long overall, with twisted column. Column of lemma awn 35 mm long. Palea 1 mm long, without keels.

**Flower and Fruit.** Anthers 3. Stigmas 2. Ovary glabrous. Caryopsis with adherent pericarp, fusiform. Hilum linear.

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

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

**TDWG4.** Catarina, Rio Grande do Sul. Buenos Aires, La Pampa. Río Negro.

**Nassella tenuis** (Phil.) M.E. Barkworth. *Taxon*, 39(4): 612: (1990).

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

**TYPE** from ?Chile. **Basionym or Replaced Name:** *Stipa tenuis* Phil., *Anales Univ. Chile* 36: 204 (1870). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: Anon., Mendoza (W; IT: SGO-45645, SGO-37382, US-A866054 (fragm. ex SGO)).

**Illustrations (Books):** A.L.Cabrera, *Flora de la Provincia de Buenos Aires, IV Pt 2 Gramineas* (1970) (277, Fig. 72 as *Stipa*), M.N.Correa, *Flora Patagonica* Parte III, Gramineae (1978) (325, Fig 219 as *Stipa*).

**Derivation** (Clifford & Bostock 2007): L. thin. Culms, leaf-blades or pedicels, slender.

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Basal innovations intravaginal. Culms 30–60 cm long. Culm-internodes distally pubescent. Leaf-sheaths glabrous on surface to pubescent. Leaf-sheath oral hairs ciliate. Ligule an eciliate membrane, 0.8–2 mm long, obtuse or acute. Leaf-blades filiform, convolute, 3–10 cm long, 0.5 mm wide. Leaf-blade surface puberulous, hairy adaxially or on both sides. Leaf-blade margins scabrous, ciliate.

**Inflorescence.** Inflorescence a panicle. Panicle open, linear or elliptic or oblong, 10–30 cm long, bearing few spikelets. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 9–18 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus elongated, curved, 2–2.9 mm long, pubescent, pungent.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 9–18 mm long, 1.1–1.2 length of upper glume, hyaline, mid-green or purple, without keels, 3 -veined. Lower glume surface glabrous or pubescent, hairy on veins. Lower glume margins eciliate or ciliate. Lower glume apex attenuate. Upper glume lanceolate, 9–18 mm long, 2–2.5 length of adjacent fertile lemma, hyaline, mid-green or purple, without keels, 3 -veined. Upper glume surface glabrous or pubescent, hairy on veins. Upper glume margins eciliate or ciliate. Upper glume apex attenuate.

**Florets.** Fertile lemma linear, subterete, 6–7.5 mm long, coriaceous, dark brown, without keel, 5 -veined, more than 3-veined. Lemma midvein ciliate, hairy below. Lemma surface papillose, rough generally or above, glabrous. Lemma margins convolute, covering most of palea. Lemma apex with a membranous corona or surmounted by a ring of hairs (on membrane), with this appendage 0.2–0.3 mm long (plus ciliolae), awned, 1 -awned. Principal lemma awn flexuous or geniculate, simple at base, 70–120 mm long overall, with a straight or slightly twisted column. Column of lemma awn puberulous. Palea 0.7–1 mm long, 0 -veined, without keels.

**Flower and Fruit.** Lodicules 2. Anthers 3, 2.5–3 mm long, anther tip penicillate. Stigmas 2. Ovary glabrous. Caryopsis with adherent pericarp, linear, 3.5–3.8 mm long, dark brown. Hilum linear, 0.75 length of caryopsis.

**Distribution (TDWG). Continent.** Europe (\*), South America.

**Region. Northern Europe** (\*).

**Country /Province /State.** : GB Aliens (Ryves et al). **Southern South America.** Argentina Northeast, Argentina South, Chile South.

**TDWG4.** Mendoza, San Luis. Buenos Aires, Cordoba, La Pampa. Chubut, Neuquén, Río Negro, Santa Cruz. Magellanes.

**Nassella tenuissima** (Trinius) M.E. Barkworth. *Taxon*, 39(4): 612: (1990).

**Accepted by:** R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online (as *Stipa*), U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), D.Sharp, D. & B.K.Simon, *AusGrass* (2002), E.Edgar, & H.Connor, *Flora of New Zealand Gramineae* 5 (2000).

**TYPE** from Argentina. **Basionym or Replaced Name:** *Stipa tenuissima* Trin., *Mem. Acad. Imp. Sci. Saint-Petersbourg, Ser. 6, Sci. Math., Seconde Pt. Sci. Nat.* 4,2(1): 36 (1836). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: W.J. Hooker ex L. Gillies 11, 1835, Argentina: Mendoza (LE-TRIN-1450.01 (& fig.); IT: US-866053 (fragm.)).

**Illustrations (Books):** S.W.L.Jacobs, R.D.B.Whalley & D.J.B.Wheeler., *Grasses of New South Wales*, 4th edn (2008) (305), A.Wilson (ed.), *Flora of Australia*, Vol 44A. *Poaceae* (2009) (63, Fig 9), M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 24 *Poaceae*, part 1 (2007) (175), F.W.Gould, *The Grasses of Texas* (1975) (78, Fig. 34 as *Stipa*), A.Burkat, *Flora Ilustrada de Entre Rios (Argentina)*, Pt II, Gramineas (1969) (148, Fig 49 as *Stipa*), A.L.Cabrera, *Flora de la Provincia de Buenos Aires, IV Pt 2 Gramineas* (1970) (277, Fig. 72 as *Stipa tenuissima* var. *oreophila*), M.N.Correa, *Flora Patagonica* Parte III, Gramineae (1978) (320, Fig. 213 as *Stipa*).

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

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Culms erect or geniculately ascending, 25–70 cm long. Culm-internodes distally glabrous. Lateral branches lacking. Leaf-sheaths scaberulous, glabrous on surface. Leaf-sheath oral hairs lacking. Ligule an eciliate membrane, 1.5–4 mm long, obtuse. Leaf-blades aciculate, 7–40 cm long, 0.4–0.5 mm wide. Leaf-blade surface scaberulous, rough on both sides, glabrous. Leaf-blade apex acute.

**Inflorescence.** Inflorescence a panicle, embraced at base by subtending leaf. Panicle open, linear, equilateral, 10–25 cm long, bearing few spikelets. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, laterally compressed, 5–10.5 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus evident, 0.2–0.4 mm long, pilose, obtuse. Floret callus hairs 0.25–0.33 length of lemma.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 5–10.5 mm long, 1.1–1.3 length of upper glume, hyaline, pallid or purple, without keels, 3 -veined. Lower glume lateral veins obscure. Lower glume apex attenuate. Upper glume lanceolate, 5–10.5 mm long, 3–4 length of adjacent fertile lemma, hyaline, pallid or purple, without keels, 3 -veined. Upper glume lateral veins obscure. Upper glume apex acuminate.

**Florets.** Fertile lemma oblong, laterally compressed, 1.8–3.6 mm long, coriaceous, without keel, 5 -veined, more than 3-veined. Lemma surface asperulous, rough above, glabrous. Lemma margins convolute, covering most of palea. Lemma apex surmounted by a ring of hairs, with this appendage 0.2–0.3 mm long, awned, 1 -awned. Principal lemma awn geniculate or bigeniculate, 50–90 mm long overall, with a straight or slightly twisted column. Column of lemma awn glabrous. Palea 0.5–1 mm long, 0 -veined, without keels.

**Flower and Fruit.** Lodicules 2 or 3. Anthers 3, 1.2–1.5 mm long, anther tip penicillate. Stigmas 2. Ovary glabrous. Caryopsis with adherent pericarp, linear, 1.5–2 mm long, dark brown. Hilum linear, 0.5–0.66 length of caryopsis.

**Distribution (TDWG). Continent.** Europe (\*), Africa, Australasia (\*), North America, South America.

**Region. Northern Europe (\*).**

**Country /Province /State.** : GB Aliens (Ryves et al). **Southern Africa** (\*). Eastern Cape. **Australia, New Zealand.** New South Wales (\*), Victoria (\*), Tasmania (\*). New Zealand North I. **Southwestern USA, South-central USA, Mexico.** California. New Mexico, Texas. Central Mexico, Northeast Mexico, Gulf (Mexico), Southwest Mexico. **Southern South America.** Argentina Northeast, Chile Central.

**TDWG4.** Western Slopes. Catamarca, La Rioja, Mendoza, Santiago del Estero, San Juan, San Luis, Tucuman. Buenos Aires, Cordoba, Entre Rios, La Pampa, Santa Fe. Río Negro, Santa Cruz. Mexico State, Puebla, Tlaxcala. Coahuila, Durango, Hidalgo, Neuvo Leon, San Luis Potosi, Tamaulipas, Zacatecas. Veracruz. Michoacan.

**Nassella torquata** (Speg.) M.E. Barkworth. *Taxon*, 39(4): 612: (1990).

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

**TYPE** from Argentina. **Basionym or Replaced Name:** *Stipa torquata* Speg., *Anales Mus. Nac. Montevideo* 4(2): 88–89, f. 20 (1901). T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: HT: Spegazzini s.n., Dec 1899, Argentina: Buenos Aires: Estación Tornquiát, Sierra Ventana (LP-2429).

**Illustrations (Books):** A.L.Cabrera, *Flora de la Provincia de Buenos Aires, IV Pt 2 Gramineas* (1970) (285, Fig. 73 as *Stipa*), B.Rosengurtt, *Gramineas Uruguayas I* (1970) (76, Fig. 24 as *Stipa*).

**Derivation** (Clifford & Bostock 2007): *L. torqueo*, twist; -ata, possessing. Awn strongly twisted.

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Culms slender, 20–45 cm long. Culm-internodes distally glabrous. Leaf-sheaths glabrous on surface, outer margin hairy. Leaf-sheath oral hairs ciliate. Ligule an eciliate membrane, 0.2 mm long, scarious. Leaf-blades filiform, conduplicate or convolute, 2.5–20 cm long, 0.4–0.6 mm wide, stiff. Leaf-blade surface glabrous. Leaf-blade apex acuminate.

**Inflorescence.** Inflorescence a panicle. Panicle open, nodding, 6–12 cm long, bearing few spikelets. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile

or the upper sterile. Spikelets lanceolate, subterete, 14–23 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus elongated, curved, 2–3 mm long, pubescent, pungent.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 14–23 mm long, 1 length of upper glume, hyaline, purple, without keels, 3–5 -veined. Lower glume apex attenuate. Upper glume lanceolate, 14–23 mm long, 2–2.5 length of adjacent fertile lemma, hyaline, purple, without keels, 3–5 -veined. Upper glume apex attenuate.

**Florets.** Fertile lemma linear, subterete, 8–9 mm long, coriaceous, without keel, 5 -veined, more than 3-veined. Lemma midvein pubescent, hairy below. Lemma surface papillose, glabrous. Lemma margins convolute, covering most of palea. Lemma apex with a membranous corona or surmounted by a ring of hairs (on membrane), with this appendage 0.8–1 mm long (plus ciliolae), awned, 1 -awned. Principal lemma awn bigenulate, constricted at base (of corona), 40–90 mm long overall, with twisted column. Column of lemma awn pubescent. Palea 1.5–2 mm long, 0 -veined, without keels.

**Flower and Fruit.** Lodicules 2. Anthers 3. Stigmas 2. Ovary glabrous. Caryopsis with adherent pericarp, fusiform. Hilum linear, 1 length of caryopsis.

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

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

**TDWG4.** Buenos Aires, Santa Fe.

**Nassella trachyphylla** Henrard. *Meded. Herb. Leid. No. 40, 57* (1921).

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

**TYPE** from Bolivia. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Bolivia: An steinigen Abhängen bei Samaipata, Mar 1911., Herzog 3011 (HT: L).

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

**Derivation** (Clifford & Bostock 2007): Gk. trachys, rough; phyllon, leaf. Leaf-blades scabrid.

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Culms slender, 20–28 cm long. Ligule an eciliate membrane. Leaf-blades erect, filiform, involute, 10–20 cm long, 0.5 mm wide. Leaf-blade surface pubescent.

**Inflorescence.** Inflorescence a panicle. Panicle open, linear, 2–3 cm long, 0.3–0.5 cm wide, bearing few spikelets. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets obovate, laterally compressed, 2.5–3 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus brief, bearded, acute.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 2.5–3 mm long, 1 length of upper glume, membranous, without keels. Lower glume apex acute. Upper glume lanceolate, 2.5–3 mm long, membranous, without keels. Upper glume apex acute.

**Florets.** Fertile lemma obovate, subterete, gibbous, 2–2.5 mm long, coriaceous, shiny, without keel, 5 -veined, more than 3-veined. Lemma surface smooth, glabrous. Lemma margins convolute, covering most of palea. Lemma apex awned, 1 -awned. Principal lemma awn eccentric, bigenulate, 8.5–18 mm long overall, with twisted column. Palea without keels.

**Flower and Fruit.** Caryopsis with adherent pericarp. Hilum linear.

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

**Country /Province/State. Western South America.** Bolivia.

**Nassella trichotoma** (Nees) Hackel ex Arech. *An. Mus. Montevideo*, i. 336 (1896).

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

**TYPE** from Uruguay. **Basionym or Replaced Name:** *Stipa trichotoma* Nees, *Fl. Bras. Enum. Pl.* 2(1): 375 (1829). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *F. Sellow* 833, no date, Uruguay: Montevideo (B; IT: BAA-3292 (fragm. ex B), MO-2097080, US-733007 (fragm. ex B)).

**Illustrations (Books):** G.E.Gibbs Russell et al, *Grasses of Southern Africa* (1990) (224, Fig. 141), S.W.L.Jacobs, R.D.B.Whalley & D.J.B.Wheeler., *Grasses of New South Wales*, 4th edn (2008) (305), A.Wilson (ed.), *Flora of Australia*, Vol 44A. *Poaceae* (2009) (63, Fig. 9), 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), J.P.Jessop, G.R.M. Dashorst & F.M.James, *Grasses of South Australia* (2006) (108, Fig. 70), A.Burkat, *Flora*

*Ilustrada de Entre Rios (Argentina)*, Pt II, Gramineas (1969) (147, Fig 48 as *Stipa*), A.L.Cabrera, *Flora de la Provincia de Buenos Aires, IV Pt 2 Gramineas* (1970) (267, Fig. 69 & 272, Fig. 71 as *Stipa*), M.N.Correa, *Flora Patagonica Parte III, Gramineae* (1978) (*Fl. Pat.* 3: 317, Fig. 211 (1978) as *Stipa*), B.Rosengurtt, *Gramineas Uruguayas I* (1970) (76, Fig. 24 & 78, Fig. 25 as *Stipa*).

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

**Derivation** (Clifford & Bostock 2007): Gk. trika, three-fold; tomos, piece. Inflorescence branches produced in threes.

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Culms 30–50 cm long. Ligule an eciliate membrane, obtuse. Leaf-blades filiform, convolute, 15–45 cm long, 0.2–0.5 mm wide, coriaceous.

**Inflorescence.** Inflorescence a panicle, deciduous as a whole. Panicle open, ovate, effuse, 8–20 cm long. Panicle branches capillary. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 4–8.5 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus evident, pilose, acute. Floret callus hairs 0.5 length of lemma.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 4–8.5 mm long, 1 length of upper glume, hyaline, without keels, 3 -veined. Lower glume surface scabrous. Lower glume apex attenuate. Upper glume lanceolate, 4–8.5 mm long, 2.5–3.5 length of adjacent fertile lemma, hyaline, without keels, 3 -veined. Upper glume surface scabrous, rough on veins. Upper glume apex attenuate.

**Florets.** Fertile lemma oblate, laterally compressed, 1.5–2.5 mm long, coriaceous, keeled, lightly keeled. Lemma surface tuberculate. Lemma margins convolute, covering most of palea. Lemma apex truncate, surmounted by a ring of hairs (obscure), awned, 1 -awned. Principal lemma awn eccentric, geniculate, 15–32 mm long overall, with twisted column, persistent or deciduous. Column of lemma awn glabrous. Palea 0.5 length of lemma, hyaline, 0 -veined, without keels.

**Flower and Fruit.** Anthers 3, 1–1.5 mm long. Caryopsis with adherent pericarp, oblong, 1.2 mm long, dark brown.

**Distribution (TDWG). Continent.** Europe (\*), Africa, Australasia (\*), North America, South America.

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

**Country /Province /State.** : GB Aliens (Ryves et al). : France. : Italy. **Macaronesia, Southern Africa** (\*). Madeira. Western Cape, Eastern Cape. **Australia, New Zealand.** South Australia (\*), New South Wales (\*), A.C.T. (\*), Victoria (\*), Tasmania (\*). New Zealand North I, New Zealand South I. **North-central USA, Southeastern USA.** Illinois, Missouri. Kentucky, North Carolina, South Carolina. **Brazil, Southern South America.** Argentina Northeast, Argentina Northwest.

**TDWG4.** Southern. Coast, Tablelands, Western Slopes. Catamarca, Mendoza, San Luis. Buenos Aires, Cordoba, Distrito Federal, Entre Rios, La Pampa, Santa Fe. Río Negro.

**Nassella tucumana** (Parodi) M.A. Torres. *Monogr. Comis. Invest. Ci. Prov. Buenos Aires*, 13: 38: (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 (as *Stipa*), U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

**TYPE** from Argentina. **Basionym or Replaced Name:** *Stipa tucumana* Parodi, *Revista Argent. Agron.* 15(1): 57, f. 2 (1948). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Argentina: Tucumán: Sierra de Aconquija, Portezuelo del Garabatal, 1600 m, 7 Feb 1933, L.R. Parodi 11062 (HT: BAA).

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

**Derivation** (Clifford & Bostock 2007): from Tucuman, Argentina.

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial, caespitose, clumped loosely. Culms erect, slender, 60–100 cm long, 1–1.5 mm diam., 3 -noded. Culm-internodes smooth or scaberulous, distally glabrous. Leaf-sheaths mostly shorter than adjacent culm internode, striately veined, antrorsely scabrous. Ligule an eciliate membrane. Leaf-blades flat or convolute, 25–40 cm long, 2–5 mm wide, flaccid. Leaf-blade surface scabrous, glabrous. Leaf-blade apex acuminate.

**Inflorescence.** Inflorescence a panicle. Panicle open, pyramidal, nodding, 15–30 cm long. Primary panicle branches ascending or spreading, 2–3 -nate, 3–10 cm long. Panicle branches capillary. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, filiform, glabrous.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile



or the upper sterile. Spikelets lanceolate, subterete, 4–5 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus brief, pubescent, acute.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma, gaping. Lower glume lanceolate, 4–4.5 mm long, 1.1 length of upper glume, membranous, 1-keeled, 3 -veined. Lower glume primary vein scabrous. Lower glume apex acuminate. Upper glume lanceolate, 3.5–4 mm long, membranous, 1-keeled, 3 -veined. Upper glume primary vein scabrous. Upper glume apex acuminate.

**Florets.** Fertile lemma obovate, subterete, 2.5–3 mm long, coriaceous, without keel, 5 -veined, more than 3-veined. Lemma midvein ciliolate. Lemma surface punctate, glabrous or puberulous. Lemma margins convolute, covering most of palea. Lemma apex awned, 1 -awned. Principal lemma awn bigeniculate, 15 mm long overall, with twisted column. Column of lemma awn puberulous. Palea present.

**Flower and Fruit.** Anthers 3, 0.5 mm long, retained within floret. Caryopsis with adherent pericarp.

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

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

**TDWG4.** Jujuy, Salta, Tucuman.

**Nassella uspallatensis** (Speg.) M.A. Torres. *Monogr. Comis. Invest. Ci. Prov. Buenos Aires*, 13: 38: (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 (as *Stipa*), U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

**TYPE** from Uruguay. **Basionym or Replaced Name:** *Stipa uspallatensis* Speg., *Anal. Mus. Montevid.* 4: II. 120 (1901). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: ST: In alpinis Cerro de los Cordobeses et Cerro Ximenes prope Paramillo de Uspallata, 2500–3000 m, Jan 1896, C. Spegazzini s.n., (LP).

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

**Derivation** (Clifford & Bostock 2007): L. -ensis, denoting origin. From Paramillo de Uspallata Chile.

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Culms erect, 8–20 cm long, 0.5–0.6 mm diam. Culm-internodes smooth, distally glabrous. Culm-nodes flush with internodes, brown, glabrous. Leaf-sheaths glabrous on surface. Leaf-sheath oral hairs pubescent. Ligule an eciliate membrane, erose. Leaf-blades straight or curved, aciculate, conduplicate, 1–4 cm long, 0.5–0.6 mm wide, stiff. Leaf-blade venation with 2–4 secondary veins. Leaf-blade surface ribbed, smooth or scaberulous, pubescent, hairy adaxially. Leaf-blade apex abruptly acute, pungent.

**Inflorescence.** Inflorescence a panicle, subtended by an inflated leaf-sheath, exerted or embraced at base by subtending leaf. Panicle spiciform, linear, 4–8 cm long, 0.3–0.4 cm wide, bearing few spikelets. Panicle branches glabrous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, 1–10 mm long, glabrous.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 8–9 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus evident, 0.5–0.75 mm long, pubescent, acute.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma, shiny. Lower glume oblong, 8–9 mm long, 1.05 length of upper glume, membranous, purple, without keels, 5 -veined. Lower glume apex obtuse or acute. Upper glume oblong, 7.5–8.5 mm long, membranous, purple, without keels, 3 -veined. Upper glume apex obtuse or acute.

**Florets.** Fertile lemma lanceolate, subterete, 5.5–6 mm long, coriaceous, without keel, 5 -veined, more than 3-veined. Lemma surface pubescent. Lemma margins convolute, covering most of palea. Lemma apex with a membranous corona or surmounted by a ring of hairs, awned, 1 -awned. Principal lemma awn bigeniculate, 10–14 mm long overall, with twisted column, persistent. Middle segment of lemma awn 3 mm long. Column of lemma awn 3 mm long, pubescent. Palea 1.5 mm long, 0 -veined, without keels. Palea surface glabrous. Palea apex obtuse.

**Flower and Fruit.** Caryopsis with adherent pericarp.

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

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

**TDWG4.** La Rioja, Mendoza, San Juan. Cordoba.

**Nassella vallsii** (Zanin & Longhi-Wagner) Penailillo. *Gayana, Bot.* 55:87 (1999).

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

**TYPE** from Brazil. **Basionym or Replaced Name:** *Stipa vallsii* A. Zanin & Longhi-Wagner, *Bradea* 5(33): 346–347, f. 2 (1990). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: A. Zanin & F.A. Silvafilho 148, 18 Nov 1988, Brazil: Rio Grande Do Sul: São Francisco de Paula Mun, Beira de Estrada (CEN; IT: ICN, MVFA, US-3358930).

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

**Derivation** (Clifford & Bostock 2007): in honor of Josi Francisco Montenegro Valls (1945-) student of Brazilian grasses.

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Rhizomes absent or short. Culms 34–65 cm long, 3–6 -noded. Culm-internodes distally glabrous or pubescent. Culm-nodes glabrous or pubescent. Leaf-sheaths smooth, glabrous on surface or pubescent, outer margin hairy. Leaf-sheath oral hairs ciliate, 0.5–1 mm long. Ligule an eciliate membrane, 0.2–0.4 mm long, erose, truncate. Leaf-blades flat or convolute, 3–17 cm long, 1–4 mm wide. Leaf-blade surface glabrous to pubescent. Leaf-blade apex attenuate.

**Inflorescence.** Inflorescence a panicle. Panicle open, oblong, 5.5–15 cm long. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 15–19 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus elongated, 2–3 mm long, pubescent, pungent.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume linear, 15–19 mm long, 1.1 length of upper glume, membranous, without keels, 3 -veined. Lower glume surface smooth or asperulous. Lower glume apex acuminate. Upper glume linear, 13.5–17.5 mm long, 1.7–1.8 length of adjacent fertile lemma, membranous, without keels, 3 -veined. Upper glume surface smooth or asperulous. Upper glume apex acuminate.

**Florets.** Fertile lemma lanceolate, subterete, 7.5–10 mm long, coriaceous, yellow, without keel, 5 -veined, more than 3-veined. Lemma midvein ciliolate, hairy below. Lemma surface scabrous, rough above. Lemma margins convolute, covering most of palea. Lemma apex with a membranous corona or surmounted by a ring of hairs, with this appendage 1–1.5 mm long, awned, 1 -awned. Principal lemma awn bigeniculate, 35–60 mm long overall, with twisted column. Column of lemma awn glabrous. Palea 1.2–2 mm long, 2 -veined, without keels.

**Flower and Fruit.** Lodicules 2. Anthers 3, 3–5 mm long, yellow or red. Stigmas 2. Ovary glabrous. Caryopsis with adherent pericarp, linear, 3.5–4 mm long. Hilum linear.

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

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

***Nassella vargasii*** (Tovar) Penailillo. *Gayana, Bot.* 55:87 (1999).

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

**TYPE** from Peru. **Basionym or Replaced Name:** *Stipa vargasii* Tovar, *Phytologia* 47(6): 445, f. c-d (1981). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: César Vargas 14127, 8 Mar 1963, Peru: Cuzco: Prov. Urubamba: laderas de Tarpata, 2860–3000 m (US-2474222).

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

**Derivation** (Clifford & Bostock 2007): in honor of Cesar Vargas (fl. 1963) who collected in Peru.

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Culms 35–45 cm long. Ligule an eciliate membrane, 1 mm long. Leaf-blades filiform, 10–15 cm long, 1 mm wide. Leaf-blade surface ribbed, pubescent, hairy adaxially.

**Inflorescence.** Inflorescence a panicle. Panicle open, elliptic, 12–16 cm long. Primary panicle branches ascending. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 7.5–8 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus evident, pilose, pungent.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 1 length of upper glume, membranous, purple, without keels. Lower glume apex setaceously acuminate. Upper glume lanceolate, 7.5–8 mm long, membranous, purple, without keels. Upper glume apex setaceously acuminate.

**Florets.** Fertile lemma lanceolate, subterete, 6–7 mm long, coriaceous, without keel, 5 -veined, more than 3-veined. Lemma midvein ciliolate, hairy below. Lemma surface with conspicuous apical hairs. Lemma margins

convolute, covering most of palea. Lemma hairs 0.7–1 mm long. Lemma apex awned, 1 -awned. Principal lemma awn bigenulate, 30 mm long overall, with twisted column. Palea without keels.

**Flower and Fruit.** Anthers 3. Stigmas 2. Ovary glabrous. Caryopsis with adherent pericarp, fusiform. Hilum linear.

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

**Country /Province /State.** Western South America. Peru.

**Nassella ventanica** (Cabrera & Torres) M.E. Barkworth. *Taxon*, 39(4): 612: (1990).

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

**TYPE** from Argentina. **Basionym or Replaced Name:** *Stipa ventanica* Cabrera & Torres, *Bol. Soc. Argent. Bot.* 12: 140 (1968). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Argentina: Rov. Buenos Aires: Partido de Pringles, Cerro Pillahinco, en faldeos rocosos, Nov. 1, 1941, A.L. Cabrera 7305 (HT: LP).

**Illustrations (Books):** A.L.Cabrera, *Flora de la Provincia de Buenos Aires, IV Pt 2 Gramineas* (1970) (267, Fig. 69 & 270, Fig. 70as *Stipa*).

**Derivation** (Clifford & Bostock 2007): L. -cola, dweller. From Sierra de la Ventana, Argentina.

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Culms erect, slender, 25–40 cm long. Culm-internodes distally glabrous. Leaf-sheaths longer than adjacent culm internode, glabrous on surface. Leaf-sheath oral hairs lacking. Ligule an eciliate membrane, 1.5–4 mm long. Leaf-blades deciduous at the ligule, filiform, convolute, 4–28 cm long, 0.5–0.7 mm wide. Leaf-blade surface scaberulous, rough abaxially, pubescent, hairy adaxially.

**Inflorescence.** Inflorescence a panicle, exerted or embraced at base by subtending leaf. Panicle open, linear, equilateral, 6–10 cm long, bearing few spikelets. Panicle branches scaberulous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, scaberulous.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, laterally compressed, 6–8.5 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus elongated, curved, 0.6–2 mm long, bearded, obtuse. Floret callus hairs 0.5–0.66 length of lemma.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 6–8.5 mm long, 1.1–1.3 length of upper glume, membranous, purple, without keels, 3 -veined. Lower glume surface asperulous, rough on veins. Lower glume apex acuminate. Upper glume lanceolate, 6–8.5 mm long, 2–3 length of adjacent fertile lemma, membranous, purple, without keels, 3 -veined. Upper glume surface asperulous, rough on veins. Upper glume apex acuminate.

**Florets.** Fertile lemma linear, laterally compressed, gibbous, 2.5–5.5(–6.5) mm long, coriaceous, without keel, 5 -veined, more than 3-veined. Lemma surface scaberulous, rough above, glabrous. Lemma margins convolute, covering most of palea. Lemma apex surmounted by a ring of hairs, with this appendage 0.5–1 mm long, awned, 1 -awned. Principal lemma awn eccentric, flexuous or geniculate or bigenulate, 28–50 mm long overall, with 18–30 mm long limb, with a straight or slightly twisted column, deciduous. Column of lemma awn 13–15 mm long, glabrous. Palea 1–1.3 mm long, 2 -veined, without keels.

**Flower and Fruit.** Lodicules 2. Anthers 3, 1–1.4 mm long, anther tip penicillate. Stigmas 2. Ovary glabrous. Caryopsis with adherent pericarp, fusiform. Hilum linear.

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

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

**TDWG4.** Buenos Aires.

**Nassella viridula** (Trin.) M.E. Barkworth. *Taxon*, 39(4): 612: (1990).

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

**TYPE** from Canada. **Basionym or Replaced Name:** *Stipa viridula* Trin., *Mem. Acad. Imp. Sci. Saint-Petersbourg, Ser. 6, Sci. Math., Seconde Pt. Sci. Nat.* 4,2(1): 39 (1836). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *J.D. Hooker* 57, 1835, Canada: Saskatchewan (LE; IT: US-557431 (fragm. ex LE)).

**Illustrations (Books):** K.F.Best, et al, *Prairie Grasses* (1971) (233 as *Stipa*), M.E.Barkworth et al, *Flora of North America north of Mexico Vol 24 Poaceae*, part 1 (2007) (175).

**Derivation** (Clifford & Bostock 2007): *L. viridis*, green; -ula, diminutive. Plant in whole or in part pale-green, often glaucous.

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Culms 50–110 cm long. Culm-internodes distally glabrous or pubescent. Leaf-sheaths glabrous on surface or puberulous, outer margin hairy. Ligule an eciliate membrane, 0.5–1.5(–3) mm long, glabrous on abaxial surface or pubescent on abaxial surface, obtuse. Collar pilose. Leaf-blades involute, 3–6 mm wide.

**Inflorescence.** Inflorescence a panicle. Panicle open, linear or lanceolate, 10–26 cm long. Primary panicle branches appressed. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 9–12 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus evident, 0.5 mm long, pubescent, acute.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 9–12 mm long, 1 length of upper glume, membranous, without keels, 5 -veined. Lower glume apex acuminate. Upper glume lanceolate, 9–12 mm long, 2 length of adjacent fertile lemma, membranous, without keels, 3 -veined. Upper glume apex acuminate.

**Florets.** Fertile lemma elliptic, subterete, 5–6 mm long, coriaceous, without keel, more than 3-veined. Lemma surface pubescent, hairy all along. Lemma margins convolute, covering most of palea. Lemma apex awned, 1 -awned. Principal lemma awn bigeniculate, 25–35 mm long overall, with twisted column. Column of lemma awn glabrous. Palea 2 mm long, without keels.

**Flower and Fruit.** Lodicules 2, 1.2–1.5 mm long. Anthers 3, 2.5–3 mm long. Stigmas 2. Caryopsis with adherent pericarp. Hilum linear.

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

**Country /Province /State.** Subarctic America, Western Canada, Northwest USA, North-central USA, Southwestern USA, South-central USA, Southeastern USA. Yukon, Northwest Territories. Alberta, British Columbia, Manitoba, Saskatchewan. Colorado, Montana, Washington, Wyoming. Illinois, Iowa, Kansas, Minnesota, Missouri, North Dakota, Nebraska, South Dakota, Wisconsin. Arizona, Nevada. New Mexico, Texas. Louisiana.

**Nassella wurdackii** (Tovar) M.E. Barkworth. *Taxon*, 39(4): 612: (1990).

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

**TYPE** from Peru. **Basionym or Replaced Name:** *Stipa wurdackii* Tovar, *Phytologia* 47(6): 445, f. a-b (1981). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Peru: Depto. Amazonas: Prov. Chachapoyas, at summit of Pumaucu southeast of Chachapoyas, 3100–3200 m, 3 Jul 1962, J.J. Wurdack 1152 (HT: US).

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

**Derivation** (Clifford & Bostock 2007): in honor of John Julius Wurdack (1921-) United States botanist.

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Culms 60–65 cm long. Ligule an eciliate membrane, 0.2–0.3 mm long. Leaf-blades flat or involute, 5–15 cm long, 1–2 mm wide. Leaf-blade surface ribbed.

**Inflorescence.** Inflorescence a panicle. Panicle open, elliptic, 15 cm long. Primary panicle branches ascending or spreading. Panicle branches pubescent. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 5.5–6.5 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus evident, pubescent, acute.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 1 length of upper glume, membranous, purple, without keels. Lower glume apex acuminate. Upper glume lanceolate, 5.5–6.5 mm long, membranous, purple, without keels. Upper glume apex acuminate.

**Florets.** Fertile lemma lanceolate, subterete, 3.5–3.8 mm long, coriaceous, without keel, 5 -veined, more than 3-veined. Lemma surface puberulous. Lemma margins convolute, covering most of palea. Lemma apex with a membranous corona or surmounted by a ring of hairs, awned, 1 -awned. Principal lemma awn geniculate, 17–20 mm long overall, with twisted column. Palea without keels.

**Flower and Fruit.** Anthers 3. Stigmas 2. Ovary glabrous. Caryopsis with adherent pericarp, fusiform. Hilum linear.

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

**Country /Province /State. Western South America.** Peru.

**Nassella yaviensis** M.A. Torres. *Monogr. Comis. Invest. Ci. Prov. Buenos Aires*, 13: 39 (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. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Argentina: Prov. Jujuy: Dep. Yaví: Abra de Yaví, 3400 m, 20 Feb 1963, A. L. Cabrera et al. 15357 (HT: LP).

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

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

**Classification.** Subfamily Pooideae. Tribe: Stipeae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Butt sheaths pubescent. Basal innovations extravaginal. Culms erect, 70–80 cm long. Culm-internodes distally pubescent. Culm-nodes constricted, brown. Lateral branches lacking. Leaf-sheaths mostly shorter than adjacent culm internode, antrorsely scabrous, glabrous on surface. Leaf-sheath oral hairs ciliate. Ligule an eciliate membrane, 2 mm long. Collar pilose. Leaf-blades 2–4 mm wide. Leaf-blade surface glabrous or hispid.

**Inflorescence.** Inflorescence a panicle. Panicle open, effuse, nodding, 36–42 cm long. Primary panicle branches 12 cm long. Panicle axis puberulous. Panicle branches puberulous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 9–10.5 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus elongated, 1.2–1.6 mm long, pubescent, pungent.

**Glumes.** Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 9–10.5 mm long, 1 length of upper glume, membranous, purple, without keels, 3–4 -veined. Lower glume apex acuminate. Upper glume lanceolate, 9–10.5 mm long, membranous, purple, without keels, 3–4 -veined. Upper glume apex acuminate.

**Florets.** Fertile lemma linear, subterete, 7.5–9.5 mm long, chartaceous, without keel, 5 -veined, more than 3-veined. Lemma surface scaberulous, pilose, hairy below. Lemma margins convolute, covering most of palea. Lemma apex with a membranous corona or surmounted by a ring of hairs, with this appendage 0.6–0.9 mm long, awned, 1 -awned. Principal lemma awn bigenulate, 45–59 mm long overall, with 25–31 mm long limb, with twisted column, deciduous. Middle segment of lemma awn ciliate. Column of lemma awn 10–16 mm long, ciliate, with 1.5–1.7 mm long hairs. Palea 0 -veined, without keels.

**Flower and Fruit.** Lodicules 2. Anthers 3. Stigmas 2. Caryopsis with adherent pericarp, linear, 5 mm long. Hilum linear, 1 length of caryopsis.

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

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

**TDWG4.** Jujuy.

**Nastus ambrensis** A.Camus. *Not. Syst.* xiv. 214 (1953).

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

**TYPE** from Madagascar. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Centre-Nord: Forêt d'Ambre, vers 1000 m, Perrier de la Bâthie 17765 (HT: P).

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

**Derivation** (Clifford & Bostock 2007): L. *-ensis*, denoting origin. From Massif d'Ambre, Madagascar.

**Classification.** Subfamily Bambusoideae. Tribe: Bambuseae.

**Habit, Vegetative Morphology.** Perennial, woody bamboo. Rhizomes short, pachymorph. Butt sheaths absent. Culms 1000–1500 cm long, woody. Culm-internodes terete. Lateral branches dendroid. Culm-sheaths present. Leaf-sheaths smooth, glabrous on surface, outer margin hairy. Ligule absent. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades lanceolate, 15–20 cm long, 8–9 mm wide. Leaf-blade surface pilose, sparsely hairy, hairy abaxially. Leaf-blade margins scaberulous. Leaf-blade apex acuminate, hairy.

**Inflorescence.** Inflorescence a panicle. Spikelets solitary. Fertile spikelets sessile.

**Fertile Spikelets.** Spikelets comprising 1–2 basal sterile florets, 1 fertile florets, with diminished florets at the apex. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets oblong or ovate, laterally compressed, 15–16 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes several, 3–5 empty glumes, shorter than spikelet. Lower glume ovate, 2–3.5 mm long, chartaceous, 5 -veined. Lower glume surface glabrous. Lower glume apex obtuse, mucronate. Upper glume ovate, 6–10 mm long, chartaceous, without keels. Upper glume surface glabrous. Upper glume apex obtuse, mucronate.

**Florets.** Basal sterile florets 1 or 2 or more, barren, with palea, attached to and deciduous with the fertile. Lemma of lower sterile floret similar to fertile lemma, ovate, 12–12.5 mm long, coriaceous, obtuse. Fertile lemma ovate, 13–13.5 mm long, coriaceous, without keel, 11–13 -veined, more than 3-veined. Lemma surface glabrous or puberulous. Lemma apex truncate or obtuse. Palea oblong, 12–13 mm long, coriaceous, 2-keeled. Palea apex obtuse. Apical sterile florets 1 in number, barren, elliptic.

**Flower and Fruit.** Lodicules 3. Anthers 6, 7.5–8.8 mm long, yellow, anther tip apiculate. Stigmas 3. Caryopsis with adherent pericarp, obovoid, 8 mm long.

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

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

**Nastus aristatus** A.Camus. *Bull. Soc. Bot. France*, lxxii. 26. (1925).

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

**TYPE** from Madagascar. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Madagascar centr: massif de Manongarivo, grès triasiques au-dessus de 1200 m; env. d'Analamazoatra, vers 900 m, Perrier de la Bâthie 11259; 10913 (ST: P).

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

**Derivation** (Clifford & Bostock 2007): *L. arista*, bristle; -ata, possessing. Leaf-blade drawn out into a bristle.

**Classification.** Subfamily Bambusoideae. Tribe: Bambuseae.

**Habit, Vegetative Morphology.** Perennial, woody bamboo. Rhizomes short, pachymorph. Butt sheaths absent. Culms 100–200 cm long, woody. Culm-internodes terete, distally glabrous. Lateral branches dendroid. Branch complement many. Culm-sheaths present. Leaf-sheaths glabrous on surface. Leaf-sheath oral hairs setose. Ligule an eciliate membrane. Leaf-blades linear or lanceolate, flat or conduplicate, 1.5–4 cm long, 1–2 mm wide. Leaf-blade venation with 10–14 secondary veins. Leaf-blade surface pilose, sparsely hairy, hairy abaxially. Leaf-blade apex acuminate, filiform.

**Inflorescence.** Inflorescence comprising only a few spikelets, comprising 1–2 fertile spikelets. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 basal sterile florets, 1 fertile florets, with diminished florets at the apex. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets ovate, laterally compressed, 6 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes several, 2–3 empty glumes, shorter than spikelet. Lower glume ovate, 1.3–1.4 mm long, chartaceous, 3 -veined. Lower glume apex acute. Upper glume ovate, 3–3.3 mm long, chartaceous, without keels, 5 -veined. Upper glume apex acuminate.

**Florets.** Basal sterile florets 1, barren, without significant palea, attached to and deciduous with the fertile. Lemma of lower sterile floret similar to fertile lemma, oblong, 4–5 mm long, coriaceous, 1-keeled, 5–7 -veined, acuminate, mucronate. Fertile lemma ovate, 5 mm long, coriaceous, keeled, 7–9 -veined, more than 3-veined. Lemma apex obtuse, pubescent. Palea 4.3 mm long, coriaceous, without keels. Palea surface glabrous. Palea apex obtuse, pubescent. Rhachilla extension 4–4.5 mm long, glabrous. Apical sterile florets 1 in number, barren, elliptic, 1 mm long.

**Flower and Fruit.** Lodicules 3. Anthers 6, 2.7–2.9 mm long, yellow. Stigmas 3. Ovary umbonate. Caryopsis with adherent pericarp.

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

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

**Nastus borbonicus** J. F. Gmel. *Syst.* ii. 580 (1791).

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

T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Jussieu gener. Plant. p. 34"; "Juss: "Caracter ex Borbonico Commersonii specimine, dicto Calumet des Hauts. ",.

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

**Derivation** (Clifford & Bostock 2007): *L. -ica*, belonging to. From Insula Borbonia, now Reunion, one of the Mascarene Islands.

**Classification.** Subfamily Bambusoideae. Tribe: Bambuseae.

**Habit, Vegetative Morphology.** Perennial, woody bamboo. Rhizomes short, pachymorph. Butt sheaths absent. Culms erect, 800–1000 cm long, woody. Culm-internodes terete, thin-walled. Lateral branches dendroid. Culm-sheaths present. Ligule an eciliate membrane. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades lanceolate, 10–15 cm long, 6–9 mm wide. Leaf-blade apex acuminate.

**Inflorescence.** Inflorescence a panicle. Panicle contracted, linear, 4–8 cm long. Spikelets solitary.

**Fertile Spikelets.** Spikelets comprising 1 basal sterile florets, 1 fertile florets, with diminished florets at the apex. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets oblong, laterally compressed, 10–11 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes several, 4 empty glumes, shorter than spikelet. Lower glume ovate, 1–2 mm long, chartaceous. Lower glume apex acute. Upper glume ovate, 5 mm long, chartaceous, without keels. Upper glume apex acute.

**Florets.** Basal sterile florets 1, barren, with palea, attached to and deciduous with the fertile. Lemma of lower sterile floret similar to fertile lemma, ovate, 7 mm long, coriaceous. Fertile lemma ovate, 7–8 mm long, coriaceous, without keel, 7–9 -veined, more than 3-veined. Lemma apex obtuse. Palea 1 length of lemma, coriaceous, 2-keeled. Apical sterile florets 1 in number, barren, elliptic.

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

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

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

**Nastus decaryanus** A.Camus. *Bull. Soc. Bot. France*, xciv. 42 (1947).

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

**TYPE** from Madagascar. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Madagascar: Domaine central: massif de l'Andringitra, au SE du lac d'Alaotra, RN 3 Zakamena, bassin de l'Onibe; 1200 m., Decary 16480 (HT: P).

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

**Derivation** (Clifford & Bostock 2007): L. *-ana*, indicating connection. As for *Decaryella*.

**Classification.** Subfamily Bambusoideae. Tribe: Bambuseae.

**Habit, Vegetative Morphology.** Perennial, woody bamboo. Rhizomes short, pachymorph. Butt sheaths absent. Culms woody. Culm-internodes terete, smooth, distally glabrous. Lateral branches dendroid. Culm-sheaths present. Leaf-sheaths smooth, glabrous on surface or pilose. Ligule absent. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades lanceolate, 8–15 cm long, 7–8 mm wide. Leaf-blade venation with obscure cross veins. Leaf-blade surface glabrous. Leaf-blade margins scaberulous. Leaf-blade apex acuminate.

**Inflorescence.** Inflorescence a panicle. Spikelets solitary. Fertile spikelets sessile.

**Fertile Spikelets.** Spikelets comprising 1 basal sterile florets, 1 fertile florets, with diminished florets at the apex. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets oblong, laterally compressed, 15–17 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes several, 3–4 empty glumes, shorter than spikelet. Lower glume ovate, 1.5–1.7 mm long, chartaceous. Lower glume surface glabrous or puberulous, hairy above. Lower glume apex acute. Upper glume ovate, 1.5–1.7 mm long, chartaceous, without keels. Upper glume surface glabrous or pubescent, hairy above. Upper glume apex acute.

**Florets.** Basal sterile florets 1, barren, with palea, attached to and deciduous with the fertile. Lemma of lower sterile floret similar to fertile lemma, ovate, 9 mm long, coriaceous. Fertile lemma ovate, 10–11 mm long, coriaceous, without keel, more than 3-veined. Lemma surface glabrous. Lemma apex obtuse. Palea 8 mm long, coriaceous, 2-keeled. Rhachilla extension 8 mm long, pubescent. Apical sterile florets 1 in number, barren, elliptic.

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

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

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

**Nastus elatoides** Widjaja. *Reinwardtia* 11(2): 108 (1997).

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

T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Irian Jaya, Idadagi: *Widjaja 6648* (BO holo, K, L, US).

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

**Derivation** (Clifford & Bostock 2007): Gk *-oides*, resembling. Resembling *Nastus elatus*.

**Classification.** Subfamily Bambusoideae. Tribe: Bambuseae.

**Habit, Vegetative Morphology.** Perennial, woody bamboo, caespitose, clumped loosely. Rhizomes short, pachymorph. Butt sheaths absent. Culms erect, drooping at the tip, 1200 cm long, 20–100 mm diam., woody. Culm-internodes terete, thin-walled, 70–80 cm long, white, distally glabrous. Lateral branches dendroid. Branch complement many, with subequal branches or 1 branch dominant. Culm-sheaths present, 10.5–15.8 cm long, smooth, pubescent, with white hairs, auriculate, with 5 mm high auricles, setose on shoulders, shoulders with 18 mm long hairs. Culm-sheath ligule 1 mm high, ciliolate. Culm-sheath blade narrowly ovate, constricted at base, erect or spreading, 10.5–17.5 cm long, 20–30 mm wide. Leaves 7 per branch. Leaf-sheaths glabrous on surface. Leaf-sheath auricles falcate, 1 mm long. Ligule an eciliate membrane, 1 mm long. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades oblong, 30.4–38.5 cm long, 45–50 mm wide. Leaf-blade surface glabrous. Leaf-blade apex acuminate. Flowering specimens unknown.

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

**Country /Province /State. Papuaasia.** New Guinea.

**Nastus elatus** Holttum. *Kew Bull.* xxi. 291 (1967).

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

**TYPE** from New Guinea. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: IT: NGF 18538, 1 Sep 1963, Papua New Guinea: New Guinea, Chimbu, Nondugl 1,890 m (A, BOG, BRI, CANB, K, L).

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

**Derivation** (Clifford & Bostock 2007): L. tall. Culms taller than those of most species of the genus.

**Classification.** Subfamily Bambusoideae. Tribe: Bambuseae.

**Habit, Vegetative Morphology.** Perennial, woody bamboo. Rhizomes short, pachymorph. Butt sheaths absent. Culms erect, 1500–2000 cm long, woody. Culm-internodes terete, 30–45 cm long. Lateral branches dendroid. Branch complement many. Culm-sheaths present, smooth. Culm-sheath ligule 1.5 mm high, ciliolate. Culm-sheath blade lanceolate, erect or reflexed, 22 cm long, 42 mm wide. Leaves 5–6 per branch. Ligule an eciliate membrane. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades linear, 8–16 cm long, 4–8 mm wide. Leaf-blade apex acuminate.

**Inflorescence.** Inflorescence a panicle, bracteate at branch bases. Panicle open, lanceolate, 8–15 cm long. Primary panicle branches ascending, 2–5 cm long. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 2 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, laterally compressed, 14 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes several, 3 empty glumes, shorter than spikelet. Lower glume ovate, chartaceous. Lower glume apex acute. Upper glume ovate, chartaceous, without keels. Upper glume apex acute.

**Florets.** Basal sterile florets 2 or more, barren, without significant palea, attached to and deciduous with the fertile. Lemma of lower sterile floret similar to fertile lemma, ovate, coriaceous. Lemma of upper sterile floret ovate. Fertile lemma ovate, 11–12 mm long, coriaceous, without keel, more than 3-veined. Lemma apex acute. Palea coriaceous, without keels.

**Flower and Fruit.** Lodicules 3, 1 mm long, ciliate. Anthers 6, 4.5 mm long. Stigmas 3. Ovary umbonate, pubescent on apex. Caryopsis with adherent pericarp.

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

**Country /Province /State. Malesia, Papuaasia.** New Guinea. **Southwestern Pacific.** Vanuatu.

**Nastus elegantissimus** (Hassk.) Holttum. *Kew Bull.* 1955, 593 (1956).

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

**Basionym or Replaced Name:** *Bambusa elegantissima* Hassk., *Pl. Jav. Rar.* 42 (1848).

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

**Derivation** (Clifford & Bostock 2007): L. elegans, elegant; -issima, most. Very attractive in some respect, usually the inflorescence.

**Classification.** Subfamily Bambusoideae. Tribe: Bambuseae.



**Habit, Vegetative Morphology.** Perennial, woody bamboo. Rhizomes short, pachymorph. Butt sheaths absent. Culms scandent, 30 mm diam., woody. Culm-internodes terete, thin-walled, 50 cm long. Lateral branches dendroid. Culm-sheaths present, 18 cm long, hispid, with black hairs. Leaf-sheaths glabrous on surface. Leaf-sheath oral hairs setose, 2 mm long. Ligule an eciliate membrane, 0.5–1 mm long. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades lanceolate, 10–20 cm long, 12–25 mm wide. Leaf-blade apex acuminate, filiform.

**Inflorescence.** Inflorescence a panicle. Panicle open, lanceolate, 4–6 cm long. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets ovate, laterally compressed, 10–12 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes several, 4–6 empty glumes, shorter than spikelet or reaching apex of florets. Lower glume ovate, 2–3 mm long, chartaceous. Lower glume apex acute. Upper glume ovate, 6–12 mm long, chartaceous, without keels, 7 -veined. Upper glume apex acute.

**Florets.** Fertile lemma ovate, 10–12 mm long, coriaceous, without keel, more than 3-veined. Lemma apex acute. Palea coriaceous, without keels.

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

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

**Country /Province /State.** Malesia. Java.

**Nastus elongatus** A.Camus. *Bull. Soc. Bot. France*, lxxii. 23. (1925).

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

**TYPE** from Madagascar. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Madagascar centr.: massif d'Andringitra, alt. 1000 mètres, bords de la rivière Ihovika [Ivohika]", Perrier de la Bâthie 10846 (HT: P).

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

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

**Classification.** Subfamily Bambusoideae. Tribe: Bambuseae.

**Habit, Vegetative Morphology.** Perennial, woody bamboo. Rhizomes short, pachymorph. Butt sheaths absent. Culms scandent, pendulous at the tip, 1500–2000 cm long, 30 mm diam., woody. Culm-internodes terete. Lateral branches dendroid. Branch complement many. Culm-sheaths present. Leaf-sheaths glabrous on surface, outer margin hairy. Leaf-sheath oral hairs ciliate. Ligule an eciliate membrane. Leaf-blades linear, convolute, 11–12 cm long, 2–2.5 mm wide, stiff. Leaf-blade midrib conspicuous. Leaf-blade venation with 14–18 secondary veins. Leaf-blade surface pilose, sparsely hairy, hairy abaxially. Leaf-blade margins ciliate. Leaf-blade apex acuminate.

**Inflorescence.** Inflorescence a panicle. Panicle open, linear, 15–20 cm long. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1–2 basal sterile florets, 1 fertile florets, with diminished florets at the apex. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets oblong, laterally compressed, 8–9 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes several, 3–4 empty glumes, shorter than spikelet. Lower glume ovate, 1.5–2 mm long, chartaceous, 5 -veined. Lower glume apex acuminate. Upper glume ovate, 3.5–4 mm long, chartaceous, without keels, 9 -veined. Upper glume apex acuminate, mucronate.

**Florets.** Basal sterile florets 1 or 2 or more, similar, barren, without significant palea, attached to and deciduous with the fertile. Lemma of lower sterile floret similar to fertile lemma, ovate, 5–7 mm long, coriaceous, 11 -veined, pubescent, mucronate. Fertile lemma oblong, 7 mm long, coriaceous, without keel, more than 3-veined. Lemma surface pubescent. Lemma apex dentate, 3 -fid, acute. Palea coriaceous, 2-keeled. Palea keels ciliate. Palea apex obtuse. Apical sterile florets 1 in number, barren, elliptic.

**Flower and Fruit.** Lodicules 3. Anthers 6, 4 mm long. Stigmas 3. Ovary umbonate. Caryopsis with adherent pericarp.

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

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

**Nastus emirnenensis** (Baker) A.Camus. *Bull. Soc. Bot. France*, lxxii. 24 (1925).

**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:** *Nastus borbonicus* var. *emirnenensis* Baker, *J. Linn. Soc.* 20:302 (1883). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Central Madagascar., Parker s.n. (HT: K).

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

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

**Classification.** Subfamily Bambusoideae. Tribe: Bambuseae.

**Habit, Vegetative Morphology.** Perennial, woody bamboo. Rhizomes short, pachymorph. Butt sheaths absent. Culms scandent, 1–2 mm diam., woody. Culm-internodes terete, solid, 15 cm long. Lateral branches dendroid. Culm-sheaths present. Ligule an eciliate membrane. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades linear, 5–10 cm long, 4–7 mm wide. Leaf-blade apex attenuate.

**Inflorescence.** Inflorescence a panicle. Panicle contracted, linear, 2–3 cm long, bearing few spikelets. Spikelets solitary.

**Fertile Spikelets.** Spikelets comprising 1 basal sterile florets, 1 fertile florets, with diminished florets at the apex. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets oblong or ovate, laterally compressed, 9 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes several, 4 empty glumes, shorter than spikelet. Lower glume ovate, 1 mm long, chartaceous. Lower glume apex acute. Upper glume ovate, 5 mm long, chartaceous, without keels. Upper glume apex acute.

**Florets.** Basal sterile florets 1, barren, with palea, attached to and deciduous with the fertile. Lemma of lower sterile floret similar to fertile lemma, ovate, 6 mm long, coriaceous. Fertile lemma ovate, 6 mm long, coriaceous, without keel, 9 -veined, more than 3-veined. Lemma apex acuminate, muticous or mucronate. Palea 5.5 mm long, 0.9 length of lemma, coriaceous, 2-keeled. Apical sterile florets 1 in number, barren, elliptic.

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

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

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

**Nastus glaucus** Widjaja. *Reinwardtia* 11(2): 110 (1997).

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

T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Irian Jaya, Jayawijaya: Widjaja 6403 (BO holo).

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

**Derivation** (Clifford & Bostock 2007): *L. glauca*, bluish-green. Whole plant or any of its parts glaucous.

**Classification.** Subfamily Bambusoideae. Tribe: Bambuseae.

**Habit, Vegetative Morphology.** Perennial, woody bamboo, caespitose, clumped loosely. Rhizomes short, pachymorph. Butt sheaths absent. Culms erect, pendulous at the tip, 1500 cm long, 5–20 mm diam., woody. Culm-internodes terete, thin-walled, 30–40 cm long. Lateral branches dendroid. Branch complement many, with subequal branches. Culm-sheaths present, 16.8–21 cm long, 2–5 times as long as wide, smooth, pubescent, with white hairs or tawny hairs, concave at apex, glabrous on shoulders. Culm-sheath ligule 1.5 mm high, ciliate. Culm-sheath blade triangular, constricted at base, reflexed, 7.2–12.5 cm long, 8–15 mm wide. Leaves 6–7 per branch. Leaf-sheath auricles absent. Ligule an eciliate membrane, 1 mm long. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades lanceolate, 11.2–17.2 cm long, 12–20 mm wide, glaucous. Leaf-blade surface glabrous. Leaf-blade apex acuminate. Flowering specimens unknown.

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

**Country /Province /State.** Papuaasia. New Guinea.

**Nastus holttumianus** Bor. *Osterr. Bot. Zeitschr.*, 120(1-2): 90 (1972).

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

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

**Derivation** (Clifford & Bostock 2007): *L. -anus*, indicating connection. In honor of Richard Eric Holttum (1895–1990) English botanist.

**Classification.** Subfamily Bambusoideae. Tribe: Bambuseae.

**Habit, Vegetative Morphology.** Perennial, woody bamboo. Rhizomes short, pachymorph. Butt sheaths absent. Culms scandent, 1000–2000 cm long, 20–30 mm diam., woody. Culm-internodes terete. Lateral branches dendroid. Culm-sheaths present. Leaf-sheaths hispid. Leaf-sheath oral hairs setose. Leaf-sheath auricles erect. Ligule an eciliate membrane. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades lanceolate, 8–16 cm long, 10–20 mm wide. Leaf-blade apex acuminate.

**Inflorescence.** Inflorescence a panicle. Panicle contracted, secund, 16 cm long, 2 cm wide. Panicle axis pubescent. Panicle branches pubescent. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets oblong or ovate, laterally compressed, 10–11 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes several, 5 empty glumes, shorter than spikelet. Lower glume linear or lanceolate, 2.5–5.5 mm long, chartaceous. Lower glume apex setaceously acuminate. Upper glume elliptic or ovate, 5.5–9 mm long, chartaceous, without keels. Upper glume apex acute.

**Florets.** Basal sterile florets absent. Fertile lemma elliptic, 9–10 mm long, coriaceous, without keel, 9–11 -veined, more than 3-veined. Lemma surface glabrous or hirsute, hairy between veins. Lemma apex acute. Palea coriaceous, 2-keeled. Palea apex dentate, 2 -fid, pubescent.

**Flower and Fruit.** Lodicules 3, 1.5 mm long, ciliate. Anthers 6, 8 mm long. Stigmas 3. Caryopsis with adherent pericarp.

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

**Country /Province /State. Papuaasia.** New Guinea.

**Nastus hooglandii** Holttum. *Kew Bull.* xxi. 287 (1967).

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

**TYPE** from New Guinea. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: New Guinea: Huon Peninsula, summit area of Mt. Rawlinson, 3200 m, Hoogland 9322 (HT: K; IT: CANB).

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

**Derivation** (Clifford & Bostock 2007): in honor of Ruurd Dirk Hoogland (1922-) Dutch botanist.

**Classification.** Subfamily Bambusoideae. Tribe: Bambuseae.

**Habit, Vegetative Morphology.** Perennial, woody bamboo. Rhizomes short, pachymorph. Butt sheaths absent. Culms scandent, woody. Culm-internodes terete. Lateral branches dendroid. Culm-sheaths present, hispid, hairy at the base, with reflexed hairs. Leaves 10–12 per branch. Ligule an eciliate membrane. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades lanceolate, 15–25 cm long, 14–22 mm wide. Leaf-blade apex acuminate.

**Inflorescence.** Inflorescence a panicle, bracteate at branch bases or bracteate at pedicel base, subtended by a spatheole, embraced at base by subtending leaf. Panicle contracted, oblong, 3–4 cm long. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 2 basal sterile florets, 1 fertile florets, with diminished florets at the apex. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets ovate, laterally compressed, 12 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes shorter than spikelet. Lower glume ovate, 3 mm long, chartaceous. Lower glume apex acute. Upper glume ovate, 4 mm long, chartaceous, without keels. Upper glume apex acute.

**Florets.** Basal sterile florets 2 or more, barren, without significant palea, attached to and deciduous with the fertile. Lemma of lower sterile floret similar to fertile lemma, ovate, 6 mm long, coriaceous, pubescent, bearing dark brown hairs or red hairs. Lemma of upper sterile floret ovate, 8 mm long, pilose (rufously). Fertile lemma ovate, 10 mm long, coriaceous, without keel, more than 3-veined. Lemma surface pubescent. Lemma hairs dark brown or red. Lemma apex acute. Palea coriaceous, 2-keeled. Rhachilla extension 8 mm long. Apical sterile florets 1 in number, barren, lanceolate, 2 mm long.

**Flower and Fruit.** Lodicules 3, ciliate. Anthers 6, 5.5 mm long. Stigmas 3. Ovary umbonate, pubescent on apex. Caryopsis with adherent pericarp.

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

**Country /Province /State. Malesia, Papuaasia.** New Guinea.

**Nastus humbertianus** A.Camus. *Bull. Soc. Bot. France*, 1 iv. 286. (1937).

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

**TYPE** from Madagascar. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Madagascar S.-E.: massif d'Andohahelo, crêtes et rochers siliceux aux abords du sommet, vers l'O., alt. 1900 m, H. Humbert, 4e voyage, s.n. (HT: P).

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

**Derivation** (Clifford & Bostock 2007): *L.* -ana, indicating connection. In honor of Jean Henri Humbert (1887–1967) French botanist who collected in Madagascar.

**Classification.** Subfamily Bambusoideae. Tribe: Bambuseae.

**Habit, Vegetative Morphology.** Perennial, woody bamboo. Rhizomes short, pachymorph. Butt sheaths absent. Culms leaning, 1500 cm long, woody. Culm-internodes terete. Lateral branches dendroid. Branch complement many. Culm-sheaths present. Leaf-sheaths glabrous on surface. Leaf-sheath oral hairs lacking. Ligule absent. Leaf-blades linear or lanceolate, flat or conduplicate, 8–14 cm long, 1.5–4 mm wide, stiff, glaucous. Leaf-blade venation with 18 secondary veins. Leaf-blade surface glabrous. Leaf-blade margins scaberulous. Leaf-blade apex acuminate.

**Inflorescence.** Inflorescence a panicle. Panicle open, linear. Primary panicle branches indistinct the panicle almost racemose. Panicle axis pubescent. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 basal sterile florets, 1 fertile florets, with diminished florets at the apex. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 8 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes several, 4–5 empty glumes, shorter than spikelet. Lower glume ovate, 3–3.5 mm long, chartaceous. Lower glume margins ciliate. Lower glume apex acuminate. Upper glume ovate, 5 mm long, chartaceous, without keels, 7 -veined. Upper glume surface pilose, hairy above. Upper glume apex truncate, mucronate.

**Florets.** Basal sterile florets 1, barren, without significant palea, attached to and deciduous with the fertile. Lemma of lower sterile floret similar to fertile lemma, elliptic, 6–6.5 mm long, coriaceous, 9 -veined, pilose, dentate, 3 -fid, truncate. Fertile lemma oblong, 6.5 mm long, coriaceous, without keel, 9 -veined, more than 3-veined. Lemma surface pilose. Lemma apex truncate. Palea 6.5 mm long, coriaceous, without keels. Palea surface pubescent, hairy above. Palea apex obtuse. Rhachilla extension 9 mm long, pubescent. Apical sterile florets 1 in number, barren, elliptic.

**Flower and Fruit.** Lodicules 3. Anthers 6. Stigmas 3. Ovary umbonate. Caryopsis with adherent pericarp, obovoid.

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

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

**Nastus lokohoensis** A.Camus. *Bull. Mus. Hist. Nat., Paris*, Ser. 2, xxix. 274 (1957).

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

**TYPE** from Madagascar. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: Humbert & Cours 22951, Madagascar: N. d'Ambalavoniho et de Belooka

ST: Humbert 22630, 15–25 Dec 1948, Madagascar: Marojejy NE, a l'Ouest de la riveere Manantenina, affluent de la Lokoho

ST: Humbert & Capuron 24339, Madagascar: Antongondriha, massif du Belsomanga.

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

**Classification.** Subfamily Bambusoideae. Tribe: Bambuseae.

**Habit, Vegetative Morphology.** Perennial, woody bamboo. Rhizomes short, pachymorph. Butt sheaths absent. Culms woody. Culm-internodes terete, distally glabrous. Lateral branches dendroid. Culm-sheaths present. Leaf-sheaths glabrous on surface or pubescent. Leaf-sheath oral hairs setose, 8–12 mm long. Ligule an eciliate membrane, 0.5 mm long. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades lanceolate, 4–5 cm long, 3–4.5 mm wide. Leaf-blade venation without cross veins. Leaf-blade surface pilose, sparsely hairy, hairy abaxially. Leaf-blade apex acuminate.

**Inflorescence.** Inflorescence a panicle. Spikelets solitary. Fertile spikelets sessile.

**Fertile Spikelets.** Spikelets comprising 1 basal sterile florets, 1 fertile florets, with diminished florets at the apex. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets oblong or ovate, laterally compressed, 6.5–7 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes two, 4 empty glumes, shorter than spikelet. Lower glume lanceolate, 3 mm long, chartaceous. Lower glume surface glabrous or puberulous. Lower glume apex acute. Upper glume lanceolate, 3.5–4 mm long, chartaceous, without keels. Upper glume surface glabrous or puberulous. Upper glume apex acute.

**Florets.** Basal sterile florets 1, barren, with palea, attached to and deciduous with the fertile. Lemma of lower sterile floret similar to fertile lemma, ovate, 4–5 mm long, coriaceous, 7–9 -veined, mucronate. Fertile lemma ovate, 5.5–6 mm long, coriaceous, keeled, more than 3-veined. Lemma surface glabrous. Lemma apex acute. Palea 5.5–6 mm long, coriaceous, 2-keeled. Palea apex obtuse. Apical sterile florets 1 in number, barren, elliptic.

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

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

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

**Nastus longispicula** Holttum. *Kew Bull.* xxi. 287 (1967).

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

**TYPE** from New Guinea. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: HT: P.J. Darbyshire 1210, 9 Aug 1963, Papua New Guinea: New Guinea (L; IT: US-2594473).

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

**Derivation** (Clifford & Bostock 2007): L. longus, long; spica, thorn; -ula, tendency. Spikelets long.

**Classification.** Subfamily Bambusoideae. Tribe: Bambuseae.

**Habit, Vegetative Morphology.** Perennial, woody bamboo. Rhizomes short, pachymorph. Butt sheaths absent. Culms scandent, woody. Culm-internodes terete, smooth. Lateral branches dendroid. Branch complement three, with 2 branches dominant. Culm-sheaths present. Leaf-sheath oral hairs ciliate. Ligule an eciliate membrane. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades lanceolate, 11–27 cm long, 20–35 mm wide. Leaf-blade apex acuminate.

**Inflorescence.** Inflorescence a panicle, bracteate at branch bases. Panicle open, 15–20 cm long. Primary panicle branches ascending, 4–8 cm long. Panicle branches pubescent. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, 1–2 mm long.

**Fertile Spikelets.** Spikelets comprising 2 basal sterile florets, 1 fertile florets, without rachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, laterally compressed, 25 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes several, 4 empty glumes, shorter than spikelet. Lower glume ovate, 4 mm long, chartaceous. Lower glume apex acute. Upper glume ovate, 7.5 mm long, chartaceous, without keels. Upper glume apex acute.

**Florets.** Basal sterile florets 2 or more, barren, without significant palea, attached to and deciduous with the fertile. Lemma of lower sterile floret similar to fertile lemma, ovate, 9 mm long, coriaceous. Lemma of upper sterile floret ovate, 15 mm long. Fertile lemma ovate, 19 mm long, coriaceous, without keel, more than 3-veined. Lemma apex acute, awned, 1 -awned. Principal lemma awn 2 mm long overall. Palea 21 mm long, coriaceous, without keels. Palea surface pilose, hairy on margins, hairy above. Palea apex dentate, 2 -fid.

**Flower and Fruit.** Lodicules 3, 3–3.5 mm long, ciliate. Anthers 6. Stigmas 3. Ovary umbonate, pubescent on apex. Caryopsis with adherent pericarp.

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

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

**Nastus madagascariensis** A.Camus. *Bull. Soc. Bot. France*, lxxii. 24. (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>: *vide* TROPICOS and Kew Synonymy Database: Madagascar centr.: Massif de Manogarivo., Perrier de la Bathie 10908 (HT: P).

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

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

**Classification.** Subfamily Bambusoideae. Tribe: Bambuseae.

**Habit, Vegetative Morphology.** Perennial, woody bamboo. Rhizomes short, pachymorph. Butt sheaths absent. Culms scandent, 10 mm diam., woody. Culm-internodes terete. Lateral branches dendroid. Branch complement many. Culm-sheaths present. Leaf-sheaths striately veined, pilose. Leaf-sheath oral hairs ciliate. Ligule an eciliate membrane. Leaf-blades linear or lanceolate, 15–20 cm long, 6 mm wide, stiff. Leaf-blade midrib conspicuous. Leaf-blade venation with 20–22 secondary veins. Leaf-blade surface scaberulous, glabrous. Leaf-blade margins scabrous. Leaf-blade apex acuminate.

**Inflorescence.** Inflorescence a panicle. Panicle open, linear, 15–17 cm long. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 2–3 basal sterile florets, 1 fertile florets, with diminished florets at the apex. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets oblong or ovate, laterally compressed, 13–14 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes several, 3–4 empty glumes, shorter than spikelet. Lower glume ovate, 2 mm long, chartaceous, 5 -veined. Lower glume apex acuminate. Upper glume ovate, 4 mm long, chartaceous, without keels, 7 -veined.

**Florets.** Basal sterile florets 2 or more, similar, barren, without significant palea, attached to and deciduous with the fertile. Lemma of lower sterile floret similar to fertile lemma, elliptic, 7–11 mm long, coriaceous, 11 -veined, glabrous or pilose. Fertile lemma ovate, 10–11 mm long, coriaceous, without keel, 9–11 -veined, more than 3-veined. Lemma surface glabrous. Lemma apex obtuse. Palea 9 mm long, 0.9 length of lemma, coriaceous, 2-keeled. Palea keels ciliate. Palea apex acute. Apical sterile florets 1 in number, barren, elliptic, 0.5 mm long.

**Flower and Fruit.** Lodicules 3. Anthers 6. Stigmas 3. Ovary umbonate. Caryopsis with adherent pericarp, obovoid, 7 mm long.

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

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

**Nastus manongarivensis** A.Camus. *Bull. Soc. Bot. France*, lxxii. 25. (1925).

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

**TYPE** from Madagascar. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: massif de Manongarivo, surtout sur les grès, de 500–1600 mètres, Perrier de la Bâthie 10260 (HT: P).

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

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

**Classification.** Subfamily Bambusoideae. Tribe: Bambuseae.

**Habit, Vegetative Morphology.** Perennial, woody bamboo. Rhizomes short, pachymorph. Butt sheaths absent. Culms 200 mm diam., woody. Culm-internodes terete. Lateral branches dendroid. Branch complement many. Culm-sheaths present. Leaf-sheaths glabrous on surface, outer margin hairy. Leaf-sheath oral hairs setose. Ligule an eciliate membrane. Leaf-blades linear or lanceolate, 7–8.5 cm long, 4–5 mm wide. Leaf-blade midrib conspicuous. Leaf-blade venation with 30–34 secondary veins. Leaf-blade surface pilose, sparsely hairy, hairy abaxially. Leaf-blade apex attenuate.

**Inflorescence.** Inflorescence a panicle, comprising 6–8 fertile spikelets. Panicle open, linear, 10–20 cm long, bearing few spikelets. Primary panicle branches indistinct the panicle almost racemose. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 basal sterile florets, 1 fertile florets, with diminished florets at the apex. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, laterally compressed, 10 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes several, 3 empty glumes, shorter than spikelet. Lower glume ovate, 3 mm long, chartaceous, 7 -veined. Lower glume apex acuminate. Upper glume ovate, 4 mm long, chartaceous, without keels, 9 -veined. Upper glume apex acute.

**Florets.** Basal sterile florets 2 or more, barren, without significant palea, attached to and deciduous with the fertile. Lemma of lower sterile floret similar to fertile lemma, ovate, 6–8 mm long, coriaceous, 1-keeled, 9–11 -veined, glabrous or puberulous, acuminate, mucronate. Fertile lemma ovate, 9 mm long, coriaceous, keeled, 11 -veined, more than 3-veined. Lemma surface puberulous. Lemma apex acuminate, mucronate. Palea 5 mm long, coriaceous, 2-keeled. Palea keels ciliate. Palea apex obtuse. Rhachilla extension 6 mm long. Apical sterile florets 1 in number, barren, elliptic, 2 mm long.

**Flower and Fruit.** Lodicules 3. Anthers 6. Stigmas 3. Ovary umbonate. Caryopsis with adherent pericarp.

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

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

**Nastus obtusus** Holttum. *Kew Bull.* 1955, 594 (1956).

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

**TYPE** from new Guinea. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Western New Guinea: Rouffaer River, 200 m, Doctors van Leeuwen 10196 (HT: K; IT: L, SING).

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

**Classification.** Subfamily Bambusoideae. Tribe: Bambuseae.

**Habit, Vegetative Morphology.** Perennial, woody bamboo. Rhizomes short, pachymorph. Butt sheaths absent. Culms scandent, 2000 cm long, 50 mm diam., woody. Culm-internodes terete, 70–80 cm long. Lateral branches dendroid. Culm-sheaths present. Leaf-sheath oral hairs setose, 15 mm long. Ligule an eciliate membrane. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades lanceolate, 15–30 cm long, 15–30 mm wide. Leaf-blade apex acuminate.

**Inflorescence.** Inflorescence a panicle, bracteate at branch bases. Panicle open, 15–30 cm long. Primary panicle branches 5–10 cm long. Panicle branches pubescent. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 2 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, laterally compressed, 17–20 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes shorter than spikelet. Lower glume ovate, chartaceous. Lower glume surface pubescent. Lower glume apex acute. Upper glume ovate, chartaceous, without keels. Upper glume surface pubescent. Upper glume apex acute.

**Florets.** Basal sterile florets 2 or more, barren, without significant palea, attached to and deciduous with the fertile. Lemma of lower sterile floret similar to fertile lemma, ovate, coriaceous, pubescent. Lemma of upper sterile floret ovate, pilose. Fertile lemma ovate, 14–17 mm long, coriaceous, without keel, more than 3-veined. Lemma surface pubescent. Lemma apex acute. Palea coriaceous, without keels.

**Flower and Fruit.** Lodicules 3, 1.5 mm long, ciliate. Anthers 6, 6 mm long. Stigmas 3. Ovary umbonate, pubescent on apex. Caryopsis with adherent pericarp.

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

**Country /Province /State.** Malesia, Papuaia. New Guinea, Solomon Is.

**Nastus perrieri** A.Camus. *Bull. Soc. Bot. France*, lxxii. 26. (1925).

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

**TYPE** from Madagascar. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Madagascar centr.: silve à Lichens du Mont Tsaratanana, alt. 1700 mètres., Perrier de la Bâthie 15491 (HT: P).

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

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

**Classification.** Subfamily Bambusoideae. Tribe: Bambuseae.

**Habit, Vegetative Morphology.** Perennial, woody bamboo. Rhizomes short, pachymorph. Butt sheaths absent. Culms woody. Culm-internodes terete. Lateral branches dendroid. Branch complement many. Culm-sheaths present. Leaf-sheaths glabrous on surface, outer margin hairy. Leaf-sheath oral hairs setose. Ligule an eciliate membrane. Leaf-blades lanceolate, 4–10 cm long, 4–6 mm wide. Leaf-blade venation prominent, with 26–28 secondary veins. Leaf-blade surface glabrous or pilose, sparsely hairy, hairy abaxially. Leaf-blade margins scaberulous. Leaf-blade apex acuminate, hairy.

**Inflorescence.** Inflorescence composed of racemes. Racemes 1, single, 3–7 cm long, bearing few fertile spikelets, bearing 3–4 fertile spikelets on each. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 2 basal sterile florets, 2 fertile florets, with diminished florets at the apex. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets ovate, laterally compressed, 6.5 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes two, 2 empty glumes, shorter than spikelet. Lower glume ovate, 2 mm long, chartaceous. Lower glume apex acuminate. Upper glume ovate, 3 mm long, chartaceous, without keels, 5 -veined. Upper glume apex acuminate.

**Florets.** Basal sterile florets 2 or more, barren, without significant palea, attached to and deciduous with the fertile. Lemma of lower sterile floret similar to fertile lemma, oblong, 3–5 mm long, coriaceous, 5 -veined, puberulous, obtuse or acute. Fertile lemma ovate, 5.5 mm long, coriaceous, without keel, 7 -veined, more than 3-veined. Lemma surface puberulous. Lemma apex acute. Palea 5 mm long, coriaceous, without keels. Palea surface puberulous. Palea apex obtuse. Rhachilla extension 3–3.5 mm long, pubescent. Apical sterile florets 1 in number, barren, elliptic, 2–2.4 mm long.

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

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

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

**Nastus productus** (Pilger) Holttum. *Kew Bull.* 1955, 594 (1956).

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

**TYPE** from New Guinea. **Basionym or Replaced Name:** *Oreiostachys producta* Pilg., *Bot. Jahrb. Syst.* 62: 460 (1929). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Saruwaged Mts.: Keysser.

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

**Derivation** (Clifford & Bostock 2007): *L. produco*, extend. Rhachilla drawn out.

**Classification.** Subfamily Bambusoideae. Tribe: Bambuseae.

**Habit, Vegetative Morphology.** Perennial, woody bamboo, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms scandent, 150–600 cm long, 5–30 mm diam., woody. Culm-internodes terete, thin-walled. Lateral branches dendroid. Branch complement many, in a clump, apparently arising below the node, with 1 branch dominant. Culm-sheaths present, deciduous. Culm-sheath blade triangular, erect, 0.7–0.8 cm long. Ligule an eciliate membrane. Leaf-blades linear, 8–20 cm long, 2–7 mm wide. Leaf-blade venation without cross veins.

**Inflorescence.** Inflorescence a panicle. Panicle open, ovate, secund, 3–8 cm long. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 3–4 basal sterile florets, 1 fertile florets, with diminished florets at the apex. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets elliptic, laterally compressed, 8–10 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes several, 2–6 empty glumes, shorter than spikelet. Upper glume ovate, 0.2–0.3 length of adjacent fertile lemma, coriaceous, without keels, 3 -veined. Upper glume apex obtuse.

**Florets.** Basal sterile florets 2 or more, similar, barren, without significant palea, attached to and deciduous with the fertile. Lemma of lower sterile floret similar to fertile lemma, elliptic, 3–4 mm long, 0.4–0.5 length of fertile lemma, coriaceous, 7 -veined, obtuse. Lemma of upper sterile floret 7–8 mm long. Fertile lemma elliptic, 7–8 mm long, coriaceous, without keel, 7 -veined, more than 3-veined. Lemma lateral veins with cross-veins. Lemma apex acute. Palea 1 length of lemma, coriaceous, 6 -veined, without keels. Apical sterile florets 1 in number, barren, elliptic, 1–2 mm long.

**Flower and Fruit.** Lodicules 3. Anthers 6. Stigmas 3. Ovary umbonate. Caryopsis with adherent pericarp.

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

**Country /Province /State.** Malesia, Papuaasia. New Guinea, Solomon Is.

**Nastus reholtumianus** S. Soenarko. *Gard. Bull. Singapore*, 30: 17 (1977).

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

**TYPE** from Indonesia. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Sumba: Mangiliwari near Maomaru, 9 May 1925, Iboet 443 (HT: BO).

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

**Derivation** (Clifford & Bostock 2007): *L. -anus*, indicating connection. In honor of Richard Eric Holttum (1895–1990) English botanist.

**Classification.** Subfamily Bambusoideae. Tribe: Bambuseae.

**Habit, Vegetative Morphology.** Perennial, woody bamboo. Rhizomes short, pachymorph. Butt sheaths absent. Culms woody. Culm-internodes terete. Lateral branches dendroid. Branch complement several. Culm-sheaths present. Leaf-sheaths glabrous on surface. Leaf-sheath oral hairs ciliate, 1–2 mm long. Ligule an eciliate membrane, 0.5 mm long. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades lanceolate, 4.5–8 cm long, 7–14 mm wide. Leaf-blade surface glabrous. Leaf-blade apex acuminate.

**Inflorescence.** Inflorescence a panicle. Panicle open, ovate, 8–12 cm long. Primary panicle branches spreading. Panicle axis puberulous. Panicle branches puberulous. Spikelets solitary.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 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, 7 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes several, 5 empty glumes, shorter than spikelet. Lower glume ovate, 1.5 mm long, chartaceous, 1-keeled. Lower glume apex acute, mucronate. Upper glume ovate, 5.5 mm long, chartaceous, without keels, 7 -veined. Upper glume apex acuminate.



**Florets.** Basal sterile florets absent. Fertile lemma ovate, 6 mm long, coriaceous, without keel, more than 3-veined. Lemma apex acuminate. Palea 6 mm long, 1 length of lemma, coriaceous, 2-keeled.

**Flower and Fruit.** Lodicules 3, 1 mm long, ciliate. Anthers 6, 2.5 mm long. Stigmas 3. Ovary umbonate. Caryopsis with adherent pericarp.

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

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

**Nastus rudimentifer** Holttum. *Kew Bull.* xxi. 288 (1967).

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

**TYPE** from New Guinea. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: L.J. Brass 13020, Feb 1939, Papua New Guinea: New Guinea (L; IT: BM, US-1761814).

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

**Derivation** (Clifford & Bostock 2007): *L. rudimentum*, beginning; *fero*, carry or bear. The rudiments of a second floret are sometimes developed by the spikelet.

**Classification.** Subfamily Bambusoideae. Tribe: Bambuseae.

**Habit, Vegetative Morphology.** Perennial, woody bamboo. Rhizomes short, pachymorph. Butt sheaths absent. Culms scandent, 2000 cm long, 50 mm diam., woody. Culm-internodes terete, 70–80 cm long. Lateral branches dendroid. Culm-sheaths present. Leaf-sheath oral hairs setose, 15 mm long. Ligule an eciliate membrane. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades lanceolate, 15–30 cm long, 15–30 mm wide. Leaf-blade apex acuminate.

**Inflorescence.** Inflorescence a panicle, bracteate at branch bases. Panicle open, 15–30 cm long. Primary panicle branches 5–10 cm long. Panicle branches pubescent. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 2 basal sterile florets, 1 fertile florets, with diminished florets at the apex. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, laterally compressed, 12 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes shorter than spikelet. Lower glume ovate, chartaceous. Lower glume surface pubescent. Lower glume apex acute. Upper glume ovate, chartaceous, without keels. Upper glume surface pubescent. Upper glume apex acute.

**Florets.** Basal sterile florets 2 or more, barren, without significant palea, attached to and deciduous with the fertile. Lemma of lower sterile floret similar to fertile lemma, ovate, coriaceous, pubescent. Lemma of upper sterile floret ovate, pilose. Fertile lemma ovate, 10 mm long, coriaceous, without keel, more than 3-veined. Lemma surface pubescent. Lemma apex acute. Palea coriaceous, 2-keeled. Rhachilla extension 1–2 mm long. Apical sterile florets 1 in number, male or barren, rudimentary or lanceolate, 0.5–1 mm long.

**Flower and Fruit.** Lodicules 3, 1.5 mm long, ciliate. Anthers 6, 6 mm long. Stigmas 3. Ovary umbonate, pubescent on apex. Caryopsis with adherent pericarp.

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

**Country /Province /State.** Malesia, Papuaasia. New Guinea.

**Nastus schlechteri** (Pilger) Holttum. *Kew Bull.* 1955, 594 (1956).

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

**TYPE** from New Guinea. **Basionym or Replaced Name:** *Oreiostrachys schlechteri* Pilg., *Bot. Jahrb. Syst.* 52: 174 (1914). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: New Guinea: Kaiser-Wilhelmsland, in der Waldern des Dischore, bei 1300 m, Jun 1909, R. Schlechter 19720 (HT: B).

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

**Derivation** (Clifford & Bostock 2007): in honor of Friedrich Richard Rudolf Schlechter (1872–1925) German-born botanist and traveller.

**Classification.** Subfamily Bambusoideae. Tribe: Bambuseae.

**Habit, Vegetative Morphology.** Perennial, woody bamboo. Rhizomes short, pachymorph. Butt sheaths absent. Culms scandent, woody. Culm-internodes terete. Lateral branches dendroid. Culm-sheaths present. Leaf-sheath oral hairs setose. Ligule an eciliate membrane. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades lanceolate, 10–20 cm long, 15–30 mm wide. Leaf-blade apex acuminate.

**Inflorescence.** Inflorescence a panicle, bracteate at branch bases. Panicle contracted, linear, 10–16 cm long. Primary panicle branches indistinct the panicle almost racemose. Panicle axis pubescent. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 2 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, laterally compressed, 10–11 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes shorter than spikelet. Lower glume ovate, chartaceous. Lower glume apex setaceously acuminate. Upper glume ovate, chartaceous, without keels. Upper glume apex setaceously acuminate.

**Florets.** Basal sterile florets 2 or more, barren, without significant palea, attached to and deciduous with the fertile. Lemma of lower sterile floret similar to fertile lemma, ovate, coriaceous. Lemma of upper sterile floret ovate. Fertile lemma ovate, 9–9.5 mm long, coriaceous, without keel, more than 3-veined. Lemma surface pubescent. Lemma apex acute. Palea 8 mm long, coriaceous, without keels. Palea surface pubescent, hairy above. Palea apex dentate, 2 -fid.

**Flower and Fruit.** Lodicules 3, 1.5 mm long, ciliate. Anthers 6. Stigmas 3. Ovary umbonate, pubescent on apex. Caryopsis with adherent pericarp.

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

**Country /Province /State.** Malesia, Papuaia. New Guinea.

**Nastus schmutzii** S. Dransfield. *Reinwardtia*, 9(4): 388 (1980).

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

**TYPE** from Indonesia. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: West Flores: Manggarai, nunang, Todong Rancang, 18 Nov 1971, 850 m, Schmutz 2789 (HT: BO).

**Illustrations (Journals):** *Reinwardtia* (9: 389, fig.2 (1980)).

**Derivation** (Clifford & Bostock 2007): In honor of E. Schmutz (fl 1971) who collected in West Flores, Indonesia.

**Classification.** Subfamily Bambusoideae. Tribe: Bambuseae.

**Habit, Vegetative Morphology.** Perennial, woody bamboo. Rhizomes short, pachymorph. Butt sheaths absent. Culms scandent, 60 mm diam., woody. Culm-internodes terete, thick-walled. Lateral branches dendroid. Culm-sheaths present. Ligule a ciliate membrane. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades lanceolate, 2.5–4.5 cm long, 4–8 mm wide. Leaf-blade surface glabrous. Leaf-blade apex attenuate.

**Inflorescence.** Inflorescence a panicle. Panicle open, 3.5–7 cm long. Primary panicle branches spreading. Panicle axis puberulous. Panicle branches puberulous. Spikelets solitary.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets oblong or ovate, laterally compressed, 5.5–6.5 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes several, 4 empty glumes, shorter than spikelet. Lower glume ovate, 1.5 mm long, chartaceous. Lower glume apex acute, mucronate. Upper glume ovate, 3–3.5 mm long, chartaceous, without keels, 7 -veined. Upper glume apex acuminate.

**Florets.** Basal sterile florets absent. Fertile lemma ovate, 5.5–6.5 mm long, coriaceous, without keel, 7 -veined, more than 3-veined. Lemma surface glabrous. Lemma apex acuminate. Palea 1 length of lemma, coriaceous, 2-keeled.

**Flower and Fruit.** Lodicules 3, 1 mm long, ciliate. Anthers 6, 2.5 mm long. Stigmas 3. Caryopsis with adherent pericarp.

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

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

**Nastus tsaratananensis** A.Camus. *Bull. Soc. Bot. France*, lxxii. 26. (1925).

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

**TYPE** from Madagascar. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Madagascar centr.: Mont Tsaratanana, silve à Lichens, vers 2000 mètres, Perrier de la Bâthie 16170 (HT: P).

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

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

**Classification.** Subfamily Bambusoideae. Tribe: Bambuseae.

**Habit, Vegetative Morphology.** Perennial, woody bamboo. Rhizomes short, pachymorph. Butt sheaths absent. Culms woody. Culm-internodes terete. Lateral branches dendroid. Branch complement many. Culm-sheaths present. Leaf-sheaths puberulous. Leaf-sheath oral hairs setose. Ligule an eciliate membrane. Leaf-

blades lanceolate, 3.5–4 cm long, 3.5–4 mm wide. Leaf-blade venation with 24–28 secondary veins. Leaf-blade surface ribbed, glabrous. Leaf-blade margins scaberulous. Leaf-blade apex acuminate, hairy.

**Inflorescence.** Inflorescence comprising only a few spikelets, comprising 2–4 fertile spikelets. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 basal sterile florets, 1 fertile florets, with diminished florets at the apex. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets oblong, laterally compressed, 6 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes two, 2 empty glumes, shorter than spikelet. Lower glume ovate, 1.2–1.6 mm long, chartaceous, 5 -veined. Lower glume apex acute. Upper glume ovate, 3–3.5 mm long, chartaceous, without keels, 5 -veined. Upper glume apex acute or acuminate.

**Florets.** Basal sterile florets 1, barren, without significant palea, attached to and deciduous with the fertile. Lemma of lower sterile floret similar to fertile lemma, oblong, 5 mm long, coriaceous, 5 -veined, puberulous, hairy at apex, acute or acuminate. Fertile lemma ovate, 5.5 mm long, coriaceous, without keel, 7 -veined, more than 3-veined. Lemma apex acute or acuminate, pubescent. Palea 3.5 mm long, coriaceous, without keels. Palea apex obtuse, pubescent. Rhachilla extension 2.5 mm long, glabrous. Apical sterile florets 1 in number, barren, elliptic, 1.5 mm long.

**Flower and Fruit.** Lodicules 3. Anthers 6. Stigmas 3. Ovary umbonate. Caryopsis with adherent pericarp.

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

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

**Neesiochloa barbata** (Nees) Pilger. *Fedde, Repert.* xlvi. 119 (1940).

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

**TYPE** from Brazil. **Basionym or Replaced Name:** *Calotheca barbata* Nees, *Fl. Bras. Enum. Pl.* 2(1): 477 (1829). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *Martius s.n.*, no date, Brazil: Piahy: in graminosis irriguis (M; IT: B, BAA-467 (fragm. ex B), K, LE-TRIN-2543.01a (mis, Nees ab Es. 1830), MO-2112275, US-A865750 (fragm. ex M)).

**Illustrations (Books):** S.A.Renouze, *The Grasses of Bahia*, 1984 (79, Fig. 28), R.Pilger, *Die Natürlichen Pflanzenfamilien* 14d (1956) (46, Fig. 9).

**Classification.** Subfamily Chloridoideae. Tribe: Cynodonteae.

**Habit, Vegetative Morphology.** Annual, caespitose. Culms 15–30 cm long. Ligule a ciliate membrane. Leaf-blades 3–7 cm long, 2–3 mm wide. Leaf-blade surface ribbed, pilose, hairy on both sides, with tubercle-based hairs. Leaf-blade margins cartilaginous, spinulose.

**Inflorescence.** Inflorescence a panicle. Panicle open, oblong, effuse, 4–10 cm long. Panicle branches glandular, scaberulous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, filiform, 10–25 mm long.

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

**Glumes.** Glumes persistent, similar, shorter than spikelet, thinner than fertile lemma. Lower glume ovate, 4.5–5 mm long, 1 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume lateral veins absent. Lower glume apex attenuate, awned, 1 -awned, awn 0.5–1 mm long. Upper glume ovate, 4.5–5 mm long, 1.25 length of adjacent fertile lemma, membranous, 1-keeled, 1 -veined. Upper glume lateral veins absent. Upper glume apex attenuate, awned, 1 -awned, awn 0.5–1 mm long.

**Florets.** Fertile lemma oblate, 3.5 mm long, chartaceous, without keel, winged on margins, 3 -veined, 0–3 -veined. Lemma midvein pubescent, hairy below. Lemma surface pubescent, hairy in the middle, hairy on veins. Lemma apex lobed, 2 -fid, incised 0.2 of lemma length, truncate, awned, 1 -awned. Principal lemma awn from a sinus, 5–6 mm long overall. Palea bowed outwards, 0.8 length of lemma, 2 -veined. Palea keels ciliate or with a crest of hairs, adorned in the middle (ciliate above). Apical sterile florets resembling fertile though underdeveloped.

**Flower and Fruit.** Caryopsis with adherent pericarp, ovoid. Embryo projecting below grain.

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

**Country /Province /State.** Brazil. Brazil Northeast.

**TDWG4.** Bahia, Maranhao, Piaui, Ceara, Rio Grande do Norte, Paraiba, Pernambuco, Alagoas, Sergipe.

**Nematopoa longipes** (Stapf & C. E. Hubbard) C.E.Hubb. *Kew Bull.* 52 (1957).

**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:** *Triraphis longipes* Stapf & C.E. Hubb., *Kew Bull.* 1927, 73. (1927)

. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: Zimbabwe, Salisbury: Eyles 2167 (K holo, BM, SRGH).

**Illustrations (Books):** G.V.Pope et al., *Flora Zambesiaca* 10 (2(1999):14, t. 7).

**Derivation** (Clifford & Bostock 2007): *L. longus*, long; *pes*, foot. Spikelets borne on long pedicels.

**Classification.** Subfamily Arundinoideae. Tribe: Arundineae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Culms erect, 30–80 cm long, 3–4 -noded. Culm-nodes glabrous. Leaves mostly basal. Ligule a ciliolate membrane. Leaf-blades filiform, involute or convolute, 10–25 cm long, 0.5–0.75 mm wide.

**Inflorescence.** Inflorescence a panicle. Panicle open, ovate, effuse, 10–16 cm long, 4–8 cm wide. Panicle branches capillary, straight or flexuous, scaberulous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, filiform, 4–10 mm long.

**Fertile Spikelets.** Spikelets comprising 4–7 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets oblong or ovate, laterally compressed, 6–10 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes 1 mm long, eventually visible between lemmas, pubescent. Floret callus evident, pilose.

**Glumes.** Glumes persistent, similar, shorter than spikelet, thinner than fertile lemma. Lower glume lanceolate, 1–1.3 mm long, 0.5 length of upper glume, hyaline, without keels, 0 -veined. Lower glume lateral veins absent. Lower glume apex acute. Upper glume lanceolate, 1.9–2.8 mm long, 0.5–0.6 length of adjacent fertile lemma, hyaline, without keels, 0–1 -veined. Upper glume primary vein absent or distinct. Upper glume lateral veins absent. Upper glume apex acute.

**Florets.** Fertile lemma oblong, 3.5–4.3 mm long, membranous, without keel, 1 -veined, 0–3 -veined. Lemma surface pilose. Lemma apex lobed, 2 -fid, incised 0.25 of lemma length, awned, 1 -awned. Principal lemma awn curved, 8–13 mm long overall. Palea lanceolate, 0.8 length of lemma, 2 -veined. Palea keels scaberulous. Apical sterile florets resembling fertile though underdeveloped.

**Flower and Fruit.** Anthers 3, 1.8–2 mm long. Caryopsis with adherent pericarp.

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

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

**Neobouteloua lophostachya** (Griseb.) Gould. *Bol. Soc. Argent. Bot.* xii. 108 (1968).

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

**TYPE** from Argentina. **Basionym or Replaced Name:** *Bouteloua lophostachya* Griseb., *Abh. Konigl. Ges. Wiss. Göttingen* 24: 302 (1879). T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: ST: *G. Hieronymus* 971, Dec 1873, Argentina: Tucumán: de la frontera entre Salta y Tucumán (GOET; IT: CORD, US-A865560 (fragm. ex GOET)). ST: *Lorenz & Hieronymus* 1216, principia de Feb 1873, Argentina: Tucumán: de la frontera entre Salta y cerca de La Línea (CORD).

**Illustrations (Books):** E.G.Nicora, *Los Generos de Gramineas de America Austral* (1987) (402, Fig. 142).

**Derivation** (Clifford & Bostock 2007): Gk. *lophos*, crest; *stachys*, ear of corn. The sterile upper florets are conspicuously three-awned.

**Classification.** Subfamily Chloridoideae. Tribe: Arundineae. Tribe: Cynodonteae.

**Habit, Vegetative Morphology.** Perennial. Culms erect, 10–30 cm long. Ligule a fringe of hairs. Leaf-blades 2–4 cm long, 1–3 mm wide, coriaceous, stiff.

**Inflorescence.** Inflorescence composed of racemes. Racemes 15–30, borne along a central axis, unilateral, 1–3 cm long, bearing 15–20 fertile spikelets on each. Central inflorescence axis 5–10 cm long. Spikelets appressed, solitary. Fertile spikelets sessile.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, with diminished florets at the apex. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets cuneate, laterally compressed, 3–3.5 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes persistent, similar, shorter than spikelet, thinner than fertile lemma. Lower glume elliptic, 2 mm long, 0.75 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume lateral veins absent. Lower glume apex acute. Upper glume elliptic, 2.5 mm long, 0.75 length of adjacent fertile lemma, membranous, 1-keeled, 1 -veined. Upper glume lateral veins absent. Upper glume apex setaceously acuminate.

**Florets.** Fertile lemma oblong, 3–3.5 mm long, membranous, without keel, 3 -veined, 0–3 -veined. Lemma surface pubescent. Lemma apex dentate, 3 -fid, awned, 3 -awned. Principal lemma awn 2.5 mm long overall. Lateral lemma awns present, arising on apex of lobes, 1–1.5 mm long, shorter than principal. Rhachilla extension glabrous. Apical sterile florets 4–5 in number, barren, in a clump, ovate, 0.5–1 mm long. Apical sterile lemmas lobed (acutely), 3 -fid, awned, 3 -awned. Apical sterile lemma awns 2–3 mm long.

**Flower and Fruit.** Caryopsis with adherent pericarp, ovoid, dorsally compressed, 1.25 mm long. Embryo 0.25 length of caryopsis.

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

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

**TDWG4.** Catamarca, La Rioja, Mendoza, Salta, Santiago del Estero, San Luis, Tucuman. Cordoba.

**Neobouteloua pauciracemosa** M.G. Lopez & F. Biurrun. *Hickenia*, 2(67): 317 (1999).

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

**TYPE** from Argentina. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Argentina: (La Rioja or San Luis Prov.) Dep. Rosario V. Peñaloza, El Divisadero, a 8 km de la Pampa de Las Salinas, 20 Apr 1997, *Biurrun, Molina & Márquez 4851* (HT: CTES; IT: CORD, SI).

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

**Derivation** (Clifford & Bostock 2007): *L. paucus*, few; *racemus*, stalk of a bunch of grapes; *-osa*, abundance. Inflorescence with few panicle branches.

**Classification.** Subfamily Chloridoideae. Tribe: Arundineae. Tribe: Cynodonteae.

**Habit, Vegetative Morphology.** Perennial, mat forming. Basal innovations intravaginal. Culms erect, 15–21 cm long. Culm-internodes distally pilose. Culm-nodes glabrous. Leaves distichous. Leaf-sheaths longer than adjacent culm internode. Ligule a ciliate membrane, 0.25–0.5 mm long. Leaf-blades 0.7–1.5 cm long, 1–1.5 mm wide, indurate, stiff. Leaf-blade surface pubescent, hairy adaxially. Leaf-blade apex acuminate.

**Inflorescence.** Inflorescence composed of racemes. Racemes (2–)3–4(–9), borne along a central axis, unilateral. Rhachis semiterete. Spikelets appressed, solitary. Fertile spikelets pedicelled. Pedicels present, 0.25–0.75 mm long.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, with diminished florets at the apex. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets cuneate, laterally compressed, 5–6 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus pubescent. Floret callus hairs 0.25 mm long.

**Glumes.** Glumes persistent, similar, shorter than spikelet, thinner than fertile lemma. Lower glume ovate, 3 mm long, 1 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume lateral veins absent. Lower glume apex acute, mucronate. Upper glume ovate, 3 mm long, 1.5 length of adjacent fertile lemma, membranous, 1-keeled, 1 -veined. Upper glume lateral veins absent. Upper glume apex acuminate.

**Florets.** Fertile lemma oblong, 1.75–2.5 mm long, membranous, without keel, 3 -veined, 0–3 -veined. Lemma surface pilose. Lemma margins ciliate. Lemma apex dentate, 3 -fid, awned, 3 -awned. Principal lemma awn 2–3 mm long overall. Lateral lemma awns present, arising on apex of lobes, 1.25–2 mm long, shorter than principal. Palea 2.5–3.5 mm long. Rhachilla extension 0.75 mm long. Apical sterile florets 4 in number, barren, in a clump, ovate, 1 mm long. Apical sterile lemmas lobed, 3 -fid, awned, 3 -awned.

**Flower and Fruit.** Lodicules 2, 0.23 mm long, truncate. Anthers 3, 0.3–0.4 mm long. Caryopsis with adherent pericarp, ellipsoid, trigonous, 1.7–2 mm long. Embryo 0.5–0.75 length of caryopsis. Hilum elliptic.

$2n = 20$  (1 ref TROPICOS).

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

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

**TDWG4.** La Rioja, San Luis.

**Neohouzeaua coradata** T.H. Wen & Dai. *J. Bamboo Res.*, 10(1): 12 (1991).

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

**TYPE** from China. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: China, Pingxian: *Wen 73115* (ZJFI holo).

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

**Classification.** Subfamily Bambusoideae. Tribe: Bambuseae.

**Habit, Vegetative Morphology.** Perennial, woody bamboo, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms scandent, 900–1300 cm long, 20 mm diam., woody. Culm-internodes terete, 40–60 cm long, distally pubescent. Lateral branches dendroid. Branch complement one. Culm-sheaths present, deciduous, pubescent, with appressed hairs, with yellow hairs, auriculate, ciliate on shoulders. Culm-sheath ligule 1 mm

high, ciliolate. Culm-sheath blade narrowly ovate or ovate, glabrous on surface. Leaves 9–13 per branch. Leaf-sheaths 4.5 cm long, glabrous on surface. Leaf-sheath oral hairs bearded, 13 mm long. Leaf-sheath auricles falcate. Ligule an eciliate membrane, 1 mm long. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades lanceolate or oblong, 14–23 cm long, 25–35 mm wide, fleshy. Leaf-blade venation with 16–18 secondary veins, with obscure cross veins. Leaf-blade surface pubescent, hairy abaxially. Leaf-blade apex acuminate. Flowering specimens unknown.

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

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

Jiangxi.

**Neohouzeaua fimbriata** Dransfield. *Thai For. Bull. (Bot.)* 31:29 (2003).

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

**TYPE** from Burma. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Burma: Parker 2733 (K holotype).

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

**Classification.** Subfamily Bambusoideae. Tribe: Bambuseae.

**Habit, Vegetative Morphology.** Perennial, woody bamboo, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms scandent, 1300 cm long, 20–30 mm diam., woody. Culm-internodes terete, thin-walled, 40 cm long, light green. Lateral branches dendroid. Branch complement many, with subequal branches. Culm-sheaths present, 13–16 cm long, 2 length of internode, hispid, with appressed hairs, with dark brown hairs, auriculate, with 9 mm high auricles, with 21 mm wide auricles, setose on shoulders, shoulders with 25 mm long hairs. Culm-sheath ligule 4 mm high, lacerate. Culm-sheath blade lanceolate or narrowly ovate, reflexed, 13–21 cm long, 12 mm wide, pubescent, acuminate. Leaf-sheaths pubescent, outer margin hairy. Leaf-sheath oral hairs setose, curly, 20 mm long. Leaf-sheath auricles falcate, 14 mm long. Ligule an eciliate membrane, 1 mm long. Collar with external ligule. Leaf-blade base with a brief petiole-like connection to sheath, petiole 1 cm long, petiole glabrous or pubescent. Leaf-blades ovate, 25–52 cm long, 6–12 mm wide. Leaf-blade surface glabrous, hairless except near base. Leaf-blade margins glabrous or ciliate. Leaf-blade apex filiform.

**Inflorescence.** Synflorescence bractiferous, clustered at the nodes, in untidy tufts, glabrous on internodes, with spatheous subtending bracts, bracts 25–35 mm long, with axillary buds at base of spikelet, prophyllate below lateral spikelets, leafless between clusters, 15–30 cm long overall.

Fertile spikelets sessile.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets linear, subterete, 20–25 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes several.

**Florets.** Fertile lemma elliptic, 15–18 mm long, 8 mm wide, chartaceous, without keel, 21 -veined, more than 3-veined. Lemma midvein ciliolate. Lemma surface pubescent, hairy above. Lemma margins pubescent. Lemma hairs tawny. Lemma apex setaceously acuminate. Palea 25 mm long, chartaceous, 22 -veined, without keels. Palea surface pubescent, hairy above. Palea apex awned, awns 1 mm long.

**Flower and Fruit.** Lodicules absent. Anthers 6. Filaments united in a tube. Stigmas 3. Ovary with a steeple-like appendage. Caryopsis with free brittle pericarp, obovoid, 12 mm long.

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

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

**Neohouzeaua helferi** (Munro) J.S. Gamble. *Bull. Misc. Inf. Kew*, 1923: 91: (1923).

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

**TYPE** from Myanmar. **Basionym or Replaced Name:** *Bambusa helferi* Munro, *Trans. Linn. Soc. London* 26(1): 114 (1868). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Hab. in Ind. or. Tenasserim, *Helper* 411

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

**Derivation** (Clifford & Bostock 2007): in honor of Johan Wilhem Helfer (1810–40) Bohemian physician and traveller who collected in Myanmar.

**Classification.** Subfamily Bambusoideae. Tribe: Bambuseae.

**Habit, Vegetative Morphology.** Perennial, woody bamboo, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms arching, 300–1500 cm long, 25–40 mm diam., woody, eventually collapsing and rooting

from upper nodes. Culm-internodes terete, thin-walled, 50–125 cm long, grey, distally pubescent. Lateral branches dendroid. Culm-sheaths present, persistent, 20–25 cm long, antrorsely scabrous (below), hispid, with appressed hairs, with white hairs, truncate at apex. Culm-sheath ligule 5–7.5 mm high, ciliate. Culm-sheath blade lanceolate, reflexed, glabrous on surface or pubescent, acuminate. Leaf-sheaths smooth, glabrous on surface. Leaf-sheath oral hairs ciliate. Ligule an eciliate membrane. Leaf-blade base asymmetrical, with a brief petiole-like connection to sheath, petiole 0.75–1 cm long. Leaf-blades lanceolate or oblong, 15–45 cm long, 25–75 mm wide. Leaf-blade venation with 14–30 secondary veins. Leaf-blade surface smooth. Leaf-blade margins scabrous. Leaf-blade apex attenuate.

**Inflorescence.** Synflorescence bractiferous, clustered at the nodes, in stellate clusters, 2–5 cm long, with glumaceous subtending bracts, with axillary buds at base of spikelet, prophyllate below lateral spikelets, leafless between clusters.

Fertile spikelets sessile.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, 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 linear, laterally compressed, 12–25 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes persistent, shorter than spikelet. Lower glume ovate, 5 mm long, chartaceous. Lower glume margins ciliate. Lower glume apex acute, mucronate. Upper glume ovate, 8 mm long, chartaceous, without keels. Upper glume margins ciliate. Upper glume apex acute, mucronate.

**Florets.** Fertile lemma lanceolate or ovate, 12–25 mm long, chartaceous, without keel, more than 3-veined. Lemma surface hirsute. Lemma margins convolute. Lemma apex acute, mucronate. Palea tightly convolute around flower, 3–4 mm long, chartaceous, without keels. Palea apex awned.

**Flower and Fruit.** Lodicules absent. Anthers 6, 12–18 mm long, anther tip smooth. Filaments united in a tube. Stigmas 3, red. Ovary with a steeple-like appendage. Caryopsis with free brittle pericarp, 5 mm long.

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

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

**Neohouzeaua kerriana** Dransfield. *Thai For. Bull. (Bot.)* 31:28 (2003).

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

**TYPE** from Thailand. T: <Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: Thailand: Kerr 12070 (K holotype).

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

**Derivation** (Clifford & Bostock 2007): L. *-ana*, indicating connection. In honor of Francis George Kerr (1877–1942) Irish-born medical officer and government botanist, Thailand.

**Classification.** Subfamily Bambusoideae. Tribe: Bambuseae.

**Habit, Vegetative Morphology.** Perennial, woody bamboo, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms erect or arching or leaning, inclined at the tip, 400–800 cm long, 11 mm diam., woody. Culm-internodes terete, thick-walled, 20–25 cm long, distally pilose. Lateral branches dendroid. Branch complement several, with subequal branches. Culm-sheaths present, deciduous but leaving a persistent girdle, 8–12 cm long, 2 length of internode, glabrous or pilose, with tawny hairs, truncate at apex, auriculate, with 6 mm high auricles, with 21 mm wide auricles, setose on shoulders, shoulders with 12 mm long hairs. Culm-sheath ligule 1 mm high, dentate. Culm-sheath blade lanceolate, spreading or reflexed, 12–15 cm long, 5–6 mm wide. Leaf-sheaths glabrous on surface. Leaf-sheath oral hairs setose, curly, 3–5 mm long. Leaf-sheath auricles falcate, 10 mm long. Ligule an eciliate membrane, 1 mm long. Collar with external ligule. Leaf-blade base with a brief petiole-like connection to sheath, petiole 1–1.5 cm long. Leaf-blades lanceolate, 22–30 cm long, 40–70 mm wide. Leaf-blade apex filiform.

**Inflorescence.** Synflorescence bractiferous, clustered at the nodes, in untidy tufts, 9 cm between clusters, glabrous on internodes, with spathaceous subtending bracts, bracts 10–25 mm long, with axillary buds at base of spikelet, prophyllate below lateral spikelets, leafless between clusters, 15–36 cm long overall.

Fertile spikelets sessile.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets linear, subterete, 20–30 mm long, breaking up at maturity, disarticulating below each fertile floret.

**Glumes.** Glumes several.

**Florets.** Fertile lemma lanceolate, 16–18 mm long, 8 mm wide, chartaceous, without keel, 13-veined, more than 3-veined. Lemma surface pubescent, hairy above. Lemma apex acuminate, awned, 1-awned. Principal lemma awn 6 mm long overall. Palea 15–20 mm long, chartaceous, 12-veined, without keels. Palea surface pubescent, hairy above. Palea apex awned, awns 2 mm long.

**Flower and Fruit.** Lodicules absent. Anthers 6, anther tip apiculate. Filaments united in a tube. Stigmas 3. Ovary with a steeple-like appendage. Caryopsis with free brittle pericarp.

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

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

**Neohouzeaua mekongensis** A.Camus. *Bull. Mus. Hist. Nat. Paris*, xxviii. 101. (1922).

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

**TYPE** from Laos. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: TYPE MATERIAL: *C. Thorel s.n.*, 1866–1868, Laos: (US-2876348). OS.

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

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

**Classification.** Subfamily Bambusoideae. Tribe: Bambuseae.

**Habit, Vegetative Morphology.** Perennial, woody bamboo, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms 1000–1500 cm long, woody. Culm-internodes terete. Lateral branches dendroid. Culm-sheaths present. Ligule an eciliate membrane. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades lanceolate, 17–30 cm long, 25–40 mm wide.

**Inflorescence.** Synflorescence bractiferous, clustered at the nodes, in untidy tufts, with glumaceous subtending bracts, with axillary buds at base of spikelet, prophyllate below lateral spikelets, leafless between clusters, 40–50 cm long overall.

Fertile spikelets sessile.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets linear or oblong, laterally compressed, 22–24 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes elongated below proximal fertile floret. Rhachilla elongation 2 mm long.

**Glumes.** Glumes several, 3–4 empty glumes, persistent, shorter than spikelet. Upper glume lanceolate or ovate, 5–9 mm long, chartaceous, without keels. Upper glume apex acute, mucronate.

**Florets.** Fertile lemma lanceolate, 14–17 mm long, chartaceous, without keel, more than 3-veined. Lemma lateral veins obscure. Lemma apex acute, awned, 1 -awned. Principal lemma awn 1–2 mm long overall. Palea 17–19 mm long, chartaceous, without keels. Palea apex awned, awns 2 mm long.

**Flower and Fruit.** Lodicules absent. Anthers 6, 8 mm long, anther tip smooth. Filaments united in a tube. Stigmas 3. Styles 12–15 mm long. Ovary with a steeple-like appendage. Caryopsis with free brittle pericarp.

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

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

**Neohouzeaua puberula** (McClure) T.H. Wen. *J. Bamboo Res.*, 10(1): 14 (1991).

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

**TYPE** from China. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: HT: *McClure LU-18370*, 28 Aug 1929, China: Kwangtung: Hainan I. (US-2802830).

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

**Derivation** (Clifford & Bostock 2007): L. *pubes*, hair of adulthood; *-ula*, diminutive. Plant covered in whole or in part with short hairs.

**Classification.** Subfamily Bambusoideae. Tribe: Bambuseae.

**Habit, Vegetative Morphology.** Perennial, woody bamboo, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms scandent, 1000–2000 cm long, 20–40 mm diam., woody. Culm-internodes terete, thick-walled, distally pubescent. Lateral branches dendroid. Branch complement many, with 1 branch dominant. Culm-sheaths present, deciduous, pubescent, with appressed hairs, with tawny hairs, auriculate, setose on shoulders. Culm-sheath ligule fimbriate. Culm-sheath blade lanceolate, demarcated but persistent, reflexed, glabrous on surface. Leaves 13 per branch. Leaf-sheaths indistinctly veined, glabrous on surface. Ligule an eciliate membrane. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades lanceolate or oblong, fleshy. Leaf-blade surface glabrous. Leaf-blade apex acuminate. Flowering specimens unknown.

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

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



**Neohouzeaua stricta** R. N. Parker. *Indian Forester*, liv. 97. (1928).

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

**TYPE** from Burma. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: Burma, Tavoy: Parker 2404; Burma, Tavoy: Parker 2408; Burma, Mergui: Parker 2462 (K isosyn).

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

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

**Classification.** Subfamily Bambusoideae. Tribe: Bambuseae.

**Habit, Vegetative Morphology.** Perennial, woody bamboo, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms erect, 700–900 cm long, 50 mm diam., woody. Culm-internodes terete, thin-walled, 60–100 cm long, dark green, distally glabrous or hispid. Lateral branches dendroid. Culm-sheaths present, deciduous, hispid, with dark brown hairs, auriculate, setose on shoulders, shoulders with 12 mm long hairs. Culm-sheath blade linear or lanceolate, reflexed. Leaf-sheaths pubescent. Leaf-sheath oral hairs setose. Leaf-sheath auricles falcate. Ligule a ciliolate membrane. Leaf-blade base with a brief petiole-like connection to sheath, petiole 0.5–1 cm long. Leaf-blades oblong, 18–28 cm long, 30–40 mm wide. Leaf-blade venation with 14 secondary veins. Leaf-blade surface scabrous, rough adaxially, glabrous or puberulous, hairy abaxially. Leaf-blade margins scaberulous. Leaf-blade apex attenuate, antrorsely scabrous.

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

Fertile spikelets sessile.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets linear, subterete, 15–16 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes elongated below proximal fertile floret.

**Glumes.** Glumes several, 3–4 empty glumes, persistent, shorter than spikelet. Upper glume lanceolate or ovate, chartaceous, without keels. Upper glume mucronate.

**Florets.** Fertile lemma oblong or ovate, 8–11 mm long, chartaceous, without keel, more than 3-veined. Lemma surface puberulous. Lemma margins convolute. Lemma apex acute, mucicous or mucronate, 1-awned. Principal lemma awn 0.5–1 mm long overall. Palea tightly convolute around flower, 12–15 mm long, chartaceous, without keels. Palea apex awned, awns 2–3 mm long.

**Flower and Fruit.** Lodicules absent. Anthers 6, 4 mm long, anther tip smooth. Filaments united in a tube. Stigmas 3. Styles 12–15 mm long. Ovary with a steeple-like appendage. Caryopsis with free brittle pericarp.

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

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

**Neohouzeaua tavoyana** Gamble. *Kew Bull.* 1923, 92. (1923).

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

**TYPE** from Burma. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: Burma: Sinyat Hill in Tavoy at 300 m alt., Jan 1919, *C.G. Rogers 361* (HT: K).

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

**Derivation** (Clifford & Bostock 2007): L. *-ana*, indicating connection. From Tavoy, Tenneseria, Myanmar.

**Classification.** Subfamily Bambusoideae. Tribe: Bambuseae.

**Habit, Vegetative Morphology.** Perennial, woody bamboo, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms erect, 300–450 cm long, 15 mm diam., woody. Culm-internodes terete, thick-walled or solid. Lateral branches dendroid. Culm-sheaths present. Leaf-sheaths glabrous on surface. Ligule an eciliate membrane, 3–4 mm long, lacerate. Leaf-blade base with a brief petiole-like connection to sheath, petiole 1 cm long. Leaf-blades oblong, 25–35 cm long, 30–60 mm wide. Leaf-blade venation with 12–20 secondary veins. Leaf-blade surface glabrous. Leaf-blade apex attenuate.

**Inflorescence.** Synflorescence bractiferous, clustered at the nodes, in globose clusters, 2–3 cm long, with glumaceous subtending bracts, with axillary buds at base of spikelet, prophyllate below lateral spikelets, leafless between clusters.

Fertile spikelets sessile.

**Fertile Spikelets.** Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets linear, laterally compressed, 20–25 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes elongated below proximal fertile floret.

**Glumes.** Glumes several, 2–3 empty glumes, persistent, shorter than spikelet. Upper glume lanceolate or ovate, chartaceous, without keels.

**Florets.** Fertile lemma oblong or ovate, 10–12 mm long, chartaceous, without keel, more than 3-veined. Lemma surface glabrous or pubescent. Lemma margins convolute, eciliate or ciliate. Lemma apex acute, awned, 1 -awned. Principal lemma awn 1–2 mm long overall. Palea linear, tightly convolute around flower, 20–25 mm long, chartaceous, without keels. Palea apex awned, awns 2 mm long.

**Flower and Fruit.** Lodicules absent or 2. Anthers 6, 10 mm long, anther tip smooth. Filaments united in a tube. Stigmas 3. Ovary with a steeple-like appendage. Caryopsis with free brittle pericarp.

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

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

**Neololoba amahussana** (Lindl.) Widjaja. *Reinwardtia* 11(2): 113: (1997).

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

**TYPE** from Indonesia. **Basionym or Replaced Name:** *Bambusa amahussana* Lindl., *Penny Cycl.* 3: 357 (1835)

. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Ambon, Amahoese: *Robinson* 35 (BO neo, K, L).

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

**Derivation** (Clifford & Bostock 2007): L. -ana, indicating position. From Amahussa, near Amboina, Moluccas, Indonesia.

**Classification.** Subfamily Bambusoideae. Tribe: Bambuseae.

**Habit, Vegetative Morphology.** Perennial, woody bamboo, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms 200–300 cm long, woody, without nodal roots. Culm-internodes terete, thin-walled. Lateral branches dendroid. Culm-sheaths present, pubescent, auriculate, ciliate on shoulders. Culm-sheath ligule entire. Leaves cauline. Leaf-sheath oral hairs ciliate, 10 mm long. Leaf-sheath auricles falcate. Ligule an eciliate membrane, entire. Collar with external ligule. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades lanceolate, 25–45 cm long, 25–80 mm wide. Leaf-blade surface glabrous. Leaf-blade apex acuminate.

**Inflorescence.** Synflorescence bractiferous, clustered at the nodes, in untidy tufts, 1–2 cm between clusters, with glumaceous subtending bracts, with axillary buds at base of spikelet, prophyllate below lateral spikelets.

**Fertile Spikelets.** Spikelets comprising 3–4 fertile florets, without rhachilla extension. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets ovate, laterally compressed, 6–8 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes definite.

**Glumes.** Glumes persistent, shorter than spikelet.

**Florets.** Fertile lemma ovate, 4 mm long, without keel, more than 3-veined. Lemma surface puberulous. Lemma margins ciliate. Lemma apex acute. Palea 5 mm long, 6–8 -veined. Palea keels ciliate, adorned above.

**Flower and Fruit.** Lodicules absent. Anthers 6, anther tip apiculate or penicillate. Stigmas 3. Ovary umbonate.

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

**Country /Province /State. Indo-China, Malesia.** Andaman Is, Myanmar. Moluccas.

**Neololeba atra** (Lindl.) E.A.Widjaja. *Reinwardtia*, 11(2): 114: (1997).

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

**TYPE** from Indonesia. **Basionym or Replaced Name:** *Bambusa atra* Lindl., *Penny Cyclop.* 3: 357 (1835). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Indonesia, Ambon, Caju Poeti: *Robinson* 33 (BO epi, K, L).

**Recent Synonyms:** *Bambusa forbesii* .

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

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

**Derivation** (Clifford & Bostock 2007): L. dark. With black hairs on lower culms.

**Classification.** Subfamily Bambusoideae. Tribe: Bambuseae.

**Habit, Vegetative Morphology.** Perennial, woody bamboo, caespitose, clumped densely. Rhizomes short, pachymorph. Butt sheaths absent. Culms 400–500 cm long, 30 mm diam., woody, without nodal roots. Culm-

internodes terete, thin-walled, 30–60 cm long, smooth, distally pubescent. Lateral branches dendroid. Branch complement one. Culm-sheaths present, 15 cm long, 2 times as long as wide, hispid, with appressed hairs, with tawny hairs, auriculate, with 4–5 mm high auricles, ciliate on shoulders, shoulders with curved hairs, shoulders with 10 mm long hairs. Culm-sheath ligule 8 mm high, lacerate. Culm-sheath blade ovate, cordate, erect, 12 cm long, 45 mm wide, acuminate. Leaves cauline. Leaf-sheath oral hairs scanty. Leaf-sheath auricles falcate. Ligule a ciliate membrane. Collar with external ligule. Leaf-blade base truncate or cordate, with a brief petiole-like connection to sheath. Leaf-blades lanceolate, 25–50 cm long, 45–90 mm wide. Leaf-blade surface glabrous. Leaf-blade apex acuminate.

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

**Fertile Spikelets.** Spikelets comprising 6 fertile florets, without rhachilla extension. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, laterally compressed, 10 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes definite, 0.5–1 mm long.

**Glumes.** Glumes persistent, shorter than spikelet.

**Florets.** Fertile lemma ovate, 7 mm long, without keel, more than 3-veined. Lemma margins ciliate, hairy above. Lemma apex acute. Palea 4–6 -veined. Palea keels ciliolate.

**Flower and Fruit.** Lodicules absent. Anthers 6, 4.5 mm long. Filaments free or united in groups. Stigmas 3. Ovary umbonate, pubescent on apex.

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

**Country /Province /State.** Indo-China, Malesia, Papuasia. Andaman Is. Philippines. New Guinea PNG, or West Papua (Irian Jaya). New Guinea. **Australia.** Queensland. Caroline Is (\*, as *Bambusa*).

**TDWG4.** North, Central.

**Neololeba glabra** Widjaja. *Reinwardtia* 11(2): 116 (1997).

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

**TYPE** from Indonesia. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Irian Jaya, Tembagapura: *Widjaja 6656* (BO holo).

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

**Derivation** (Clifford & Bostock 2007): L. smooth. Ligules of culm-sheaths and leaf-blades lacking hairs.

**Classification.** Subfamily Bambusoideae. Tribe: Bambuseae.

**Habit, Vegetative Morphology.** Perennial, woody bamboo, caespitose, clumped loosely. Rhizomes short, pachymorph. Butt sheaths absent. Culms leaning, pendulous at the tip, 500–800 cm long, 5–10 mm diam., woody, without nodal roots. Culm-internodes terete, thin-walled, 40 cm long, antrorsely scabrous, distally glabrous or pilose. Lateral branches dendroid. Culm-sheaths present, persistent, 5–6 cm long, 2 times as long as wide, pubescent, with white hairs or tawny hairs, without auricles, setose on shoulders, shoulders with 7 mm long hairs. Culm-sheath ligule entire. Culm-sheath blade triangular, narrower than sheath, erect, 2.5–4 cm long, 4–19 mm wide, glabrous on surface. Leaves cauline. Leaf-sheath auricles absent. Ligule an eciliate membrane, 12 mm long, glabrous on abaxial surface. Collar with external ligule. Leaf-blade base truncate, with a brief petiole-like connection to sheath. Leaf-blades lanceolate, 19.5–27.4 cm long, 22–30 mm wide. Leaf-blade surface glabrous. Leaf-blade margins scabrous. Leaf-blade apex acuminate. Flowering specimens unknown.

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

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

**Neololeba hirsuta** (Holttum) E.A.Widjaja. *Reinwardtia*, 11(2): 118 (1997).

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

**TYPE** from PNG. **Basionym or Replaced Name:** *Bambusa hirsuta* Holttum, *Kew Bull.* 21: 271 (1967). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: New Guinea: Lae, near District Commissioner's house, *Millar & Holttum 15795*, HT: LAE; IT: BRI, K, L

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

**Derivation** (Clifford & Bostock 2007): L. hairy. Plant hairy in respect to all or some parts.

**Classification.** Subfamily Bambusoideae. Tribe: Bambuseae.

**Habit, Vegetative Morphology.** Perennial, woody bamboo, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms 400–500 cm long, 25 mm diam., woody, without nodal roots. Culm-internodes terete, thin-walled, 50–75 cm long, distally hispid. Lateral branches dendroid. Culm-sheaths present, glabrous or

hispid, auriculate, with 2 mm high auricles, setose on shoulders, shoulders with curved hairs, shoulders with 10 mm long hairs. Culm-sheath ligule ciliate. Culm-sheath blade ovate, erect, acuminate. Leaves cauline. Leaf-sheath oral hairs ciliate. Leaf-sheath auricles falcate. Ligule an eciliate membrane, entire. Collar with external ligule. Leaf-blade base truncate or broadly rounded, with a brief petiole-like connection to sheath. Leaf-blades lanceolate, 20–35 cm long, 17–42 mm wide, glaucous. Leaf-blade surface pubescent, hairy abaxially. Leaf-blade apex acuminate.

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

**Fertile Spikelets.** Spikelets comprising 6–8 fertile florets, without rhachilla extension. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, laterally compressed, 13 mm long, 3.5 mm wide, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes definite, 1.5 mm long.

**Glumes.** Glumes persistent, shorter than spikelet. Lower glume 5.5 mm long. Upper glume 7 mm long.

**Florets.** Fertile lemma ovate, 7 mm long, without keel, more than 3-veined. Lemma surface hispidulous, hairy above. Lemma margins ciliate, hairy above. Lemma apex acute, awned, 1 -awned. Principal lemma awn 1.5–2 mm long overall. Palea 6–8 -veined. Palea keels ciliolate.

**Flower and Fruit.** Lodicules absent. Anthers 6, 4 mm long, anther tip apiculate. Stigmas 3. Ovary umbonate, pubescent on apex.

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

**Country /Province /State. Papuaasia.** New Guinea PNG. New Guinea.

**Neololeba inaurita** Widjaja. *Reinwardtia* 11(2): 119, f. 24 (1997).

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

**TYPE** from Indonesia. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Irian Jaya, Fakfak District, Mapurujaya Subdistrict, on the way to Tembagapura from Timika, mile 34, *Widjaja 6654* (HT: BO).

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

**Derivation** (Clifford & Bostock 2007): *L. in-*, not; *aurita*, eared. Auricles and ligules inconspicuous.

**Classification.** Subfamily Bambusoideae. Tribe: Bambuseae.

**Habit, Vegetative Morphology.** Perennial, woody bamboo, caespitose, clumped densely. Rhizomes short, pachymorph. Butt sheaths absent. Culms erect, 400–800 cm long, 10–20 mm diam., woody, without nodal roots. Culm-internodes terete, thin-walled, 50–60 cm long, mid-green, distally glabrous. Lateral branches dendroid, arising from upper culm. Bud complement 1. Branch complement one or two or three, in a clump, thinner than stem. Culm-sheaths present, deciduous, 11–12 cm long, 2 times as long as wide, hispid, with white hairs or tawny hairs, truncate at apex, without auricles, setose on shoulders, shoulders with 15–19 mm long hairs. Culm-sheath blade triangular, narrower than sheath, erect, 8–10 cm long, 27–33 mm wide, glabrous on surface. Leaf-sheath oral hairs setose, 15–19 mm long. Leaf-sheath auricles absent. Ligule an eciliate membrane, 1–2 mm long. Collar with external ligule. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades deciduous at the ligule, elliptic or ovate, 14–42 cm long, 60–80 mm wide. Leaf-blade surface glabrous. Leaf-blade apex acuminate.

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

**Fertile Spikelets.** Spikelets comprising 5–6 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, laterally compressed, 15–19 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes definite, 1 mm long, glabrous.

**Glumes.** Glumes two, persistent, similar, shorter than spikelet, similar to fertile lemma in texture. Lower glume ovate, 8 mm long. Lower glume apex acuminate, mucronate. Upper glume ovate, 8 mm long. Upper glume apex acuminate, mucronate.

**Florets.** Fertile lemma ovate, 9–11 mm long, without keel, more than 3-veined. Lemma surface glabrous. Lemma apex acuminate. Palea 9–11 mm long. Palea apex acute. Apical sterile florets resembling fertile though underdeveloped.

**Flower and Fruit.** Anthers 6, 4 mm long, yellow. Stigmas 3. Caryopsis with adherent pericarp.

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

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

**Neomicrocalamus andropogonifolius** (Griff.) C.M.A. Stapleton. *Edinburgh J. Bot.*, 51(3): 325 (1994).

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

**TYPE** from India. **Basionym or Replaced Name:** *Bambusa andropogonifolia* Griff., *Itin. Pl. Khasyah Mts.* 2: 124 (1848). T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: HT: *Griffith Itin.* 417, Bhutan: Tashigang Distr.: Diri Chhu, 27.10N 91.26E, 3500 ft (K).

**Illustrations (Books):** H.J. Noltie, *The Grasses of Bhutan* (2000) (512, Fig. 7 & 514, Fig. 8).

**Classification.** Subfamily Bambusoideae. Tribe: Bambuseae.

**Habit, Vegetative Morphology.** Perennial, woody bamboo, pluricaespitose. Rhizomes elongated, pachymorph. Butt sheaths absent. Culms scandent, 1200 cm long, woody. Culm-internodes terete, thin-walled, 50 cm long. Culm-nodes flush with internodes. Lateral branches dendroid. Bud complement 1. Branch complement many. Culm-sheaths present, glabrous. Culm-sheath blade inconspicuous. Leaves cauline, 6–7 per branch. Leaf-sheaths glabrous on surface. Leaf-sheath oral hairs lacking. Ligule an eciliate membrane. Leaf-blade base broadly rounded, with a brief petiole-like connection to sheath. Leaf-blades lanceolate or ovate, 4–7 cm long, 10–15 mm wide. Leaf-blade venation without cross veins. Leaf-blade margins scabrous. Leaf-blade apex acuminate, filiform. Flowering specimens unknown.

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

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

**TDWG4.** Bhutan.

**Neomicrocalamus dongvanensis** Nguyen To Quyen. *Bot. Zhurn.*, 76(6): 877 (1991).

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

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

**Derivation** (Clifford & Bostock 2007): *L. -ensis*, denoting origin. From Dong Van, Ha Tien Province, Vietnam.

**Classification.** Subfamily Bambusoideae. Tribe: Bambuseae.

**Habit, Vegetative Morphology.** Perennial, woody bamboo, pluricaespitose. Rhizomes elongated, pachymorph. Butt sheaths absent. Culms erect, straight or zigzag, 100–200 cm long, 6–8 mm diam., woody. Culm-internodes terete, 10–25 cm long. Lateral branches dendroid. Branch complement one or several. Culm-sheaths present, glabrous. Culm-sheath blade inconspicuous or linear. Leaves cauline, 4–9 per branch. Ligule an eciliate membrane, 1 mm long, obtuse. Leaf-blade base with a brief petiole-like connection to sheath, petiole 0.1 cm long. Leaf-blades lanceolate, 6–9 cm long, 8–13 mm wide. Leaf-blade venation with 6–8 secondary veins, with distinct cross veins. Leaf-blade surface glabrous. Leaf-blade margins scabrous. Leaf-blade apex acuminate, filiform. Flowering specimens unknown.

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

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

**Neomicrocalamus prainii** (Gamble) P.C. Keng. *J. Bamboo Res.*, 2(2): 10 (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 India. **Basionym or Replaced Name:** *Thamnocalamus prainii*, *Racemobambos prainii*, *Microcalamus prainii* Gamble, *J. Asiat. Soc. Bengal, Pt. 2, Nat. Hist.* 59(2): 207, pl. 7 (1890). T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: India: Assam: Naga Hills, 2600 m, 1886, *Prain s.n.* (HT: K).

**Illustrations (Books):** S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 63).

**Derivation** (Clifford & Bostock 2007): in honor of David Prain (1857–1944) Scots-born physician and botanist, sometime Director, Royal Botanic Gardens, Kew.

**Classification.** Subfamily Bambusoideae. Tribe: Bambuseae.

**Habit, Vegetative Morphology.** Perennial, woody bamboo. Rhizomes elongated, pachymorph. Butt sheaths absent. Culms scandent, 500–1000 cm long, 5–8 mm diam. Culm-internodes terete, thick-walled or solid, 20–25 cm long, yellow. Culm-nodes swollen. Lateral branches dendroid. Branch complement several. Culm-sheaths present, 5–15 cm long, 5–8 times as long as wide, antrorsely scabrous, convex at apex. Culm-sheath blade inconspicuous. Leaves cauline. Leaf-sheaths striately veined, smooth. Ligule an eciliate membrane, obtuse. Leaf-blade base with a brief petiole-like connection to sheath, petiole 0.2 cm long. Leaf-blades lanceolate or oblong, 5–10 cm long, 8–18 mm wide. Leaf-blade midrib evident. Leaf-blade venation with 4–6 secondary veins, without cross veins. Leaf-blade margins scabrous. Leaf-blade apex attenuate, filiform.

**Inflorescence.** Inflorescence composed of racemes, terminal and axillary, bracteate at pedicel base. Racemes 1, single, paucilateral, 6–9 cm long, bearing few fertile spikelets, bearing 2–4 fertile spikelets on each. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 3–6 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets linear, laterally compressed, 25–35 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes flattened, clavate, curved, eventually visible between lemmas.

**Glumes.** Glumes two or several, 2(–3) empty glumes, persistent, dissimilar, shorter than spikelet. Lower glume lanceolate, membranous, 1-keeled. Lower glume margins ciliate. Lower glume apex acute. Upper glume ovate, membranous, without keels, 3–5 -veined. Upper glume surface pilose, hairy at apex. Upper glume apex acute.

**Florets.** Fertile lemma ovate, 10 mm long, membranous, without keel, 9–11 -veined, more than 3-veined. Lemma lateral veins prominent. Lemma apex acute. Palea 1 length of lemma. Palea keels ciliolate. Apical sterile florets resembling fertile though underdeveloped.

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

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

**Country /Province /State.** **China.** China South Central, Tibet. **Indian Subcontinent, Indo-China.** Assam. Myanmar.

**TDWG4.** Yunnan. Meghalaya, Nagaland.

**Neomicrocalamus yunnanensis** (T.H. Wen) D.Ohrnberger. *Bamboos of the World Intro.* 4: 19 (1997).

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

**TYPE** from China. **Basionym or Replaced Name:** *Racemobambos yunnanensis* T.H. Wen, *J. Bamboo Res.* 5(2): 11 (1986). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: China: Yunnan: Jinping, *W.W. Chou ZP 83311* (HT: ZJFI).

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

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

**Classification.** Subfamily Bambusoideae. Tribe: Bambuseae.

**Habit, Vegetative Morphology.** Perennial, woody bamboo, pluricaespitose. Rhizomes elongated, pachymorph. Butt sheaths absent. Culms scandent, 1500 cm long, 10 mm diam., woody. Culm-internodes terete, solid, 60 cm long, distally pubescent. Lateral branches dendroid. Branch complement many. Culm-sheaths present, deciduous, pubescent, with tawny hairs, glabrous on margins, without auricles, glabrous on shoulders. Culm-sheath ligule 1–3 mm high, ciliate. Culm-sheath blade inconspicuous or linear, reflexed. Leaves cauline, 3–4 per branch. Leaf-sheaths 20–35 cm long, pubescent. Leaf-sheath oral hairs setose. Ligule an ciliate membrane. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades lanceolate, 4–7 cm long, 8–13 mm wide. Leaf-blade venation with 8 secondary veins, without cross veins. Leaf-blade surface glabrous. Leaf-blade margins scabrous. Leaf-blade apex acuminate, filiform. Flowering specimens unknown.

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

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

**TDWG4.** Yunnan.

**Neostaffia colusana** (Davy) Davy. *Erythea*, vii. 43 (1899).

**Accepted by:** R.J.Soreng et al., *Catalogue of New World 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:** *Staffia colusana* Burt Davy, *Erythea* 6(11): 110, pl. 3 (1898). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *J. Burt Davy s.n.*, 28 May 1898, USA: California: Colusa Co.: near Princeton (UC; IT: K, US-2947514).

**Illustrations (Books):** M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 25 *Poaceae*, part 2 (2003) (296).

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

**Classification.** Subfamily Chloridoideae. Tribe: Cynodonteae.

**Habit, Vegetative Morphology.** Annual, caespitose. Culms geniculately ascending, 10–30 cm long. Leaves without demarcation between sheath and blade. Leaf-sheaths glandular, viscid. Ligule absent. Leaf-blades 2–8 cm long, 5–12 mm wide, viscid, aromatic. Leaf-blade surface pilose, sparsely hairy, with capitate hairs.

**Inflorescence.** Inflorescence composed of racemes. Racemes 1, single, multilateral, 2–8 cm long. Rhachis subterete, with scattered hairs, terminating in a sterile spikelet. Spikelet packing broadside to rhachis, crowded. Spikelets solitary. Fertile spikelets sessile.

**Sterile Spikelets.** Apical sterile spikelets rudimentary, 5–20 in number.

**Fertile Spikelets.** Spikelets comprising 5 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets cuneate, subterete, 4–6 mm long, falling entire. Rhachilla internodes definite.

**Glumes.** Glumes both absent or obscure.

**Florets.** Fertile lemma flabellate, 5 mm long, membranous, without keel, 7–11 -veined, more than 3-veined. Lemma lateral veins ribbed. Lemma margins ciliolate. Lemma apex erose, truncate, muticous. Palea 0.8 length of lemma, 2 -veined. Apical sterile florets resembling fertile though underdeveloped.

**Flower and Fruit.** Lodicules 2, cuneate, 0.2 mm long, fleshy, truncate. Anthers 3, 2.5 mm long. Stigmas 2, sparsely hairy. Caryopsis with adherent pericarp, obovoid, laterally compressed, 2.5 mm long, dark brown. Embryo 1 length of caryopsis (obscured by viscid pericarp).

$2n = 40$  (1 ref TROPICOS).

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

**Country /Province /State.** Southwestern USA. California.

**Neostapfiella chloridiantha** A.Camus. *Bull. Bi-Mens. Soc. Linn. Lyon*, v. 5. (1926).

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

**TYPE** from Madagascar. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: IT: *H.P. de la Bathie 11046*, 1908, Madagascar (US-1445132, US-81979).

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

**Derivation** (Clifford & Bostock 2007): Gk. anthos, flower. Spikelets resembling those of *Chloris*.

**Classification.** Subfamily Chloridoideae. Tribe: Chloridoideae incertae sedis.

**Habit, Vegetative Morphology.** Annual. Basal innovations flabellate. Culms slender, 25–30 cm long. Ligule a ciliolate membrane. Leaf-blades 4–6 cm long, 4 mm wide. Leaf-blade surface glabrous or pilose, sparsely hairy. Leaf-blade apex obtuse, apiculate.

**Inflorescence.** Inflorescence composed of racemes. Racemes 1, single, unilateral, 3–7 cm long. Rhachis angular. Spikelet packing broadside to rhachis. Spikelets ascending, solitary. Fertile spikelets sessile.

**Fertile Spikelets.** Spikelets comprising 2 fertile florets, without rhachilla extension. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets cuneate, laterally compressed, 4 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus pubescent, obtuse.

**Glumes.** Glumes persistent, dissimilar, shorter than spikelet, thinner than fertile lemma, gaping. Lower glume lanceolate, 3 mm long, 1 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume lateral veins absent. Lower glume surface glabrous or pubescent. Lower glume apex acuminate. Upper glume lanceolate, 3 mm long, 0.75–1 length of adjacent fertile lemma, membranous, 1-keeled, 1 -veined. Upper glume lateral veins absent. Upper glume surface glabrous or pubescent. Upper glume apex acuminate.

**Florets.** Fertile lemma elliptic, laterally compressed, 2.5–3.7 mm long, coriaceous, keeled, 3 -veined, 0–3 -veined. Lemma surface glabrous. Lemma apex dentate, 2 -fid, awned, 1 -awned. Principal lemma awn subapical, 12–15 mm long overall.

**Flower and Fruit.** Anthers 3, 1 mm long. Caryopsis with adherent pericarp, lanceolate, trigonous.

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

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

**Neostapfiella humbertiana** A.Camus. *Not. Syst., ed. Humbert*, xi. 19: (1944).

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

**TYPE** from Madagascar. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Madagascar (SE): vallee moyenne du Mandrare pres d'Anadabolava., *Humbert 12731, 12581* (ST: not designated).

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

**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. Tribe: Chloridoideae incertae sedis.

**Habit, Vegetative Morphology.** Annual. Basal innovations flabellate. Culms decumbent, slender, 8–15 cm long, rooting from lower nodes. Lateral branches ample. Leaves basal and cauline. Leaf-sheaths keeled. Ligule a ciliolate membrane. Leaf-blades lanceolate, 1–2.5 cm long, 3–4.5 mm wide. Leaf-blade apex obtuse.

**Inflorescence.** Inflorescence composed of racemes. Racemes 2, paired, erect, unilateral, 2.5–4 cm long, 3–4 mm wide. Rhachis angular. Spikelet packing broadside to rhachis, regular, 2 -rowed. Spikelets ascending, solitary. Fertile spikelets sessile.

**Fertile Spikelets.** Spikelets comprising 2 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets cuneate, laterally compressed, 3.2–3.5 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus evident, 0.5 mm long, pubescent, acute.

**Glumes.** Glumes persistent, dissimilar, shorter than spikelet, thinner than fertile lemma, gaping. Lower glume lanceolate, 1–1.5 mm long, 0.4–0.6 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume lateral veins absent. Lower glume apex acuminate, mucronate. Upper glume oblong, 2.5 mm long, 0.75 length of adjacent fertile lemma, membranous, 1-keeled, 1 -veined. Upper glume lateral veins absent. Upper glume apex obtuse, mucronate.

**Florets.** Fertile lemma obovate, laterally compressed, 3.2–3.5 mm long, coriaceous, keeled, 3 -veined, 0–3 -veined. Lemma surface pilose. Lemma apex dentate, 2 -fid, acute, awned, 1 -awned. Principal lemma awn subapical, 4–4.5 mm long overall. Apical sterile florets 1 in number, barren, elliptic, 1.5 mm long. Apical sterile lemmas pubescent, awned, 1 -awned. Apical sterile lemma awns dorsal, 2.5 mm long.

**Flower and Fruit.** Anthers 3. Caryopsis with adherent pericarp, lanceolate, trigonous.

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

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

**Neostapfiella perrieri** A.Camus. *Bull. Bi-Mens. Soc. Linn. Lyon*, v. 6. (1926).

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

**Illustrations (Books):** J.Bosser, *Graminees des Paturage et des Cultures a Madagascar* (1969) (77, Fig 18).

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

**Classification.** Subfamily Chloridoideae. Tribe: Chloridoideae incertae sedis.

**Habit, Vegetative Morphology.** Annual. Stolons present. Basal innovations flabellate. Culms 15–30 cm long. Leaves mostly basal. Leaf-sheaths keeled. Ligule a ciliolate membrane. Leaf-blades 1.2–4.5 cm long, 3–4 mm wide. Leaf-blade apex obtuse.

**Inflorescence.** Inflorescence composed of racemes. Racemes 2–4, digitate, unilateral, 3–7 cm long. Rhachis angular. Spikelet packing broadside to rhachis. Spikelets ascending, solitary. Fertile spikelets sessile.

**Fertile Spikelets.** Spikelets comprising 2 fertile florets, without rhachilla extension. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets cuneate, laterally compressed, 4.5–5.5 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus elongated, 1–1.5 mm long, pilose, pungent.

**Glumes.** Glumes persistent, similar, shorter than spikelet, thinner than fertile lemma, gaping. Lower glume lanceolate, 3–4 mm long, 1 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume lateral veins absent. Lower glume apex acute. Upper glume lanceolate, 3–4 mm long, 1 length of adjacent fertile lemma, membranous, 1-keeled, 1 -veined. Upper glume lateral veins absent. Upper glume apex acute.

**Florets.** Fertile lemma elliptic, laterally compressed, lanceolate in profile, 3.2–3.5 mm long, coriaceous, keeled, 3 -veined, 0–3 -veined. Lemma surface puberulous. Lemma apex dentate, 2 -fid, awned, 1 -awned. Principal lemma awn subapical, 9–14 mm long overall.

**Flower and Fruit.** Caryopsis with adherent pericarp, lanceolate, trigonous.

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

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

**Nephelochloa orientalis** Boiss. *Diagn. Ser. I*: 5: 73 (1844).

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

T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: In collibus siccis Caria interioris, legi abunde vi 1842 floriferam circa Gheyra (Geyre) Aphrodisiam veterum, *Boissier s.n.* (HT: G; IT: BM, E, K).

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



**Derivation** (Clifford & Bostock 2007): *L. oriens*, the east; -alis, pertaining to. From the eastern Mediterranean through to Turkey.

**Classification.** Subfamily Pooideae. Tribe: Poeae.

**Habit, Vegetative Morphology.** Annual. Culms erect, 13–25 cm long. Ligule an eciliate membrane, lacerate. Leaf-blades involute, 20–65 cm long, 0.3–1 mm wide. Leaf-blade margins scaberulous.

**Inflorescence.** Inflorescence a panicle. Panicle open, obovate, 5–13 cm long, 1.5–9 cm wide. Primary panicle branches whorled at most nodes, 1.5–5 cm long, sterile at lowest node. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 3–6 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets oblong, laterally compressed, 2–4.5(–5.5) mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes eventually visible between lemmas, pubescent. Floret callus pubescent.

**Glumes.** Glumes persistent, similar, shorter than spikelet. Lower glume lanceolate, 1–1.6 mm long, 1.1 length of upper glume, membranous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume apex acute. Upper glume ovate, 0.9–1.5 mm long, 0.75 length of adjacent fertile lemma, membranous, without keels, 3 -veined. Upper glume apex acute.

**Florets.** Fertile lemma elliptic, lanceolate in profile, 1.5–2 mm long, membranous, much thinner above, mid-green or purple, without keel, 5 -veined, more than 3-veined. Lemma apex lobed, 2 -fid, with triangular lobes, incised 0.2 of lemma length, awned, 1 -awned. Principal lemma awn from a sinus, 1.2–1.7 mm long overall. Palea 0.66 length of lemma. Apical sterile florets resembling fertile though underdeveloped.

**Flower and Fruit.** Anthers 2. Ovary glabrous.

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

**Country /Province /State.** Western Asia. Turkey.

### **Neurachne alopecuroides** R. Br. *Prod.* 196 (1810).

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

**TYPE** from Australia. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: HT: *Robert Brown 6142*, Australia: Western Australia: King George Sound (BM (photo, BRI)).

**Illustrations (Books):** J.P.Jessop, G.R.M. Dashorst & F.M.James, *Grasses of South Australia* (2006) (500, Fig 429 as *N. alopecuroides*), C.A.Gardner, *Flora of Western Australia*, Vol 1, Part 1, *Gramineae* (1952) (272, Pl 78), N.Walsh & T.Entwistle, *Flora of Victoria* Vol 2 (1994) (583, Fig 118 as *N. alopecuroides*), D.Sharp & B.K.Simon, *AusGrass*. Grasses of Australia. CD-Rom Version 1.0. (2002), R.Pilger, *Die Natürlichen Pflanzenfamilien* 14e (1940) (41, Fig. 21 as *N. alopecuroides*).

**Illustrations (Journals):** *Hooker's Icones Plantarum* (t.1241 (1877)), *Contr.Qld.Herb.* (13:38, Fig.1 (1972)).

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

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

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

**Habit, Vegetative Morphology.** Perennial, caespitose. Rhizomes short. Butt sheaths pilose. Culms erect, 20–60 cm long, 2–4 -noded. Culm-nodes bearded. Leaf-sheaths smooth, glabrous on surface, outer margin glabrous. Ligule a fringe of hairs, 0.4–0.8 mm long. Collar glabrous. Leaf-blades flat or involute, 4–16 cm long, 1–3 mm wide, stiff. Leaf-blade midrib indistinct. Leaf-blade surface smooth, glabrous or pilose. Leaf-blade margins smooth.

**Inflorescence.** Inflorescence a panicle. Panicle spiciform, oblong or ovate, 1–2.5 cm long. Primary panicle branches accrescent to a central axis, with lateral stumps on axis. Panicle axis with rounded ribs, pubescent. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, oblong, 0.1–0.4 mm long, pubescent, tip discoid.

**Fertile Spikelets.** Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets lanceolate, dorsally compressed, 8–12 mm long, falling entire. Spikelet callus bearded, base obtuse.

**Glumes.** Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma. Lower glume lanceolate, 6–11 mm long, 0.75–0.9 length of spikelet, chartaceous or cartilaginous, without keels, 3–5 -veined. Lower glume lateral veins ribbed. Lower glume surface pilose. Lower glume apex acuminate. Upper glume lanceolate, 8–12 mm long, 1 length of spikelet, chartaceous or cartilaginous, with membranous margins, 9–11 -veined. Upper glume lateral veins ribbed. Upper glume surface setose, hairy below. Upper glume margins ciliate. Upper glume apex acuminate, awned, 1 -awned, awn 1–3 mm long.

**Florets.** Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret elliptic or oblong, 5.5–7 mm long, 0.6–0.7 length of spikelet, chartaceous, 7 -veined, pilose, ciliate on margins, acute. Fertile lemma elliptic, 4.9–6.8 mm long, hyaline, without keel. Lemma apex acute. Palea hyaline, without keels.

**Flower and Fruit.** Anthers 3, 1.9–3.5 mm long.

$2n = 34$  (1 ref TROPICOS), or 36 (1 ref TROPICOS).

**Distribution (TDWG). Continent.** Australasia.

**Country /Province /State. Australia.** Western Australia, South Australia, Victoria. Eremean, South-West. Southern.

**Neurachne annularis** T.D.Macfarlane. *Nuytsia* 17:217–220, Fig.2 (2007).

**TYPE** from Australia. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Australia occidentali, prope "Cunya", *Speck 1201* (HT: CANB-72644).

**Illustrations (Journals):** *Telopea* (Fig.2 (2007)).

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

**Habit, Vegetative Morphology.** Perennial, caespitose, clumped densely. Cataphylls evident. Butt sheaths distinctly ribbed, woolly. Culms erect or geniculately ascending, 35–75 cm long, rooting from lower nodes. Culm-internodes striate. Culm-nodes pubescent. Lateral branches ample. Leaf-sheaths smooth, glabrous on surface, outer margin glabrous. Leaf-sheath oral hairs ciliate. Ligule a fringe of hairs, 0.5 mm long. Leaf-blades straight or flexuous, aciculate, conduplicate, 10–24 cm long, 0.4–0.8 mm wide, stiff. Leaf-blade surface ribbed, pubescent, sparsely hairy, hairy adaxially. Leaf-blade margins tuberculate-ciliate, hairy at base. Leaf-blade apex acuminate.

**Inflorescence.** Inflorescence a panicle, comprising 15–20 fertile spikelets. Peduncle 10–30 cm long. Panicle spiciform, linear, 2.5–4 cm long. Primary panicle branches accrescent to a central axis, with lateral stumps on axis. Panicle axis with rounded ribs. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Sterile Spikelets.** Basal sterile spikelets absent or well-developed, 0–2 in number.

**Fertile Spikelets.** Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets ovate, dorsally compressed, falling entire. Spikelet callus pilose.

**Glumes.** Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma. Lower glume ovate, 7–9 mm long, 1 length of spikelet, cartilaginous, without keels, 5 -veined (6–7 visible inside). Lower glume lateral veins ribbed. Lower glume surface flat or concave, scabrous, pilose, hairy between veins. Lower glume margins tuberculately ciliate. Lower glume apex acuminate, mucronate. Upper glume elliptic, 7–9 mm long, 1 length of spikelet, cartilaginous, 7 -veined (8–9 visible inside). Upper glume lateral veins ribbed. Upper glume surface pilose, hairy between veins. Upper glume margins ciliate. Upper glume apex acuminate, mucronate, awn 2 mm long.

**Florets.** Basal sterile florets 1, male, with palea. Lemma of lower sterile floret lanceolate or elliptic, 5.5–6 mm long, 0.66 length of spikelet, membranous, much thinner on margins, without keels or 1-keeled (weakly), 6–7 -veined, pubescent, hairy between veins, ciliate on margins, fringed above, truncate. Palea of lower sterile floret membranous, 0.8–1.5 mm long. Fertile lemma lanceolate or ovate, 4.7–5.7 mm long, membranous, without keel, 3 -veined, 0–3 -veined. Lemma surface glabrous or puberulous, hairy above. Lemma margins pubescent. Lemma apex truncate or acute. Palea with auriculate flaps, hyaline, 2 -veined, without keels.

**Flower and Fruit.** Lodicules 2, 0.4–0.6 mm long, fleshy, veined. Anthers 3, 3.5 mm long, yellow.

**Distribution (TDWG). Continent.** Australasia.

**Country /Province /State. Australia.** Western Australia. South-West.

**Neurachne lanigera** S.T. Blake. *Contrib. Queensl Herb.* 13: 10 (1972).

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

**TYPE** from Australia. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Australia occidentali, prope "Cunya", *Speck 1201* (HT: CANB-72644).

**Illustrations (Books):** J.P.Jessop, G.R.M. Dashorst & F.M.James, *Grasses of South Australia* (2006) (500, Fig 430).

**Illustrations (Journals):** *Contr.Qld.Herb.* (13:42, Fig.3 (1972)).

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

**Derivation** (Clifford & Bostock 2007): L. lana, wool; gero, bear. Leaf-blades or leaf-sheaths woolly.

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

**Habit, Vegetative Morphology.** Perennial, caespitose. Rhizomes short. Butt sheaths pilose. Culms erect, 15–25 cm long, 5–10 -noded. Culm-nodes bearded. Leaf-sheaths mostly shorter than adjacent culm internode, smooth, pilose, outer margin hairy. Ligule a fringe of hairs, 0.5–0.9 mm long. Collar pilose. Leaf-blades filiform, involute, 2–12 cm long, 1–2 mm wide, stiff. Leaf-blade midrib indistinct. Leaf-blade surface smooth or scabrous, pilose. Leaf-blade margins smooth or scabrous.

**Inflorescence.** Inflorescence a panicle. Panicle spiciform, oblong, 1.5–3 cm long. Primary panicle branches accrescent to a central axis, with lateral stumps on axis. Panicle axis with rounded ribs, scabrous, glabrous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, oblong, 0.15–0.5 mm long, scabrous, glabrous or pubescent, tip discoid.

**Fertile Spikelets.** Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets lanceolate, dorsally compressed, 10–12 mm long, falling entire. Spikelet callus bearded, base obtuse, attached transversely.

**Glumes.** Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma. Lower glume lanceolate, 10–12 mm long, 1 length of spikelet, cartilaginous, much thinner on margins, without keels, 5(–7) -veined. Lower glume lateral veins ribbed. Lower glume surface puberulous or setose. Lower glume apex acuminate, muticous or mucronate. Upper glume lanceolate, 10–12 mm long, 1 length of spikelet, cartilaginous, with membranous margins, 7 -veined. Upper glume lateral veins ribbed. Upper glume surface puberulous or setose, hairy below. Upper glume margins ciliate. Upper glume apex acuminate, muticous or awned, 1 -awned, awn 0–2 mm long.

**Florets.** Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret lanceolate, 6.5–7.8 mm long, 0.6–0.8 length of spikelet, chartaceous, 7 -veined, smooth or scabrous, rough on veins, pubescent or setose, ciliate on margins, acute. Fertile lemma lanceolate, 6.5–7.8 mm long, hyaline, without keel, 5 -veined, more than 3-veined. Lemma apex acute. Palea hyaline, without keels.

**Flower and Fruit.** Anthers 3, 3.6–4.8 mm long.

$2n = 36$  (1 ref TROPICOS).

**Distribution (TDWG). Continent.** Australasia.

**Country /Province /State.** Australia. Western Australia, South Australia. Eremean. NW & Lake Eyre.

**Neurachne minor** S. T. Blake. *Contrib. Queensl. Herb.*, 13: 12 (1972).

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

**TYPE** from Australia. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Carnegie in Australia occidentali, *Bennett 221* (HT: PERTH; IT: BRI-129040).

**Illustrations (Journals):** *Contr. Qld. Herb.* (13:42, Fig.3 (1972)).

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

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

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

**Habit, Vegetative Morphology.** Perennial, caespitose. Rhizomes short. Butt sheaths pilose. Culms erect, 13–25 cm long, 2–4 -noded. Culm-nodes bearded. Leaf-sheaths smooth, glabrous on surface, outer margin glabrous. Ligule a fringe of hairs, 0.4–0.8 mm long. Collar glabrous. Leaf-blades triangular or linear, flat or involute, 3–10 cm long, 0.5–2.5 mm wide, stiff. Leaf-blade midrib indistinct. Leaf-blade surface smooth, pilose. Leaf-blade margins smooth or scabrous.

**Inflorescence.** Inflorescence a panicle. Panicle spiciform, ovate, 0.6–1.5 cm long. Primary panicle branches accrescent to a central axis, with lateral stumps on axis. Panicle axis with rounded ribs, pubescent. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, oblong, 0.1–0.3 mm long, glabrous or pubescent, tip discoid.

**Fertile Spikelets.** Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets lanceolate or ovate, dorsally compressed, 5.5–8 mm long, falling entire. Spikelet callus bearded, base obtuse, attached obliquely.

**Glumes.** Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma. Lower glume lanceolate, 3.8–6.5 mm long, 0.7–0.8 length of spikelet, chartaceous, much thinner on margins, without keels, 5 -veined. Lower glume lateral veins ribbed. Lower glume surface pilose. Lower glume apex acuminate, awned, 1 -awned, awn 1–2 mm long. Upper glume elliptic, 5.5–8 mm long, 1 length of spikelet, chartaceous or cartilaginous, with membranous margins, 11–13 -veined. Upper glume lateral veins ribbed. Upper glume surface pilose or setose, hairy below. Upper glume margins ciliate. Upper glume apex acuminate.

**Florets.** Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret elliptic, gibbous, 4–5.6 mm long, 0.7 length of spikelet, membranous, 7 -veined, smooth or scabrous, rough on veins, pilose, ciliate on margins, acute. Fertile lemma elliptic, 3.7–5.6 mm long, hyaline, without keel. Lemma apex acute. Palea hyaline, without keels.

**Flower and Fruit.** Anthers 3, 2.8–3.2 mm long.

$2n = 36$  (1 ref TROPICOS).

**Distribution (TDWG). Continent.** Australasia.

**Country /Province /State.** Australia. Western Australia. Eremean.

**Neurachne munroi** (F. Muell.) F. Muell. *Fragm.* viii. 200. (1873).

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

**TYPE** from Australia. **Basionym or Replaced Name:** *Panicum munroi* F. Muell., *Fragm.* 5: 204 (1867). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *H. Beckler s.n.*, Australia: New South Wales: Goginga Mountains, Scrope Range, (MEL; IT: BRI, K).

**Illustrations (Books):** J.P.Jessop, G.R.M. Dashorst & F.M.James, *Grasses of South Australia* (2006) (501, Fig 431), S.W.L.Jacobs, R.D.B.Whalley & D.J.B.Wheeler., *Grasses of New South Wales*, 4th edn (2008) (306), J.C.Tothill, & J.B.Hacker. *The grasses of southern Queensland* (1983) (312).

**Illustrations (Journals):** *Hooker's Icones Plantarum* (t.1239 (1877)), *Contr.Qld.Herb.* (13:42, Fig.3 (1972)).

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

**Derivation** (Clifford & Bostock 2007): in honor of William Munro (1818–1880) Scots-born British soldier and amateur botanist who collected extensively in India.

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

**Habit, Vegetative Morphology.** Perennial, caespitose. Rhizomes short, scaly. Butt sheaths pilose. Culms erect, 25–30 cm long. Culm-nodes bearded. Leaf-sheaths mostly shorter than adjacent culm internode. Ligule a fringe of hairs. Leaf-blades flat or involute, 5–10 cm long, 1.5–2.5 mm wide, stiff. Leaf-blade midrib indistinct. Leaf-blade apex acute or acuminate.

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

**Fertile Spikelets.** Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets lanceolate, dorsally compressed, 6 mm long, falling entire. Spikelet callus bearded, base obtuse, attached obliquely. Spikelet callus hairs 0.25 length of spikelet.

**Glumes.** Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma. Lower glume lanceolate, 5 mm long, 0.8 length of spikelet, chartaceous, without keels, 3 -veined. Lower glume lateral veins ribbed. Lower glume surface glabrous. Lower glume apex truncate. Upper glume lanceolate, 6 mm long, 1 length of spikelet, coriaceous, with membranous margins, 5–7 -veined. Upper glume lateral veins ribbed. Upper glume surface pubescent, hairy below, with marginal tufts of hair. Upper glume apex acuminate.

**Florets.** Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret lanceolate, 4 mm long, 0.66 length of spikelet, chartaceous, 3 -veined, eciliate on margins, truncate. Fertile lemma lanceolate, 4 mm long, hyaline, without keel, 3 -veined, 0–3 -veined. Lemma apex obtuse. Palea with auriculate flaps, 1.1 length of lemma, hyaline, 2 -veined, without keels. Palea apex acute.

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

$2n = 36$  (1 ref TROPICOS).

**Distribution (TDWG). Continent.** Australasia.

**Country /Province /State.** Australia. Western Australia, Northern Territory, South Australia, Queensland, New South Wales.

Eremean, South-West. Central Australia. NW & Lake Eyre. Inland. Western Plains.

**Neurachne queenslandica** S. T. Blake. *Contrib. Queensl. Herb.* 13; 16 (1972).

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

**TYPE** from Australia. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Queensland, Enniskillen Station, *White 12746* (HT: BRI-038446).

**Illustrations (Journals):** *Contr.Qld.Herb.* (13:42, Fig.3 (1972)).

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

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

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

**Habit, Vegetative Morphology.** Perennial, caespitose. Rhizomes short. Butt sheaths pilose. Culms erect or decumbent, 20–40 cm long, 4–8 -noded. Culm-nodes bearded. Leaf-sheaths smooth, glabrous on surface or pilose, outer margin glabrous. Ligule a fringe of hairs, 0.4–1 mm long. Collar glabrous. Leaf-blades filiform or linear, flat or involute, 3–21 cm long, 1–3 mm wide, stiff. Leaf-blade midrib indistinct. Leaf-blade surface scabrous, glabrous. Leaf-blade margins scabrous.

**Inflorescence.** Inflorescence a panicle. Panicle spiciform, linear, 1–3.2 cm long. Primary panicle branches accrescent to a central axis, with lateral stumps on axis. Panicle axis with rounded ribs, glabrous or pubescent. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, oblong, 0.5–1 mm long, glabrous or pubescent, tip discoid.

**Fertile Spikelets.** Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets lanceolate or elliptic, dorsally compressed, 5.3–8 mm long, falling entire. Spikelet callus bearded, base obtuse, attached transversely.

**Glumes.** Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma. Lower glume lanceolate, 4.8–7 mm long, 0.8–0.9 length of spikelet, chartaceous, much thinner on margins, without keels, 5 -veined. Lower glume lateral veins ribbed. Lower glume surface setose. Lower glume apex acuminate. Upper glume lanceolate, 5.3–8 mm long, 1 length of spikelet, chartaceous, with membranous margins, 9 -veined. Upper glume lateral veins ribbed. Upper glume surface setose, hairy below. Upper glume margins ciliate. Upper glume apex acuminate.

**Florets.** Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret elliptic, 3.7–5.3 mm long, 0.6–0.7 length of spikelet, membranous, 7 -veined, scabrous, rough on veins, puberulous or setose, ciliate on margins, acute. Fertile lemma elliptic, 3.7–5.3 mm long, hyaline, without keel. Lemma apex acute. Palea hyaline, without keels.

**Flower and Fruit.** Anthers 3, 3.6–4.2 mm long.

$2n = 53$  (1 ref TROPICOS).

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

**Country /Province /State.** Australia. Queensland.

Central, Inland.

**Neurachne tenuifolia** S. T. Blake. *Contrib. Queensl. Herb.*, 13: 18 (1972).

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

**TYPE** from Australia. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Australia centrali, Standley Chasm, *Perry 5387* (HT: BRI-019001; IT: CANB, NSW, PERTH).

**Illustrations (Journals):** *Contr.Qld.Herb.* (13:42, Fig.3 (1972)).

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

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

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

**Habit, Vegetative Morphology.** Perennial, caespitose. Rhizomes short. Butt sheaths villous. Culms erect or decumbent, 30–50 cm long, 5–8 -noded. Culm-nodes glabrous. Leaf-sheaths smooth, glabrous on surface, outer margin glabrous. Ligule a fringe of hairs, 0.6–0.9 mm long. Collar glabrous. Leaf-blades curled, filiform, convolute, 8–25 cm long, 0.8–1.5 mm wide, stiff. Leaf-blade midrib indistinct. Leaf-blade surface papillose, rough adaxially, pubescent. Leaf-blade margins smooth.

**Inflorescence.** Inflorescence a panicle. Panicle spiciform, linear or oblong, 4–6 cm long. Primary panicle branches accrescent to a central axis, with lateral stumps on axis. Panicle axis with rounded ribs, pubescent. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, oblong, 0.6–1 mm long, pubescent, tip discoid.

**Fertile Spikelets.** Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets lanceolate, dorsally compressed, 6.5–12 mm long, falling entire. Spikelet callus bearded, base obtuse, attached transversely.

**Glumes.** Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma. Lower glume lanceolate, 6.5–12 mm long, 1 length of spikelet, cartilaginous, much thinner on margins, without keels, 5 -veined. Lower glume lateral veins ribbed. Lower glume surface glabrous or setose. Lower glume apex acuminate, mucicous or awned, 1 -awned, awn 2.5–3.5 mm long. Upper glume lanceolate, 6.5–12 mm long, 1 length of spikelet, cartilaginous, with membranous margins, 7 -veined. Upper glume lateral veins ribbed. Upper glume surface glabrous. Upper glume margins ciliate. Upper glume apex acuminate, awned, 1 -awned, awn 2.5–3.5 mm long.

**Florets.** Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret lanceolate or elliptic, 4.8–6.1 mm long, 0.5–0.75 length of spikelet, chartaceous, 7 -veined, scabrous, rough on veins, glabrous or puberulous, eciliate on margins, acute. Fertile lemma lanceolate, 4.8–6.5 mm long, hyaline, without keel. Lemma apex acute. Palea hyaline, without keels.

**Flower and Fruit.** Anthers 3, 3.2–3.7 mm long.

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

**Distribution (TDWG). Continent.** Australasia.

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

Central Australia. Central.

### **Neyraudia arundinacea** (L.) Henrard. *Meded. Herb. Leid. No. 58*, 8 (1929).

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

**TYPE** from Pakistan. **Basionym or Replaced Name:** *Aristida arundinacea* L., *Mant. Pl. 2*: 186 (1771). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: ST: *H.C. Levinge s.n.*, Oct. 1875, Pakistan: Jhelum Valley, 2000 ft (K).

**Illustrations (Books):** R.M.Pollhill, F.T.E.A., *Gramineae* (1(1970):132, Fig. 43), G.V.Pope et al., *Flora Zambesiaca* 10 (2(1999):19, T. 9), J.Bosser, *Graminees des Paturage et des Cultures a Madagascar* (1969) (131, Fig. 42), H.J.Noltie, *The Grasses of Bhutan* (2000) (653, Fig. 32 as var. *zollingeri*), H.Duistermaat, *Field Guide to the Grasses of Singapore* (2005) (91, Fig. 90 as var. *zollingeri*).

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

**Classification.** Subfamily Chloridoideae.

**Habit, Vegetative Morphology.** Perennial. Rhizomes short, scaly. Culms erect, 200–400 cm long, 5–10 mm diam. Culm-internodes solid. Leaves cauline. Ligule a fringe of hairs. Leaf-blades deciduous at the ligule, 30–60 cm long, 5–10 mm wide. Leaf-blade surface scabrous. Leaf-blade apex filiform.

**Inflorescence.** Inflorescence a panicle. Panicle open, lanceolate, dense, 30–80 cm long, 8–12 cm wide. Primary panicle branches profusely divided. Panicle branches angular, scaberulous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 5–7 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets oblong, laterally compressed, 6–9 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes definite. Floret callus evident, 0.2–0.4 mm long, pubescent.

**Glumes.** Glumes persistent, similar, shorter than spikelet, similar to fertile lemma in texture. Lower glume lanceolate, 2.2–3 mm long, 0.8 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume lateral veins absent. Lower glume apex acuminate. Upper glume lanceolate, 2.6–3.2 mm long, 0.75 length of adjacent fertile lemma, membranous, 1-keeled, 3 -veined. Upper glume apex acuminate.

**Florets.** Fertile lemma lanceolate, 3.5–4.5 mm long, membranous, without keel, 3 -veined, 0–3 -veined. Lemma margins ciliate. Lemma hairs 2 mm long. Lemma apex lobed, 2 -fid, with linear lobes, incised 0.1–0.2 of lemma length, awned, 1 -awned. Principal lemma awn from a sinus, curved, 1.5–2.5 mm long overall. Palea 0.75 length of lemma, 2 -veined. Palea keels scaberulous. Apical sterile florets resembling fertile though underdeveloped.

**Flower and Fruit.** Lodicules 2, fleshy. Anthers 3. Caryopsis with adherent pericarp, linear, isodiametric, biconvex. Embryo 0.4 length of caryopsis. Hilum punctiform.

$N = 20$  (1 ref TROPICOS).

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

**Country /Province /State.** West-central tropical Africa, East tropical Africa, South tropical Africa, Western Indian ocean. Congo, DRC. Tanzania. Malawi. Madagascar. China. Hainan. Indian Subcontinent, Indo-China, Malesia. Eastern Himalaya, India, Pakistan, West Himalaya. Andaman Is, Laos, Myanmar, Nicobar Is, Thailand, Vietnam. Java, Lesser Sunda Is, Malaya, Singapore, Sumatra.

**TDWG4.** Darjeeling, Bhutan, Sikkim. Meghalaya. Uttah Pradesh. Himachal Pradesh, Jammu Kashmir.

### **Neyraudia curvipes** Ohwi. *Bull. Tokyo Sci. Mus.*, No. 18, 9 (1947).

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

**TYPE** from Malaysia, Sabah. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: IT: *J. Clemens & M.S. Clemens 34189*, 26 Jul 1933, Malasya/Sabah: Borneo, Ranau, Penataran, Sungai, 1,371 m (L).

**Illustrations (Books):** H.J.Noltie, *The Grasses of Bhutan* (2000) (763, Fig. 50).

**Derivation** (Clifford & Bostock 2007): *L. curvus*, bent; pes, foot. Pedicels curved.

**Classification.** Subfamily Chloridoideae.

**Habit, Vegetative Morphology.** Perennial. Rhizomes short. Culms erect, robust, 200–300 cm long. Culm-internodes smooth. Leaves cauline. Leaf-sheath oral hairs ciliate. Ligule a fringe of hairs. Leaf-blades 30–60 cm long, 30–40 mm wide, indurate. Leaf-blade surface smooth, glabrous. Leaf-blade apex attenuate, filiform.

**Inflorescence.** Inflorescence a panicle. Panicle open, ovate, effuse, 30–50 cm long. Primary panicle branches profusely divided. Panicle branches bearded in axils. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 3–4 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets oblong, laterally compressed, 6–8 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes glabrous. Floret callus evident, curved, 1 mm long, pilose.

**Glumes.** Glumes persistent, similar, shorter than spikelet, similar to fertile lemma in texture. Lower glume lanceolate, 3 mm long, 0.75 length of upper glume, membranous, 1-keeled, 3 -veined. Lower glume lateral veins absent. Lower glume apex acute. Upper glume lanceolate, 4 mm long, 0.6–0.8 length of adjacent fertile lemma, membranous, 1-keeled, 3 -veined. Upper glume apex acute.

**Florets.** Fertile lemma lanceolate, 3.5–4.5 mm long, scarious to cartilaginous, without keel, 3 -veined, 0–3 -veined. Lemma margins ciliate. Lemma apex lobed, 2 -fid, with linear lobes, awned, 1 -awned. Principal lemma awn from a sinus, curved, 1–2 mm long overall. Palea 3 mm long, 0.5–0.6 length of lemma, 2 -veined. Apical sterile florets resembling fertile though underdeveloped.

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

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

**Country /Province /State. Indian Subcontinent, Malesia.** Eastern Himalaya. Borneo.

**TDWG4.** Bhutan.

**Neyraudia fanjingshanensis** L.Liu. *Fl. Reipubl. Popularis Sin.* 9(2): 388 (2002).

**Accepted by:** S-L Chen et al, *Flora of China* 22 (Poaceae) (2006).

**TYPE** from China. T:<Type of Basionym>; *vide* TROPICOS and Kew Synonymy Database: China: Guizhou: Fanjing Shan, 900 m, 20 July 1987, *T.H. Tsi* 271 (HT: PE).

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

**Classification.** Subfamily Chloridoideae.

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

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

**TDWG4.** Guizhou.

**Neyraudia montana** Keng. *Sinensia*, vi. 151 (1935).

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

**Illustrations (Books):** S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 640).

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

**Classification.** Subfamily Chloridoideae.

**Habit, Vegetative Morphology.** Perennial. Butt sheaths villous or woolly, with tawny hairs. Culms erect, 100–150 cm long, 2–3 mm diam., 4–5 -noded. Leaf-sheaths mostly shorter than adjacent culm internode, glabrous on surface. Ligule a fringe of hairs, 2 mm long. Collar glabrous. Leaf-blades deciduous at the ligule, involute, 30–60 cm long, 5–7 mm wide. Leaf-blade surface glabrous or pilose, sparsely hairy, hairy adaxially. Leaf-blade apex attenuate.

**Inflorescence.** Inflorescence a panicle. Panicle open, lanceolate, 30–60 cm long. Primary panicle branches ascending, 10–22 cm long. Spikelets appressed, solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 3–6 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets oblong, laterally compressed, 7–10 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus evident, pilose. Floret callus hairs 2 mm long.

**Glumes.** Glumes persistent, similar, shorter than spikelet, similar to fertile lemma in texture. Lower glume lanceolate, 4–5 mm long, 0.8–1 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume lateral

veins absent. Lower glume apex acuminate. Upper glume lanceolate, 5 mm long, 0.8–1 length of adjacent fertile lemma, membranous, 1-keeled, 1 -veined. Upper glume lateral veins absent. Upper glume apex acuminate.

**Florets.** Fertile lemma lanceolate, 5–6 mm long, membranous, without keel, 3 -veined, 0–3 -veined. Lemma margins ciliate. Lemma apex lobed, 2 -fid, with linear lobes, awned, 1 -awned. Principal lemma awn from a sinus, 0.8–1.5 mm long overall. Palea 4 mm long, 2 -veined. Palea surface pubescent, hairy on margins. Apical sterile florets resembling fertile though underdeveloped.

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

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

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

**TDWG4.** Anhui, Fujian, Jiangxi, Zhejiang. Hubei.

## **Neyraudia reynaudiana** (Kunth) Keng ex Hitchcock. *Am. Journ. Bot.* xxi. 131 (1934).

**Accepted by:** R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), 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 Unknown. **Basionym or Replaced Name:** *Arundo reynaudiana* Kunth, *Revis. Gramin.* 1: 275, pl. 49 (1830). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: T: *unknown s.n.*, unknown (L).

**Illustrations (Books):** T.Koyama, *Grasses of Japan and its neighbouring regions* (1987) (243, Fig. 90), C-C Hsu, *Flora of Taiwan*, Vol 5 (1978) (228), C-C Hsu, *Taiwan Grasses* (1975) (387, Pl. 1370), H.B.Gilliland, *Grasses of Malaya* (1971) (60, Fig. 6), M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 25 *Poaceae*, part 2 (2003) (32), S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 641).

**Derivation** (Clifford & Bostock 2007): L. -ana, indicating connection. As for *Reynaudia*.

**Classification.** Subfamily Chloridoideae.

**Habit, Vegetative Morphology.** Perennial. Rhizomes short, scaly. Culms erect, 200–300 cm long. Culm-internodes solid. Leaves cauline. Ligule a fringe of hairs, 3–4 mm long. Leaf-blades deciduous at the ligule, 20–100 cm long, 8–25 mm wide. Leaf-blade surface smooth. Leaf-blade apex filiform.

**Inflorescence.** Inflorescence a panicle. Panicle open, lanceolate, dense, 30–50 cm long, 8–10 cm wide. Primary panicle branches profusely divided. Panicle branches angular, scaberulous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1 basal sterile florets, 4–8 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets oblong, laterally compressed, 6–8 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus evident, 0.2–0.4 mm long, pubescent.

**Glumes.** Glumes persistent, similar, shorter than spikelet, similar to fertile lemma in texture. Lower glume lanceolate, 2–2.5 mm long, 0.9 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume lateral veins absent. Lower glume apex acuminate. Upper glume lanceolate, 2–2.5 mm long, 0.75 length of adjacent fertile lemma, membranous, 1-keeled, 1 -veined. Upper glume lateral veins absent. Upper glume apex acuminate.

**Florets.** Basal sterile florets 1, barren, without significant palea, persisting on inflorescence. Lemma of lower sterile floret similar to fertile lemma, lanceolate, 4 mm long, membranous, 3 -veined, eciliate on margins. Fertile lemma lanceolate, 3.5–4.5 mm long, membranous, without keel, 3 -veined, 0–3 -veined. Lemma margins ciliate. Lemma hairs 2–2.5 mm long. Lemma apex lobed, 2 -fid, with linear lobes, incised 0.1–0.2 of lemma length, awned, 1 -awned. Principal lemma awn from a sinus, curved, 1.5–2.5 mm long overall. Palea 0.75 length of lemma, 2 -veined. Palea keels scaberulous. Apical sterile florets resembling fertile though underdeveloped.

**Flower and Fruit.** Lodicules 2, fleshy. Anthers 3, 1.5 mm long. Caryopsis with adherent pericarp, linear, isodiametric, biconvex, 1.1 mm long. Embryo 0.4 length of caryopsis. Hilum punctiform.

*N* = 20 (1 ref TROPICOS).

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

**Country /Province /State.** China, Eastern Asia. China South Central, Hainan, China North-Central, China Southeast, Tibet. Taiwan. **Indian Subcontinent, Indo-China, Malesia.** Assam, Eastern Himalaya, India, Nepal, West Himalaya. Cambodia, Laos, Myanmar, Thailand, Vietnam. Java, Lesser Sunda Is, Malaya, Sulawesi. **Southeastern USA, Mexico.** Florida. Northwest Mexico, Mexico.

**TDWG4.** Gansu. Anhui, Fujian, Guangdong, Guangxi, Hunan, Jiangsu, Jiangxi, Zhejiang. Guizhou, Hubei, Sichuan, Yunnan. Arunachal Pradesh, Sikkim. Meghalaya, Tripura. Bihar. Punjab, Tamilnadu, Uttah Pradesh, West Bengal. Himachal Pradesh, Jammu Kashmir. Baja California Sur.



**Nicoraepoa andina** Trin. *Ann. Mo. Bot. Gard.* 94: 843 (2007).

**Accepted by:** R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online (as *Poa*).

**TYPE** from Chile. **Basionym or Replaced Name:** *Poa andina* Trin., *Linnaea* 10 (3): 306 (1836). T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: IT: *E. Poppig III, 26 Chile (47)*, Chile austral: Antuco. Omiss. in diar. (LE-TRIN-2578.02; IT: BAA (fragm. ex LE-TRIN-2578.02)). like 2578.01 top plucks with a few leaves, all evidently the same species, the second culm of this sheet says merely "*Poa andina*". HT: *Poppig D. 907*, 1829, Chile: austr. In alpis. figidiss. m. ingiv. Antucens. (LE-TRIN-2578.01a; IT: BAA (fragm. ex LE-TRIN-2578.01a)). 2578.01 b "*Phragmites*". Chile austr. Andina. Antuco. Nov 6 1828. is the same species if not the same plant but has leaves, neither has a base.. IT: *E.F. Poeppig III 26*, no date, Chile: austral, Antuco (US-81671, US-1648168 (fragm. ex W), W).

**Recent Synonyms:** *Poa straminea*.

**Illustrations (Books):** M.N.Correa, *Flora Patagonica* Parte III, Gramineae (1978) (172, Fig 109).

**Derivation** (Clifford & Bostock 2007): L. -inus, belonging to. From the Andes.

**Classification.** Subfamily Pooideae. Tribe: Poeae.

**Habit, Vegetative Morphology.** Perennial. Rhizomes elongated. Butt sheaths herbaceous, persistent and investing base of culm, with fibrous dead sheaths. Culms 20–70 cm long. Culm-internodes terete, smooth. Lateral branches lacking. Leaf-sheaths smooth, glabrous on surface. Ligule a ciliolate membrane, 2–3 mm long, pubescent on abaxial surface, truncate. Leaf-blades flat or conduplicate, 2–18(–30) cm long, 6–12 mm wide. Leaf-blade surface glabrous. Leaf-blade apex pungent. Gynodioecious ("male", in this context, indicating the bisexual state).

**Inflorescence.** Inflorescence a panicle. Peduncle smooth. Panicle open, elliptic, 15 cm long. Primary panicle branches 3–4 -nate, 4–9 cm long. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 2–4 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, laterally compressed, 6–7.5 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes scaberulous. Floret callus pilose. Floret callus hairs 0.33–0.5 length of lemma.

**Glumes.** Glumes persistent, similar, shorter than spikelet. Lower glume lanceolate, 0.9 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 acute. Upper glume lanceolate, 6–7 mm long, 1 length of adjacent fertile lemma, membranous, 1-keeled, 3 -veined. Upper glume primary vein scabrous. Upper glume apex acute.

**Florets.** Fertile florets female. Fertile lemma lanceolate, oblong in profile, 6.5–7 mm long, membranous, keeled, 5 -veined, more than 3-veined. Lemma surface scabrous. Lemma apex emarginate, awned, 1 -awned. Principal lemma awn from a sinus, 0.5–1 mm long overall. Palea 0.9 length of lemma. Palea keels scabrous. Apical sterile florets resembling fertile though underdeveloped.

**Flower and Fruit.** Lodicules 2, membranous. Anthers 3, 3–3.5 mm long, purple. Staminodes present, 1.5–3 mm long. Caryopsis with adherent pericarp, ellipsoid, 2 mm long. Hilum punctiform.

Male inflorescence bisexual similar to female.

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

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

**TDWG4.** Neuquén, Río Negro. Rest of Chile- Biobio, La Araucania, Maule, O'Higgins, Santado, Valpariso. Maule, Biobio, La Araucania. Los Lagos.

**Nicoraepoa chonotica** Phil. *Ann. Mo. Bot. Gard.* 94: 843 (2007).

**Accepted by:** R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online (as *Poa*).

**TYPE** from Chile. **Basionym or Replaced Name:** *Poa chonotica* Phil., *Linnaea* 29: 97 (1858). T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: HT: Fonck s.n.; ; Chile: Chonos-Islands (W-s.n. ex SGO-PHIL-410; IT: US-89683 (fragm. ex SGO-PHIL-410 & photo)).

**Recent Synonyms:** *Poa borchersii* R. Phil., *Anal. Univ. Chil.* xciv. 172. (1896).

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

**Derivation** (Clifford & Bostock 2007): L. -ica, belonging to. From Chonos Archipelago, Chile.

**Classification.** Subfamily Pooideae. Tribe: Poeae.

**Habit, Vegetative Morphology.** Perennial. Rhizomes elongated. Culms erect, robust, 50–200 cm long. Leaf-sheaths striately veined, smooth, glabrous on surface or pubescent. Ligule a ciliolate membrane, 2.5–3 mm long, glabrous on abaxial surface or pubescent on abaxial surface, truncate. Leaf-blades flat or conduplicate, 4–40 cm long, 7–14 mm wide, indurate, stiff. Leaf-blade surface scabrous, rough on both sides. Leaf-blade apex acute, pungent. Gynodioecious ("male", in this context, indicating the bisexual state).

**Inflorescence.** Inflorescence a panicle. Panicle open, linear or elliptic, 5–30 cm long. Primary panicle branches whorled at most nodes, 7–14 cm long. Panicle branches smooth or scaberulous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 1–4 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets ovate, laterally compressed, 6–9.5 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes smooth or scaberulous, glabrous or sparsely hairy. Floret callus pilose. Floret callus hairs 0.25–0.5 length of lemma.

**Glumes.** Glumes persistent, similar, shorter than spikelet. Lower glume ovate, 4.5–7 mm long, 0.75 length of upper glume, membranous, 1-keeled, 3 -veined. Lower glume primary vein scaberulous. Lower glume apex obtuse or acute. Upper glume ovate, 6–8 mm long, 1.2 length of adjacent fertile lemma, membranous, 1-keeled, 3 -veined. Upper glume primary vein scaberulous. Upper glume apex obtuse or acute.

**Florets.** Fertile florets female. Fertile lemma ovate, 5–7.5 mm long, membranous, mid-green or purple and light brown, bordered with last colour, keeled, 5 -veined, more than 3-veined. Lemma midvein eciliate or ciliate, hairy below. Lemma lateral veins distinct. Lemma surface scabrous. Lemma margins eciliate or ciliate, hairy below. Lemma apex obtuse, muticous or mucronate. Palea 1 length of lemma. Palea keels scabrous. Palea surface scabrous. Apical sterile florets resembling fertile though underdeveloped.

**Flower and Fruit.** Lodicules 2, membranous. Anthers 3, 3–4 mm long. Staminodes present, 1.7–2 mm long. Caryopsis with adherent pericarp, 3 mm long, light brown. Hilum punctiform.

Male inflorescence similar to female. Male spikelets resembling female.

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

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

**TDWG4.** Chubut, Neuquén, Río Negro. Biobio, La Araucania. Los Lagos, Aisen, Magellanes.

**Nicoraepoa erinacea** (Speg.) Soreng & L.J.Gillespie. *Ann. Mo. Bot. Gard.* 94: 844 (2007).

**Accepted by:** R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online (as *Poa*).

**TYPE** from Argentina. **Basionym or Replaced Name:** *Poa erinacea* Speg., *Anal. Mus. Buenos Aires* 7: 198 (1902). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *N. Illin s.n.*, Dec 1899, Argentina: R. Chubut, in aridissimis subsalsis secus R. Chubut (LPS-67; IT: BAA-2534 (ex herb. Speg.), US-88783 (fragm. ex herb. Speg.)).

**Illustrations (Books):** M.N.Correa, *Flora Patagonica* Parte III, Gramineae (1978) (167, Fig 108).

**Derivation** (Clifford & Bostock 2007): L. hedgehog. Plants caespitose with rigid, pungent foliage.

**Classification.** Subfamily Pooideae. Tribe: Poeae.

**Habit, Vegetative Morphology.** Perennial, cushion forming. Stolons present. Culms 7–12 cm long. Leaf-sheaths glabrous on surface, outer margin hairy. Ligule a ciliolate membrane, 0.5 mm long, pubescent on abaxial surface. Collar pubescent. Leaf-blades straight or curved, aciculate, 1.5–2.5 cm long, 0.5–1 mm wide. Leaf-blade surface pubescent, hairy adaxially. Leaf-blade apex pungent. Gynodioecious ("male", in this context, indicating the bisexual state).

**Inflorescence.** Inflorescence a panicle. Panicle spiciform, linear, 1.5–3.5 cm long, bearing few spikelets. Primary panicle branches indistinct the panicle almost racemose. Panicle axis 3–6 noded, glabrous or puberulous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 2–3 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets ovate, laterally compressed, 6–8 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus glabrous or sparsely hairy.

**Glumes.** Glumes persistent, similar, shorter than spikelet. Lower glume ovate, 3.5–4 mm long, 0.75–0.9 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume lateral veins absent. Lower glume apex acute. Upper glume ovate, 4–5.2 mm long, 0.9–1 length of adjacent fertile lemma, membranous, 1-keeled, 3 -veined. Upper glume primary vein smooth. Upper glume apex acute.

**Florets.** Fertile florets female. Fertile lemma ovate, 4–6 mm long, membranous, much thinner above, keeled, lightly keeled, 0–1 -veined, 0–3 -veined, without veins or one-veined. Lemma apex acute. Apical sterile florets resembling fertile though underdeveloped.

**Flower and Fruit.** Lodicules 2, membranous. Anthers 3. Staminodes present, 1–1.5 mm long. Caryopsis with adherent pericarp. Hilum punctiform.

Male inflorescence similar to female. Male spikelets resembling female.

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

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

**TDWG4.** Chubut.

**Nicoraepoa pungionifolia** (Speg.) Soreng & L.J.Gillespie. *Ann. Mo. Bot. Gard.* 94: 844 (2007).

**Accepted by:** R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online (as *Poa*).

**TYPE** from Argentina. **Basionym or Replaced Name:** *Poa pugionifolia* Speg., *Anal. Mus. Buenos Aires* 7: 199 (1902). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Argentina, Rio Chico: *Ameghino*. Argentina, Rio Schuen: *Ameghino sn* (LPT syn).

**Illustrations (Books):** M.N. Correa, *Flora Patagonica* Parte III, Gramineae (1978) (172, Fig 112).

**Classification.** Subfamily Pooideae. Tribe: Poeae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Rhizomes short. Culms 25–30 cm long. Leaf-sheaths smooth. Ligule a ciliolate membrane, 0.5–2.5 mm long, pubescent on abaxial surface, truncate. Leaf-blades straight or curved, conduplicate, 2.5–5 cm long, 1–5 mm wide. Leaf-blade surface scabrous, rough adaxially. Leaf-blade margins scabrous. Leaf-blade apex abruptly acute, pungent. Gynodioecious ("male", in this context, indicating the bisexual state).

**Inflorescence.** Inflorescence a panicle, comprising 5–15 fertile spikelets. Panicle open, linear, 3–6 cm long, bearing few spikelets. Primary panicle branches appressed, simple. Panicle axis smooth or scaberulous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 2–4 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets ovate, laterally compressed, 7–11 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus glabrous.

**Glumes.** Glumes persistent, similar, shorter than spikelet. Lower glume ovate, 5.5–6.5 mm long, 0.75–0.9 length of upper glume, membranous, 1-keeled, 1–3 -veined. Lower glume lateral veins absent or distinct. Lower glume apex acute. Upper glume ovate, 6–7 mm long, 0.75–0.9 length of adjacent fertile lemma, membranous, 1-keeled, 3 -veined. Upper glume apex acute.

**Florets.** Fertile florets female. Fertile lemma ovate, 6.5–8 mm long, membranous, keeled, 5 -veined, more than 3-veined. Lemma midvein without distinctive roughness or scaberulous. Lemma lateral veins obscure. Lemma margins ciliate or pubescent, hairy at base. Lemma apex obtuse or acute, muticous or mucronate. Palea keels scabrous. Apical sterile florets resembling fertile though underdeveloped.

**Flower and Fruit.** Lodicules 2, membranous. Anthers 3, 2.8–4 mm long. Staminodes present, 1.5 mm long. Caryopsis with adherent pericarp, 2 mm long. Hilum punctiform.

Male inflorescence similar to female. Male spikelets resembling female.

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

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

**TDWG4.** Santa Cruz, Tierra del Fuego, Magallanes.

**Nicoraepoa robusta** (Steud.) Soreng & L.J. Gillespie. *Ann. Mo. Bot. Gard.* 94: 844 (2007).

**Accepted by:** R.J. Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online (as *Poa*).

**TYPE** from Chile. **Basionym or Replaced Name:** *Poa robusta* Steud., *Syn. Pl. Gram.* 426 (1854). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *W. Lechler [Hohenacker exsiccatae]* 1191, Dec, Chile: Magallanes, Punta Arenas, paludibus salsis lit. maris prope (P-STEUD; IT: BAA (ex G), BAA (fragm. ex P), G, LE, K, US-81586 (ex W, fragm. ex K, fragm. ex P), US-946984 (fragm. ex LE), W).

**Illustrations (Books):** M.N. Correa, *Flora Patagonica* Parte III, Gramineae (1978) (172, Fig 110).

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

**Classification.** Subfamily Pooideae. Tribe: Poeae.

**Habit, Vegetative Morphology.** Perennial. Rhizomes elongated. Culms geniculately ascending or decumbent, robust, 30–80 cm long. Leaf-sheaths inflated, without keel, glabrous on surface. Ligule a ciliolate membrane, 0.8–1.5 mm long, obtuse. Leaf-blades flat or conduplicate, 4.5–15 cm long, 3–5(–8) mm wide. Leaf-blade surface scabrous, rough adaxially. Leaf-blade apex pungent. Gynodioecious ("male", in this context, indicating the bisexual state).

**Inflorescence.** Inflorescence a panicle. Panicle contracted, linear, 5–15 cm long. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 2–4 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets ovate, laterally compressed, 6.5–11 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus glabrous.

**Glumes.** Glumes persistent, similar, shorter than spikelet. Lower glume ovate, 6–7 mm long, 1 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume lateral veins absent. Lower glume apex acute or acuminate. Upper glume ovate, 6.5–8 mm long, 0.75–1 length of adjacent fertile lemma, membranous, 1-keeled, 3 -veined. Upper glume apex acute or acuminate.

**Florets.** Fertile florets female. Fertile lemma ovate, 6–9 mm long, membranous, keeled, 5 -veined, more than 3-veined. Lemma apex acuminate, muticous or mucronate. Palea keels scabrous. Apical sterile florets resembling fertile though underdeveloped.

**Flower and Fruit.** Lodicules 2, membranous. Anthers 3, 3–4 mm long. Staminodes present, 2–3 mm long. Caryopsis with adherent pericarp, trigonous, 3 mm long. Hilum punctiform.

Male inflorescence similar to female. Male spikelets resembling female.

Vegetative proliferation absent, or occurs.

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

**Country /Province /State. Southern South America.** Argentina South, Chile South. **Subantarctic islands.** Falkland Is (Malvinas).

**TDWG4.** Tierra del Fuego. Chiloe, Aisen, Magellanes. Aisen, Magellanes.

### **Nicoraepoa stepparia** (E.G.Nicora) Soreng. *Darwiniana* 49: 91 (2011).

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

**TYPE** from Argentina. **Basionym or Replaced Name:** *Poa stepparia* E.G.Nicora, *Hickenia*, 1(18): 101 (1977). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *L.R. Parodi 1268*, 5 Feb 1920, Argentina: Prov. Neuquen: Zapala, hab. en estepa seca cerca del pueblo (BAA).

**Illustrations (Books):** M.N.Correa, *Flora Patagonica* Parte III, Gramineae (1978) (172, Fig 111).

**Derivation** (Clifford & Bostock 2007): *L. steppe*, *steppe*; -aria, pertaining to. From grasslands of Argentina.

**Classification.** Subfamily Pooideae. Tribe: Poeae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Rhizomes elongated. Basal innovations intravaginal. Culms 50–70 cm long. Leaf-sheaths tubular for much of their length, with 1 of their length closed, longer than adjacent culm internode, antrorsely scabrous. Ligule an eciliate membrane, truncate. Leaf-blades conduplicate, 1–11 cm long, 3.5–6 mm wide, stiff. Leaf-blade surface scabrous, rough adaxially. Leaf-blade margins scabrous. Leaf-blade apex pungent. Gynodioecious ("male", in this context, indicating the bisexual state).

**Inflorescence.** Inflorescence a panicle. Panicle open, lanceolate, 7–15 cm long. Primary panicle branches 2.5–6.5 cm long. Panicle branches smooth or scaberulous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

**Fertile Spikelets.** Spikelets comprising 2–4 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets ovate, laterally compressed, 6.5–8 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes 0.6–1 mm long. Floret callus pubescent.

**Glumes.** Glumes persistent, similar, shorter than spikelet. Lower glume ovate, 4.3–5 mm long, 0.9 length of upper glume, membranous, 1-keeled, 3 -veined. Lower glume primary vein smooth. Lower glume apex acute. Upper glume ovate, 5–5.5 mm long, 0.75–0.9 length of adjacent fertile lemma, membranous, 1-keeled, 3 -veined. Upper glume primary vein smooth. Upper glume apex acute.

**Florets.** Fertile florets female. Fertile lemma ovate, 5.5–7 mm long, membranous, keeled, 5 -veined, more than 3-veined. Lemma midvein ciliate, hairy below. Lemma lateral veins obscure. Lemma margins eciliate or ciliate, hairy below. Lemma apex acute. Palea keels ciliolate. Apical sterile florets resembling fertile though underdeveloped.

**Flower and Fruit.** Lodicules 2, membranous. Anthers 3, 3–3.5 mm long. Staminodes present, 1.5 mm long. Caryopsis with adherent pericarp, trigonous, sulcate on hilar side, 2–2.5 mm long, dark brown. Hilum punctiform.

Male inflorescence similar to female. Male spikelets resembling female.

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

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

**TDWG4.** Neuquén, Río Negro.

### **Nicoraepoa subenervis** (Hack.) Soreng & L.J.Gillespie. *Ann. Mo. Bot. Gard.* 94: 845 (2007).

**Accepted by:** R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online (as *Poa*).

**TYPE** from Argentina. **Basionym or Replaced Name:** *Poa subenervis* Hack., *Arkiv Bot. Stockh.* vii. No. 2, 7 (1907). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: LT: *P.K.H. Dusén s.n. [6021]*, 27 Feb 1905 (from US), Argentina: Patagonia: in locis uliginosis in montanis inter Lago Viedma et Laguna Tar, ca. 1000 m (W; IT: US-1161299, US-88723 (fragm. ex W)). LT designated by Soreng & Gillespie, *Ann. Missouri Bot. Gard.* 94(4): 845 (2007). ST: *Dusen*, 1 "A." 1905, Argentina: Patagonia; Lago San Martin, Rio Fosiles in uliginosis c. 800 m (IST: S).

**Illustrations (Books):** M.N.Correa, *Flora Patagonica* Parte III, Gramineae (1978) (167, Fig 107).

**Derivation** (Clifford & Bostock 2007): L. sub, approaching; -e, without; nerva, nerve. Glumes and/or lemmas weakly nerved.

**Classification.** Subfamily Pooideae. Tribe: Poeae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Rhizomes elongated. Culms erect, 15–20 cm long. Lateral branches lacking. Leaves mostly basal. Leaf-sheaths smooth. Ligule a ciliolate membrane, 1–1.5 mm long, pubescent on abaxial surface, truncate. Leaf-blades flat or conduplicate, 2–3.5 cm long, 3–4 mm wide. Leaf-blade surface glabrous. Leaf-blade apex acuminate.

**Inflorescence.** Inflorescence a panicle. Panicle contracted, linear, 4–6 cm long, bearing few spikelets. Panicle branches scabrous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, scabrous.

**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, 5–7 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes 1–1.5 mm long, smooth or scaberulous. Floret callus pilose. Floret callus hairs 1–1.5 mm long, 0.25–0.33 length of lemma.

**Glumes.** Glumes persistent, similar, shorter than spikelet. Lower glume lanceolate, 3.5–4.5 mm long, 0.9 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume lateral veins absent. Lower glume apex acute. Upper glume ovate, 4–5 mm long, 0.9–1 length of adjacent fertile lemma, membranous, 1-keeled, 3 -veined. Upper glume apex acute.

**Florets.** Fertile lemma ovate, 4.5–5.5 mm long, membranous, keeled, 5 -veined, more than 3-veined. Lemma midvein scabrous. Lemma lateral veins obscure. Lemma apex acuminate, mucronate. Palea keels ciliolate. Apical sterile florets resembling fertile though underdeveloped.

**Flower and Fruit.** Lodicules 2, membranous. Anthers 3, 2–2.5 mm long. Caryopsis with adherent pericarp. Hilum punctiform.

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

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

**TDWG4.** Mendoza, San Juan. Neuquén, Santa Cruz. Chiloé, Aisen, Magellanes. Santiago.

**Notochloë microdon** (Benth.) Domin. *Fedde, Repert.* x. 117 (1911).

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

**TYPE** from Australia. **Basionym or Replaced Name:** *Triraphis microdon* Benth., *Fl. Austral.* 7: 605 (1878). T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: HT: *C. Moore s.n.*, Australia: New South Wales: Blue Mountains (K).

**Illustrations (Books):** K.O.Mallett (ed.), *Flora of Australia*, Vol 44B. *Poaceae* (2004) (33, Fig 6), D.Sharp & B.K.Simon, *AusGrass*. Grasses of Australia. CD-Rom Version 1.0. (2002).

**Illustrations (Journals):** *Ann. Missouri Bot. Gard.* (97: 346, Fig.13 (2010)).

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

**Derivation** (Clifford & Bostock 2007): Gk. mikros, small; odous, tooth. The lemma is shortly tridentate.

**Classification.** Subfamily Danthonioideae. Tribe: Arundineae. Tribe: Danthonieae.

**Habit, Vegetative Morphology.** Perennial, caespitose. Culms 40–60 cm long. Ligule a fringe of hairs. Leaf-blades convolute, 15–30 cm long, 2–3 mm wide. Leaf-blade surface ribbed.

**Inflorescence.** Inflorescence a panicle. Panicle open, ovate, effuse. Panicle branches terete. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, filiform, curved.

**Fertile Spikelets.** Spikelets comprising 6–12 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets oblong, laterally compressed, 15–30 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus evident, pilose.

**Glumes.** Glumes persistent, similar, shorter than spikelet, thinner than fertile lemma. Lower glume lanceolate, 4–8 mm long, 0.8 length of upper glume, membranous, 1-keeled, 3 -veined. Lower glume apex acuminate. Upper glume lanceolate, 5–9 mm long, 0.5–1 length of adjacent fertile lemma, membranous, 1-keeled, 3–5 -veined. Upper glume apex acuminate.

**Florets.** Fertile lemma elliptic, 6–9 mm long, keeled, 7 -veined, more than 3-veined. Lemma lateral veins ribbed. Lemma apex dentate, 3 -fid, incised 0.15 of lemma length. Palea 2 -veined. Palea keels ciliolate. Apical sterile florets resembling fertile though underdeveloped.

**Distribution (TDWG). Continent.** Australasia.

**Country /Province /State.** Australia. New South Wales.

Tablelands.