

Ichnanthus annuus T.J. Killeen & C.C. Kirpes. *Novon*, 1(4): 179 (1991).

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

TYPE from Brazil. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *G. Eiten & L. Eiten 10743*, 21 Feb 1970, Brazil: Maranhco: Munc. de Loreto: "Ilha de Balsas" region between the Balsas & Parnamba Rivers. 35 km S of Loreteo. 7:23'S 45:4'W. Few hundred meters south of main house of Fazenda Morros. Edge of cultivated ground, in shade of forest trees. 300 m. (US-2689090; IT: US-2701820).

Illustrations (Journals): *Novon* (1: 180, Fig. 3 (1992)).

Derivation (Clifford & Bostock 2007): L. annual. Annuals.

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

Habit, Vegetative Morphology. Annual. Culms geniculately ascending, slender, 15–40 cm long, 5–11 -noded, rooting from lower nodes. Culm-internodes striate, distally pilose (sparsely). Lateral branches sparse. Leaf-sheaths tight, keeled, pilose. Leaf-sheath oral hairs ciliate. Ligule a fringe of hairs, 0.5 mm long. Leaf-blade base cordate, symmetrical, with a brief petiole-like connection to sheath. Leaf-blades ovate, 2–9 cm long, 10–25 mm wide, membranous. Leaf-blade venation with distinct cross veins. Leaf-blade surface scaberulous, rough adaxially, pilose. Leaf-blade margins cartilaginous, scabrous. Leaf-blade apex acute.

Inflorescence. Inflorescence a panicle, terminal or terminal and axillary (occasionally). Panicle open, 3–11 cm long, with spikelets clustered towards branch tips (in groups of 2–9 spikelets). Primary panicle branches simple. Panicle axis pilose. Spikelets ascending, in pairs. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets lanceolate, laterally compressed, acute, 4–5 mm long, falling entire. Floret callus without wings.

Glumes. Glumes similar, shorter than spikelet or reaching apex of florets, thinner than fertile lemma. Lower glume ovate, clasping, 0.66–0.75 length of spikelet, cartilaginous, 1-keeled, 3 -veined. Lower glume lateral veins ribbed. Lower glume surface scabrous, glabrous. Lower glume apex acuminate to setaceously acuminate. Upper glume lanceolate, 0.9–1 length of adjacent fertile lemma, 1 length of spikelet, cartilaginous, 5 -veined. Upper glume lateral veins ribbed. Upper glume surface pilose (sparsely). Upper glume apex acuminate.

Florets. Basal sterile florets 1, male, with palea. Lemma of lower sterile floret 1 length of spikelet, cartilaginous, 5 -veined, ribbed, pilose (sparsely). Fertile lemma 2 mm long, cartilaginous (thinly), shiny. Lemma margins involute. Lemma apex acute, without appendage. Palea cartilaginous (thinly).

Flower and Fruit. Anthers 3, 1.5 mm long. Caryopsis with adherent pericarp.

Distribution (TDWG). Continent. South America.

Country /Province /State. Northern South America, Western South America, Brazil (Maranhao). Venezuela. Colombia. Brazil Northeast.

Ichnanthus bambusiflorus (Trin.) Doell. *Mart. Fl. Bras.* ii. II. 288. (1877).

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

TYPE from Brazil. **Basionym or Replaced Name:** *Panicum bambusiflorum* Trin., *Gram. Panic.* 188 (1826). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *G.H. von Langsdorff s.n.*, Brazil: in fruticetis umbrosis (LE-TRIN-0599.01; IT: US-80480 (fragm. ex LE)).

Illustrations (Books): S.A.Renvoize, *The Grasses of Bahia*, 1984 (121, Fig. 44).

Derivation (Clifford & Bostock 2007): L. flos, flower. Resembling *Bambusa* with respect to the inflorescence.

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

Habit, Vegetative Morphology. Perennial. Culms erect or rambling, robust, 150–1000 cm long. Leaf-sheaths glabrous on surface or pilose, with tubercle-based hairs. Ligule a ciliolate membrane, 0.5–1 mm long. Leaf-blade base cordate, without a false petiole or with a brief petiole-like connection to sheath. Leaf-blades lanceolate, 20–40 cm long, 20–40 mm wide. Leaf-blade venation with distinct cross veins. Leaf-blade surface glabrous or pubescent, hairy abaxially. Leaf-blade margins scabrous. Leaf-blade apex acuminate.

Inflorescence. Inflorescence a panicle. Panicle open, ovate, 8–20 cm long, with spikelets clustered towards branch tips. Primary panicle branches 5–15 cm long. Panicle branches bearing congested spikelets. Spikelets ascending, in pairs. Fertile spikelets sessile and pedicelled, 2 in the cluster. Pedicels present, filiform, angular.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. 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, laterally compressed, 5–6 mm long, falling

entire, readily shedding fertile florets. Floret callus winged, with apical wings shrivelled to concave scars, with this appendage 0.5–1 mm long.

Glumes. Glumes similar, reaching apex of florets, thinner than fertile lemma. Lower glume lanceolate or ovate, 4–5 mm long, 0.75–0.8 length of spikelet, herbaceous, 1-keeled, 3–5 -veined. Lower glume surface pilose, hairy at apex. Lower glume apex cuspidate. Upper glume oblong or ovate, 1 length of spikelet, herbaceous, 1-keeled, 5–7 -veined. Upper glume surface glabrous or pilose. Upper glume apex acuminate.

Florets. Basal sterile florets 1, barren, with palea. Lemma of lower sterile floret similar to upper glume, oblong or ovate, 1 length of spikelet, 1-keeled, 5–7 -veined, glabrous or pubescent, acuminate. Fertile lemma elliptic, dorsally compressed, 3–3.5 mm long, indurate, without keel. Lemma margins involute. Lemma apex acute. Palea involute, indurate.

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

Distribution (TDWG). Continent. South America.

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

TDWG4. Goiás, Bahia, Ceara, Rio Grande do Norte, Paraíba, Pernambuco, Alagoas, Sergipe, Minas Gerais, Rio de Janeiro, Espírito Santo, Sao Paulo Parana.

***Ichnanthus breviscrobis* Doell. *Mart. Fl. Bras.* ii. II. 294. (1877).**

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

TYPE from Brazil. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: LT: *Spruce* 385, ca. 1851, Brazil: Para: near Santarem (K; ILT: K, US-2767362 (fragm. ex K & P)). LT designated by Stieber, *Syst. Bot.* 12: 190 (1987).

Illustrations (Books): J.A.Steyermark et al, *Flora of the Venezuelan Guayana* Vol. 8 (2004) (126, Fig. 84), E.Judziwicz, *Flora of the Guianas*, 187. *Poaceae* (1990) (273, Fig. 47).

Derivation (Clifford & Bostock 2007): *L. brevis*, short; *scrobis*, ditch.

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

Habit, Vegetative Morphology. Perennial. Culms decumbent or scandent, 100–500(–1000) cm long. Leaves cauline. Ligule an eciliate membrane, 1 mm long. Leaf-blades lanceolate or elliptic, 10–25 cm long, 15–30 mm wide, glaucous. Leaf-blade surface scaberulous, rough adaxially, glabrous or pubescent, hairy abaxially. Leaf-blade apex acuminate.

Inflorescence. Inflorescence a panicle. Panicle open, ovate, 15–30 cm long, 5–10 cm wide, contracted about primary branches. Primary panicle branches ascending or spreading, 7 cm long, bearing spikelets almost to the base. Panicle branches pubescent in axils. Spikelets in pairs. Fertile spikelets pedicelled, 2 in the cluster. Pedicels present, angular, unequal.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets ovate, laterally compressed, 4–4.5 mm long, falling entire, readily shedding fertile florets. Floret callus winged, with apical wings shrivelled to concave scars.

Glumes. Glumes similar, reaching apex of florets, thinner than fertile lemma. Lower glume ovate, 3.5 mm long, 0.6–0.8 length of spikelet, membranous, 1-keeled, 3–5 -veined. Lower glume surface pubescent. Lower glume apex obtuse. Upper glume ovate, herbaceous, without keels, 7 -veined. Upper glume surface pubescent. Upper glume apex obtuse.

Florets. Basal sterile florets 1, male, with palea. Lemma of lower sterile floret similar to upper glume, ovate, 1 length of spikelet, without keels, 7 -veined, pubescent, obtuse. Fertile lemma elliptic, dorsally compressed, 3.5–4 mm long, indurate, without keel, 5 -veined, more than 3-veined. Lemma lateral veins obscure. Lemma margins involute. Lemma apex acute. Palea involute, indurate.

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

Distribution (TDWG). Continent. South America.

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

TDWG4. Roraima, Para, Amapa, Amazonas, Acre, Rondonia.

***Ichnanthus calvescens* (Trin.) Doell. *Mart. Fl. Bras.* ii. II. 285. (1877).**

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

TYPE from Brazil. **Basionym or Replaced Name:** *Panicum calvescens* Nees ex Trin., *Gram. Panic.* 193 (1826). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: ST: *Nees ab Esenb.*, Brazil (LE-TRIN-0612.01).

ST: *K.F.P. von Martius s.n.*, no date, Brazil (US-80545 (fragm. ex B)).

LT: *Burchell 9042*, Brazil: Para: ad Tocantins fluvium inter Funil et S. Joco, s.d. (BR; ILT: K, US-2808813 (fragm. ex BR)). LT designated by Stieber, *Syst. Bot.* 7: 109 (1982).

Illustrations (Books): S.A.Renvoize, *Gramineas de Bolivia* (1998) (380, Fig 81), J.A.Steyermark et al, *Flora of the Venezuelan Guayana* Vol. 8 (2004) (127, Fig. 85), E.Judziewicz, *Flora of the Guianas*, 187. *Poaceae* (1990) (273, Fig 47).

Derivation (Clifford & Bostock 2007): *L. calvesco*, become bald. Plants in whole or in part glabrous.

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

Habit, Vegetative Morphology. Perennial. Culms erect or rambling, 40–350 cm long. Lateral branches ample. Leaves cauline. Leaf-sheaths glabrous on surface to hispid, with simple hairs or tubercle-based hairs. Leaf-sheath auricles erect. Ligule a ciliate membrane, 1–2 mm long. Leaf-blade base simple or broadly rounded. Leaf-blades lanceolate or ovate, 8–30 cm long, 10–30 mm wide. Leaf-blade venation with distinct cross veins. Leaf-blade surface glabrous to pilose. Leaf-blade apex acuminate.

Inflorescence. Inflorescence a panicle. Panicle open, ovate, effuse, 20–45 cm long, 9–20 cm wide. Primary panicle branches 2–6 -nate, whorled at most nodes, 10–15 cm long. Spikelets ascending, in pairs. Fertile spikelets pedicelled, 2 in the cluster. Pedicels present, filiform, angular, flexuous.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets ovate, laterally compressed, 2.5–4 mm long, falling entire, readily shedding fertile florets. Floret callus winged, with apical wings adnate to lemma, with this appendage 1 mm long.

Glumes. Glumes similar, shorter than spikelet or reaching apex of florets, thinner than fertile lemma. Lower glume lanceolate or ovate, 0.5–1 length of spikelet, herbaceous, 1-keeled, 3 -veined. Lower glume apex acute. Upper glume lanceolate or oblong, 0.5–1 length of spikelet, herbaceous, 1-keeled, 3 -veined. Upper glume apex acute.

Florets. Basal sterile florets 1, barren, with palea. Lemma of lower sterile floret similar to upper glume, lanceolate or oblong, 1 length of spikelet, 1-keeled, 5 -veined, acute. Fertile lemma oblong, dorsally compressed, 2.5–3 mm long, indurate, without keel. Lemma margins involute. Lemma apex acute. Palea involute, indurate.

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

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

Country /Province /State. Mexico. Southeast Mexico. **Mesoamerica, Caribbean, Northern South America, Western South America, Brazil.** Belize, Costa Rica, Panama. Trinidad-Tobago. Guyana, Surinam, Venezuela. Bolivia, Colombia, Peru. Brazil West Central, Brazil Northeast, Brazil North, Brazil Southeast.

TDWG4. Roraima, Para, Amapa, Amazonas, Acre, Rondonia, Mato Grosso, Goias, Bahia, Maranhao, Piaui, Sao Paulo Parana. Tabasco.

Ichnanthus camporum Swallen. *Phytologia*, xi. 149 (1964).

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

TYPE from Brazil. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *Chase 11274*, 17 Mar 1930, Brazil: Goias: between Viannapolis and Ponta Funda, weak, fragile, clambering in low brush, sandy clay campo, 900–1000 m (US-1448744; IT: US-2529251).

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

Derivation (Clifford & Bostock 2007): *L. campus*, plain. Growing on the plains.

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

Habit, Vegetative Morphology. Perennial. Rhizomes elongated. Culms 60–110 cm long. Culm-internodes distally glabrous or pilose. Leaves mostly basal. Leaf-sheaths pilose or hirsute. Ligule a ciliate membrane, 1 mm long. Leaf-blades lanceolate, 16–20 cm long, 6–9 mm wide. Leaf-blade venation with distinct cross veins. Leaf-blade surface pilose or hirsute. Leaf-blade margins cartilaginous, serrulate.

Inflorescence. Inflorescence a panicle. Panicle open, lanceolate or ovate, 10–30 cm long. Primary panicle branches 6–8 in number, simple. Panicle branches bearing distant spikelets. Spikelets ascending, in pairs. Fertile spikelets sessile and pedicelled, 2 in the cluster. Pedicels present, filiform, angular.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets lanceolate, laterally compressed, 5–5.5 mm long, falling entire, readily shedding fertile florets. Floret callus winged, with apical wings reduced to convex swellings, with this appendage 1 mm long.

Glumes. Glumes similar, reaching apex of florets, thinner than fertile lemma. Lower glume lanceolate, 3–3.5 mm long, 0.6 length of spikelet, herbaceous, 1-keeled, 3 -veined. Lower glume lateral veins ribbed. Lower glume apex acute. Upper glume lanceolate, 1 length of spikelet, herbaceous, 1-keeled, 5 -veined. Upper glume lateral veins ribbed. Upper glume apex acute.

Florets. Basal sterile florets 1, barren, with palea. Lemma of lower sterile floret similar to upper glume, oblong, 1 length of spikelet, 1-keeled, 5 -veined, ribbed, acute. Fertile lemma elliptic, dorsally compressed, 3–3.5 mm long, indurate, without keel. Lemma margins involute. Lemma apex acute. Palea involute, indurate.

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

Distribution (TDWG). Continent. South America.

Country /Province /State. Western South America, Brazil. Brazil West Central, Brazil North, Brazil Southeast.

TDWG4. Goias.

Ichnanthus conjunctus Hitchcock & Ekman. *U. S. Dept. Agric., Misc. Publ. No. 243:297* (1936).

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

TYPE from Cuba. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *Ekman* 6536, Cuba: Oriente, Sabanos, on moist wood in a woods (US-1387342; IT: G, US-1502322).

Illustrations (Books): A.S.Hitchcock, *Manual of the Grasses of the West Indies* (1936) (297, Fig. 287).

Derivation (Clifford & Bostock 2007): *L. conjungo*, join together. Panicle branches appressed.

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

Habit, Vegetative Morphology. Perennial. Culms decumbent or rambling, 3–8 cm long, rooting from lower nodes. Culm-internodes distally glabrous or pilose (sparsely). Lateral branches sparse. Leaf-sheaths outer margin hairy. Ligule a ciliate membrane, 0.5 mm long. Leaf-blade base broadly rounded, asymmetrical, with a brief petiole-like connection to sheath. Leaf-blades ovate, 0.5–2 cm long, 5–9 mm wide. Leaf-blade surface glabrous or puberulous. Leaf-blade apex acute.

Inflorescence. Inflorescence composed of racemes, terminal or terminal and axillary. Racemes 3–6, borne along a central axis, erect, 1–3(–6) cm long. Central inflorescence axis 1–2(–7) cm long. Spikelet packing lax, irregular. Spikelets ascending. Pedicels present.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets lanceolate, laterally compressed, acute, 3 mm long, falling entire, readily shedding fertile florets. Floret callus winged, with apical wings reduced to convex swellings.

Glumes. Glumes similar, reaching apex of florets, thinner than fertile lemma. Lower glume ovate, 1.5 mm long, 0.5 length of spikelet, herbaceous, 1-keeled, 3–5 -veined. Lower glume lateral veins ribbed. Lower glume surface glabrous. Lower glume apex acute. Upper glume lanceolate, 1 length of spikelet, herbaceous, 1-keeled, 5 -veined. Upper glume lateral veins ribbed. Upper glume surface glabrous. Upper glume apex acuminate.

Florets. Basal sterile florets 1, barren, with palea. Lemma of lower sterile floret similar to upper glume, oblong, 1 length of spikelet, 1-keeled, 5 -veined, ribbed, acuminate. Fertile lemma elliptic, dorsally compressed, 2.5 mm long, indurate, without keel. Lemma margins involute. Lemma apex obtuse. Palea involute, indurate.

Flower and Fruit. Caryopsis with adherent pericarp.

Distribution (TDWG). Continent. South America.

Country /Province /State. Caribbean (Cuba only). Cuba.

Ichnanthus cordatus Ekman. *Arkiv Bot. Stockh.* x. No. 17, 18 (1911).

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

TYPE from Brazil. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *Malmé* 3187, 29 Apr 1903, Brazil: Matto Grosso: Cuyaba; in silvula vallis (S; IT: US-2489451 (fragm. ex S), US-702285 (fragm. ex S)).

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

Derivation (Clifford & Bostock 2007): *L. cordus*, heart; *-ata*, possessing. Leaf blades cordate.

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

Habit, Vegetative Morphology. Annual. Culms geniculately ascending, slender, 11–40 cm long, 11 -noded, rooting from lower nodes. Culm-internodes striate, distally pilose (sparsely). Lateral branches sparse. Leaf-sheaths tight, keeled, pilose. Leaf-sheath oral hairs ciliate. Ligule a fringe of hairs, 0.5 mm long. Leaf-blade base cordate, symmetrical, with a brief petiole-like connection to sheath. Leaf-blades ovate, 2–4 cm long, 10–20 mm wide, membranous. Leaf-blade surface scaberulous, rough adaxially. Leaf-blade apex acute.

Inflorescence. Inflorescence a panicle, terminal and axillary, embraced at base by subtending leaf. Panicle open, 1.5–6 cm long, with spikelets clustered towards branch tips. Primary panicle branches simple. Spikelets ascending, in pairs. Fertile spikelets pedicelled. Pedicels present, unequal.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets lanceolate, laterally compressed, acute, 4 mm long, falling entire. Floret callus winged, with apical wings adnate to lemma.

Glumes. Glumes similar, shorter than spikelet. Lower glume ovate, clasping, 0.66 length of spikelet, 3 -veined. Lower glume apex acuminate. Upper glume lanceolate, 1 length of adjacent fertile lemma, 1 length of spikelet, 5 -veined. Upper glume surface pilose. Upper glume apex acuminate.

Florets. Basal sterile florets 1, with palea. Lemma of lower sterile floret 5 -veined. Fertile lemma 2 mm long, coriaceous, shiny. Lemma surface glabrous. Lemma margins involute. Lemma apex acute, without appendage. Palea apex obtuse.

Flower and Fruit. Anthers 1 mm long. Caryopsis with adherent pericarp.

Distribution (TDWG). Continent. South America.

Country /Province /State. Brazil (Mato Grosso). Brazil West Central, Brazil Northeast, Brazil North.

***Ichnanthus dasycoleus* Tutin. *Journ. Bot.* lxxii. 337. (1934).**

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

TYPE from Guyana. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *T.G. Tutin* 642, 28 Aug 1933, Guyana: Kaietuk savanna, Potaro River, shady place, rather damp, near the top of the fall, 330 m (BM).

Illustrations (Books): S.A.Rennoize, *The Grasses of Bahia*, 1984 (117, Fig. 42).

Derivation (Clifford & Bostock 2007): Gk *dasys*, hairy; *koleos*, sheath. Lower leaf-sheaths densely hairy.

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

Habit, Vegetative Morphology. Annual. Culms geniculately ascending or decumbent, 30–150 cm long, rooting from lower nodes. Lateral branches sparse. Leaves cauline. Leaf-sheaths woolly. Ligule a ciliate membrane, 0.5–1.5 mm long. Leaf-blades lanceolate, 8–13 cm long, 12–20 mm wide. Leaf-blade venation with distinct cross veins. Leaf-blade surface scabrous, rough adaxially, pubescent, hairy abaxially. Leaf-blade apex acuminate.

Inflorescence. Inflorescence a panicle. Panicle open, ovate, 10–20 cm long. Primary panicle branches spreading, whorled at lower nodes, simple, 5–11 cm long. Panicle branches stiff. Spikelets ascending, in pairs. Fertile spikelets pedicelled, 2 in the cluster. Pedicels present, filiform, angular.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets oblong, laterally compressed, acute or acuminate, 4–4.5 mm long, falling entire, readily shedding fertile florets. Floret callus winged, with apical wings adnate to lemma, with this appendage 0.5–1 mm long.

Glumes. Glumes similar, reaching apex of florets, thinner than fertile lemma. Lower glume lanceolate, 0.5 length of spikelet, herbaceous, 1-keeled, 3 -veined. Lower glume surface scabrous. Lower glume apex acute or acuminate. Upper glume lanceolate, 1 length of spikelet, herbaceous, 1-keeled, 5 -veined. Upper glume surface scabrous. Upper glume apex obtuse or acute.

Florets. Basal sterile florets 1, barren, with palea. Lemma of lower sterile floret similar to upper glume, oblong, 1 length of spikelet, 1-keeled, 5 -veined, scabrous, obtuse or acute. Fertile lemma elliptic, dorsally compressed, 3–3.5 mm long, indurate, without keel. Lemma margins involute. Lemma apex obtuse. Palea involute, indurate.

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

Distribution (TDWG). Continent. South America.

Country /Province /State. Mesoamerica, Northern South America, Brazil. Belize, Honduras. Guyana, Surinam, Venezuela. Brazil Northeast, Brazil North.

TDWG4. Bahia.

***Ichnanthus drepanophyllus* Mez. *Repert. Spec. Nov. Regni Veg.* 15: 131 (1918)**

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

TYPE from Brazil. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *Gardner 1175*, Dec. 1837, Brazil: Pernambuco (K; IT: B, BM, G, K, NY, OXF, W, US-2767355 (fragm. ex G, OXF, W)).

Illustrations (Books): S.A.Renvoize, *The Grasses of Bahia*, 1984 (119, Fig. 43).

Derivation (Clifford & Bostock 2007): Gk *drepanos*, sickle; *phllo*, leaf. Leaf-blades sickle-shaped.

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

Habit, Vegetative Morphology. Perennial, culms solitary. Rhizomes elongated. Butt sheaths woolly. Basal innovations flabellate. Culms erect or geniculately ascending, 28–60 cm long. Culm-nodes bearded. Leaves basal and cauline. Leaf-sheaths glabrous on surface, outer margin hairy. Ligule a fringe of hairs. Leaf-blade base with a false petiole, petiole 3–3.5 cm long. Leaf-blades lanceolate, 15–18 cm long, 5–12 mm wide. Leaf-blade venation with distinct cross veins. Leaf-blade surface scabrous, rough adaxially.

Inflorescence. Inflorescence a panicle. Panicle contracted, linear, 15–22 cm long, 1–2 cm wide. Primary panicle branches 5–7 in number, appressed, 2–5 cm long, bearing spikelets almost to the base. Panicle branches bearing congested spikelets. Spikelets ascending, in pairs. Fertile spikelets pedicelled, 2 in the cluster. Pedicels present, filiform, angular.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets lanceolate, laterally compressed, acute, 8–10 mm long, falling entire, readily shedding fertile florets. Floret callus winged, with apical wings adnate to lemma, with this appendage 4–5 mm long.

Glumes. Glumes similar, reaching apex of florets, thinner than fertile lemma. Lower glume elliptic or ovate, 5–6 mm long, 0.6–0.75 length of spikelet, herbaceous, 1-keeled, 5 -veined. Lower glume apex acute. Upper glume elliptic, 1 length of spikelet, herbaceous, 1-keeled, 7 -veined. Upper glume apex acute.

Florets. Basal sterile florets 1, barren, with palea. Lemma of lower sterile floret similar to upper glume, elliptic, 1 length of spikelet, 1-keeled, 5 -veined, acute. Fertile lemma oblong, dorsally compressed, 6 mm long, indurate, without keel. Lemma margins involute. Lemma apex acute. Palea involute, indurate.

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

Distribution (TDWG), Continent. South America.

Country /Province /State. Brazil. Brazil Northeast.

TDWG4.

Ichnanthus ephemerolepharis G.A. Black & Frses ex G.A. Black & Pires. *Bol. Tecn. Inst. Agron. Norte, Para*, No. 15, 5 (1948).

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

TYPE from Brazil. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *R. L. Froes 22898*, Oct 1947, Brazil: Amazonas: in silvula humili vulgo "catanga" inter Rio Preto et Rio Padauri (IAN; IT: US-2154027, US-2236061 (fragm. & photo ex IAN)).

Illustrations (Books): J.A.Steyermark et al, *Flora of the Venezuelan Guayana* Vol. 8 (2004) (128, Fig. 87).

Derivation (Clifford & Bostock 2007): Gk *ephemeros*, short-lived; *blepharis*, eye-lash. At the base of the upper floret there are two membranous lateral wings which may shrivel at maturity.

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

Habit, Vegetative Morphology. Perennial. Culms erect, 60–120 cm long. Lateral branches lacking. Leaves mostly basal. Leaf-sheaths glabrous on surface, outer margin hairy. Ligule a fringe of hairs, 1–2 mm long. Leaf-blade base without a false petiole or with a brief petiole-like connection to sheath. Leaf-blades lanceolate, 25–50 cm long, 5–15 mm wide. Leaf-blade venation with distinct cross veins. Leaf-blade surface glabrous. Leaf-blade apex acuminate or attenuate.

Inflorescence. Inflorescence a panicle. Panicle open, lanceolate or ovate, 10–20 cm long. Primary panicle branches ascending, whorled at most nodes. Panicle branches scabrous. Spikelets ascending, in pairs. Fertile spikelets pedicelled, 2 in the cluster. Pedicels present, filiform, angular.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets lanceolate, laterally compressed, 3–4 mm long, falling entire, readily shedding fertile florets. Floret callus winged, with apical wings adnate to lemma, with this appendage 1–1.5 mm long.

Glumes. Glumes similar, reaching apex of florets, thinner than fertile lemma. Lower glume elliptic or oblong, 2.5–3 mm long, 0.7–0.8 length of spikelet, herbaceous, 1-keeled, 1–3 -veined. Lower glume lateral veins absent or distinct. Lower glume surface pilose, hairy at apex. Lower glume apex obtuse. Upper glume oblong, 1 length of spikelet, herbaceous, 1-keeled, 5 -veined. Upper glume apex obtuse.

Florets. Basal sterile florets 1, barren, with palea. Lemma of lower sterile floret similar to upper glume, oblong, 1 length of spikelet, 1-keeled, 5 -veined, obtuse. Fertile lemma oblong, dorsally compressed, 2.5–3.5 mm long, chartaceous, without keel. Lemma margins involute. Lemma apex acute. Palea involute, indurate.

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

Distribution (TDWG). Continent. South America.

Country /Province /State. Northern South America, Brazil. Venezuela. Brazil North.

TDWG4.

Ichnanthus glaber (Raddi) Hitchc. *Contrib. US Nat. Herb.* 22:10 (1920).

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

TYPE from Brazil. **Basionym or Replaced Name:** *Navicularia glabra* Raddi, *Agrostogr. Bras.* 39–40 (1823)

. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *Raddi s.n.*, ca. 1817–1818, Brazil: Rio de Janeiro: in saltibus montosis prope Rio de Janeiro (PI; IT: BM, FI, P).

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

Derivation (Clifford & Bostock 2007): L. smooth. Leaf-blades lacking hairs.

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

Habit, Vegetative Morphology. Perennial. Culms decumbent, 30–40 cm long, rooting from lower nodes. Leaves cauline. Leaf-sheath oral hairs ciliate. Leaf-sheath auricles erect, 2–4 mm long. Ligule an eciliate membrane, 1 mm long. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades lanceolate or oblong, 10–16 cm long, 15–20 mm wide. Leaf-blade venation with distinct cross veins. Leaf-blade surface glabrous. Leaf-blade apex acuminate.

Inflorescence. Inflorescence a panicle. Panicle open, ovate, effuse, 7–15 cm long, 5–10 cm wide. Primary panicle branches ascending. Panicle branches capillary, flexuous. Spikelets ascending, in pairs. Fertile spikelets pedicelled, 2 in the cluster. Pedicels present, filiform, angular, 10–15 mm long.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets lanceolate, laterally compressed, acuminate, 5–6.5 mm long, falling entire, readily shedding fertile florets. Floret callus winged, with apical wings adnate to lemma, with this appendage 0.7–0.9 mm long.

Glumes. Glumes similar, reaching apex of florets, thinner than fertile lemma. Lower glume lanceolate or ovate, 3.5–4 mm long, 0.6–0.7 length of spikelet, herbaceous, 1-keeled, 3 -veined. Lower glume apex cuspidate. Upper glume lanceolate or ovate, 1 length of spikelet, herbaceous, 1-keeled, 5 -veined. Upper glume apex cuspidate.

Florets. Basal sterile florets 1, barren, with palea. Lemma of lower sterile floret similar to upper glume, lanceolate or ovate, 1 length of spikelet, 1-keeled, 5 -veined, acute. Fertile lemma oblong, dorsally compressed, 3.5–4 mm long, indurate, without keel. Lemma margins involute. Lemma apex acuminate. Palea involute, indurate.

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

Distribution (TDWG). Continent. South America.

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

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

Ichnanthus grandifolius (Doell) F.O. Zuloaga & T.R. Soderstrom. *Smithsonian Contrib. Bot.*, 59: 31 (1985).

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

TYPE from Brazil. **Basionym or Replaced Name:** *Panicum grandifolium* Doell, *Fl. Bras.* 2(2): 195 (1877)

. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *Martius s.n.*, Brazil: Bahia: habitat in sylvis ad Itahypi fluvium et Camacorum vic. um S. Pedro d' Alcantara (M; IT: US (fragm. ex M & photo)).

Recent Synonyms: *Ichnanthus umbraphilus* S.A. Renvoize, *Kew Bull.*, 39(1): 180 (1984).

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

Derivation (Clifford & Bostock 2007): L. grandis, large; folium, leaf. Leaf-blades large.

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

Habit, Vegetative Morphology. Perennial. Rhizomes elongated. Butt sheaths pubescent. Culms geniculately ascending, 60–200 cm long. Leaf-sheaths pilose. Ligule a ciliate membrane, 1 mm long. Collar

dark. Leaf-blade base with a brief petiole-like connection to sheath or with a false petiole, petiole 0.3–2 cm long. Leaf-blades lanceolate or ovate, 22–32 cm long, 35–60 mm wide. Leaf-blade venation with distinct cross veins. Leaf-blade surface glabrous. Leaf-blade margins glabrous or ciliate, hairy at base. Leaf-blade apex acuminate.

Inflorescence. Inflorescence composed of racemes. Racemes 20–30, borne along a central axis, 3–15 cm long. Central inflorescence axis 15–45 cm long. Spikelet packing distant, irregular. Spikelets appressed, in pairs. Fertile spikelets sessile and pedicelled, 2 in the cluster. Pedicels present, filiform, angular, 2–3 mm long.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets oblong, laterally compressed, 3.5–4.5 mm long, falling entire, readily shedding fertile florets. Floret callus winged, with apical wings shrivelled to concave scars.

Glumes. Glumes similar, reaching apex of florets, thinner than fertile lemma. Lower glume lanceolate, 0.5–0.66 length of spikelet, herbaceous, 1-keeled, 3 -veined. Lower glume lateral veins ribbed. Lower glume surface pilose, hairy at apex. Lower glume apex acute. Upper glume ovate, 1 length of spikelet, herbaceous, 1-keeled, 5 -veined. Upper glume lateral veins ribbed. Upper glume apex acute.

Florets. Basal sterile florets 1, barren, with palea. Lemma of lower sterile floret similar to upper glume, oblong, 0.5–0.66 length of spikelet, 1-keeled, 5 -veined, ribbed, acute. Fertile lemma oblong, dorsally compressed, 3.3–3.7 mm long, indurate, shiny, without keel. Lemma margins involute. Lemma apex obtuse. Palea involute, indurate.

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

Distribution (TDWG). Continent. South America.

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

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

Ichnanthus hirtus (Raddi) Chase. *Journ. Wash. Acad. Sc.* xiii. 175 (1923).

Accepted by: R.J.Soreng et al., *Catalogue of New World 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:** *Navicularia hirta* Raddi, *Agrostogr. Bras.* 39 (1823)

. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *G. Raddi s.n.*, ca. 1817, Brazil: Rio de Janeiro (PI; IT: BOLO, BM, P, US-78076 (fragm. ex BM)).

Illustrations (Books): S.A.Renvoize, *The Grasses of Bahia*, 1984 (115, Fig. 41).

Derivation (Clifford & Bostock 2007): L. hairy. Hairy in part or extensively.

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

Habit, Vegetative Morphology. Perennial, caespitose. Culms erect, 45–80 cm long. Leaves basal and cauline. Leaf-sheaths outer margin hairy. Leaf-sheath auricles erect. Ligule a ciliolate membrane, 1 mm long. Leaf-blades lanceolate, 7–17 cm long, 7–15 mm wide, stiff. Leaf-blade venation with distinct cross veins. Leaf-blade surface scabrous, rough adaxially, pubescent, hairy abaxially. Leaf-blade apex acuminate.

Inflorescence. Inflorescence composed of racemes. Racemes borne along a central axis, 4–6 cm long. Central inflorescence axis 3–12 cm long, pubescent. Rhachis pubescent on surface. Spikelet packing crowded, irregular. Spikelets ascending, in pairs. Fertile spikelets sessile and pedicelled, 2 in the cluster. Pedicels present, filiform, angular.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets oblong, laterally compressed, 4–5 mm long, falling entire, readily shedding fertile florets. Floret callus winged, with apical wings adnate to lemma, with this appendage 1 mm long.

Glumes. Glumes similar, reaching apex of florets, thinner than fertile lemma. Lower glume obovate, 0.5–0.75 length of spikelet, herbaceous, 1-keeled, 3–5 -veined. Lower glume surface pilose, hairy at apex. Lower glume margins ciliate. Lower glume apex acute. Upper glume oblong, 1 length of spikelet, herbaceous, 1-keeled, 5–7 -veined. Upper glume surface pubescent, hairy at apex. Upper glume apex acute.

Florets. Basal sterile florets 1, barren, with palea. Lemma of lower sterile floret similar to upper glume, oblong, 1 length of spikelet, 1-keeled, 5–7 -veined, acute. Fertile lemma oblong, dorsally compressed, 4 mm long, indurate, without keel. Lemma margins involute. Lemma apex acute. Palea involute, indurate.

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

Distribution (TDWG). Continent. South America.

Country /Province /State. Western South America, Brazil. Colombia, Peru. Brazil Northeast, Brazil Southeast.

TDWG4. Goias, Bahia, Minas Gerais, Rio de Janeiro, Espirito Santo, Sao Paulo Parana.

Ichnanthus hoffmannseggii (Roem. & Schult.) Doell. *Mart. Fl. Bras.* ii. II. 287. (1877).

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

TYPE from Brazil. **Basionym or Replaced Name:** *Panicum hoffmannseggii* Roem. & Schult., *Syst. Veg.* 2: 450 (1817)

T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: ST: *J.C. von Hoffmannsegg am Link*, Brazil: S. da Chapada: in arenosis (LE-TRIN-0748.01 (& fig.); IST: US-78075).

ST: *Sieber s.n.*, Brazil: Para: s.d. (B; IST: BR, US-78075 (fragm. ex B)).

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

Derivation (Clifford & Bostock 2007): in honor of Johannes Centurius Graf Hoffmannsegg (1766–1849) German museum curator and traveller.

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

Habit, Vegetative Morphology. Annual. Stolons present. Culms geniculately ascending or decumbent, 10–50 cm long. Leaves cauline. Leaf-sheaths pilose or hirsute. Ligule a ciliate membrane. Leaf-blades linear or elliptic, 5–8 cm long, 15–20 mm wide, membranous. Leaf-blade venation with distinct cross veins. Leaf-blade surface pubescent, hairy on both sides. Leaf-blade apex acute or acuminate.

Inflorescence. Inflorescence a panicle, terminal or terminal and axillary. Panicle open, ovate, 3–18 cm long. Panicle axis pubescent. Panicle branches pubescent. Spikelets ascending, in pairs. Fertile spikelets sessile and pedicelled, 2 in the cluster. Pedicels present, filiform, angular, ciliate.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets lanceolate, laterally compressed, 4–5 mm long, falling entire, readily shedding fertile florets. Floret callus winged, with apical wings adnate to lemma, with this appendage 0.5–0.9 mm long.

Glumes. Glumes similar, reaching apex of florets, thinner than fertile lemma. Lower glume oblong, 0.66–0.75 length of spikelet, herbaceous, 1-keeled, 3 -veined. Lower glume apex attenuate, awned, 1 -awned, awn 1–2 mm long. Upper glume lanceolate, 1 length of spikelet, herbaceous, 1-keeled, 5 -veined. Upper glume surface pilose. Upper glume hairs yellow. Upper glume apex acuminate.

Florets. Basal sterile florets 1, barren, with palea. Lemma of lower sterile floret similar to upper glume, lanceolate, 1 length of spikelet, 1-keeled, 5 -veined, pilose, bearing yellow hairs, acute. Fertile lemma oblong, dorsally compressed, 2–3 mm long, indurate, without keel. Lemma margins involute. Lemma apex acute. Palea involute, indurate.

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

Distribution (TDWG). Continent. South America.

Country /Province /State. Northern South America, Brazil. French Guiana. Brazil West Central, Brazil Northeast, Brazil North.

Para, Amapa, Goias, Maranhao, Piaui.

Ichnanthus inconstans (Trin. ex Nees) Doell. *Mart. Fl. Bras.* ii. II. 284. (1877).

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

TYPE from Brazil. **Basionym or Replaced Name:** *Panicum inconstans* Trin. ex Nees, *Fl. Bras. Enum. Pl.* 2(1): 132–133 (1829). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *G.H. von Langsdorff s.n.*, Nov. 1824, Brazil: Serra da Lapa, in fruticetis umbrosis (LE-TRIN-0761.01 (& fig.); IT: US (fragm.)).

Illustrations (Books): S.A.Renvoize, *Gramineas de Bolivia* (1998) (380, Fig 81), S.A.Renvoize, *The Grasses of Bahia*, 1984 (119, Fig. 43), L.B. Smith, D.C. Wasshausen, R.M. Klein *Flora Illustrada Catarinensis Gramineas* (1981–1982) (759, Fig. 159), F.O.Zuloaga et al, *Flora del Paraguay* 23 (1994) (174, Fig. 48).

Derivation (Clifford & Bostock 2007): L. variable. Leaf-blades vary in outline from sub-cordate to linear-lanceolate in outline.

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

Habit, Vegetative Morphology. Perennial. Rhizomes elongated. Culms 40–90 cm long, woody. Leaves cauline. Ligule a ciliate membrane, 0.5 mm long. Leaf-blade base cordate. Leaf-blades lanceolate, 9–20 cm long, 15–20(–30) mm wide. Leaf-blade surface pubescent. Leaf-blade apex acuminate.

Inflorescence. Inflorescence a panicle. Panicle open, ovate, 4–24 cm long, 2–9 cm wide. Primary panicle branches 1–11 cm long, bearing spikelets almost to the base. Panicle branches pubescent. Spikelets in pairs. Fertile spikelets pedicelled, 2 in the cluster. Pedicels present, angular, unequal.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret

male or barren, the upper fertile. Spikelets elliptic, laterally compressed, 3.5–4.5(–5.5) mm long, falling entire, readily shedding fertile florets. Floret callus winged, with apical wings adnate to lemma, with this appendage 1 mm long.

Glumes. Glumes similar, reaching apex of florets, thinner than fertile lemma. Lower glume ovate, 0.5–1 length of spikelet, herbaceous, 1-keeled, 3 -veined. Lower glume surface asperulous, glabrous or pilose. Lower glume apex acute. Upper glume ovate, herbaceous, without keels, 5 -veined. Upper glume surface glabrous or pilose. Upper glume apex acute.

Florets. Basal sterile florets 1, male, with palea. Lemma of lower sterile floret similar to upper glume, ovate, 1 length of spikelet, without keels, 3 -veined, acute. Fertile lemma elliptic, dorsally compressed, 3 mm long, indurate, dark brown, shiny, without keel, more than 3-veined. Lemma lateral veins obscure. Lemma margins involute. Lemma apex obtuse. Palea involute, indurate.

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

Distribution (TDWG). Continent. South America.

Country /Province /State. **Western South America, Brazil, Southern South America.** Bolivia, Peru. Brazil West Central, Brazil Northeast, Brazil Southeast, Brazil South. Paraguay.

TDWG4. Mato Grosso, Goias, Bahia, Minas Gerais, Rio de Janeiro, Espirito Santo, Sao Paulo Parana, Catarina, Rio Grande do Sul. Misiones.

Ichnanthus lanceolatus Scribn. & J. G. Sm. *U.S. Dept. Agric. Bull. Agrost.* iv. 36. (1897).

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

TYPE from Mexico. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: LT: *Gaumer 854*, Sept 1895, Mexico: Yucatan: old fields about Izamal (US-744253; ILT: F, G, MO-1836415, NY, P). LT designated by Stieber, *Syst. Bot.* 12: 193 (1987).

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

Derivation (Clifford & Bostock 2007): *L. lanceus*, lance; -ola, diminutive; -ata, possessing. Mostly a reference to lanceolate leaf-blades.

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

Habit, Vegetative Morphology. Perennial, caespitose. Culms 35–75 cm long. Lateral branches ample. Leaf-sheaths glabrous on surface or hirsute, outer margin hairy. Ligule a fringe of hairs. Leaf-blade base with a brief petiole-like connection to sheath, petiole 0.3–0.6 cm long. Leaf-blades lanceolate, 5–12 cm long, 10–20 mm wide. Leaf-blade venation with distinct cross veins. Leaf-blade surface glabrous.

Inflorescence. Inflorescence composed of racemes. Racemes 4–10, borne along a central axis, 5–8 cm long. Central inflorescence axis 10–15 cm long. Spikelet packing lax, irregular. Spikelets appressed, in pairs. Fertile spikelets sessile and pedicelled, 2 in the cluster. Pedicels present, filiform, angular, 3–4 mm long.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets elliptic, laterally compressed, 3–4 mm long, falling entire, readily shedding fertile florets. Floret callus winged, with apical wings shrivelled to concave scars.

Glumes. Glumes similar, reaching apex of florets, thinner than fertile lemma. Lower glume lanceolate, 2–3 mm long, 0.66–0.75 length of spikelet, herbaceous, 1-keeled, 3 -veined. Lower glume lateral veins ribbed. Lower glume surface glabrous. Lower glume apex acute. Upper glume lanceolate, 1 length of spikelet, herbaceous, 1-keeled, 5 -veined. Upper glume lateral veins ribbed. Upper glume apex acuminate.

Florets. Basal sterile florets 1, barren, with palea. Lemma of lower sterile floret similar to upper glume, oblong, 1 length of spikelet, 1-keeled, 5 -veined, ribbed, acuminate. Fertile lemma elliptic, dorsally compressed, 2–3 mm long, indurate, shiny, without keel. Lemma margins involute. Lemma apex obtuse. Palea involute, indurate.

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

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

Country /Province /State. **Mexico.** Southeast Mexico. **Mesoamerica.** Belize, Guatemala, Honduras. Campeche, Chiapas, Quintana Roo, Tabasco, Yucatan.

Ichnanthus lancifolius Mez. *Repert. Sp. Nov. Fedde* 15: 126 (1918).

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

TYPE from Brazil. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: ST: *Riedel 142=243*, Brazil: Bahia: prope Ilheos (B; IT: US-1108618 (fragm. ex B), US-2767361 (fragm. ex B, W), W).

Illustrations (Books): S.A.Renvoize, *The Grasses of Bahia*, 1984 (121, Fig. 44), J.A.Steyermark et al, *Flora of the Venezuelan Guayana* Vol. 8 (2004) (129, Fig. 89 as var. *weberbaueri*).

Derivation (Clifford & Bostock 2007): *L. lanceus*, lance; folium, leaf. Leaf-blade lanceolate.

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

Habit, Vegetative Morphology. Perennial, culms solitary. Rhizomes elongated. Basal innovations flabellate. Culms erect, 50–54 cm long. Leaves mostly basal. Leaf-sheaths glabrous on surface. Ligule a ciliolate membrane, 0.1–1 mm long. Leaf-blade base without a false petiole or with a brief petiole-like connection to sheath. Leaf-blades linear or lanceolate, 15–45 cm long, 10–15 mm wide. Leaf-blade venation with distinct cross veins. Leaf-blade surface glabrous. Leaf-blade apex acuminate.

Inflorescence. Inflorescence a panicle. Panicle open, ovate, effuse, 15–30 cm long. Panicle branches capillary. Spikelets appressed, in pairs. Fertile spikelets pedicelled, 2 in the cluster. Pedicels present, filiform, angular.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets oblong, laterally compressed, acute, 4–7 mm long, falling entire, readily shedding fertile florets. Floret callus winged, with apical wings adnate to lemma, with this appendage 2–3 mm long.

Glumes. Glumes similar, reaching apex of florets, thinner than fertile lemma. Lower glume lanceolate or ovate, 3–4 mm long, 0.5–0.75 length of spikelet, herbaceous, 1-keeled, 3 -veined. Lower glume surface smooth or asperulous. Lower glume apex acute. Upper glume lanceolate or ovate, 1 length of spikelet, herbaceous, 1-keeled, 5–7 -veined. Upper glume apex acute.

Florets. Basal sterile florets 1, barren, with palea. Lemma of lower sterile floret similar to upper glume, lanceolate or ovate, 1 length of spikelet, 1-keeled, 5–7 -veined, acute. Fertile lemma lanceolate or oblong, dorsally compressed, 3–4 mm long, indurate, without keel. Lemma margins involute, eciliate or ciliate. Lemma apex acute. Palea involute, indurate.

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

Distribution (TDWG). Continent. South America.

Country /Province /State. Northern South America, Western South America, Brazil. Venezuela. Bolivia, Peru. Brazil Northeast, Brazil Southeast.

TDWG4. Bahia.

Ichnanthus leiocarpus (Spreng.) Kunth. *Rev. Gram.* 1 suppl. 10 (1834).

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

TYPE from Brazil. **Basionym or Replaced Name:** *Panicum leiocarpon* Spreng., *Neue Entdeck. Pflanzenk.* 1: 243 (1820). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *F. Sellow 8241*, 1814–1818, Brazil: no other data (B; IT: K, US-975266 (fragm. ex B, LE)).

Recent Synonyms: *Panicum maximiliani* Schrad. ex Schult., *Mant.* 2: 255 (1824).

Illustrations (Books): A.S.Hitchcock, *Manual of the Grasses of the West Indies* (1936), S.A.Renvoize, *The Grasses of Bahia*, 1984 (130, Fig. 45, as *Panicum maximiliani*), L.B. Smith, D.C. Wasshausen, R.M. Klein *Flora Illustrada Catarinensis Gramineas* (1981–1982) (759, Fig. 159).

Derivation (Clifford & Bostock 2007): *Gk. leios*, smooth; *karpos*, fruit. Spikelets glabrous.

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

Habit, Vegetative Morphology. Perennial. Rhizomes elongated. Culms decumbent or rambling, 60–200 cm long. Culm-internodes distally glabrous or pubescent. Lateral branches sparse, arising from lower culm. Leaves cauline. Leaf-sheaths pilose or hirsute. Ligule a ciliate membrane, 1 mm long. Collar pilose. Leaf-blade base without a false petiole. Leaf-blades lanceolate, 10–20 cm long, 15–35 mm wide. Leaf-blade venation with distinct cross veins. Leaf-blade surface glabrous or pubescent, hairy abaxially. Leaf-blade apex acuminate.

Inflorescence. Inflorescence a panicle. Panicle open, ovate or obovate, 25–35 cm long. Primary panicle branches ascending or spreading, whorled at most nodes, moderately divided or profusely divided, 5–20 cm long. Panicle axis pilose. Panicle branches capillary, flexuous. Spikelets ascending, in pairs. Fertile spikelets pedicelled, 2 in the cluster. Pedicels present, filiform, angular, 10–12 mm long.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets oblong, laterally compressed, 4–5 mm long, falling entire, readily shedding fertile florets. Floret callus winged, with apical wings adnate to lemma, with this appendage 1.5 mm long.

Glumes. Glumes similar, reaching apex of florets, thinner than fertile lemma, gaping. Lower glume lanceolate or ovate, 0.5–1 length of spikelet, herbaceous, 1-keeled, 3–5 -veined. Lower glume apex acute. Upper glume lanceolate, 1 length of spikelet, herbaceous, 1-keeled, 5–7 -veined. Upper glume apex acuminate.

Florets. Basal sterile florets 1, barren, with palea. Lemma of lower sterile floret similar to upper glume, lanceolate, 1 length of spikelet, 1-keeled, 5–7 -veined, acuminate. Fertile lemma lanceolate, dorsally compressed, 3–3.5 mm long, indurate, pallid or light brown, without keel. Lemma margins involute. Lemma apex acute. Palea involute, indurate.

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

Distribution (TDWG). Continent. South America.

Country /Province /State. Caribbean, Northern South America, Brazil. Trinidad-Tobago. French Guiana, Guyana, Surinam, Venezuela. Brazil Northeast, Brazil Southeast, Brazil South.

TDWG4. Goias, Bahia, Maranhao, Piaui, Minas Gerais, Rio de Janeiro, Espirito Santo, Sao Paulo Parana, Catarina, Rio Grande do Sul.

Ichnanthus leptophyllus Doell. *Mart. Fl. Bras.* ii. II. 287. (1877).

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

TYPE from Brazil. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: LT: *Spruce 843 "Panicum n. 24"*, Brazil: Para, in vicinity of Santarem (NY; ILT: B, BM, FB, G, M, P, W, US-2808808 (fragm. ex W), US-975268 (fragm. & photo)). LT designated by Stieber, *Syst. Bot.* 7: 96 (1982).

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

Derivation (Clifford & Bostock 2007): Gk. leptos, narrow; phyllon, leaf. Leaf-blades narrow.

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

Habit, Vegetative Morphology. Perennial. Rhizomes elongated. Culms erect, 50–120 cm long. Leaves cauline. Leaf-sheaths glabrous on surface. Ligule a ciliolate membrane, 0.5 mm long. Leaf-blade base amplexicaul. Leaf-blades lanceolate or oblong, 10–30 cm long, 20–40 mm wide, membranous. Leaf-blade venation with distinct cross veins. Leaf-blade surface glabrous. Leaf-blade apex acuminate.

Inflorescence. Inflorescence a panicle. Panicle open, elliptic, 15–23 cm long. Primary panicle branches whorled at most nodes, 10–15 cm long. Panicle axis scabrous. Panicle branches capillary, flexuous, bearing approximate spikelets. Spikelets ascending, in pairs. Fertile spikelets pedicelled, 2 in the cluster. Pedicels present, filiform, angular, 4 mm long.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets lanceolate, laterally compressed, acuminate, 4 mm long, falling entire, readily shedding fertile florets. Floret callus winged, with apical wings adnate to lemma, with this appendage 1.5 mm long.

Glumes. Glumes similar, reaching apex of florets, thinner than fertile lemma, gaping. Lower glume lanceolate, 2.5–3 mm long, 0.6–0.75 length of spikelet, herbaceous, 1-keeled, 1–3 -veined. Lower glume lateral veins absent or distinct. Lower glume apex cuspidate. Upper glume linear or oblong, 1 length of spikelet, herbaceous, 1-keeled, 5 -veined. Upper glume surface smooth or asperulous. Upper glume apex cuspidate.

Florets. Basal sterile florets 1, barren, with palea. Lemma of lower sterile floret similar to upper glume, lanceolate or oblong, 1 length of spikelet, 1-keeled, 5 -veined, smooth or scaberulous, cuspidate. Fertile lemma elliptic, dorsally compressed, 3–3.5 mm long, indurate, without keel. Lemma margins involute. Lemma apex acute. Palea involute, indurate.

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

Distribution (TDWG). Continent. South America.

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

Para, Amapa, Amazonas, Acre, Rondonia.

Ichnanthus longiglumis Mez. *Repert. Spec. Nov. Fedde* xv. 131 (1918).

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

TYPE from Brazil. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: ST: *Warming s.n.*, Brazil: Minas Gerais: summa in Sierra da Piedade

LT: *Glaziou 17929*, 21 Dec 1888, Brazil: Rio de Janeiro Pico de Itabira, among rocks (B; ILT: G, K, P, US-2767363 (fragm. ex G-DEL), US-1108620 (fragm. ex B), US-1280067 (fragm. ex P), US-1126887 (fragm. ex W), US-2626171 (fragm. ex P)). LT designated by Stieber, *Syst. Bot.* 7: 95 (1982).

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

Derivation (Clifford & Bostock 2007): *L. longus*, long; gluma, husk. Spikelets with long glumes and or lemmas.

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

Habit, Vegetative Morphology. Perennial. Culms erect, 15–40 cm long. Leaves cauline. Leaf-sheaths pilose. Ligule a ciliate membrane, 1 mm long. Leaf-blade base broadly rounded or cordate. Leaf-blades lanceolate, 6–8 cm long, 5–10 mm wide. Leaf-blade surface glabrous or pubescent or pilose. Leaf-blade apex attenuate.

Inflorescence. Inflorescence a panicle, terminal and axillary, embraced at base by subtending leaf. Panicle open, ovate, 4–9 cm long. Primary panicle branches 2–5 cm long, bearing spikelets almost to the base. Spikelets in pairs. Fertile spikelets pedicelled, 2 in the cluster. Pedicels present, angular, unequal.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets lanceolate, laterally compressed, 6–7 mm long, falling entire, readily shedding fertile florets. Floret callus winged, with apical wings adnate to lemma, with this appendage 1 mm long.

Glumes. Glumes similar, reaching apex of florets, thinner than fertile lemma. Lower glume lanceolate, 1 length of spikelet, herbaceous, 1-keeled, 3 -veined. Lower glume surface glabrous or pilose. Lower glume apex acute or acuminate. Upper glume ovate, herbaceous, without keels, 5 -veined. Upper glume surface glabrous or pilose. Upper glume apex acute.

Florets. Basal sterile florets 1, male, with palea. Lemma of lower sterile floret similar to upper glume, ovate, 1 length of spikelet, without keels, 5 -veined, glabrous or pilose, acute. Fertile lemma elliptic, dorsally compressed, 3–3.5 mm long, indurate, without keel, more than 3-veined. Lemma lateral veins obscure. Lemma margins involute. Lemma apex obtuse. Palea involute, indurate.

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

Distribution (TDWG). Continent. South America.

Country /Province /State. Brazil. Brazil Southeast.
Minas Gerais, Rio de Janeiro, Espirito Santo.

Ichnanthus mayarensis (Wright) Hitchcock. *Contrib. U. S. Nat. Herb.* xii. 228 (1909).

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

TYPE from Cuba. **Basionym or Replaced Name:** *Panicum mayarense* C. Wright, *Anales Acad. Ci. Med. Habana* 8: 206 (1871). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: LT: *Wright 3468*, Feb 1865, Cuba: Oriente, Pinar de Mayari abajo (GH; ILT: B, K, MO-1836419, S, NY-71086 (fragm.), US-80793 (fragm. ex GH & photo)). LT designated by Hitchcock, *Contr. U.S. Natl. Herb.* 12: 228 (1909).

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

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

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

Habit, Vegetative Morphology. Annual. Culms decumbent or rambling, 3–8 cm long, rooting from lower nodes. Culm-internodes distally glabrous or hirsute. Leaf-sheaths outer margin hairy. Ligule a ciliate membrane, 0.5 mm long. Leaf-blade base broadly rounded or cordate, asymmetrical, without a false petiole or with a brief petiole-like connection to sheath. Leaf-blades linear or lanceolate, 2–4.5 cm long, 4–7 mm wide. Leaf-blade venation with distinct cross veins. Leaf-blade surface glabrous or hispid. Leaf-blade apex acuminate.

Inflorescence. Inflorescence composed of racemes, terminal or terminal and axillary. Racemes 3–6, borne along a central axis, erect, 1–3 cm long. Central inflorescence axis 2 cm long. Spikelet packing crowded, irregular. Spikelets ascending, in pairs. Fertile spikelets sessile and pedicelled, 2 in the cluster. Pedicels present, filiform, angular.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets lanceolate, laterally compressed, acute, 2–3 mm long, falling entire, readily shedding fertile florets. Floret callus winged, with apical wings reduced to convex swellings.

Glumes. Glumes similar, reaching apex of florets, thinner than fertile lemma. Lower glume obovate, 1.5–2 mm long, 0.66 length of spikelet, herbaceous, 1-keeled, 3 -veined. Lower glume lateral veins ribbed. Lower glume surface glabrous. Lower glume apex acute. Upper glume lanceolate, 1 length of spikelet, herbaceous, 1-keeled, 5 -veined. Upper glume lateral veins ribbed. Upper glume surface glabrous. Upper glume apex acuminate.

Florets. Basal sterile florets 1, barren, with palea. Lemma of lower sterile floret similar to upper glume, oblong, 1 length of spikelet, 1-keeled, 5 -veined, ribbed, acuminate. Palea of lower sterile floret 0.3–0.5 length

of lemma. Fertile lemma elliptic, dorsally compressed, 2–2.5 mm long, indurate, without keel. Lemma margins involute. Lemma apex obtuse. Palea involute, indurate.

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

Distribution (TDWG). Continent. South America.

Country /Province /State. Caribbean. Cuba.

Ichnanthus mexicanus Fourn. *Mex. Pl.* 2:34 (1886).

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

TYPE from Mexico. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: HT: *Liebmann 457*, Aug 1841–1843, Mexico: Trapiche de la Concepcisn (C; IT: US-78799 (fragm. ex Hauviense)).

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

Derivation (Clifford & Bostock 2007): L. -ana, indicating origin. From Mexico.

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

Habit, Vegetative Morphology. Perennial, caespitose. Culms decumbent, 160–300 cm long, rooting from lower nodes. Lateral branches ample. Leaf-sheaths mostly shorter than adjacent culm internode, glabrous on surface or pilose, with tubercle-based hairs. Leaf-sheath auricles erect. Ligule a fringe of hairs, 1–1.5 mm long. Leaf-blades lanceolate, 12–30 cm long, 15–30 mm wide. Leaf-blade surface glabrous or pubescent, sparsely hairy.

Inflorescence. Inflorescence composed of racemes. Racemes 4–10, borne along a central axis, erect, 5–10 cm long. Central inflorescence axis 10–15 cm long. Spikelet packing lax, irregular. Spikelets appressed, in pairs. Fertile spikelets sessile and pedicelled, 2 in the cluster. Pedicels present, 0.5–2 mm long.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets ovate, laterally compressed, 3–4.5 mm long, falling entire, readily shedding fertile florets. Floret callus winged, with free apical wings, with this appendage 0.8–1 mm long.

Glumes. Glumes similar, reaching apex of florets, thinner than fertile lemma. Lower glume lanceolate or ovate, 3–4.5 mm long, 1 length of spikelet, herbaceous, 1-keeled, 3 -veined. Lower glume lateral veins ribbed. Lower glume surface glabrous. Lower glume apex acute. Upper glume ovate, 1 length of spikelet, herbaceous, 1-keeled, 5 -veined. Upper glume lateral veins ribbed. Upper glume apex acute.

Florets. Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret similar to upper glume, lanceolate or ovate, 1 length of spikelet, 1-keeled, 5 -veined, ribbed, acute. Fertile lemma ovate, dorsally compressed, 3–3.5 mm long, indurate, without keel. Lemma margins involute. Lemma apex obtuse. Palea involute, indurate.

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

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

Country /Province /State. Mexico. Southwest Mexico. **Mesoamerica.** Belize, Honduras.

Ichnanthus mollis Ekman. *Arkiv Bot. Stockh.* x. No. 17, 20 (1911).

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

TYPE from Brazil. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: HT: *Malmé 3480 Exp. II Regnell*, 8 Jun 1903, Brazil: Mato Grosso, ad cascata grande catarrhactam prope Buriti (S; IT: US-2767368 (fragm. ex S)).

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

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

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

Habit, Vegetative Morphology. Perennial. Culms geniculately ascending or decumbent, 6–30 cm long, rooting from lower nodes. Culm-internodes distally pilose. Leaves cauline. Leaf-sheaths pilose. Ligule a ciliate membrane, 1–1.5 mm long. Leaf-blade base cordate, asymmetrical. Leaf-blades lanceolate or oblong, 4–7 cm long, 8–15 mm wide. Leaf-blade venation with distinct cross veins. Leaf-blade surface pubescent, hairy abaxially. Leaf-blade apex acuminate.

Inflorescence. Inflorescence a panicle, terminal and axillary. Panicle open, ovate, effuse, 5–10 cm long. Primary panicle branches whorled at lower nodes. Panicle axis pilose. Panicle branches pilose. Spikelets ascending, in pairs. Fertile spikelets sessile and pedicelled, 2 in the cluster. Pedicels present, filiform, angular.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. 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, laterally compressed, acuminate, 2.5–3.5 mm

long, falling entire, readily shedding fertile florets. Floret callus winged, with apical wings adnate to lemma, with this appendage 0.5–0.9 mm long.

Glumes. Glumes similar, reaching apex of florets, thinner than fertile lemma. Lower glume ovate, 2 mm long, 0.6–0.8 length of spikelet, herbaceous, 1-keeled, 3 -veined. Lower glume apex cuspidate. Upper glume elliptic or ovate, 1 length of spikelet, herbaceous, 1-keeled, 3–5 -veined. Upper glume hairs white. Upper glume apex acuminate.

Florets. Basal sterile florets 1, barren, with palea. Lemma of lower sterile floret similar to upper glume, elliptic or ovate, 1 length of spikelet, 1-keeled, 5 -veined, pilose, bearing white hairs, acuminate. Fertile lemma ovate, dorsally compressed, 2.5 mm long, indurate, dark brown, without keel. Lemma margins involute. Lemma apex acute. Palea involute, indurate.

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

Distribution (TDWG). Continent. South America.

Country /Province /State. Brazil. Brazil West Central, Brazil North. Mato Grosso, Goiás.

***Ichnanthus nemoralis* (Schrad.) Hitchcock & Chase. *Contrib. US. Nat. Herb.* xviii. 334 (1917).**

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

TYPE from Brazil. **Basionym or Replaced Name:** *Panicum nemorale* Schrad., *Mant.* 2: 255 (1824). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *Wied-Neuwied s.n.*, "Herb Nees 212", Brazil (B; IT: US-78073 (fragm. ex B)).

Illustrations (Books): S.A.Renvoize, *The Grasses of Bahia*, 1984 (117, Fig. 42), W.Burger, *Flora Costaricensis* 15, Gramineae: *Fieldiana Botany New Series* 4 (1980) (271, Fig 98), E.Judziewicz, *Flora of the Guianas*, 187. *Poaceae* (1990) (273, Fig 47).

Derivation (Clifford & Bostock 2007): *L. nemus*, wood, -alis, pertaining to. Woodland species.

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

Habit, Vegetative Morphology. Annual. Culms decumbent or rambling, 50–130 cm long. Culm-internodes distally glabrous or pubescent. Leaves cauline. Leaf-sheaths glabrous on surface or pilose. Ligule a ciliate membrane, 1 mm long. Leaf-blade base with a brief petiole-like connection to sheath, petiole 0.1–0.2 cm long. Leaf-blades lanceolate or oblong, 6–11 cm long, 10–30 mm wide. Leaf-blade venation with distinct cross veins. Leaf-blade surface pubescent, hairy abaxially or on both sides. Leaf-blade apex acuminate.

Inflorescence. Inflorescence a panicle or composed of racemes. Panicle open, ovate, 12–34 cm long. Primary panicle branches spreading, simple. Panicle branches bearing congested spikelets. Racemes borne along a central axis, 3–7 cm long. Central inflorescence axis 9–17 cm long. Spikelet packing crowded, irregular. Spikelets ascending, in pairs. Fertile spikelets sessile and pedicelled, 2 in the cluster. Pedicels present, filiform, angular.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets oblong, laterally compressed, acute, 4–5 mm long, falling entire, readily shedding fertile florets. Floret callus winged, with apical wings adnate to lemma, with this appendage 1.5 mm long.

Glumes. Glumes similar, reaching apex of florets, thinner than fertile lemma. Lower glume oblong, 0.5–0.66 length of spikelet, herbaceous, 1-keeled, 3–5 -veined. Lower glume apex acute. Upper glume ovate, 1 length of spikelet, herbaceous, 1-keeled, 5 -veined. Upper glume apex acute.

Florets. Basal sterile florets 1, barren, with palea. Lemma of lower sterile floret similar to upper glume, ovate, 1 length of spikelet, 1-keeled, 5 -veined, acute. Fertile lemma lanceolate, dorsally compressed, 3–3.5 mm long, indurate, pallid or light brown, without keel. Lemma margins involute. Lemma apex acute. Palea involute, indurate.

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

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

Country /Province /State. Mexico. Southeast Mexico. **Mesoamerica, Caribbean, Northern South America, Western South America, Brazil.** Belize, Costa Rica, Guatemala, Honduras, Nicaragua, Panama. Trinidad-Tobago. French Guiana, Guyana, Surinam, Venezuela. Colombia, Ecuador, Galapagos. Brazil Northeast, Brazil Southeast, Brazil South.

TDWG4. Para, Amapa, Bahia, Ceara, Rio Grande do Norte, Paraiba, Pernambuco, Alagoas, Sergipe, Minas Gerais, Rio de Janeiro, Espirito Santo, Sao Paulo Parana, Catarina, Rio Grande do Sul. Quintana Roo.

Ichnanthus nemorosus (Sw.) Doell. *Martius, Fl. Bras.* 2(2):289 (1877).

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

TYPE from Jamaica. **Basionym or Replaced Name:** *Panicum nemorosum* Sw., *Prodr.* 22 (1788). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: IST: *Poiteau s.n.*, Santo Domingo (LE-TRIN-0847.02 (fig. & spec.), LE-TRIN-0847.01 (illustr. of 0847.02)). fig.: *Panicum nemorosum* Sw. ipso teste!.

LT: *O.P. Swartz 3096*, Jamaica (S; ILT: BM (2 sheets), M, US-2489449 (fragm. ex S), US-2489450 (fragm. ex M)). LT designated by Stieber, *Syst. Bot.* 12: 210 (1987).

Illustrations (Books): E.G.Nicora, *Los Generos de Gramineas de America Austral* (1987) (429, Fig. 149), F.O.Zuloaga et al, *Flora del Paraguay* 23 (1994) (177, Fig. 49).

Illustrations (Journals): *Ruizia* (13:298, Fig 36h-i (1993)).

Derivation (Clifford & Bostock 2007): *L. nemus*, wood; -osa, abundance. Woodland species.

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

Habit, Vegetative Morphology. Annual. Culms prostrate, 30–40 cm long, rooting from lower nodes. Culm-nodes pubescent. Lateral branches sparse. Leaf-sheaths pilose. Ligule a ciliate membrane, 0.5–1 mm long. Leaf-blade base cordate, asymmetrical. Leaf-blades lanceolate, 2–8.5 cm long, 5–30 mm wide. Leaf-blade venation with distinct cross veins. Leaf-blade surface glabrous or pilose, hairy on both sides, with simple hairs or tubercle-based hairs. Leaf-blade apex acuminate.

Inflorescence. Inflorescence a panicle, terminal and axillary. Panicle open, linear or lanceolate, 3–10 cm long, 0.2–3 cm wide. Primary panicle branches appressed or ascending, simple, 1–5 cm long, bearing 6–8 fertile spikelets on each lower branch. Spikelets ascending, in pairs. Fertile spikelets sessile and pedicelled, 2 in the cluster. Pedicels present, filiform, angular.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets elliptic, laterally compressed, acute or acuminate, 2–3.5 mm long, falling entire, readily shedding fertile florets. Floret callus winged, with apical wings shrivelled to concave scars, with this appendage 0.5 mm long.

Glumes. Glumes similar, reaching apex of florets, thinner than fertile lemma. Lower glume lanceolate or ovate, 0.5–1 length of spikelet, herbaceous, much thinner on margins, 1-keeled, 3–5 -veined. Lower glume lateral veins ribbed. Lower glume surface glabrous or pilose. Lower glume apex cuspidate. Upper glume elliptic or oblong, 1 length of spikelet, herbaceous, with hyaline margins, 1-keeled, 5–7 -veined. Upper glume lateral veins ribbed. Upper glume surface glabrous or pilose. Upper glume apex acute or acuminate.

Florets. Basal sterile florets 1, barren, with palea. Lemma of lower sterile floret similar to upper glume, elliptic or oblong, 1 length of spikelet, 1-keeled, 5 -veined, ribbed, glabrous or pilose, acute or acuminate. Fertile lemma elliptic or ovate, dorsally compressed, 2–2.5 mm long, indurate, without keel. Lemma margins involute. Lemma apex obtuse. Palea involute, indurate.

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

$2n = 40$ (1 ref TROPICOS).

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

Country /Province /State. **Mexico.** Central Mexico, Northeast Mexico, Gulf (Mexico), Southwest Mexico, Southeast Mexico. **Mesoamerica, Caribbean, Northern South America, Western South America, Brazil, Southern South America.** Belize, Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua, Panama. Cuba, Dominican Republic, Haiti, Jamaica, Leeward Is, Windward Islands, Puerto Rico, Trinidad-Tobago. Surinam, Venezuela. Bolivia, Colombia, Ecuador. Brazil North. Argentina Northwest, Paraguay.

TDWG4. Jujuy, Salta, Tucuman. Puebla. Hidalgo, Queretaro, San Luis Potosi. Veracruz. Guerrero, Jalisco, Oaxaca. Campeche, Chiapas.

Ichnanthus pallens (Sw.) Munro ex Benth. *Fl. Hongk.* 414. (1861).

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

TYPE from Jamaica. **Basionym or Replaced Name:** *Panicum pallens* Sw., *Prodr.* 23 (1788). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: LT: *O.P. Swartz s.n.*, Jamaica (M; ILT: BM, G, S, US-2489445 (fragm. ex M), US-2489446 (fragm. ex S)). LT designated by Stieber, *Syst. Bot.* 12: 203 (1987).

Recent Synonyms: *Ichnanthus vicinus* (Bailey) Merrill, *Philipp. Journ. Sc.* 20 : 367 (1922).

Illustrations (Books): H.Jacques-Felix, *Les Graminees d'Afrique tropicale* (1962) (247, Fig. 176), T.Koyama, *Grasses of Japan and its neighbouring regions* (1987) (311, Fig. 119 as *I. vicinus*), C-C Hsu, *Flora*

of Taiwan, Vol 5 (1978) (540 as *I. vicinus*), C-C Hsu, *Taiwan Grasses* (1975) (561, Pl. 1432 as *I. vicinus*), H.J. Noltie, *The Grasses of Bhutan* (2000) (683, Fig. 37), H.B. Gilliland, *Grasses of Malaya* (1971) (146, Fig. 28 as *I. vicinus*), E.E. Henty, *A Manual of the Grasses of New Guinea* (1969) (118, Pl. 44 as *I. vicinus*), D. Sharp & B.K. Simon, *AusGrass. Grasses of Australia*. CD-Rom Version 1.0. (2002), A.S. Hitchcock, *Manual of the Grasses of the West Indies* (1936) (300, Fig. 288), S.A. Renvoize, *Gramineas de Bolivia* (1998) (380, Fig. 81), S.A. Renvoize, *The Grasses of Bahia*, 1984 (117, Fig. 42), L.B. Smith, D.C. Wasshausen, R.M. Klein *Flora Illustrada Catarinensis Gramineas* (1981–1982) (759, Fig. 159 & 780, Fig. 162 as *I. bacularis*), A. Burkat, *Flora Illustrada de Entre Rios (Argentina)*, Pt II, Gramineas (1969) (273, Fig. 105), W. Burger, *Flora Costaricensis* 15, Gramineae: *Fieldiana Botany New Series* 4 (1980) (273, Fig. 99), A.L. Cabrera, *Flora de la Provincia de Buenos Aires, IV Pt 2 Gramineas* (1970) (488, Fig. 125), F.O. Zuloaga et al, *Flora del Paraguay* 23 (1994) (179, Fig. 50), B. Rosengurt, *Gramineas Uruguayas I* (1970) (318, Fig. 135), G. Harling & C. Persson, *Flora of Ecuador* (2006) (78: 9, Fig. 1 (2006)), E. Judziewicz, *Flora of the Guianas*, 187. *Poaceae* (1990) (281, Fig. 48), S-L Chen et al, *Flora of China*, Illustrations, *Poaceae* (2007) (Fig. 709 as *Ichnanthus pallens* var. *major*).

Illustrations (Journals): *Ruizia* (13:298, Fig 360-p (1993) as *P. axillaris*).

Images: D. Sharp & B.K. Simon, *AusGrass. Grasses of Australia*. CD-Rom Version 1.0. (2002); H.B. Gilliland et al., *Flora of Malaya Vol. 3 Grasses* (1971); (as *I. vicinus*).

Derivation (Clifford & Bostock 2007): *L. pale*. Inflorescences pale.

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

Habit, Vegetative Morphology. Perennial, mat forming. Culms prostrate, 20–60 cm long, rooting from lower nodes. Leaf-sheaths outer margin hairy. Ligule a ciliolate membrane. Leaf-blades lanceolate, 5–6 cm long, 15–20 mm wide, flaccid. Leaf-blade midrib indistinct. Leaf-blade venation with distinct cross veins. Leaf-blade apex acuminate.

Inflorescence. Inflorescence a panicle or composed of racemes, exserted or embraced at base by subtending leaf. Panicle open, oblong, 5–10 cm long, contracted about primary branches or contracted about secondary branches. Primary panicle branches bearing spikelets almost to the base. Racemes borne along a central axis, unilateral, 3–7.5 cm long, secondarily branched. Rhachis angular. Spikelet packing distant, irregular. Spikelets ascending, in pairs. Fertile spikelets pedicelled, 2 in the cluster. Pedicels present, filiform, angular, unequal, 2–10 mm long, scaberulous.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets lanceolate, laterally compressed, 4.5–5 mm long, falling entire, readily shedding fertile florets. Floret callus winged, with apical wings shrivelled to concave scars.

Glumes. Glumes lateral (fertile lemma rotated 90 degrees), similar, reaching apex of florets, thinner than fertile lemma. Lower glume lanceolate, 0.6–0.8 length of spikelet, herbaceous, 1-keeled, 5 -veined. Lower glume lateral veins ribbed. Lower glume apex setaceous acuminate. Upper glume elliptic, herbaceous, 1-keeled, 7 -veined. Upper glume lateral veins ribbed. Upper glume apex acute to acuminate.

Florets. Basal sterile florets 1, barren, with palea. Lemma of lower sterile floret similar to upper glume, oblong, 1 length of spikelet, 1-keeled, 7 -veined, ribbed, acute. Fertile lemma oblong, dorsally compressed, 2 mm long, indurate, pallid or dark brown, shiny, without keel, more than 3-veined. Lemma lateral veins obscure. Lemma margins involute. Lemma apex obtuse. Palea involute, indurate.

Flower and Fruit. Lodicules 2, cuneate, fleshy. Anthers 3. Caryopsis with adherent pericarp, oblong, dorsally compressed. Hilum elliptic.

$N = 10$ (1 ref TROPICOS). $2n = 40$ (1 ref TROPICOS).

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

Country /Province /State. **West tropical Africa, West-central tropical Africa.** Liberia, Sierre Leone. Annobon, Principe & Sao Tome. **China, Eastern Asia.** China South Central, Hainan, China North-Central, China Southeast. Nansei-Shoto, Taiwan. **Indian Subcontinent, Indo-China, Malesia, Papuasia.** Eastern Himalaya, India, Sri Lanka. Myanmar, Thailand, Vietnam. Borneo, Java, Malaya, Philippines. New Guinea West Papua (Irian Jaya). New Guinea. **Australia.** Queensland. **Mexico.** Central Mexico, Gulf (Mexico), Southwest Mexico, Southeast Mexico. **Mesoamerica, Caribbean, Northern South America, Western South America, Brazil, Southern South America.** Belize, Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua, Panama. Dominican Republic (& as *I. axillaris*), Haiti (& as *I. axillaris*), Jamaica (& as *I. axillaris*), Leeward Is, Windward Islands, Puerto Rico (& as *I. axillaris*), Trinidad-Tobago (& as *I. axillaris*). French Guiana, Guyana, Surinam, Venezuela. Bolivia, Colombia, Ecuador, Peru. Brazil West Central, Brazil Northeast, Brazil North, Brazil Southeast, Brazil South. Argentina Northeast, Paraguay, Uruguay.

TDWG4. Fujian, Guangdong, Guangxi, Hunan, Jiangxi. Guizhou, Yunnan. Darjeeling. North. Jujuy, Salta, Tucuman. Buenos Aires, Corrientes, Entre Rios, Misiones. Puebla. Veracruz. Oaxaca. Chiapas, Quintana Roo, Tabasco.

Ichnanthus panicoides Beauv. *Agrost.* 57.pl. 12 (1812).

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

TYPE from French Guiana. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: LT: *P. Beauv., Ess. Nouv. Agrost. pl. 12, f. 1 (1812)*, "Croît dans l'Amérique Méridionale; elle m'a été communiquée par M. Desfontaines, membre de l'institute, LT designated by Stieber, *Syst. Bot.* 7(1): 103 (1982).

INT: *A.S. Hitchcock 17121*, 6 Dec 1919, Guyana (US-1038585, US-1038586). INT designated by Stieber, *Syst. Bot.* 7: 103 (1982).

Illustrations (Books): J.A.Steyermark et al, *Flora of the Venezuelan Guayana* Vol. 8 (2004) (127, Fig. 86), E.Judziwicz, *Flora of the Guianas*, 187. *Poaceae* (1990) (273, Fig 47).

Illustrations (Journals): *Ruizia* (13:298, Fig 36k-1 (1993)).

Derivation (Clifford & Bostock 2007): Gk. -oides, resembling. Resembling *Panicum*, usually with respect to form of the inflorescence or spikelet.

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

Habit, Vegetative Morphology. Perennial. Culms erect, 30–100 cm long. Culm-nodes bearded. Lateral branches lacking. Leaves cauline. Leaf-sheaths glabrous on surface. Ligule a ciliate membrane, 1 mm long. Leaf-blade base simple or broadly rounded, with a brief petiole-like connection to sheath. Leaf-blades lanceolate or ovate, 9–10 cm long, 3.5–7 mm wide. Leaf-blade venation with distinct cross veins. Leaf-blade surface glabrous. Leaf-blade apex acuminate.

Inflorescence. Inflorescence a panicle, terminal or terminal and axillary. Panicle open, ovate, 20–35 cm long. Primary panicle branches 6–12 cm long, bearing 2–4 fertile spikelets on each lower branch. Spikelets ascending, in pairs. Fertile spikelets pedicelled, 2 in the cluster. Pedicels present, filiform, angular, 8–10 mm long.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets lanceolate or ovate, laterally compressed, acuminate, 9–10 mm long, falling entire, readily shedding fertile florets. Floret callus winged, with apical wings adnate to lemma, with this appendage 3–5 mm long.

Glumes. Glumes similar, reaching apex of florets, thinner than fertile lemma. Lower glume lanceolate, 6–7 mm long, 0.66 length of spikelet, herbaceous, 1-keeled, 5–9 -veined. Lower glume apex acute. Upper glume lanceolate, 1 length of spikelet, herbaceous, 1-keeled, 7–11 -veined. Upper glume surface villous, with tubercle-based hairs. Upper glume apex caudate.

Florets. Basal sterile florets 1, barren, with palea. Lemma of lower sterile floret similar to upper glume, oblong, 1 length of spikelet, 1-keeled, 7–11 -veined, villous, hairy at apex, caudate. Fertile lemma lanceolate or obovate, dorsally compressed, 4–6 mm long, indurate, without keel. Lemma margins involute, ciliolate. Lemma apex acuminate, pubescent. Palea involute, indurate.

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

Distribution (TDWG). Continent. South America.

Country /Province /State. Mesoamerica, Northern South America, Western South America, Brazil. Costa Rica. French Guiana, Guyana, Surinam, Venezuela. Bolivia, Colombia, Peru. Brazil North. Roraima, Para, Amapa, Amazonas, Acre, Rondonia.

Ichnanthus procurrens (Nees ex Trin.) Swallen. *Phytologia*, xi. 149 (1964).

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

TYPE from Brazil. **Basionym or Replaced Name:** *Panicum procurrens* Nees ex Trin., *Gram. Panic.* 183 (1826). T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: HT: *G.H. von Langsdorff s.n.*, Brazil: Minas Gerais: "in campis glareosis" (LE-TRIN-0903.01; IT: US-974728 (fragm. ex LE)).

Illustrations (Books): S.A.Renvoize, *Gramineas de Bolivia* (1998) (Fig. 81), J.A.Steyermark et al, *Flora of the Venezuelan Guayana* Vol. 8 (2004) (130, Fig. 90), L.B. Smith, D.C. Wasshausen, R.M. Klein *Flora Illustrada Catarinensis Gramineas* (1981–1982) (759, Fig. 159), F.O.Zuloaga et al, *Flora del Paraguay* 23 (1994) (182, Fig. 51 & as var. *subaequiglume*).

Illustrations (Journals): *Darwiniana* (22: 36, Fig.8 (1979) as *Panicum*).

Derivation (Clifford & Bostock 2007): L. *procurro*, project. The inflorescence projects beyond the leaf-sheath.

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

Habit, Vegetative Morphology. Annual or perennial. Culms erect, 30–100 cm long. Leaf-sheaths glabrous on surface. Ligule a ciliate membrane. Leaf-blades linear or lanceolate, 2–4 cm long, 2.5–10 mm wide, stiff.

Leaf-blade venation with distinct cross veins. Leaf-blade surface glabrous or hirsute, sparsely hairy. Leaf-blade margins cartilaginous, serrulate. Leaf-blade apex acute.

Inflorescence. Inflorescence a panicle. Panicle open, ovate, 3–8 cm long, with spikelets clustered towards branch tips. Primary panicle branches simple, bearing spikelets almost to the base. Panicle branches bearing congested spikelets or the terminal spikelet distant on a long pedicel, pilose. Spikelets ascending, in pairs. Fertile spikelets sessile and pedicelled, 2 in the cluster. Pedicels present, filiform, angular.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets lanceolate, laterally compressed, 3–3.5 mm long, falling entire, readily shedding fertile florets. Floret callus winged, with apical wings reduced to convex swellings.

Glumes. Glumes similar, reaching apex of florets, thinner than fertile lemma. Lower glume ovate, 1 length of spikelet, herbaceous, 1-keeled, 3 -veined. Lower glume surface pilose or villous. Lower glume apex acuminate. Upper glume oblong, 1 length of spikelet, herbaceous, 1-keeled, 5–7 -veined. Upper glume surface pilose or villous. Upper glume apex acute.

Florets. Basal sterile florets 1, barren, with palea. Lemma of lower sterile floret similar to upper glume, oblong, 1 length of spikelet, 1-keeled, 5–7 -veined, acute. Fertile lemma lanceolate, dorsally compressed, 2–2.5 mm long, indurate, without keel. Lemma margins involute. Lemma apex acute. Palea involute, indurate.

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

Distribution (TDWG). Continent. South America.

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

TDWG4. Mato Grosso, Goias, Bahia, Maranhao, Piaui, Minas Gerais, Rio de Janeiro, Espirito Santo, Sao Paulo Parana, Catarina, Rio Grande do Sul. Corrientes, Misiones.

Ichnanthus riedelii (Trin.) Doell. *Mart. Fl. Bras. ii. II. 278.* (1877).

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

TYPE from Brazil. **Basionym or Replaced Name:** *Panicum riedelii* Trin., *Mem. Acad. Imp. Sci. Saint-Petersbourg, Ser. 6, Sci. Math., Seconde Pt. Sci. Nat.* 3,1(2–3): 327 (1834). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *Riedel s.n.*, 1831, Brazil: Bahia (LE-TRIN-0925.01 (& figs.); IT: B, G, LE-TRIN-0925.02, US-2877781 (fragm. ex LE-TRIN-0925.01?)).

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

Derivation (Clifford & Bostock 2007): in honor of Ludwig Riedel (1790–1861) German plant collector and traveller.

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

Habit, Vegetative Morphology. Perennial. Culms erect, 30–90 cm long. Culm-internodes distally pubescent. Leaves mostly basal. Leaf-sheaths glabrous on surface or pilose. Ligule a ciliate membrane, 0.5 mm long. Leaf-blade base with a false petiole, petiole 2–7 cm long. Leaf-blades lanceolate, 8–20 cm long, 10–30 mm wide, herbaceous. Leaf-blade venation with distinct cross veins. Leaf-blade surface pubescent, hairy abaxially or on both sides. Leaf-blade apex acuminate.

Inflorescence. Inflorescence composed of racemes. Racemes borne along a central axis, appressed or ascending, 7–14 cm long. Spikelet packing crowded, irregular. Spikelets ascending, in pairs. Fertile spikelets sessile and pedicelled, 2 in the cluster. Pedicels present, filiform, angular.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets oblong, laterally compressed, acute, 7 mm long, falling entire, readily shedding fertile florets. Floret callus winged, with apical wings adnate to lemma, with this appendage 3–4.5 mm long.

Glumes. Glumes similar, reaching apex of florets, thinner than fertile lemma. Lower glume oblong, 1 length of spikelet, herbaceous, 1-keeled, 7–9 -veined. Lower glume apex acute. Upper glume ovate, 1 length of spikelet, herbaceous, 1-keeled, 7–9 -veined. Upper glume apex acute.

Florets. Basal sterile florets 1, barren, with palea. Lemma of lower sterile floret similar to upper glume, ovate, 1 length of spikelet, 1-keeled, 5–7 -veined, acute. Fertile lemma lanceolate, dorsally compressed, 6 mm long, indurate, pallid or light brown, without keel. Lemma margins involute. Lemma apex acute. Palea involute, indurate.

Flower and Fruit. Caryopsis with adherent pericarp.

Distribution (TDWG). Continent. South America.

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

Amazonas, Acre, Rondonia, Bahia, Ceara, Rio Grande do Norte, Paraiba, Penambuco, Alagoas, Sergipe.

Ichnanthus ruprechtii Doell. *Mart. Fl. Bras.* ii. II. 293. (1877).

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

TYPE from Brazil. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: LT: *J.B.E. Pohl 5067*, ca. 1817–1821, Brazil: Goias: near Pillar (BR; ILT: G, US-2487288 (fragm. ex G, W), W). LT designated by Stieber, *Syst. Bot.* 12: 195 (1987).

ST: *Bunbury s.n.*, Brazil: Minas Gerais: "ad Congo Soco" (BR).

Illustrations (Books): S.A.Renvoize, *Gramineas de Bolivia* (1998) (380, Fig 81), L.B. Smith, D.C. Wasshausen, R.M. Klein *Flora Illustrada Catarinensis Gramineas* (1981–1982) (759, Fig. 159).

Derivation (Clifford & Bostock 2007): in honor of Franz Josef Iwanowitsch Ruprecht (1814–1870) German-born Russian botanist.

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

Habit, Vegetative Morphology. Perennial. Culms erect or scandent, robust, 150–1000 cm long, firm or woody, with prop roots or rooting from lower nodes. Culm-nodes pubescent. Leaf-sheaths glabrous on surface or pubescent. Ligule a ciliate membrane, 0.3–1.5 mm long. Collar pubescent. Leaf-blade base cordate, asymmetrical. Leaf-blades lanceolate, 9–25 cm long, 20–40 mm wide. Leaf-blade venation with distinct cross veins. Leaf-blade surface glabrous or pubescent, hairy on both sides. Leaf-blade apex acuminate.

Inflorescence. Inflorescence a panicle. Panicle open, ovate, dense, 8–30 cm long, 5–12 cm wide. Primary panicle branches appressed or ascending, profusely divided, 5–17 cm long. Spikelets ascending, in pairs. Fertile spikelets sessile and pedicelled, 2 in the cluster. Pedicels present, filiform, angular.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets elliptic, laterally compressed, acuminate, 4–6 mm long, falling entire, readily shedding fertile florets. Floret callus winged, with apical wings shrivelled to concave scars.

Glumes. Glumes similar, reaching apex of florets, thinner than fertile lemma. Lower glume ovate, 1 length of spikelet, herbaceous, 1-keeled, 1–3 -veined. Lower glume lateral veins absent or distinct. Lower glume surface glabrous or pubescent. Lower glume apex caudate. Upper glume elliptic, 1 length of spikelet, herbaceous, 1-keeled, 5–7 -veined. Upper glume surface glabrous or pubescent. Upper glume apex acute to attenuate.

Florets. Basal sterile florets 1, barren, with palea. Lemma of lower sterile floret similar to upper glume, lanceolate, 1 length of spikelet, 1-keeled, 5 -veined, smooth or scaberulous, acute or acuminate. Fertile lemma elliptic, dorsally compressed, 2–3 mm long, indurate, without keel. Lemma margins involute. Lemma apex acute. Palea involute, indurate.

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

Distribution (TDWG). Continent. South America.

Country /Province /State. Northern South America, Western South America, Brazil, Southern South America. French Guiana, Guyana, Surinam, Venezuela. Bolivia, Peru. Brazil West Central, Brazil Southeast, Brazil North, Brazil South. Paraguay.

TDWG4. Roraima, Mato Grosso, Goias, Minas Gerais, Rio de Janeiro, Espirito Santo, Sao Paulo Parana, Catarina, Rio Grande do Sul. Jujuy. Misiones.

Ichnanthus tarijjanus K.E. Rogers. *Phytologia*, 22(2): 102 (1971).

Regarded by K as a synonym (*I. ruprechtii*).

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 Bolivia. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *R.F. Steinbach 1768*, 10 Feb 1916, Bolivia: Tarija: Yacuiba (US-2044282; IT: GH, LIL-45.750).

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

Derivation (Clifford & Bostock 2007): L. -anus, indicating location. From Dept. Tarijia, Bolivia.

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

Habit, Vegetative Morphology. Perennial. Rhizomes elongated, scaly, woolly. Culms erect, robust, 60–80 cm long. Culm-internodes elliptical in section, 2–10 cm long, distally pubescent. Culm-nodes pubescent. Leaf-sheaths 2.3–9 cm long, pilose, outer margin hairy. Ligule a ciliate membrane, 1.5–2 mm long, pubescent on abaxial surface. Collar pubescent. Leaf-blade base cordate. Leaf-blades lanceolate or ovate, 13.5–18 cm long, 34–48 mm wide. Leaf-blade midrib conspicuous. Leaf-blade venation with distinct cross veins. Leaf-blade surface glabrous or pubescent, hairy on both sides. Leaf-blade margins scaberulous. Leaf-blade apex caudate.

Inflorescence. Inflorescence a panicle. Panicle open, ovate, dense, 15–35 cm long, 3–10 cm wide. Primary panicle branches 15–20 in number, ascending, 5–7 cm long. Panicle axis smooth or scaberulous, glabrous. Panicle branches scabrous, pilose, pubescent in axils. Spikelets in pairs or in threes. Fertile spikelets sessile and pedicelled, 2–3 in the cluster. Pedicels present, oblong, angular, pubescent.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets elliptic, laterally compressed, acute, 3–4 mm long, 0.6–1 mm wide, falling entire, readily shedding fertile florets. Floret callus winged, with apical wings adnate to lemma, with this appendage 0.8–1.1 mm long.

Glumes. Glumes similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate or ovate, 2.2–3.4 mm long, 0.5–0.75 length of spikelet, herbaceous, 1-keeled, 3 -veined. Lower glume primary vein scabrous. Lower glume margins eciliate or ciliate. Upper glume elliptic, 2.8–3.9 mm long, 1 length of spikelet, herbaceous, 1-keeled, 5 -veined. Upper glume surface pilose, hairy above. Upper glume apex acute.

Florets. Basal sterile florets 1, male, with palea. Lemma of lower sterile floret similar to upper glume, lanceolate, 2.6–3.6 mm long, 1 length of spikelet, 1-keeled, 5 -veined, scabrous, rough on midvein, glabrous or pilose, hairy above, acute. Palea of lower sterile floret 2.3–3 mm long, pilose, adorned on flanks. Fertile lemma elliptic, dorsally compressed, 2.2–3.1 mm long, 0.8–1 mm wide, indurate, yellow, without keel, 5 -veined, more than 3-veined. Lemma surface smooth. Lemma margins involute. Lemma apex acute. Palea involute, indurate.

Flower and Fruit. Anthers 3, 1.4–1.9 mm long. Caryopsis with adherent pericarp.

Distribution (TDWG). Continent. South America.

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

TDWG4. Jujuy, Salta.

Ichnanthus tarumanensis G. A. Black & Froes. *Bol. Tecn. Inst. Agron. Norte, Para*, No. 20, 33 (1950).

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

TYPE from Brazil. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: HT: *R.L. Froes 25042*, 14 Aug 1949, Brazil: Amazonas, prope Manaus, secus Igarape Gits, fluminis amazonas affluentem (IAN; IT: US-2236062 (fragm. ex IAN & photo)).

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

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

Habit, Vegetative Morphology. Perennial, caespitose. Culms geniculately ascending or decumbent, 50–80 cm long. Culm-nodes pubescent. Leaves basal and cauline. Leaf-sheaths pilose. Ligule a fringe of hairs, 1 mm long. Leaf-blades lanceolate, 10–20 cm long, 10–20 mm wide, membranous. Leaf-blade venation with distinct cross veins. Leaf-blade surface pilose, hairy on both sides. Leaf-blade apex acuminate.

Inflorescence. Inflorescence a panicle. Panicle open, ovate, 10–20 cm long. Primary panicle branches 4–8 cm long, bearing 2–8 fertile spikelets on each lower branch. Panicle axis pilose. Panicle branches pilose. Spikelets ascending, in pairs. Fertile spikelets sessile and pedicelled, 2 in the cluster. Pedicels present, filiform, angular, ciliate.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets lanceolate, laterally compressed, 4.5–6.5 mm long, falling entire, readily shedding fertile florets. Floret callus winged, with apical wings adnate to lemma, with this appendage 0.5–1 mm long.

Glumes. Glumes similar, reaching apex of florets, thinner than fertile lemma. Lower glume obovate, 0.66–1 length of spikelet, herbaceous, 1-keeled, 3 -veined. Lower glume apex attenuate, awned, 1 -awned, awn 1.5 mm long. Upper glume lanceolate, 1 length of spikelet, herbaceous, 1-keeled, 5 -veined. Upper glume surface pilose. Upper glume hairs white. Upper glume apex acuminate.

Florets. Basal sterile florets 1, barren, with palea. Lemma of lower sterile floret similar to upper glume, oblong, 1 length of spikelet, 1-keeled, 5 -veined, pilose, bearing white hairs, acuminate. Fertile lemma elliptic, dorsally compressed, 3–3.5 mm long, indurate, without keel. Lemma margins involute. Lemma apex acute. Palea involute, indurate.

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

Distribution (TDWG). Continent. South America.

Country /Province /State. Brazil. Brazil North.

Amazonas, Acre, Rondonia.

Ichnanthus tectus Swallen. *Mem. N. Y. Bot. Gard.* ix. 265 (1957).

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

TYPE from Venezuela. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: R.S. Cowan & J.J. Wurdack 31139, 2 Feb 1951, Venezuela: Amazonas: Serranía Parz, Rmo Parz, Caño Asmsa, Rmo Ventuari, just south of valley head of Camp Cano, sabanita and scrub forest, 2000 m. (US-2040249).

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

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

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

Habit, Vegetative Morphology. Perennial. Culms erect, 100–120 cm long. Leaves mostly basal. Leaf-sheaths glabrous on surface. Ligule a fringe of hairs, 1–2 mm long. Leaf-blades lanceolate, 35–65 cm long, 8–10 mm wide. Leaf-blade venation with distinct cross veins. Leaf-blade surface glabrous, hairless except near base. Leaf-blade margins scabrous, tuberculate-ciliate, hairy at base. Leaf-blade apex acuminate or attenuate.

Inflorescence. Inflorescence a panicle. Panicle open, ovate, 20–25 cm long. Primary panicle branches ascending or spreading, 4–8 cm long. Panicle axis scabrous. Panicle branches stiff. Spikelets appressed, in pairs. Fertile spikelets sessile and pedicelled, 2 in the cluster. Pedicels present, filiform, angular.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets lanceolate, laterally compressed, 4.5–5 mm long, falling entire, readily shedding fertile florets. Floret callus winged, with apical wings adnate to lemma, with this appendage 1.5 mm long.

Glumes. Glumes similar, reaching apex of florets, thinner than fertile lemma. Lower glume lanceolate, 4 mm long, 0.8 length of spikelet, herbaceous, 1-keeled, 3 -veined. Lower glume apex obtuse. Upper glume lanceolate, 1 length of spikelet, herbaceous, 1-keeled, 5 -veined. Upper glume apex obtuse.

Florets. Basal sterile florets 1, barren, with palea. Lemma of lower sterile floret similar to upper glume, oblong, 1 length of spikelet, 1-keeled, 5 -veined, obtuse. Fertile lemma elliptic, dorsally compressed, 4 mm long, indurate, without keel. Lemma margins involute. Lemma apex acute. Palea involute, indurate.

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

Distribution (TDWG). Continent. South America.

Country /Province /State. Northern South America. Venezuela.

Ichnanthus tenuis (J. Presl & C. Presl) Hitchc. & Chase. *Contrib. US. Nat. Herb.* xviii. 334 (1917).

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

TYPE from Panama. **Basionym or Replaced Name:** *Oplismenus tenuis* J. Presl & C. Presl, *Reliq. Haenk.* 1(4–5): 319 (1830). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *Haenke s.n.*, Panama (or Mexico?), s.d. (PR; IT: BR, LE, MO-1837505, MO-5117061 (line drawing), US-2489448 (fragm. ex LE)).

Illustrations (Books): S.A.Renvoize, *Gramineas de Bolivia* (1998) (380, Fig. 81), S.A.Renvoize, *The Grasses of Bahia*, 1984 (119, Fig. 43), J.A.Steyermark et al, *Flora of the Venezuelan Guayana* Vol. 8 (2004) (128, Fig. 88), L.B. Smith, D.C. Wasshausen, R.M. Klein *Flora Illustrada Catarinensis Gramineas* (1981–1982) (759, Fig. 159 & 777, Fig. 161), W.Burger, *Flora Costaricensis* 15, Gramineae: *Fieldiana Botany New Series* 4 (1980) (271, Fig. 98), F.O.Zuloaga et al, *Flora del Paraguay* 23 (1994) (186, Fig. 52).

Derivation (Clifford & Bostock 2007): L. thin. Culms, leaf-blades or pedicels, slender.

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

Habit, Vegetative Morphology. Annual, mat forming. Culms rambling, 10–40 cm long, rooting from lower nodes. Culm-internodes distally pubescent or pilose. Lateral branches ample. Leaf-sheaths pilose, with simple hairs or tubercle-based hairs. Ligule a ciliate membrane, 1–1.5 mm long. Leaf-blade base broadly rounded, asymmetrical. Leaf-blades linear or lanceolate or ovate, 2–7 cm long, 6–15 mm wide. Leaf-blade venation with distinct cross veins. Leaf-blade surface pubescent or pilose. Leaf-blade apex acuminate.

Inflorescence. Inflorescence a panicle or composed of racemes, terminal and axillary. Peduncle 6–20 cm long. Panicle open, ovate, 3–9 cm long. Primary panicle branches 2–7 in number, simple, 2–7 cm long, bearing spikelets almost to the base. Panicle branches flexuous. Racemes 2–7, borne along a central axis, 2–7 cm long. Central inflorescence axis 1.5–6 cm long. Spikelet packing lax, irregular. Spikelets ascending, in pairs. Fertile spikelets sessile and pedicelled, 2 in the cluster. Pedicels present, filiform, angular.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets lanceolate, laterally compressed, 3.5–5 mm long, falling entire,

readily shedding fertile florets. Floret callus winged, with apical wings shrivelled to concave scars, with this appendage 0.5–1 mm long.

Glumes. Glumes similar, reaching apex of florets, thinner than fertile lemma. Lower glume lanceolate, 0.66–1 length of spikelet, herbaceous, 1-keeled, 3 -veined. Lower glume lateral veins ribbed. Lower glume surface pilose. Lower glume apex attenuate. Upper glume elliptic, 1 length of spikelet, herbaceous, 1-keeled, 5 -veined. Upper glume surface pilose. Upper glume apex setaceously acuminate.

Florets. Basal sterile florets 1, barren, with palea. Lemma of lower sterile floret similar to upper glume, lanceolate, 1 length of spikelet, 1-keeled, 5 -veined, setaceously acuminate. Fertile lemma elliptic or oblong, dorsally compressed, 1.5–3 mm long, indurate, without keel. Lemma margins involute. Lemma apex obtuse or acute. Palea involute, indurate.

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

$2n = 40$ (1 ref TROPICOS).

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

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

TDWG4. Amazonas, Acre, Rondonia, Mato Grosso, Goias, Bahia, Maranhao, Piaui, Ceara, Rio Grande do Norte, Paraiba, Pernambuco, Alagoas, Sergipe, Minas Gerais, Rio de Janeiro, Espirito Santo, Sao Paulo Parana, Catarina, Rio Grande do Sul. Buenos Aires, Chaco, Corrientes, Misiones. Puebla. Veracruz. Oaxaca. Chiapas, Quintana Roo, Tabasco.

Ichnanthus wrightii Hitchcock. *Contrib. U. S. Nat. Herb.* xii. 229 (1909).

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

TYPE from Cuba. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: HT: *Wright 3880*, 1865, Cuba: Pinar del Rmo: under overhanging rocks and around base of palms beside the Rmo Seco in Arroyo Honda (US-559959; IT: B, GH, K, NY). Only "Cuba" recorded on US label..

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

Derivation (Clifford & Bostock 2007): In honor of Charles Wright (1811–1885) United States botanical collector.

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

Habit, Vegetative Morphology. Annual. Culms decumbent or rambling, 20–40 cm long, rooting from lower nodes. Culm-internodes distally glabrous or pilose (sparsely). Leaf-sheaths outer margin hairy. Ligule a ciliate membrane, 0.5 mm long. Leaf-blade base broadly rounded, asymmetrical, with a false petiole, petiole 0.5–1 cm long. Leaf-blades lanceolate, 2–5 cm long, 3–9 mm wide, membranous. Leaf-blade venation with obscure cross veins. Leaf-blade surface scaberulous, rough adaxially, glabrous or puberulous. Leaf-blade apex acute.

Inflorescence. Inflorescence composed of racemes, terminal. Racemes 3–6, borne along a central axis, erect, 0.5–3 cm long. Central inflorescence axis 2–2.5 cm long. Spikelet packing lax, irregular. Spikelets ascending, in pairs. Fertile spikelets pedicelled, 2 in the cluster. Pedicels present, filiform, angular.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets lanceolate, laterally compressed, acute, 2.5–3 mm long, falling entire, readily shedding fertile florets. Floret callus winged, with apical wings shrivelled to concave scars.

Glumes. Glumes similar, reaching apex of florets, thinner than fertile lemma. Lower glume ovate, 1 mm long, 0.3 length of spikelet, herbaceous, 1-keeled, 5 -veined. Lower glume lateral veins ribbed. Lower glume surface glabrous. Lower glume apex acute. Upper glume lanceolate, 1 length of spikelet, herbaceous, 1-keeled, 5 -veined. Upper glume lateral veins ribbed. Upper glume surface glabrous. Upper glume apex acuminate.

Florets. Basal sterile florets 1, barren, with palea. Lemma of lower sterile floret similar to upper glume, oblong, 1 length of spikelet, 1-keeled, 5 -veined, ribbed, acuminate. Fertile lemma elliptic, dorsally compressed, 2 mm long, indurate, without keel. Lemma margins involute. Lemma apex obtuse. Palea involute, indurate.

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

Distribution (TDWG). Continent. South America.

Country /Province /State. Caribbean (Cuba only). Cuba.

Ichnanthus zehntneri Mez. *Bot. Jahrb. Engler.* 56(125): 9 (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 Brazil. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: HT: *Zehntner 3079*, Brazil: Bahia: Cabeceira da Cortezio, campos geraes (B; IT: M, US-2767352 (fragm. ex M & photo)).

Illustrations (Books): S.A.Renvoize, *The Grasses of Bahia*, 1984 (121, Fig. 44).

Derivation (Clifford & Bostock 2007): in honor of Zehntner (prior to 1921) who collected in Brazil.

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

Habit, Vegetative Morphology. Perennial, culms solitary. Rhizomes short. Basal innovations flabellate. Culms erect, 50–100 cm long. Leaves mostly basal. Leaf-sheaths glabrous on surface, outer margin hairy. Ligule a ciliate membrane, 1 mm long. Leaf-blade base with a false petiole, petiole 1–5 cm long. Leaf-blades linear or lanceolate, 15–30 cm long, 5–10 mm wide, stiff. Leaf-blade venation with distinct cross veins. Leaf-blade surface pilose, hairy adaxially. Leaf-blade apex acuminate.

Inflorescence. Inflorescence a panicle. Panicle open, oblong, 10–20 cm long. Primary panicle branches ascending or spreading, simple, 2–6 cm long. Panicle branches bearing congested spikelets. Spikelets ascending, in pairs. Fertile spikelets pedicelled, 2 in the cluster. Pedicels present, oblong, angular.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets elliptic, laterally compressed, 4–5 mm long, falling entire, readily shedding fertile florets. Floret callus winged, with apical wings adnate to lemma, with this appendage 0.7–0.9 mm long.

Glumes. Glumes similar, reaching apex of florets, thinner than fertile lemma. Lower glume ovate, 3 mm long, 0.66 length of spikelet, herbaceous, 1-keeled, 3 -veined. Lower glume apex acute. Upper glume ovate, 1 length of spikelet, herbaceous, 1-keeled, 5 -veined. Upper glume apex acute.

Florets. Basal sterile florets 1, barren, with palea. Lemma of lower sterile floret similar to upper glume, ovate, 1 length of spikelet, 1-keeled, 5 -veined, acute. Fertile lemma elliptic, dorsally compressed, 3 mm long, indurate, without keel. Lemma margins involute. Lemma apex acute. Palea involute, indurate.

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

Distribution (TDWG). Continent. South America.

Country /Province /State. Brazil. Brazil North.

TDWG4. Bahia.

Imperata brasiliensis Trin. *Mem. Acad. Petersb. Ser. VI. ii.* 331. (1833).

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

TYPE from Brazil. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: HT: *Riedel s.n.*, Brazil (LE).

HT?: *Riedel 1616*, 24 Nov. 1823, Brazil: Minas Gerais: Serra da Lapa, in cultis (LE-TRIN-0014:01; IT: LE K, US (fragm.)).

Illustrations (Books): M.E.Barkworth et al, *Flora of North America north of Mexico Vol 25 Poaceae*, part 2 (2003), A.S.Hitchcock, *Manual of the Grasses of the West Indies* (1936) (378, Fig. 344), S.A.Renvoize, *Gramineas de Bolivia* (1998) (573, Fig. 134), S.A.Renvoize, *The Grasses of Bahia*, 1984 (266, Fig. 100), J.A.Steyermark et al, *Flora of the Venezuelan Guayana Vol. 8* (2004) (132, Fig. 91), L.B. Smith, D.C. Wasshausen, R.M. Klein *Flora Illustrada Catarinensis Gramineas* (1981–1982) (1170, Fig. 228 & 1171, Fig. 229), A.Burkat, *Flora Ilustrada de Entre Rios (Argentina)*, Pt II, Gramineas (1969) (448, Fig. 190), A.L.Cabrera, *Flora de la Provincia de Buenos Aires, IV Pt 2 Gramineas* (1970) (568, Fig. 150), B.Rosengurtt, *Gramineas Uruguayas I* (1970) (180, Fig. 72), R.Pilger, *Die Natürlichen Pflanzenfamilien* 14e (1940) (112, Fig. 65), E.Hafliger & E.Schultz, *Grass Weeds*, CIBA-GEIGY (1:62(1980)).

Illustrations (Journals): *Ruizia* (13:422 Fig 56h-i (1993)).

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

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

Habit, Vegetative Morphology. Perennial. Rhizomes elongated, scaly. Butt sheaths persistent and investing base of culm, with fibrous dead sheaths. Culms erect, 25–75 cm long, 1 mm diam. Culm-internodes solid, distally glabrous. Culm-nodes bearded. Lateral branches lacking. Leaves mostly basal. Leaf-sheaths glabrous on surface. Ligule a ciliolate membrane, 0.3–1 mm long, brown. Leaf-blades erect, 6–15 cm long, 8–10 mm wide, stiff. Leaf-blade surface glabrous, hairless except near base. Leaf-blade margins scabrous.

Inflorescence. Inflorescence a panicle with branches tipped by a raceme. Peduncle 10–20 cm long, glabrous. Panicle spiciform, linear, 6–15 cm long, 1–2 cm wide. Panicle axis scabrous, villous. Panicle branches

scabrous, villous. Racemes bearing few fertile spikelets. Rhachis tough, subterete. Rhachis internodes filiform. Spikelets in pairs. Fertile spikelets pedicelled, 2 in the cluster. Pedicels present, filiform, unequal, tip discoid.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets elliptic, subterete, 3.5–4 mm long, falling entire. Spikelet callus bearded, base truncate. Spikelet callus hairs white, 8–12 mm long.

Glumes. Glumes similar, exceeding apex of florets, firmer than fertile lemma. Lower glume lanceolate, 1 length of spikelet, membranous, without keels, 3–5 -veined. Lower glume surface villous. Upper glume lanceolate, 1 length of spikelet, membranous, without keels, 5–7 -veined. Upper glume surface villous.

Florets. Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret similar to fertile lemma, oblong, hyaline, 0 -veined, without midvein, without lateral veins, erose, obtuse. Fertile lemma ovate, 0.5–1.1 mm long, hyaline, without keel, 0 -veined, 0–3 -veined, without veins. Lemma apex acute. Palea hyaline, 0 -veined, without keels.

Flower and Fruit. Lodicules absent. Anthers 1, 1.8–2.8 mm long. Stigmas 2, terminally exserted.

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

Country /Province /State. Southeastern USA, Mexico. Alabama, Florida, Louisiana, Mississippi. Southwest Mexico, Southeast Mexico. **Mesoamerica, Caribbean, Northern South America, Western South America, Brazil, Southern South America.** Belize, Costa Rica, El Salvador, Guatemala, Honduras. Bahamas, Cuba, Dominican Republic, Haiti, Jamaica, Trinidad-Tobago. French Guiana, Guyana, Surinam, Venezuela. Bolivia, Colombia, Ecuador, Peru. Brazil Northeast, Brazil Southeast, Brazil North. Argentina Northeast, Argentina Northwest, Chile Central, Paraguay, Uruguay.

TDWG4. Amazonas, Acre, Rondonia, Goias, Bahia, Minas Gerais, Rio de Janeiro, Espirito Santo, Sao Paulo Parana, Catarina, Rio Grande do Sul. Jujuy, Salta, Tucuman. Buenos Aires, Chaco, Cordoba, Corrientes, Formosa, La Pampa, Misiones, Santa Fe. Oaxaca. Campeche, Chiapas, Quintana Roo, Tabasco, Yucatan.

Imperata brevifolia Vasey. *Bull. Torrey Bot. Club*, xiii. 26 (1886).

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

TYPE from USA. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: LT: *S.B. Parish 1031*, 15 Sep 1883, USA: California: San Bernardino Co. (US-80003, US-722085; ILT: MO-1837504, MO-1827501). LT designated by McVaugh, Fl. Novo-Gal. 14: 200 (1983) but without specifying the specific US sheet.

ST: *C. Wright 2001*, USA: New Mexico.

Illustrations (Books): M.E.Barkworth et al, *Flora of North America north of Mexico Vol 25 Poaceae*, part 2 (2003) (622), F.W.Gould, *The Grasses of Texas* (1975) (568, Fig. 298).

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

Derivation (Clifford & Bostock 2007): *L. brevis*, short; folium, leaf. Leaf-blades shorter than those of some other species in the genus or relative to the length of the culm.

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

Habit, Vegetative Morphology. Perennial. Rhizomes elongated, scaly. Culms erect, 100–150 cm long. Culm-internodes distally glabrous. Lateral branches lacking. Leaf-sheath oral hairs ciliate. Leaf-sheath auricles absent or erect. Ligule a ciliolate membrane. Leaf-blades erect, tapering towards tip and sheath, 6–12 mm wide, stiff. Leaf-blade surface glabrous. Leaf-blade margins scabrous.

Inflorescence. Inflorescence a panicle with branches tipped by a raceme. Panicle spiciform, linear, 10–30 cm long. Racemes bearing few fertile spikelets. Rhachis tough, subterete. Rhachis internodes filiform. Spikelets in pairs. Fertile spikelets pedicelled, 2 in the cluster. Pedicels present, filiform, unequal.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets lanceolate, subterete, 3–4 mm long, falling entire. Spikelet callus bearded, base truncate. Spikelet callus hairs white, 9–12 mm long.

Glumes. Glumes similar, exceeding apex of florets, firmer than fertile lemma. Lower glume lanceolate, 1 length of spikelet, membranous, without keels. Lower glume surface villous. Upper glume lanceolate, 1 length of spikelet, membranous, without keels. Upper glume surface villous.

Florets. Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret similar to fertile lemma, oblong, hyaline, 0 -veined, without midvein, without lateral veins, erose, obtuse. Fertile lemma ovate, hyaline, without keel, 0 -veined, 0–3 -veined, without veins. Lemma apex acute. Palea hyaline, 0 -veined, without keels.

Flower and Fruit. Lodicules absent. Stigmas 2, terminally exserted.

Distribution (TDWG). Continent. North America.

Country /Province /State. Southwestern USA, South-central USA, Mexico. Arizona, California, Nevada, Utah. New Mexico, Texas. Northeast Mexico, Northwest Mexico, Southwest Mexico.
TDWG4. Chihuahua. Baja California, Sonora. Jalisco, Nayarit.

Imperata cheesemanii Hack. *Trans. Proc. N. Z. Inst.* v. 378. (1903).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), E.Edgar, & H.Connor, *Flora of New Zealand Gramineae* 5 (2000).

TYPE from New Zealand. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *T.F. Cheeseman s.n. [1001 to Hackel]*, Aug 1887, New Zealand: Kermadec Islands (W; IT: US).

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

Derivation (Clifford & Bostock 2007): in honor of Thomas Frederick Cheeseman (1846–1926) English-born New Zealand botanist.

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

Habit, Vegetative Morphology. Perennial. Basal innovations extravaginal. Culms 30–40 cm long, 3-noded. Culm-internodes distally glabrous. Lateral branches lacking. Leaf-sheaths glabrous on surface. Leaf-sheath oral hairs bearded. Ligule an eciliate membrane, truncate. Leaf-blades 15–30 cm long, 12–20 mm wide. Leaf-blade surface glabrous. Leaf-blade margins scabrous. Leaf-blade apex acute or acuminate.

Inflorescence. Inflorescence a panicle with branches tipped by a raceme. Panicle contracted or spiciform, lanceolate, 6–13 cm long, 2–3 cm wide. Primary panicle branches 0.5–2.5 cm long. Panicle axis villous. Racemes bearing few fertile spikelets. Rhachis tough, subterete. Rhachis internodes filiform. Spikelets in pairs. Fertile spikelets pedicelled, 2 in the cluster. Pedicels present, clavate, unequal, plumose, hairy at tip.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets lanceolate, subterete, 3 mm long, falling entire. Spikelet callus bearded, base truncate. Spikelet callus hairs white, 6–8 mm long.

Glumes. Glumes similar, exceeding apex of florets, firmer than fertile lemma. Lower glume lanceolate, 1 length of spikelet, membranous, without keels, 5-veined. Lower glume lateral veins obscure. Lower glume surface villous, hairy generally. Upper glume lanceolate, 1 length of spikelet, membranous, without keels, 3-veined. Upper glume surface villous, hairy at apex.

Florets. Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret similar to fertile lemma, oblong, 0.66 length of spikelet, hyaline, 0-veined, without midvein, without lateral veins, erose, obtuse. Fertile lemma ovate, 2 mm long, hyaline, without keel, 0-veined, 0–3-veined, without veins. Lemma apex dentate, 3-fid. Palea hyaline, 0-veined, without keels.

Flower and Fruit. Lodicules absent. Anthers 1. Stigmas 2, terminally exerted.

Distribution (TDWG). Continent. Australasia.

Country /Province /State. New Zealand. Kermadec Is.

Imperata condensata Steud. *Syn. Pl. Gram.* 431 (1854).

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

TYPE from Chile. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *Lechler 831*, Chile: Cordilleras de Ranco (P; IT: US).

Illustrations (Books): E.G.Nicora, *Los Generos de Gramineas de America Austral* (1987) (502, Fig. 178), M.N.Correa, *Flora Patagonica* Parte III, Gramineae (1978) (*Fl. Pat.* 3: 548, Fig. 371 (1978)).

Derivation (Clifford & Bostock 2007): *L. condense*, press close together. Spikelets crowded in the inflorescence.

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

Habit, Vegetative Morphology. Perennial. Rhizomes elongated, scaly. Butt sheaths purple, persistent and investing base of culm, with fibrous dead sheaths. Culms erect or geniculately ascending, 20–60 cm long, 1–4-noded. Culm-internodes purple, distally glabrous. Culm-nodes glabrous. Lateral branches lacking. Leaves mostly basal. Leaf-sheaths mostly shorter than adjacent culm internode, glabrous on surface. Leaf-sheath oral hairs ciliate. Ligule a ciliolate membrane, 2–4 mm long, pilose on abaxial surface, entire or lacerate. Leaf-blades erect, linear or lanceolate, 10–12 cm long, 4–11 mm wide, stiff. Leaf-blade surface glabrous. Leaf-blade apex attenuate, filiform.

Inflorescence. Inflorescence a panicle with branches tipped by a raceme. Panicle spiciform, linear, 7–13 cm long, 1.5–2 cm wide. Racemes bearing few fertile spikelets. Rhachis tough, subterete. Rhachis internodes filiform. Spikelets in pairs. Fertile spikelets pedicelled, 2 in the cluster. Pedicels present, filiform, unequal, 0.5–2 mm long, tip discoid.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets elliptic, subterete, 4–5 mm long, falling entire. Spikelet callus bearded, base truncate. Spikelet callus hairs white, 9–12 mm long, 2 length of spikelet.

Glumes. Glumes similar, exceeding apex of florets, firmer than fertile lemma. Lower glume lanceolate, 1 length of spikelet, membranous, much thinner on margins, without keels, 3–4 -veined. Lower glume surface villous, hairy below. Upper glume lanceolate, 1 length of spikelet, membranous, with hyaline margins, without keels, 5–7 -veined. Upper glume surface villous, hairy below.

Florets. Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret similar to fertile lemma, oblong, hyaline, 0 -veined, without midvein, without lateral veins, ciliate on margins, erose, obtuse. Fertile lemma ovate, hyaline, without keel, 0 -veined, 0–3 -veined, without veins. Lemma apex erose.

Flower and Fruit. Lodicules absent. Anthers 2, 2.5–3.5 mm long. Stigmas 2, terminally exerted. Caryopsis with adherent pericarp, 1 mm long.

Distribution (TDWG). Continent. South America.

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

TDWG4. Mendoza, San Juan. La Pampa. Chubut, Neuquén. Tarapaca, Antofagasta, Atacama, Coquimbo, Rest of Chile- Biobio, La Araucania, Maule, O'Higgins, Santado, Valpariso. Atacama. Coquimbo, Valparaiso, Santiago, Maule, Biobio, La Araucania. Los Lagos.

Imperata conferta (Presl) Ohwi. *Bot. Mag., Tokyo*. lv. 549 (1941).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), J.F.Veldkamp, *Poaceae ms (Flora Malesiana)*, N.L.Bor, *Grasses of Burma, Ceylon, India and Pakistan* (1960), W.D.Clayton & N.Snow, *Key to Pacific Grasses* (2010).

TYPE from Philippines. **Basionym or Replaced Name:** *Saccharum confertum* J. Presl, *Reliq. Haenk.* 1(4–5): 346 (1830). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *Haenke s.n.*, Philippines, Luzon (PR; IT: US-727354 (fragm. ex PR)).

Illustrations (Books): H.Duistermaat, *Field Guide to the Grasses of Singapore* (2005) (79, Fig. 74).

Derivation (Clifford & Bostock 2007): *L. confertio*, cram together. Plants forming a dense covering on the forest floor.

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

Habit, Vegetative Morphology. Perennial. Rhizomes elongated. Culms erect, 100–200 cm long. Culm-nodes glabrous or pubescent. Leaves mostly basal. Ligule a ciliate membrane. Leaf-blades erect, 20–45 cm long, 7–14 mm wide, stiff. Leaf-blade margins scaberulous. Leaf-blade apex acuminate.

Inflorescence. Inflorescence a panicle with branches tipped by a raceme. Panicle contracted, lanceolate, 25–50 cm long, 2–5 cm wide. Primary panicle branches closely spaced, 6–12 cm long. Panicle branches capillary. Racemes 0.5–1 cm long, bearing few fertile spikelets. Rhachis tough. Rhachis internodes filiform. Spikelets in pairs. Fertile spikelets pedicelled, 2 in the cluster. Pedicels present, filiform, unequal, 1.2–2.6 mm long.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets lanceolate, subterete, 3 mm long, falling entire. Spikelet callus bearded, base truncate. Spikelet callus hairs white, 15–22 mm long, 5–7 length of spikelet.

Glumes. Glumes similar, exceeding apex of florets, firmer than fertile lemma. Lower glume lanceolate, 1 length of spikelet, membranous, without keels, 3 -veined. Lower glume surface villous, hairy below. Lower glume apex acuminate. Upper glume lanceolate, 2.8 mm long, 0.9 length of spikelet, membranous, without keels, 3 -veined. Upper glume surface villous, hairy below. Upper glume apex acuminate.

Florets. Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret similar to fertile lemma, linear, 2 mm long, 0.66 length of spikelet, hyaline, 1 -veined, without lateral veins, acuminate. Fertile lemma linear, 2 mm long, hyaline, without keel, 1 -veined, 0–3 -veined, one-veined. Lemma apex erose, obtuse. Palea 0.5 length of lemma, hyaline, 0 -veined, without keels.

Flower and Fruit. Lodicules absent. Anthers 1, 2 mm long. Stigmas 2, terminally exerted.

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

Country /Province /State. Indo-China, Malesia, Papuasias. Myanmar, Vietnam. Philippines. New Guinea West Papua (Irian Jaya). New Guinea, Solomon Is. Southwestern Pacific and Northwestern Pacific. Fiji, New Caledonia, Samoa, Tonga, Vanuatu, Wallis-Futuna Is. Caroline Is, Marianas.

Imperata contracta (H. B. & K.) Hitchcock. *Rep. Missouri Bot. Gard.* iv. 146 (1893).

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

TYPE from Colombia. **Basionym or Replaced Name:** *Saccharum contractum* Kunth, *Nov. Gen. Sp. (quarto ed.)* 1: 182 (1815) [1816]. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *Humboldt & Bonpland s.n.*, May-Sep, Colombia (P).

Illustrations (Books): S.A.Renvoize, *Gramineas de Bolivia* (1998) (573, Fig 134), S.A.Renvoize, *The Grasses of Bahia*, 1984 (266, Fig. 100), W.Burger, *Flora Costaricensis* 15, Gramineae: *Fieldiana Botany New Series* 4 (1980) (277, Fig 100), G.Harling & C.Persson, *Flora of Ecuador* (2006), E.Judziewicz, *Flora of the Guianas*, 187. *Poaceae* (1990) (289, Fig. 49).

Derivation (Clifford & Bostock 2007): *L. contracta*. Inflorescence a narrow panicle.

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

Habit, Vegetative Morphology. Perennial. Rhizomes elongated, scaly. Culms erect, 100–200 cm long, 1–2 mm diam. Culm-internodes thin-walled, distally glabrous. Lateral branches lacking. Leaves cauline. Leaf-sheath auricles erect. Ligule a ciliolate membrane, 0.5–1.5 mm long, brown. Leaf-blades erect, tapering towards tip and sheath, 30–70 cm long, 5–11 mm wide, stiff. Leaf-blade midrib widened. Leaf-blade surface glabrous. Leaf-blade margins scabrous.

Inflorescence. Inflorescence a panicle with branches tipped by a raceme. Panicle spiciform, linear, tapering above, 25–50 cm long. Primary panicle branches ascending, 2–5 cm long. Panicle axis scabrous, villous. Panicle branches scabrous, villous. Racemes bearing few fertile spikelets. Rhachis tough, subterete. Rhachis internodes filiform. Spikelets in pairs. Fertile spikelets pedicelled, 2 in the cluster. Pedicels present, filiform, unequal, 0.5 mm long or 1.5 mm long, scabrous, villous.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets elliptic, subterete, 2.9–3.5 mm long, falling entire. Spikelet callus bearded, base truncate. Spikelet callus hairs white, 8–12 mm long.

Glumes. Glumes similar, exceeding apex of florets, firmer than fertile lemma. Lower glume lanceolate, 1 length of spikelet, membranous, without keels, 3 -veined. Lower glume surface smooth or asperulous, villous. Upper glume lanceolate, 1 length of spikelet, membranous, without keels, 3 -veined. Upper glume surface smooth or scabrous, villous.

Florets. Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret similar to fertile lemma, oblong, 1.5–1.8 mm long, hyaline, 0 -veined, without midvein, without lateral veins, erose, obtuse. Fertile lemma ovate, 0.7–1.1 mm long, hyaline, without keel, 0 -veined, 0–3 -veined, without veins. Lemma apex acute. Palea hyaline, 0 -veined, without keels.

Flower and Fruit. Lodicules absent. Anthers 1, 1.6–2 mm long. Stigmas 2, terminally exerted. Caryopsis with adherent pericarp, obovoid, 0.7 mm long.

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

Country /Province /State. Mexico. Northeast Mexico, Gulf (Mexico), Southeast Mexico. **Mesoamerica, Caribbean, Northern South America, Western South America, Brazil, Southern South America.** Belize, Costa Rica, El Salvador, Guatemala, Honduras, Panama. Cayman Is, Cuba, Dominican Republic, Haiti, Jamaica, Leeward Is, Windward Islands, Puerto Rico, Trinidad-Tobago. French Guiana, Guyana, Surinam, Venezuela. Bolivia, Colombia, Ecuador, Peru. Brazil Northeast, Brazil Southeast. Paraguay.

TDWG4. Mato Grosso, Bahia, Minas Gerais, Rio de Janeiro, Espirito Santo, Sao Paulo Parana, Catarina, Rio Grande do Sul. Tucuman. Chaco, Formosa. Hidalgo, Queretaro. Veracruz. Campeche, Chiapas, Tabasco, Yucatan.

Imperata cylindrica (L.) Raeusch. *Nom. Bot.* ed.3, :10 (1797).

Accepted by: R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), D.Sharp, D. & B.K.Simon, *AusGrass* (2002), E.Edgar, & H.Connor, *Flora of New Zealand Gramineae* 5 (2000), S-L Chen et al, *Flora of China* 22 (Poaceae) (2006), J.F.Veldkamp, *Poaceae ms (Flora Malesiana)*, N.L.Bor, *Grasses of Burma, Ceylon, India and Pakistan* (1960), N.Tsvelev, *Grasses of the Soviet Union* (1983), T.Koyama, *Grasses of Japan and its neighboring regions* (1987), W.D.Clayton & N.Snow, *Key to Pacific Grasses* (2010).

TYPE from Europe. **Basionym or Replaced Name:** *Lagurus cylindricus* L. *Syst. Nat. (ed. 2)* 2: 878 (1759). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Italy.; *Anon.* (HT: LINN-96.2).

Illustrations (Books): H.Jacques-Felix, *Les Graminees d'Afrique tropicale* (1962) (268, Fig. 199), W. Robyns (1929 and 1934). *Flora Agrostologique du Congo Belge et du Ruanda-Urundi*, I. Maydees et Andropogonees and II. Panicees. Bruxelles, Goemaere (83, Pl. 5, as var. *thunbergii*), F.N.Hepper, *F.W.T.A.* 3(2) (1972) (465, Fig.448), R.M.Polhill, F.T.E.A., *Gramineae* (3(1982):701, Fig. 159), G.V.Pope et al., *Flora*

Zambesiaca 10, L.K.A. Chippindall, *Grasses and Pastures of South Africa* (1955) (477, Fig. 392 as var. *africana*), G.E.Gibbs Russell et al, *Grasses of Southern Africa* (1990) (189, Fig. 111), J.Bosser, *Graminees des Paturage et des Cultures a Madagascar* (1969) (211, 75 as var. *africana*), N.Feinbrun-Dothan, *Flora Palaestina* 4 (1986) (Pl. 423), S.Phillips, *Poaceae* (Gramineae) in I.Hedberg & S.Edwards, *Flora of Ethiopia and Eritrea* (1995) (294, Fig. 117), L.Boulos, *Flora of Egypt* 4 (2005) (325, Pl. 96), N.L.Bor, *Gramineae* in K.H.Rechinger, *Flora Iranica*. No. 70/30 (1970) (Tab. 68), N.L.Bor, *Gramineae* in *Flora of Iraq* (1968) (535, Pl. 205), C-C Hsu, *Flora of Taiwan*, Vol 5 (1978) (702), C-C Hsu, *Taiwan Grasses* (1975) (662, Pl. 1469 as var. *major*), K.M.Matthew, Illustrations on the *Flora of Tamilnadu Carnatic* (1982) (Pl. 880 & 881), T.A.Cope, *Flora of Pakistan* 143: *Poaceae* (1982) (253, Fig. 25), H.J.Noltie, *The Grasses of Bhutan* (2000) (779, Fig. 53), H.B.Gilliland, *Grasses of Malaya* (1971) (221, Fig. 48), H.Duistermaat, *Field Guide to the Grasses of Singapore* (2005) (79, Fig. 75), J.P.Jessop, G.R.M. Dashorst & F.M.James, *Grasses of South Australia* (2006) (524, Fig. 447), C.A.Gardner, *Flora of Western Australia*, Vol 1, Part 1, *Gramineae* (1952) (313, Pl. 92), J.R.Wheeler et al, *Flora of the Kimberley Region* (1992) (1180, Fig. 334), N.Walsh & T.Entwistle, *Flora of Victoria* Vol 2 (1994) (622, Fig. 125), S.W.L.Jacobs, R.D.B.Whalley & D.J.B.Wheeler, *Grasses of New South Wales*, 4th edn (2008) (283 as var. *major*), J.C.Tothill & J.B.Hacker. *The grasses of southern Queensland* (1983) (278 as var. *major*), D.Sharp & B.K.Simon, *AusGrass*. Grasses of Australia. CD-Rom Version 1.0. (2002), M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 25 *Poaceae*, part 2 (2003), R.Pilger, *Die Natürlichen Pflanzenfamilien* 14e (1940) (111, Fig. 64), S-L Chen et al, *Flora of China*, Illustrations, *Poaceae* (2007) (Fig. 816 as *I. cylindrica* var. *major*), E.Hafliger & E.Schultz, *Grass Weeds*, CIBA-GEIGY (1:63(1980)).

Images: D.Sharp & B.K.Simon, *AusGrass*. Grasses of Australia. CD-Rom Version 1.0. (2002); K.O.Mallett (ed.). *Flora of Australia*, Vol 44 A (2002) & Vol 44B (2004). *Poaceae*; L.Boulos, *Flora of Egypt* 4 (2005); R.Darke, *Ornamental Grasses* (2004); R.Darke, *The Encyclopaedia of Grasses for Liveable Landscapes* (2007); F.van Oudtshoorn, *Guide to Grasses of Southern Africa* (1999).

Derivation (Clifford & Bostock 2007): *L. cylindrus*, cylinder; *L. -ica*, belonging to. Inflorescences cylindrical.

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

Habit, Vegetative Morphology. Perennial. Rhizomes elongated, scaly. Culms erect, 10–120 cm long. Leaves mostly basal. Ligule a ciliolate membrane. Leaf-blades erect, flat or convolute, 3–100 cm long, 2–20 mm wide, stiff. Leaf-blade margins scabrous.

Inflorescence. Inflorescence a panicle with branches tipped by a raceme. Panicle spiciform, linear, 3–22 cm long. Primary panicle branches accrescent to a central axis, with evident branchlets on axis. Racemes bearing few fertile spikelets. Rhachis tough, subterete. Rhachis internodes filiform. Spikelets in pairs. Fertile spikelets pedicelled, 2 in the cluster. Pedicels present, filiform, unequal.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets lanceolate, subterete, 2.2–6 mm long, falling entire. Spikelet callus bearded, base truncate. Spikelet callus hairs white, 2–3 length of spikelet.

Glumes. Glumes similar, exceeding apex of florets, firmer than fertile lemma. Lower glume oblong, 1 length of spikelet, membranous, without keels, 5–7 -veined. Lower glume surface villous, hairy below. Lower glume apex obtuse. Upper glume oblong, 2.2–6 mm long, membranous, without keels, 5–7 -veined. Upper glume surface villous, hairy below. Upper glume apex obtuse.

Florets. Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret similar to fertile lemma, oblong, 0.5 length of spikelet, hyaline, 0 -veined, without midvein, without lateral veins, ciliolate on margins, erose, obtuse. Fertile lemma ovate, 1 mm long, hyaline, without keel, 0 -veined, 0–3 -veined, without veins. Lemma apex acute. Palea hyaline, 0 -veined, without keels.

Flower and Fruit. Lodicules absent. Anthers 2, 3–5 mm long. Stigmas 2, terminally exerted.

$N = 10$ (4 refs TROPICOS), or 20 (1 ref TROPICOS). $2n = 20$ (1 ref TROPICOS).

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

Region. Southwestern Europe, Southeastern Europe.

Country /Province /State. : Balears, Corsica, France, Portugal, Sardinia, Spain. : Albania, Bulgaria, Greece, Italy, Sicily, Turkey Europe, Yugoslavia. **Northern Africa, Macaronesia, West tropical Africa, West-central tropical Africa, Northeast tropical Africa, East tropical Africa, South tropical Africa, Southern Africa, Western Indian ocean.** Algeria, Egypt, Libya, Morocco, Tunisia. Cape Verde, Madeira. Benin, Burkina, Gambia, Ghana, Guinea, Ivory Coast, Liberia, Mali, Nigeria, Senegal, Sierre Leone, Togo. Cameroon, Congo, Gabon, Rwanda, DRC. Ethiopia (inc. Eritrea), Socotra, Sudan. Kenya, Tanzania, Uganda. Angola, Malawi, Mozambique, Zambia, Zimbabwe. Namibia, Botswana, Limpopo, North-West, Gauteng, Mpumalanga, Swaziland, Free State, Kwazulu-Natal, Lesotho, Northern Cape, Western Cape, Eastern Cape. Mauritius, Madagascar. **Middle Asia, Caucasus, Western Asia, Arabian Peninsula, China, Eastern Asia,**

Russia. Kazakhstan, Kirgizistan, Turkmenistan, Tadzhikistan, Uzbekistan. Afghanistan, Iran, Iraq. Kuwait, Oman. China South Central, Hainan, China North-Central, China Southeast, Tibet. Korea, Nansei-Shoto, Ogosawara-shoto, Taiwan. **Indian Subcontinent, Indo-China, Malesia, Papuaasia.** Bangladesh, Eastern Himalaya, India, Nepal, Pakistan, Sri Lanka, West Himalaya. Andaman Is, Cambodia, Laos, Myanmar, Thailand, Vietnam. Borneo, Cocos (Keeling) Is, Java, Lesser Sunda Is, Malaya, Singapore, Moluccas, Philippines, Sulawesi, Sumatra, Christmas I. New Guinea West Papua (Irian Jaya). New Guinea, Solomon Is. **Australia, New Zealand.** Western Australia, Northern Territory, South Australia, Queensland, New South Wales, A.C.T., Victoria, Tasmania, Lord Howe-Norfolk Is. New Zealand North I. **Southwestern Pacific, Northwestern Pacific.** Fiji, New Caledonia, Samoa, Tonga, Vanuatu. Marianas. **South-central USA, Southeastern USA, Mexico.** Texas. Alabama, Florida, Louisiana, Mississippi. Southwest Mexico, Southeast Mexico. **Western South America.** Colombia.

TDWG4. Hebei, Shaanxi, Shandong, Shanxi. Anhui, Fujian, Guangdong, Guangxi, Henan, Hunan, Jiangsu, Jiangxi, Zhejiang. Guizhou, Hubei, Sichuan, Yunnan. Darjeeling, Bhutan, Sikkim. Assam, Manipur, Meghalaya, Tripura. Bihar, Kerala, Karnataka. Madhya Pradesh, Maharashtra, Orissa, Punjab, Rajasthan, Tamilnadu, Uttara Pradesh, West Bengal. Himachal Pradesh, Jammu Kashmir. Kimberley. Darwin & Gulf, Central Australia. Southern. North, Central, South East. Coast, Tablelands, Western Slopes. Oaxaca. Chiapas.

Imperata flavida S.M.Phillips & S.L.Chen. *Novon* 15(3): 469 (2005).

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

TYPE from China. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: China: Hainan: Ton Fao Kacheh river, sandy river shore, 91 m [300 ft], 14 Jan. 1923, *Eryl Smith s.n.* (HT: K).

Illustrations (Books): S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 816).

Derivation (Clifford & Bostock 2007): *L. flavidus*, pale yellow. Spikelets yellow.

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

Habit, Vegetative Morphology. Perennial, culms solitary. Rhizomes elongated. Butt sheaths persistent and investing base of culm, with fibrous dead sheaths. Culms erect, 70–125 cm long, 3–7 mm diam. Culm-nodes glabrous. Leaf-sheaths longer than adjacent culm internode, smooth, glabrous on surface. Leaf-sheath oral hairs ciliate. Ligule a ciliate membrane, 1 mm long, brown. Leaf-blade base simple. Leaf-blades 20–60 cm long, 5–10 mm wide. Leaf-blade midrib conspicuous. Leaf-blade apex acuminate.

Inflorescence. Inflorescence a panicle with branches tipped by a raceme, embraced at base by subtending leaf. Panicle spiciform, linear, 12–17 cm long, 2.5 cm wide. Racemes bearing few fertile spikelets. Rhachis tough, subterete. Rhachis internodes filiform. Spikelets in pairs. Fertile spikelets pedicelled, 2 in the cluster. Pedicels present, filiform, unequal, ciliate.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets elliptic or oblong, subterete, 3–4 mm long, falling entire. Spikelet callus bearded, base truncate. Spikelet callus hairs white, 3–4 length of spikelet.

Glumes. Glumes similar, exceeding apex of florets, firmer than fertile lemma. Lower glume oblong, 1 length of spikelet, membranous, without keels, 5 -veined. Lower glume surface villous, hairy below. Lower glume margins ciliate. Upper glume oblong, 1 length of spikelet, membranous, without keels, 7 -veined. Upper glume surface villous, hairy below. Upper glume margins ciliate.

Florets. Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret similar to fertile lemma, oblong, 2 mm long, hyaline, 0 -veined, without midvein, without lateral veins, erose. Fertile lemma ovate, 1.5 mm long, hyaline, without keel, 0 -veined, 0–3 -veined, without veins. Lemma margins ciliate. Palea 1.5 mm long, hyaline, 0 -veined, without keels.

Flower and Fruit. Lodicules absent. Anthers 2, 2.5–2.8 mm long. Stigmas 2, yellow.

Distribution (TDWG). Continent. Temperate Asia.

Country /Province /State. China. Hainan.

Imperata latifolia (J.D.Hooker) L.Liu. *Vasc. Pl. Hengduan Mountains* 2: 2299 (1994).

Accepted by: S-L Chen et al, *Flora of China* 22 (Poaceae) (2006).

TYPE from India. **Basionym or Replaced Name:** *Imperata arundinacea* var. *latifolia* Hook. f., *Fl. Brit. India* 7(21): 106 (1897) [1896]. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: India: tropical Himalaya, from Kumaon to Assam.

Illustrations (Books): S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 816).

Derivation (Clifford & Bostock 2007): *L. latus*, broad; *folium*, leaf. Leaf-blades broad or relatively broad with respect to related species.

Classification. Subfamily Panicoideae. Tribe: Andropogoneae. Subtribe SACCHARINAE.
Distribution (TDWG). Continent. Temperate Asia, Tropical Asia.
Country /Province /State. China. China South Central. **Indian Subcontinent.** India.
TDWG4. Sichuan.

Imperata minutiflora Hack. *DC. Monog. Phan.* vi. 100. (1889).

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

TYPE from Peru. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: ST: *Gaudichaud s.n.*, Peru: prope Lima (B).

ST: *Barranca 524*, Peru: prope Lima (C, US-2942433, W).

Illustrations (Books): S.A.Renvoize, *Gramineas de Bolivia* (1998) (573, Fig 134).

Derivation (Clifford & Bostock 2007): *L. minutus*, very small; flos, flower. Spikelets or florets very small.

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

Habit, Vegetative Morphology. Perennial, caespitose. Culms geniculately ascending or decumbent, 100 cm long. Ligule an eciliate membrane. Leaf-blades flat or involute, 8–10 cm long, 1–2 mm wide. Leaf-blade apex attenuate.

Inflorescence. Inflorescence a panicle with branches tipped by a raceme. Panicle spiciform, linear, 20–25 cm long. Primary panicle branches appressed or ascending, 0.5–2 cm long. Panicle axis glabrous. Panicle branches glabrous. Racemes bearing few fertile spikelets. Rhachis tough, subterete, glabrous on surface. Rhachis internodes filiform. Spikelets in pairs. Fertile spikelets pedicelled, 2 in the cluster. Pedicels present, filiform, unequal, glabrous, tip widened.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets lanceolate, subterete, 2–2.2 mm long, falling entire. Spikelet callus bearded, base truncate. Spikelet callus hairs white, 8–10 mm long, 3–4 length of spikelet.

Glumes. Glumes similar, exceeding apex of florets, firmer than fertile lemma. Lower glume lanceolate, 1 length of spikelet, membranous, without keels, 5 -veined. Upper glume lanceolate, 0.75 length of spikelet, membranous, without keels, 3 -veined.

Florets. Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret similar to fertile lemma, oblong, 0.75 length of spikelet, hyaline, 0 -veined, without midvein, without lateral veins, erose, obtuse. Fertile lemma ovate, hyaline, without keel, 0 -veined, 0–3 -veined, without veins. Palea hyaline, 0 -veined, without keels.

Flower and Fruit. Lodicules absent. Anthers 1, 1.5 mm long. Stigmas 2, terminally exerted.

Distribution (TDWG). Continent. South America.

Country /Province /State. Western South America, Brazil, Southern South America. Bolivia, Ecuador, Peru. Brazil West Central. Argentina Northwest.

TDWG4. Jujuy, Salta, Tucuman. Chaco, Formosa.

Imperata parodii Acevedo. *Bol. Soc. Argent. Bot* 12: 358 (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 Chile. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *C. Reiche s.n.*, Jan 1905, Chile: Prov. Cautín: al S de la boca del Toltén (SGO-63584 (photo, SI); IT: SGO-62611).

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

Derivation (Clifford & Bostock 2007): in honor of Lorenzo Raimondo Parodi (1895–1966) Argentinian agrostologist.

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

Habit, Vegetative Morphology. Perennial. Rhizomes elongated. Culms erect, 53–63 cm long, 3 -noded. Culm-internodes distally glabrous. Lateral branches lacking. Leaf-sheaths longer than adjacent culm internode, glabrous on surface. Ligule a ciliate membrane, 0.5–1 mm long, brown. Leaf-blades erect, flat or convolute, 11–14 cm long, 3–6 mm wide, stiff. Leaf-blade surface pilose, hairy adaxially. Leaf-blade apex attenuate.

Inflorescence. Inflorescence a panicle with branches tipped by a raceme. Panicle spiciform, linear or oblong, 6–13.5 cm long, 2–2.5 cm wide. Primary panicle branches 0.5–2.5 cm long. Racemes bearing few fertile spikelets. Rhachis tough, subterete. Rhachis internodes filiform. Spikelets in pairs. Fertile spikelets pedicelled, 2 in the cluster. Pedicels present, filiform, unequal, 2.5 mm long, tip discoid.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret

male or barren, the upper fertile. Spikelets elliptic, subterete, 3 mm long, falling entire. Spikelet callus bearded, base truncate. Spikelet callus hairs white, 8–12 mm long.

Glumes. Glumes similar, exceeding apex of florets, firmer than fertile lemma. Lower glume lanceolate, 2.5 mm long, 0.9 length of spikelet, membranous, without keels, 3–5 -veined. Lower glume lateral veins all falling short of apex. Lower glume surface villous, hairy below. Lower glume apex obtuse. Upper glume lanceolate, 3 mm long, 1 length of spikelet, membranous, without keels, 5 -veined. Upper glume surface villous. Upper glume apex acute.

Florets. Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret similar to fertile lemma, oblong, hyaline. Fertile lemma ovate, 2 mm long, hyaline, without keel, 0 -veined, 0–3 -veined, without veins. Lemma surface puberulous, hairy above. Lemma apex dentate, 3 -fid.

Flower and Fruit. Lodicules 2. Anthers 1, 2 mm long. Stigmas 2.

Distribution (TDWG). Continent. South America.

Country /Province /State. Southern South America. Chile South. Aisen.

Imperata tenuis Hack. *DC. Monog. Phan.* vi. 689. (1889).

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

TYPE from Brazil. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Brasilia: in uliginosis prope Sao Joao de El Rey provinc. Minarum, *Glaziou 17442* (HT: W; IT: US).

Illustrations (Books): S.A.Renvoize, *Gramineas de Bolivia* (1998) (573, Fig 134).

Derivation (Clifford & Bostock 2007): L. thin. Culms, leaf-blades or pedicels, slender.

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

Habit, Vegetative Morphology. Perennial, caespitose, clumped densely. Culms erect, 80–100 cm long. Culm-nodes glabrous. Ligule an eciliate membrane. Leaf-blades flat or involute, 30–40 cm long, 4–5 mm wide, coriaceous, stiff. Leaf-blade surface glabrous. Leaf-blade apex attenuate.

Inflorescence. Inflorescence a panicle with branches tipped by a raceme. Panicle spiciform, linear, 18–25 cm long. Primary panicle branches spreading. Panicle axis with scattered hairs. Panicle branches with scattered hairs. Racemes bearing few fertile spikelets. Rhachis tough, subterete. Rhachis internodes filiform. Spikelets in pairs. Fertile spikelets pedicelled, 2 in the cluster. Pedicels present, filiform, unequal, plumose, hairy at tip, with 5–6 mm long hairs, 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, subterete, 3–3.2 mm long, falling entire. Spikelet callus bearded, base truncate. Spikelet callus hairs white, 5–6 mm long.

Glumes. Glumes similar, exceeding apex of florets, firmer than fertile lemma. Lower glume lanceolate, 1 length of spikelet, membranous, without keels, 5 -veined. Lower glume surface pilose, hairy generally. Upper glume lanceolate, 0.75 length of spikelet, membranous, without keels, 3 -veined. Upper glume surface pilose, hairy at apex.

Florets. Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret similar to fertile lemma, oblong, 0.75 length of spikelet, hyaline, 0 -veined, without midvein, without lateral veins, erose, obtuse. Fertile lemma ovate, hyaline, without keel, 0 -veined, 0–3 -veined, without veins. Palea hyaline, 0 -veined, without keels.

Flower and Fruit. Lodicules absent. Anthers 1, 2 mm long. Stigmas 2, terminally exerted.

Distribution (TDWG). Continent. South America.

Country /Province /State. Western South America, Brazil, Southern South America (*). Bolivia, Ecuador, Peru. Brazil Southeast. Paraguay.

Goiás, Minas Gerais, Rio de Janeiro, Espírito Santo, São Paulo Paraná.

Indocalamus amplexicaulis W.T. Lin. *J. South China Agr. Univ.* 13(2): 86. 1992.

TYPE from China. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: China: Guangdong: Gogang, Guanyin Shan, 1000 m, *J.Y. Lin 28242* (HT: SCAC).

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

Derivation (Clifford & Bostock 2007): L. *amplexatio*, embrace; *caulis*, stem. The connate leaf-sheath and ligule encircle the stem.

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Distribution (TDWG). Continent. Temperate Asia.

Country /Province /State. China. China Southeast.

TDWG4. Guangdong.

Indocalamus barbatus McClure. *Sunyatsenia*, vi. 32 (1941).

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

TYPE from China. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: China: Guangxi: evergreen broad-leaved valley forests, ca. 500 m.,

Illustrations (Books): S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 174).

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo, caespitose. Rhizomes elongated, leptomorph. Butt sheaths absent. Culms erect, woody. Culm-internodes terete. Lateral branches suffrutescent. Branch complement one. Culm-sheaths present. Leaves cauline. Leaf-sheaths keeled, hispid, with tubercle-based hairs, outer margin hairy. Leaf-sheath oral hairs setose, spreading, 20–30 mm long. Leaf-sheath auricles falcate, 3 mm long. Ligule a ciliate membrane, 2 mm long. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades oblong, 20–40 cm long, 50–100 mm wide. Leaf-blade venation with 18–24 secondary veins, with distinct cross veins. Leaf-blade margins scaberulous. Leaf-blade apex attenuate, filiform. Flowering specimens unknown.

Flower and Fruit. $2n = 48$ (1 ref TROPICOS).

Distribution (TDWG). Continent. Temperate Asia.

Country /Province /State. China. China Southeast.

TDWG4. Guangxi.

Indocalamus bashanensis (C.D. Chu & C.S. Chao) H.R. Zhao & Y.L. Yang. *Acta Phytotax. Sin.* 23(6): 465 (1985).

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

TYPE from China. **Basionym or Replaced Name:** *Sasa bashanensis* C.D. Chu & C.S. Chao, *Acta Phytotax. Sin.*, 18(1): 30 (1980). T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: China, Shanxi, Zhenba: Qiao Shi-yi 65.

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

Derivation (Clifford & Bostock 2007): *L. -ensis*, denoting origin. From Ba Shan, Sichuan Province, China.

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo. Rhizomes elongated, leptomorph. Butt sheaths absent. Culms 200–300 cm long, 10–15 mm diam., woody. Culm-internodes terete, thin-walled, 38–42 cm long, distally pruinose and pilose. Culm-nodes swollen, with distinct supra-nodal ridge. Lateral branches suffrutescent. Culm-sheaths present, yellow or brown, pilose, without auricles, glabrous on shoulders. Culm-sheath ligule 2–4 mm high, dentate. Culm-sheath blade lanceolate. Leaves cauline, 6–9 per branch. Leaf-sheaths striately veined, glabrous on surface. Leaf-sheath oral hairs lacking. Leaf-sheath auricles absent. Ligule an eciliate membrane, (2–)4–8 mm long, brown, obtuse. Leaf-blade base cuneate, with a brief petiole-like connection to sheath. Leaf-blades lanceolate or elliptic, 15–35 cm long, 40–80 mm wide, pruinose. Leaf-blade venation with 10–26 secondary veins, with distinct cross veins. Leaf-blade margins scabrous. Flowering specimens unknown.

Distribution (TDWG). Continent. Temperate Asia.

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

TDWG4. Sichuan.

Indocalamus chishuiensis Y.L. Yang & C.J. Hsueh. *Acta Phytotax. Sin.*, 31(1): 68 (1993).

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

TYPE from China. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: China: Guizhou: Chishui, Hushi, Tianxianqiao, in declivitate et loco demisso, 1300 m, 25 Oct. 1987, *J.R. Xue 8738* (HT: NJU).

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

Derivation (Clifford & Bostock 2007): *L. -ensis*, denoting origin. From Chishui, Guizhan Province, China.

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo, caespitose. Rhizomes elongated, leptomorph. Butt sheaths absent. Culms erect, 100 cm long, 3–5 mm diam., woody. Culm-internodes terete, thick-walled, 5–

15 cm long, distally glabrous or pubescent. Lateral branches suffrutescent. Branch complement one or two. Culm-sheaths present, persistent, 5–7 cm long, coriaceous, without auricles. Culm-sheath ligule 0.2–0.5 mm high. Culm-sheath blade linear or lanceolate, erect or reflexed, 0.25–2 cm long. Leaves cauline. Leaf-sheaths pilose, with tubercle-based hairs. Leaf-sheath oral hairs lacking. Leaf-sheath auricles absent. Ligule an eciliate membrane, 1–2 mm long. Leaf-blade base cuneate, with a brief petiole-like connection to sheath, petiole 0.3–0.5 cm long. Leaf-blades lanceolate or oblong, 13–18 cm long, 20–30 mm wide. Leaf-blade venation with 12–14 secondary veins, with distinct cross veins. Leaf-blade surface papillose, rough abaxially, glabrous. Leaf-blade apex attenuate. Flowering specimens unknown.

Distribution (TDWG). Continent. Temperate Asia.

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

TDWG4. Guizhou.

Indocalamus confertus C.H.Hu. *J. Bamboo Res.*, 15(1): 1 (1996).

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

TYPE from China. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: China: Sichuan: Wushan, Tieloping, 1950 m, *G.H. Yang 57895* (HT: FDU).

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

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo, caespitose. Rhizomes elongated, leptomorph. Butt sheaths absent. Culms erect, 20–50 cm long, 3 mm diam., woody. Culm-internodes terete, 4–9 cm long. Culm-nodes swollen. Lateral branches suffrutescent. Branch complement one. Culm-sheaths present, chartaceous, glabrous, without auricles, glabrous on shoulders. Culm-sheath ligule 2 mm high. Leaves cauline, 2–5 per branch. Leaf-sheath oral hairs lacking. Leaf-sheath auricles absent. Ligule an eciliate membrane. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades elliptic, 11–16 cm long, 3–4.5 mm wide. Leaf-blade venation with 14–20 secondary veins, without cross veins. Leaf-blade apex attenuate.

Inflorescence. Inflorescence a panicle. Panicle contracted, oblong. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, 2–6 mm long.

Fertile Spikelets. Spikelets comprising 4–5 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets linear, subterete, 12–25 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, similar, shorter than spikelet. Lower glume lanceolate, 3 mm long, chartaceous, without keels. Lower glume apex setaceously acuminate. Upper glume lanceolate, 4–5 mm long, chartaceous, without keels. Upper glume apex setaceously acuminate.

Florets. Fertile lemma lanceolate, 8 mm long, chartaceous, purple, without keel, 7 -veined, more than 3-veined. Lemma apex awned, 1 -awned. Palea 6–7 mm long. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 3. Anthers 3, 4 mm long, yellow. Stigmas 2. Caryopsis with adherent pericarp.

Distribution (TDWG). Continent. Temperate Asia.

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

TDWG4. Sichuan.

Indocalamus cordatus T.H. Wen & Y. Zou. *J. Bamboo Res.*, 10(1): 18 (1991).

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

TYPE from China. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: China, Douchang: Wen 90661 (ZJFI holo).

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

Derivation (Clifford & Bostock 2007): *L. cordus*, heart; *-ata*, possessing. Leaf-blades cordate.

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo, caespitose. Rhizomes elongated, leptomorph. Butt sheaths absent. Culms erect, 100–150 cm long, 6–8 mm diam., woody. Culm-internodes terete, 8–15 cm long, distally mealy and pubescent. Culm-nodes pubescent. Lateral branches suffrutescent. Branch complement one. Culm-sheaths present, persistent, coriaceous, pilose, hairy below, hairy on margins, auriculate, with 1 mm high auricles, setose on shoulders, shoulders with 2–3 mm long hairs. Culm-sheath blade linear, erect, pubescent. Leaves cauline, 3 per branch. Leaf-sheaths 10–12 cm long, pubescent, outer margin glabrous. Leaf-sheath oral hairs setose. Leaf-sheath auricles falcate. Ligule an eciliate membrane, 0.4 mm long, truncate. Leaf-

blade base truncate or cordate, asymmetrical, with a brief petiole-like connection to sheath. Leaf-blades lanceolate or oblong, 12–23 cm long, 30–45 mm wide, fleshy. Leaf-blade venation with 14–18 secondary veins, with distinct cross veins. Leaf-blade surface glabrous. Leaf-blade apex attenuate. Flowering specimens unknown.

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

Country /Province /State. **China.** China Southeast.

Jiangxi.

Indocalamus dayongensis W.T. Lin. *J. Bamboo Res.*, 13(4): 3 (1994).

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

TYPE from China. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: China: Hunan: Dayong, Zhangjiajie, 1400 m, 8 Sept. 1993, *Linjiaee 31885* (HT: CANT).

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

Derivation (Clifford & Bostock 2007): *L. -ensis*, denoting origin. From Dayong, Hunan Province, China.

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

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

Country /Province /State. **China.** China Southeast.

TDWG4. Hunan.

Indocalamus decorus Q.H. Dai. *Acta Phytotax. Sin.*, 20(4): 494 (1982).

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

TYPE from China. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: China: Guangxi: Nan'ning, cult. in Guangxi Inst. of Forestry Bamboo Garden, *Q.H. Dai 81051* (HT: GXFI).

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

Derivation (Clifford & Bostock 2007): *L. decor*, elegance. Attractive, usually with respect to habit.

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo, caespitose. Rhizomes elongated, leptomorph. Butt sheaths absent. Culms erect, 40–80 cm long, 3–5 mm diam., woody. Culm-internodes terete, 13–22 cm long, distally mealy. Lateral branches suffrutescent. Branch complement one. Culm-sheaths present, persistent, 7–8 cm long, 4 times as long as wide, yellow, hispid, hairy at the base, with dark brown hairs, hairy on margins, auriculate, ciliate on shoulders, shoulders with 4–5 mm long hairs. Culm-sheath ligule 1 mm high, ciliolate. Culm-sheath blade ovate, erect, 2–3 cm long, 10–15 mm wide, pubescent. Leaves cauline, 2–4 per branch. Leaf-sheaths glabrous on surface, outer margin hairy. Leaf-sheath oral hairs ciliate, 3 mm long. Leaf-sheath auricles absent. Ligule an eciliate membrane, 1–2 mm long, scaberulous on abaxial surface. Leaf-blade base with a brief petiole-like connection to sheath, petiole 0.5 cm long. Leaf-blades lanceolate or elliptic, 25–35 cm long, 50–55 mm wide. Leaf-blade venation with 13–29 secondary veins, with distinct cross veins. Leaf-blade surface glabrous. Leaf-blade apex attenuate. Flowering specimens unknown.

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

Country /Province /State. **China.** China Southeast.

TDWG4. Guangxi.

Indocalamus emeiensis C.D.Chu & C.S.Chao. *Acta Phytotax. Sin.*, 18(1): 25 (1980).

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

TYPE from China. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: China: Sichuan: Emei Shan, Hongchunping, mountain slopes ca. 1200 m, *C.D. Chu & C.S. Chao 76037* (HT: NFU).

Illustrations (Books): S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 174).

Derivation (Clifford & Bostock 2007): *L. -ensis*, denoting origin. From Emei Shan, Sichuan Province, China.

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo, caespitose. Rhizomes elongated, leptomorph. Butt sheaths absent. Culms erect, 100 cm long, 3–6 mm diam., woody. Culm-internodes terete, distally hispid, with reflexed hairs. Lateral branches suffrutescent. Culm-sheaths present, hispid, hairy at the base, with dark brown hairs, hairy on margins, auriculate, setose on shoulders, shoulders with 10–20 mm long hairs. Culm-sheath blade lanceolate or triangular. Leaves cauline, 1–3 per branch. Leaf-sheaths pubescent, hairs white. Leaf-sheath oral hairs setose. Leaf-sheath auricles falcate, 1 mm long. Ligule a ciliate membrane, 30 mm long. Leaf-

blade base with a brief petiole-like connection to sheath, petiole 0.3–0.7 cm long. Leaf-blades lanceolate, 1.2–8.5 cm long, 8–41 mm wide. Leaf-blade venation with 13–29 secondary veins, with distinct cross veins. Leaf-blade margins scabrous. Leaf-blade apex attenuate. Flowering specimens unknown.

Distribution (TDWG). Continent. Temperate Asia.

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

TDWG4. Sichuan.

Indocalamus guangdongensis H.R. Zhao & Y.L. Yang. *Acta Phytotax. Sin.*, 23(6): 462 (1985).

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

TYPE from China. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: China: Guangdong: Lianshan, Futong, in declivitate et in vallibus, ca. 900 m, 25 April 1978, Z.P. Wang 780025 (HT: NJU).

Illustrations (Books): S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 172).

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

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo, caespitose. Rhizomes elongated, leptomorph. Butt sheaths absent. Culms erect, 150–350 cm long, 9–15 mm diam., woody. Culm-internodes terete, thin-walled, 28–62 cm long, light green or purple, distally mealy and glabrous. Culm-nodes flush with internodes. Lateral branches suffrutescent. Branch complement one. Culm-sheaths present, persistent, 11.5–14.2 cm long, coriaceous, purple, hispid, with dark brown hairs, auriculate, ciliate on shoulders. Culm-sheath ligule 0.5–1 mm high. Culm-sheath blade ovate, erect, 6.5–11 cm long, 39–104 mm wide, acute. Leaves cauline, 2–7 per branch. Leaf-sheaths striately veined, pilose. Leaf-sheath oral hairs lacking. Leaf-sheath auricles absent. Ligule a ciliate membrane, 1–2.5 mm long. Leaf-blade base cuneate, with a brief petiole-like connection to sheath. Leaf-blades lanceolate, 35–56 cm long, 39–104 mm wide. Leaf-blade venation with 16–30 secondary veins, with distinct cross veins. Leaf-blade surface puberulous, hairy abaxially. Leaf-blade apex attenuate. Flowering specimens unknown.

Distribution (TDWG). Continent. Temperate Asia.

Country /Province /State. China. China South Central, China Southeast.

TDWG4. Guangdong, Guangxi, Hunan, Zhejiang (+). Guizhou, Hubei.

Indocalamus herklotsii McClure. *Lingnan Univ. Sci. Bull.*, No. 9, 22 (1940).

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

TYPE from China. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: China: Guangdong: Hong Kong New Territories, Lantao Island, ca. 500 m, 5–13 Oct. 1938, F.A. McClure 20838 (HT: ?; ST: US).

Illustrations (Books): S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 172).

Derivation (Clifford & Bostock 2007): In honor of Geoffrey Alton Craig Herklots (1902–1986) British-born Colonial Officer of Hong Kong.

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo, caespitose. Rhizomes elongated, leptomorph. Butt sheaths absent. Culms erect, 150–200 cm long, 5–6 mm diam., woody. Culm-internodes terete, solid. Lateral branches suffrutescent. Bud complement 1. Branch complement one, solitary, as thick as stem. Culm-sheaths present, persistent, glabrous on margins or hairy on margins, without auricles, glabrous on shoulders or ciliate on shoulders. Culm-sheath blade lanceolate to ovate, erect, acuminate. Leaves cauline, 3 per branch. Leaf-sheaths outer margin hairy. Leaf-sheath oral hairs lacking or setose, dark. Ligule a ciliolate membrane. Leaf-blade base with a brief petiole-like connection to sheath, petiole glabrous or pubescent. Leaf-blades lanceolate, 14–29 cm long, 10–47 mm wide. Leaf-blade venation with distinct cross veins. Leaf-blade apex attenuate.

Inflorescence. Inflorescence a panicle. Panicle open, 7–8 cm long. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, 3–15 mm long.

Fertile Spikelets. Spikelets comprising 3–4 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets oblong, laterally compressed, compressed slightly, 9–15 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes compressed, scaberulous.

Glumes. Glumes persistent, similar, shorter than spikelet. Lower glume lanceolate, 5–5.5 mm long, 0.7–0.8 length of upper glume, chartaceous, without keels. Lower glume apex obtuse. Upper glume lanceolate, 6.5–8 mm long, 1.1 length of adjacent fertile lemma, chartaceous, without keels. Upper glume apex acute.

Florets. Fertile lemma lanceolate, 6–7 mm long, chartaceous, without keel, 5 -veined, more than 3-veined. Lemma apex obtuse, mucronate. Palea 1 length of lemma, chartaceous. Palea keels ciliolate, adorned above. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 3, 1.25 mm long. Anthers 3, 5 mm long. Stigmas 2. Ovary glabrous. Caryopsis with adherent pericarp.

Distribution (TDWG). Continent. Temperate Asia.

Country /Province /State. China. China Southeast.

TDWG4. Hong Kong.

Indocalamus hirsutissimus Z.P. Wang & P.X. Zhang. *J. Bamboo Res.*, 4(1): 44 (1985).

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

TYPE from China. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: China: Guizhou: Wang-mo Xian, c. 600 m, in sylvis, Z.P. Wang et al. G8312 (HT: NJU; IT: GZFI).

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

Derivation (Clifford & Bostock 2007): *L. hirsutus*, hairy; *-issima*, most. Plant in whole or in part very hairy.

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo, caespitose. Rhizomes elongated, leptomorph. Butt sheaths absent. Culms erect, 300 cm long, 10–20 mm diam., woody. Culm-internodes terete, 40 cm long. Culm-nodes flanged, pubescent. Lateral branches suffrutescent. Branch complement one. Culm-sheaths present, 0.5 length of internode, coriaceous, yellow, hispid, with dark brown hairs, hairy on margins, auriculate, setose on shoulders, shoulders with 10–20 mm long hairs. Culm-sheath ligule 2–3 mm high, fimbriate. Culm-sheath blade lanceolate, deciduous, reflexed, pubescent. Leaves cauline, 2–11 per branch. Leaf-sheaths pubescent. Leaf-sheath oral hairs setose, 10–20 mm long. Leaf-sheath auricles falcate. Ligule an eciliate membrane, 2–12 mm long. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades lanceolate or oblong, 15–28 cm long, 12.5–15.5 mm wide. Leaf-blade venation with 10–18 secondary veins, with distinct cross veins. Leaf-blade surface pubescent, hairy abaxially. Leaf-blade apex attenuate. Flowering specimens unknown.

Distribution (TDWG). Continent. Temperate Asia.

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

TDWG4. Guizhou.

Indocalamus hirtivaginatus H.R. Zhao & Y.L. Yang. *Acta Phytotax. Sin.*, 23(6): 463 (1985).

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

TYPE from China. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: China: Jiangxi: Ruijin, Baying, ad viam, 26 April 1979, G.H. Ye & C.H. Hu 79005 (HT: NJU).

Illustrations (Books): S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 175).

Derivation (Clifford & Bostock 2007): *L. hirtus*, hairy; *vagina*, sheath; *-ata*, possessing. Leaf-sheath hairy.

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo, caespitose. Rhizomes elongated, leptomorph. Butt sheaths absent. Culms erect, 200 cm long, 8–10 mm diam., woody. Culm-internodes terete, thin-walled, 12–30 cm long, mid-green or purple, distally glabrous or pubescent. Lateral branches suffrutescent. Branch complement one. Culm-sheaths present, persistent, coriaceous, green, hispid, with appressed hairs, with dark brown hairs, without auricles, ciliate on shoulders. Culm-sheath ligule 0.7–1.5 mm high, ciliolate. Culm-sheath blade linear or lanceolate, erect, 1.5–6.5 cm long. Leaves cauline. Leaf-sheath auricles absent. Ligule a ciliate membrane, 1–2 mm long. Leaf-blade base with a brief petiole-like connection to sheath, petiole 0.1–0.7 cm long. Leaf-blades lanceolate or oblong, 19–34 cm long, 45–70 mm wide. Leaf-blade venation with 18–24 secondary veins, with distinct cross veins. Leaf-blade surface glabrous. Leaf-blade apex attenuate. Flowering specimens unknown.

Distribution (TDWG). Continent. Temperate Asia.

Country /Province /State. China. China Southeast.

TDWG4. Jiangxi.

Indocalamus hispidus H.R. Zhao & Y.L. Yang. *Acta Phytotax. Sin.*, 23(6): 460 (1985).

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

TYPE from China. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: China: Sichuan: Fendu, Qiyaoshan, 1600–1900 m, 16 Aug. 1975, *T.P. Yi 75409* (HT: NJU).

Illustrations (Books): S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 175).

Derivation (Clifford & Bostock 2007): *L.* bearing coarse stiff hairs. Plant wholly or partly rough to the touch.

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo, caespitose. Rhizomes elongated, leptomorph. Butt sheaths absent. Culms erect, 100–200(–350) cm long, 3–12 mm diam., woody. Culm-internodes terete, thin-walled, 10–35 cm long, distally hispid, with tubercle-based hairs. Lateral branches suffrutescent. Branch complement one. Culm-sheaths present, coriaceous, hispid, with red hairs, without auricles, glabrous on shoulders. Culm-sheath ligule 1–3 mm high. Culm-sheath blade lanceolate, reflexed, 0.6–3 cm long. Leaves cauline. Leaf-sheath oral hairs lacking. Leaf-sheath auricles absent. Ligule an eciliate membrane, 1.5–3 mm long. Leaf-blade base with a brief petiole-like connection to sheath, petiole 0.5–1 cm long. Leaf-blades oblong, 11–28 cm long, 40–65 mm wide. Leaf-blade venation with 16–30 secondary veins, with distinct cross veins. Leaf-blade surface pubescent, hairy abaxially. Leaf-blade apex caudate.

Inflorescence. Inflorescence a panicle. Panicle contracted, oblong, 9–10 cm long. Primary panicle branches appressed or ascending. Panicle axis pubescent. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 4–5 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets linear, subterete, 13–17 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes pubescent.

Glumes. Glumes persistent, similar, shorter than spikelet. Lower glume lanceolate, 2.5–5 mm long, chartaceous, without keels. Lower glume apex acuminate. Upper glume lanceolate, 7–10 mm long, chartaceous, without keels, 3-veined. Upper glume apex setaceous acuminate.

Florets. Fertile lemma lanceolate, 10 mm long, chartaceous, without keel, 5-veined, more than 3-veined. Lemma lateral veins with cross-veins. Lemma apex setaceous acuminate. Palea 0.25 length of lemma. Apical sterile florets resembling fertile though underdeveloped.

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

Distribution (TDWG). Continent. Temperate Asia.

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

TDWG4. Sichuan.

Indocalamus hunanensis B.M. Yang. *Acta Phytotax. Sin.* 19(2): 259 (1981).

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

TYPE from China. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: Hunan: Sangzhi, Bamaoqi, Xiaozhuangping, 1450 m, 22 May 1978, *L.H. Liu 6941* (HT: HNTC).

Illustrations (Books): S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 176).

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

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo, caespitose. Rhizomes elongated, leptomorph. Butt sheaths absent. Culms erect, 110–170 cm long, 4–5 mm diam., woody. Culm-internodes terete, thick-walled, 15–17 cm long. Culm-nodes glabrous. Lateral branches suffrutescent, erect. Branch complement one. Culm-sheaths present, persistent, 8–12 cm long, coriaceous, hispid, with tawny hairs or dark brown hairs, auriculate, ciliate on shoulders. Culm-sheath ligule 0.7 mm high. Culm-sheath blade lanceolate, erect or reflexed, 1–4 cm long, 1–3 mm wide, glabrous on surface. Leaves cauline, 2–4 per branch. Leaf-sheaths 4.5–6.5 cm long, glabrous on surface. Leaf-sheath oral hairs lacking. Leaf-sheath auricles absent. Ligule an eciliate membrane, 1 mm long, truncate. Leaf-blade base broadly rounded, with a brief petiole-like connection to sheath, petiole 0.3–0.7 cm long, petiole glabrous. Leaf-blades lanceolate, 9–17 cm long, 18–31 mm wide, glaucous. Leaf-blade venation with 12–18 secondary veins. Leaf-blade apex attenuate.

Inflorescence. Inflorescence a panicle. Panicle contracted, oblong, 5–11 cm long. Panicle axis pubescent. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, 1–3 mm long, pubescent.

Fertile Spikelets. Spikelets comprising 3–5 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets linear, subterete, 10–25 mm long, breaking up at maturity, disarticulating below each fertile floret. Spikelet callus pubescent. Rhachilla internodes 1–1.5 mm long, pubescent.

Glumes. Glumes persistent, similar, shorter than spikelet. Lower glume lanceolate, 2–5.5 mm long, chartaceous, without keels, (3–)5(–7) -veined. Lower glume apex acuminate. Upper glume lanceolate, 6–8.5 mm long, chartaceous, without keels, (5–)7 -veined. Upper glume apex acuminate.

Florets. Fertile lemma lanceolate, 7–10 mm long, chartaceous, without keel, 7 -veined, more than 3-veined. Palea 2.5–4 mm long. Apical sterile florets resembling fertile though underdeveloped.

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

Distribution (TDWG). Continent. Temperate Asia.

Country /Province /State. China. China South Central, China Southeast.

TDWG4. Hunan. Chongqing, Sichuan.

Indocalamus inaequilaterus W.T. Lin & Z.M. Wu. *Acta Phytotax. Sin.*, 26(2): 147 (1988).

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

TYPE from China. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Guangdong: Fengkai, Heishiding, Z.M. Wu, 0115 (HT: SCAC).

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

Derivation (Clifford & Bostock 2007): L. *in-*, not; *aequus*, equal; *latus*, side. Leaf-blades asymmetric with respect to midrib.

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo, caespitose. Rhizomes elongated, leptomorph. Butt sheaths absent. Culms erect, 100–120 cm long, 6–9 mm diam., woody. Culm-internodes terete, thick-walled, 25–33 cm long, distally pubescent. Culm-nodes flush with internodes. Lateral branches suffrutescent. Branch complement one. Culm-sheaths present, persistent, 14–16 cm long, hispid, with white hairs, without auricles, glabrous on shoulders. Culm-sheath ligule 1 mm high. Culm-sheath blade lanceolate, narrower than sheath, spreading or reflexed, 1.4–2.4 cm long. Leaves cauline, 4–5 per branch. Leaf-sheaths keeled, hirsute. Leaf-sheath oral hairs scanty or lacking. Leaf-sheath auricles absent. Ligule an eciliate membrane, 1 mm long. Leaf-blade base asymmetrical, with a brief petiole-like connection to sheath. Leaf-blades oblong or ovate, 14–28 cm long, 35–65 mm wide. Leaf-blade venation with 18–24 secondary veins, with distinct cross veins. Leaf-blade surface glabrous. Leaf-blade apex attenuate. Flowering specimens unknown.

Distribution (TDWG). Continent. Temperate Asia.

Country /Province /State. China. China Southeast.

TDWG4. Guangdong.

Indocalamus latifolius (Keng) McClure. *Sunyatsenia*, vi. 37 (1941).

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

TYPE from China. **Basionym or Replaced Name:** *Arundinaria latifolia* Keng, *Sinensia* 6(2): 147, 153, f. 1 (1935). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: China: Zhejiang: Hangzhou, on slopes in front of Lingyin Temple, 26 Jan. 1935, Y.C. Yang 118 (HT: US).

Pseudosasa hirta S.L. Chen & G.Y. Sheng, *Bull. Bot. Res. North-East. Forest. Inst.*, 11(4): 43 (1991).

Pseudosasa truncatula S.L. Chen & G.Y. Sheng, *Bull. Bot. Res. North-East. Forest. Inst.*, 11(4): 44 (1991).

Illustrations (Books): S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Figs. 179–182–181).

Derivation (Clifford & Bostock 2007): L. *latus*, broad; *folium*, leaf. Leaf-blades broad or relatively broad with respect to related species.

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo, caespitose. Rhizomes elongated, leptomorph. Butt sheaths absent. Culms erect, 100 cm long, 5 mm diam., woody. Culm-internodes terete, distally pubescent. Lateral branches suffrutescent, erect or ascending. Branch complement one or two or three. Culm-sheaths present. Leaves cauline, 1–3 per branch. Leaf-sheaths glabrous on surface or pilose, outer margin glabrous or hairy. Ligule a ciliate membrane, 1.5–4 mm long. Leaf-blade base cuneate or broadly rounded, with a brief petiole-like connection to sheath, petiole 0.3–0.8 cm long. Leaf-blades lanceolate or oblong, 10–30 cm long, 15–47 mm wide. Leaf-blade venation with 12–24 secondary veins, with distinct cross veins. Leaf-blade surface glabrous or pubescent, hairy abaxially. Leaf-blade margins scabrous. Leaf-blade apex attenuate.

Inflorescence. Inflorescence a panicle or composed of racemes, without bracts or bracteate at branch bases, embraced at base by subtending leaf. Panicle open, elliptic, 6–12 cm long. Primary panicle branches appressed. Panicle axis pubescent. Racemes 1, bearing 4–5 fertile spikelets on each. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 5–9 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets linear, subterete, 25–40 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes 4–5 mm long, pubescent. Floret callus pubescent.

Glumes. Glumes persistent, similar, shorter than spikelet. Lower glume lanceolate, 5–7 mm long, chartaceous, without keels, 5–7 -veined. Lower glume lateral veins obscure. Lower glume surface puberulous. Upper glume lanceolate, 8–10 mm long, chartaceous, without keels, 7–9 -veined. Upper glume surface puberulous.

Florets. Fertile lemma ovate, 13–15 mm long, chartaceous, without keel, 11–13 -veined, more than 3-veined. Lemma lateral veins with cross-veins. Lemma surface glabrous or puberulous. Palea 5–7 mm long, chartaceous. Palea surface puberulous, hairy on back. Palea apex ciliate. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 3, 1 mm long. Anthers 3, 4–5 mm long, purple. Stigmas 2. Caryopsis with adherent pericarp.

$2n = 48$ (2 refs TROPICOS).

Distribution (TDWG). Continent. Temperate Asia.

Country /Province /State. China. China South Central, China North-Central, China Southeast.

TDWG4. Shaanxi, Shanxi. Anhui, Henan, Jiangsu. Hubei.

Indocalamus longiauritus Hand.-Mazz. *Anz. Akad. Wiss. Wien, Math.-Nat.* lxii. 254. (1925).

Accepted by: R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), S-L Chen et al, *Flora of China* 22 (Poaceae) (2006).

TYPE from China. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: IST: *H.F. von Handel-Mazzetti* 12256, 9 Dec 1918, China: Hona (US-1529844, US-1128966).

ST: *Handel-Mazzetti* 10598, 6 Jul 1917, China: Prov. Guischou orient.: ... inter urbem Guiyang (Kweiyang) et vicum Gwanyinschen

ST: *Handel Mazzaetti* 10643, 9 Jul 1917, China: in silvis umbrosis prope vicum Madjiadwen inter opp. Guiding et Duyün.

Recent Synonyms: *Bashania auctiaurita* T.P. Yi, *Bull. Bot. Res. North-East. Forest. Inst.*, 6(4): 27 (1986). *Pseudosasa vittata* B.M. Yang, *Bamboo Res. Asia* 1989(2): 2 (1989)

Illustrations (Books): S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 173).

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo, caespitose. Rhizomes elongated, leptomorph. Butt sheaths absent. Culms erect, 100 cm long, 3–6 mm diam., woody. Culm-internodes terete. Lateral branches suffrutescent. Culm-sheaths present, hispid, hairy at the base, with dark brown hairs, hairy on margins, auriculate, setose on shoulders, shoulders with 10 mm long hairs. Leaves cauline, 1–3 per branch. Ligule an eciliate membrane. Leaf-blade base with a brief petiole-like connection to sheath, petiole 0.3–0.7 cm long. Leaf-blades lanceolate, 1.2–8.5 cm long, 8–41 mm wide. Leaf-blade venation with 13–29 secondary veins, with distinct cross veins. Leaf-blade margins scabrous. Leaf-blade apex attenuate.

Inflorescence. Inflorescence a panicle, without bracts or bracteate at branch bases. Panicle contracted, oblong, 8–14 cm long. Panicle axis pubescent. Panicle branches pubescent. Spikelets solitary. Fertile spikelets sessile.

Fertile Spikelets. Spikelets comprising 8 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets linear, subterete, 40–60 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, similar, shorter than spikelet. Lower glume lanceolate, chartaceous, without keels. Lower glume apex acuminate. Upper glume lanceolate, chartaceous, without keels, 7–9 -veined. Upper glume apex acuminate.

Florets. Fertile lemma ovate, 10 mm long, chartaceous, without keel, 7 -veined, more than 3-veined. Palea 1 length of lemma. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 3, 1.5 mm long, ciliate. Anthers 3. Stigmas 2. Caryopsis with adherent pericarp.

$2n = 48$ (1 ref TROPICOS).

Distribution (TDWG). Continent. Temperate Asia, South America.

Country /Province /State. China. China South Central, China Southeast. **Mesoamerica.** Guatemala, Honduras.

TDWG4. Fujian, Guangdong, Guangxi, Henan, Hunan, Jiangxi, Zhejiang (+). Guizhou, Sichuan.

Indocalamus macrophyllus C.F. Huang. *Wuyi Sci. J.* 8: 171–172, f. 1.. 1991.

TYPE from China. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: China: Fujian: Wuyi Shan,.

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

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

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Distribution (TDWG). Continent. Temperate Asia.

Country /Province /State. China. China Southeast.

TDWG4. Fujian.

Indocalamus parvifolius (Hack. ex Keng) Keng f. *Techn. Bull. Natl. Forest. Res. Bur.* 8: 12 (1948).

TYPE from China. **Basionym or Replaced Name:** *Arundinaria parvifolia* Hack. ex Keng, *J. Wash. Acad. Sci.* 26: 396 (1936). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: China: Yunnan: without precise locality, Aug. 1910, *R.P. Maire* 7532 (HT: US).

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

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

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo. Butt sheaths absent. Culms woody. Culm-internodes terete. Lateral branches suffrutescent. Branch complement one. Culm-sheaths present. Leaves cauline, 6–9 per branch. Leaf-sheaths glabrous on surface or puberulous. Leaf-sheath oral hairs setose. Ligule an eciliate membrane, 0.5–1 mm long, truncate. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades lanceolate, involute, 2.5–5 cm long, 3–5 mm wide. Leaf-blade venation with distinct cross veins. Leaf-blade margins scaberulous. Leaf-blade apex acuminate.

Inflorescence. Inflorescence composed of racemes, embraced at base by subtending leaf. Racemes 1, single, 4–7 cm long, bearing 3–7 fertile spikelets on each. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, 4–14 mm long.

Fertile Spikelets. Spikelets comprising 5–9 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets linear, laterally compressed, 27–40 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes 4 mm long, pubescent, hairy above. Floret callus pilose. Floret callus hairs 1 mm long.

Glumes. Glumes persistent, similar, shorter than spikelet. Lower glume lanceolate, 5–7 mm long, chartaceous, without keels, 3–5 -veined. Lower glume surface glabrous or puberulous, hairy above. Lower glume apex acuminate. Upper glume lanceolate, 7–11 mm long, chartaceous, without keels, 7–9 -veined. Upper glume surface glabrous or puberulous, hairy above. Upper glume apex acuminate.

Florets. Fertile lemma lanceolate or oblong, 12–15 mm long, chartaceous, without keel, 9 -veined, more than 3-veined. Lemma lateral veins with cross-veins. Lemma surface puberulous. Lemma apex acuminate. Palea 9–10 mm long, chartaceous. Palea keels ciliate, adorned above. Palea surface puberulous. Palea apex dentate, 2 -fid. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 3, 2–2.5 mm long, ciliate. Anthers 3, 5–6 mm long, yellow. Stigmas 2. Ovary glabrous. Caryopsis with adherent pericarp.

Distribution (TDWG). Continent. Temperate Asia.

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

Yunnan.

Indocalamus pedalis (Keng) P. C. Keng. *Techn. Bull. Nat. For. Res. Bur. China*, No. 8 : 1 (1948).

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

TYPE from China. **Basionym or Replaced Name:** *Arundinaria pedalis* Keng, *J. Wash. Acad. Sci.* 36: 84, f. 3 (1946). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: China: Sichuan: Jiangbei Xian, Pangqi, rocky place, *Ho Ching* (HT: ?).

Illustrations (Books): S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 177, Fig. 183).

Derivation (Clifford & Bostock 2007): L. *pes*, foot; *-alis*, pertaining to. Culms short.

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo, culms solitary. Rhizomes elongated, leptomorph. Butt sheaths absent. Culms erect or geniculately ascending, 15 cm long, 1–1.5 mm diam., woody. Culm-internodes terete, 1–5 cm long. Lateral branches suffrutescent. Bud complement 1. Branch complement one, solitary, as thick as stem. Culm-sheaths present. Leaves cauline, 1–2 per branch. Leaf-sheaths glabrous on surface or puberulous. Ligule an eciliate membrane or a ciliolate membrane, 1 mm long. Leaf-blade base with a brief petiole-like connection to sheath, petiole 0.2–0.4 cm long, petiole glabrous or pubescent. Leaf-blades deciduous at the ligule, lanceolate, 6.5–15 cm long, 9–17 mm wide. Leaf-blade venation with 8–12 secondary veins, with distinct cross veins. Leaf-blade margins scaberulous. Leaf-blade apex acuminate.

Inflorescence. Inflorescence composed of racemes, exserted or embraced at base by subtending leaf. Racemes 1, single, 10–11 cm long, bearing few fertile spikelets, bearing 4–8 fertile spikelets on each. Rhachis pubescent on surface. Spikelets appressed or ascending, solitary. Fertile spikelets pedicelled. Pedicels present, 2–20 mm long, pubescent.

Fertile Spikelets. Spikelets comprising 4–11 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets linear, laterally compressed, 20–60 mm long, 3–5 mm wide, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes compressed, 4–5 mm long, pubescent, hairy above. Floret callus pubescent. Floret callus hairs 0.8 mm long.

Glumes. Glumes several, 3–4 empty glumes, persistent, similar, shorter than spikelet. Lower glume lanceolate, 4–5 mm long, chartaceous, without keels. Lower glume surface pubescent. Lower glume apex acute. Upper glume lanceolate, 7–8 mm long, chartaceous, without keels. Upper glume surface pubescent. Upper glume apex acute.

Florets. Fertile lemma ovate, 7–10 mm long, chartaceous, without keel, more than 3-veined. Lemma lateral veins with cross-veins. Lemma surface pubescent, hairy above. Lemma apex attenuate. Palea 1 length of lemma, chartaceous. Palea keels scaberulous. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 3, 3 mm long, veined, ciliate. Anthers 3, 5–6 mm long. Stigmas 2. Ovary glabrous. Caryopsis with adherent pericarp.

$2n = 48$ (1 ref TROPICOS).

Distribution (TDWG), Continent. Temperate Asia.

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

TDWG4. Sichuan.

Indocalamus petelotii (A. Camus) D.Ohrnberger. *Bamboos of the World Intro.* 3: 14: (1996).

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

TYPE from Indochina. **Basionym or Replaced Name:** *Arundinaria petelotii* A.Camus, *Not. Syst.* 14: 252 (1953). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Indochina, Tonkin, Cha-pa: Petelot 8356.

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

Derivation (Clifford & Bostock 2007): In honor of Paul Alfred Petelot (1885- ?) French entomologist and plant collector in Indo-China, now Cambodia, Laos and Vietnam.

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo. Rhizomes elongated, leptomorph. Butt sheaths absent. Culms 200–300 cm long, woody. Culm-internodes terete, distally glabrous. Lateral branches suffrutescent. Culm-sheaths present. Leaves cauline. Leaf-sheaths smooth, glabrous on surface. Leaf-sheath auricles falcate. Ligule absent. Leaf-blade base with a brief petiole-like connection to sheath, petiole 0.6–1 cm long. Leaf-blades deciduous at the ligule, lanceolate, 28–30 cm long, 35–49 mm wide. Leaf-blade venation with 14 secondary veins, with distinct cross veins. Leaf-blade apex acuminate.

Inflorescence. Inflorescence a panicle. Panicle contracted, 15–20 cm long. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, 5–40 mm long.

Fertile Spikelets. Spikelets comprising 6–7 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets linear, laterally compressed, 25–30 mm long, 5 mm wide, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes 3 mm long. Floret callus pilose. Floret callus hairs 0.8–1 mm long.

Glumes. Glumes several, 3 empty glumes, persistent, similar, shorter than spikelet. Lower glume ovate, 3 mm long, chartaceous, without keels. Lower glume apex acuminate. Upper glume ovate, 6 mm long, chartaceous, without keels, 3–5 -veined. Upper glume surface pubescent, hairy at apex. Upper glume apex acuminate.

Florets. Fertile lemma ovate, 10 mm long, chartaceous, without keel, 7 -veined, more than 3-veined. Lemma surface glabrous. Lemma apex attenuate. Palea 9.5 mm long, chartaceous. Apical sterile florets resembling fertile though underdeveloped.

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

Distribution (TDWG). Continent. Tropical Asia.

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

Indocalamus pseudosinicus McClure. *Sunyatsenia* 6(1): 37–41, pl. 8. 1941.

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

TYPE from China. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: China, Long Min Tin: How 73208.

Illustrations (Books): S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 171 as *Indocalamus pseudosinicus* var. *pseudosinicus* & *Indocalamus pseudosinicus* var. *densinervillus*).

Derivation (Clifford & Bostock 2007): Gk *pseudos*, false. Resembling *Indocalamus sinicus*.

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Distribution (TDWG). Continent. Temperate Asia.

Country /Province /State. China. Hainan, China Southeast.

TDWG4. Guangdong, Guangxi.

Indocalamus pubiflorus (Keng) Keng f. *Techn. Bull. Natl. Forest. Res. Bur.* 8: 12 (1948).

TYPE from China. **Basionym or Replaced Name:** *Arundinaria pubiflora* Keng, *Sinensia* 7(3): 414–416, f. 4 (1936). T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: China: Guangdong: top of hill at rear of Iu Village, Lung Tsu Shan, 30 May 1924, K.P. Yo[To?] & W.T. Tsang CCC 12284 (HT: US).

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

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 Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo. Butt sheaths absent. Culms 120 cm long, woody. Culm-internodes terete, 4–5.5 cm long. Lateral branches suffrutescent. Branch complement two to three. Culm-sheaths present. Leaves cauline, 1–2 per branch. Leaf-sheaths 3 cm long, puberulous, outer margin glabrous or hairy. Leaf-sheath oral hairs setose, 12 mm long. Ligule an eciliate membrane, 1 mm long, truncate. Leaf-blade base with a brief petiole-like connection to sheath, petiole 0.2–0.3 cm long. Leaf-blades oblong, 8–18 cm long, 11–15 mm wide. Leaf-blade venation with obscure cross veins. Leaf-blade surface glabrous or puberulous, hairy abaxially. Leaf-blade margins scabrous. Leaf-blade apex acuminate.

Inflorescence. Inflorescence composed of racemes, exserted or embraced at base by subtending leaf. Racemes 1, single, 3–9 cm long, bearing 3–5 fertile spikelets on each. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, 5–9 mm long, puberulous.

Fertile Spikelets. Spikelets comprising 2–4 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets oblong, laterally compressed, 16–20 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes elongated between glumes. Rhachilla elongation 1 mm long. Rhachilla internodes 3–4 mm long, pubescent, hairy above. Floret callus pilose.

Glumes. Glumes persistent, similar, shorter than spikelet. Lower glume lanceolate, 7–10 mm long, chartaceous, without keels. Lower glume surface puberulous, hairy above. Lower glume apex acuminate. Upper glume lanceolate, 7–12 mm long, chartaceous, without keels. Upper glume surface puberulous, hairy above. Upper glume apex acuminate.

Florets. Fertile lemma ovate, 10–12 mm long, chartaceous, without keel, 9 -veined, more than 3-veined. Lemma surface pubescent. Lemma apex acuminate. Palea 7–8 mm long, chartaceous. Palea keels ciliate. Palea apex entire, obtuse. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 3, 2 mm long, veined, ciliate. Anthers 3, 5 mm long, brown. Stigmas 2. Ovary glabrous. Caryopsis with adherent pericarp.

Distribution (TDWG). Continent. Temperate Asia.

Country /Province /State. China. China Southeast.

Guangdong, Hunan, Jiangxi.

Indocalamus pumilus Q.H. Dai & C.F. Huang. *Acta Phytotax. Sin.*, 24(5): 394 (1986).

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

TYPE from China. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: China: Guangxi: Nan'ning, cultivated in the Guangxi Inst. of Forestry Bamboo Garden, Q.H. Dai & C.F. Huang 8317 (HT: GXFI).

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

Derivation (Clifford & Bostock 2007): *L. dwarf*, low growing. Habit typically depauperate.

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo. Rhizomes elongated, leptomorph. Butt sheaths absent. Culms 20–30 cm long, 1–3 mm diam., woody. Culm-internodes terete, 4–9 cm long, distally mealy. Lateral branches suffrutescent. Bud complement 1. Branch complement one, solitary, as thick as stem. Culm-sheaths present, persistent, puberulous, with white hairs or yellow hairs, hairy on margins, auriculate, setose on shoulders, shoulders with 5–6 mm long hairs. Culm-sheath ligule 1 mm high, ciliate. Culm-sheath blade lanceolate, erect, pubescent. Leaves cauline, 4–6 per branch. Leaf-sheaths puberulous, hairs white or yellow, outer margin glabrous. Leaf-sheath oral hairs ciliate, 5 mm long. Leaf-sheath auricles erect or falcate. Ligule an eciliate membrane or a ciliolate membrane, 1 mm long. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades lanceolate or ovate, 13–20 cm long, 20–30 mm wide. Leaf-blade venation with 12–18 secondary veins, with distinct cross veins. Leaf-blade surface puberulous, densely hairy, hairy abaxially. Leaf-blade margins scaberulous. Leaf-blade apex acuminate. Flowering specimens unknown.

Distribution (TDWG). Continent. Temperate Asia.

Country /Province /State. China. China Southeast. Guangxi (+).

Indocalamus quadratus H.R. Zhao & Y.L. Yang. *Acta Phytotax. Sin.*, 20(2): 216 (1982).

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

TYPE from China. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: China: Hunan: Dong'an Dao, valley forests, 600–700 m, 26 May 1977, Z.P. Wang & A.T. Liu 77031 (HT: Herb. Biology Dept. Nanjing Univ.).

Illustrations (Books): S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 176).

Derivation (Clifford & Bostock 2007): *L. quadrus*, square; *-ata*, indicating possession. Transverse veins of leaf-blade conspicuously mark the surface into small squares.

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo, caespitose. Rhizomes elongated, leptomorph. Butt sheaths absent. Culms erect, 270–330 cm long, 8–11 mm diam., woody. Culm-internodes terete, 22–26 cm long, distally mealy. Culm-nodes swollen. Lateral branches suffrutescent. Branch complement one. Culm-sheaths present, persistent, purple, hispid, with dark brown hairs, hairy on margins, auriculate, with 15 mm high auricles, with 13 mm wide auricles, setose on shoulders, shoulders with straight hairs, shoulders with 20 mm long hairs. Culm-sheath ligule 12–16 mm high, purple, fimbriate. Culm-sheath blade linear, erect or reflexed. Leaves cauline. Leaf-sheaths glabrous on surface or puberulous, outer margin hairy. Leaf-sheath oral hairs setose, spreading, 14 mm long. Leaf-sheath auricles falcate, 12 mm long. Ligule a ciliate membrane, 2 mm long, purple. Leaf-blade base cuneate or broadly rounded, with a brief petiole-like connection to sheath. Leaf-blades lanceolate or oblong, 8.5–24.5 cm long, 56–72 mm wide. Leaf-blade venation with 18–30 secondary veins, with distinct cross veins. Leaf-blade apex attenuate. Flowering specimens unknown.

Distribution (TDWG). Continent. Temperate Asia.

Country /Province /State. China. China South Central, China Southeast. TDWG4. Hunan, Zhejiang (+). Guizhou.

Indocalamus sinicus (Hance) Nakai. *Journ. Arnold Arb.* vi. 148 (1925).

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

TYPE from China. **Basionym or Replaced Name:** *Arundinaria sinica* Hance, *Ann. Sci. Nat., Bot.* ser. 4 18: 235 (1862). T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: China: Guangdong: Hong Kong, 600–700 m.,

Illustrations (Books): S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 171).

Derivation (Clifford & Bostock 2007): *L. Sina*, China; *-ica*, belonging to. From China.

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo, caespitose. Rhizomes elongated, leptomorph. Butt sheaths absent. Culms woody. Culm-internodes terete, distally glabrous. Lateral branches suffrutescent. Culm-sheaths present. Leaves cauline. Leaf-sheaths striately veined, smooth, glabrous on surface. Leaf-sheath oral hairs setose. Ligule an eciliate membrane. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades lanceolate, 15–25 cm long, 18–30 mm wide. Leaf-blade venation indistinct, with 10–14 secondary veins, with obscure cross veins. Leaf-blade surface glabrous. Leaf-blade apex attenuate.

Inflorescence. Inflorescence a panicle. Panicle open, elliptic, 15–30 cm long. Primary panicle branches 10–15 cm long. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, 25–50 mm long.

Fertile Spikelets. Spikelets comprising 3–4 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets linear, subterete, 12–16 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, similar, shorter than spikelet. Lower glume lanceolate, 6 mm long, chartaceous, without keels, 3–7 -veined. Lower glume surface glabrous. Lower glume margins ciliolate. Lower glume apex acute. Upper glume lanceolate, 8 mm long, chartaceous, 1-keeled, 7–9 -veined. Upper glume surface glabrous. Upper glume margins ciliolate. Upper glume apex truncate.

Florets. Fertile lemma ovate, 10–12 mm long, chartaceous, without keel, 13 -veined, more than 3-veined. Lemma surface glabrous. Palea 1 length of lemma, chartaceous. Apical sterile florets resembling fertile though underdeveloped.

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

Distribution (TDWG). Continent. Temperate Asia.

Country /Province /State. China. Hainan, China Southeast.

TDWG4. Guangdong.

Indocalamus suichuanensis T.P. Yi & Y.H. Guo. *J. Bamboo Res.*, 14(1): 14 (1995).

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

TYPE from China. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: China, Sichuan Co.: Duan & Guo 034; China: Jiangxi: Suichan Xian, 1050 m, 28 May 1992, *X.T. Duan & Y.H. Guo 034* (HT: Herb. Forestry School of Sichuan Province; IT: Herb. Ji'an Prefecture Institute of Forestry, Jiangxi).

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

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

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo, caespitose. Rhizomes elongated, leptomorph. Butt sheaths absent. Culms erect, 100–120 cm long, 3.5–4.5 mm diam., woody. Culm-internodes terete, thick-walled or solid, 14–18 cm long, distally mealy. Lateral branches suffrutescent. Branch complement one. Culm-sheaths present, persistent, 6.5–8 cm long, 6 times as long as wide, coriaceous, yellow, hispid, with appressed hairs, with tawny hairs, hairy on margins, without auricles, glabrous on shoulders or ciliate on shoulders. Culm-sheath blade linear or lanceolate, erect, 7–10 cm long, 1–1.5 mm wide, glabrous on surface. Leaves cauline, 1–6 per branch. Leaf-sheaths 5–6 cm long, glabrous on surface, outer margin glabrous. Leaf-sheath oral hairs scanty or lacking. Leaf-sheath auricles absent. Ligule an eciliate membrane, 1 mm long, truncate or obtuse. Leaf-blade base cuneate or broadly rounded, with a brief petiole-like connection to sheath, petiole 0.15–0.3 cm long. Leaf-blades lanceolate, 10.5–14 cm long, 20–25 mm wide, fleshy, mid-green and glaucous, discolourous with last colour beneath. Leaf-blade venation with 12–14 secondary veins, with distinct cross veins. Leaf-blade surface glabrous. Leaf-blade margins scabrous. Leaf-blade apex attenuate. Flowering specimens unknown.

Distribution (TDWG). Continent. Temperate Asia.

Country /Province /State. China. China Southeast.

TDWG4. Jiangxi.

Indocalamus tessellatus (Munro) P. C. Keng. *Keng, Claves Gen. & Spec. Gramin. Sinic.* 152 (1957).

Accepted by: R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), S-L Chen et al, *Flora of China* 22 (Poaceae) (2006).

TYPE from UK(cultivated). **Basionym or Replaced Name:** *Bambusa tessellata* Munro, *Trans. Linn. Soc. London* 26(1): 110 (1868)

. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: NT: *Stapleton 1122*, 18 Aug 1998, UK (cultivated), Bamboo Garden, Kew (K). NT designated by Stapleton, *Taxon* 49(2): 238 (2000).

Recent Synonyms: *Pseudosasa longivaginata* H.R. Zhao & Y.L. Yang, *Acta Phytotax. Sin.* 20 (2): 217–218, pl. 2 (1982).

Illustrations (Books): L.K.A. Chippindall, *Grasses and Pastures of South Africa* (1955) (as *Arundinaria*), S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 178).

Illustrations (Journals): *Hooker's Icones Plantarum* (t.2930 (1911) as *Arundinaria*).

Derivation (Clifford & Bostock 2007): *L. tessela*, little tile; -ata, possessing. Pattern of veins tile-like on the leaf-blade.

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo. Rhizomes elongated, leptomorph. Butt sheaths absent. Culms erect, zigzag, 400–500 cm long, 10–15 mm diam., woody. Culm-internodes terete, thin-walled. Culm-nodes glabrous. Lateral branches dendroid. Branch complement three, in a clump. Culm-sheaths present. Leaves cauline, 2–3 per branch. Leaf-sheath oral hairs lacking. Ligule an eciliate membrane. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades oblong, 30–47 cm long, 60–100 mm wide. Leaf-blade surface glabrous. Leaf-blade apex acuminate.

Inflorescence. Inflorescence a panicle. Panicle open, ovate, 15 cm long. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 3–4 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile and the upper sterile. Spikelets lanceolate, laterally compressed, 15–20 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, similar, shorter than spikelet. Lower glume lanceolate, 3–4 mm long, 0.75 length of upper glume, chartaceous, without keels. Lower glume apex acute. Upper glume lanceolate, 4–5 mm long, 0.66–0.75 length of adjacent fertile lemma, chartaceous, without keels. Upper glume apex acute.

Florets. Fertile lemma lanceolate, 7 mm long, chartaceous, without keel, more than 3-veined. Lemma apex acuminate. Apical sterile florets resembling fertile though underdeveloped.

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

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

Country /Province /State. Western Indian ocean. Mauritius (+). China, Eastern Asia. China Southeast.

TDWG4. Hunan, Zhejiang.

Indocalamus tongchuensis K.F. Huang & Z.L. Dai. *Wuyi Sci. J.* 6: 293–295 (1986).

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

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

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo. Rhizomes elongated, leptomorph. Butt sheaths absent. Culms 150 cm long, 5 mm diam., woody. Culm-internodes terete, 5–7.3 cm long, yellow, distally mealy. Culm-nodes flush with internodes. Lateral branches suffrutescent. Culm-sheaths present, pilose, hairy above, hairy on margins, without auricles, glabrous on shoulders. Culm-sheath ligule entire or ciliolate. Culm-sheath blade triangular, cordate, erect, glabrous on surface. Leaves cauline, 3–7 per branch. Leaf-sheaths glabrous on surface. Leaf-sheath oral hairs lacking. Leaf-sheath auricles absent. Ligule a ciliolate membrane, 1.5 mm long. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades lanceolate or elliptic, 40 cm long, 80 mm wide, mid-green and light green, discolourous with last colour beneath. Leaf-blade venation with 24–28 secondary veins, with distinct cross veins. Leaf-blade surface pubescent, hairy abaxially. Flowering specimens unknown.

Distribution (TDWG). Continent. Temperate Asia.

Country /Province /State. China. China Southeast.

TDWG4. Fujian.

Indocalamus victorialis P. C. Keng. *Acta Phytotax. Sin.* i. 121 (1951).

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

TYPE from China. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: China: Sichuan: Chongqing, 19 May 1954, *Keng f. 3907* (HT: NJU).

Illustrations (Books): S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 183).

Derivation (Clifford & Bostock 2007): *L. victoria*, victory; -alis, pertaining to. Commemorating the Chinese victory in the Anti-Japanese War.

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo, caespitose. Rhizomes elongated, leptomorph. Butt sheaths absent. Culms erect, 100–150 cm long, 5–8 mm diam., woody. Culm-internodes terete, 20–28 cm

long. Lateral branches suffrutescent. Branch complement one. Culm-sheaths present. Leaves cauline, 1–4 per branch. Ligule an eciliate membrane. Leaf-blade base with a brief petiole-like connection to sheath, petiole 0.3–0.4 cm long. Leaf-blades lanceolate, 14–23 cm long, 25–40 mm wide. Leaf-blade surface glabrous. Leaf-blade apex attenuate.

Inflorescence. Inflorescence a panicle. Panicle open, oblong, 15 cm long, contracted about primary branches. Primary panicle branches spreading, 1–3-nate, 5–12 cm long, bearing spikelets almost to the base. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, 1.5 mm long.

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 linear, subterete, 10 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, similar, shorter than spikelet. Lower glume lanceolate, 2 mm long, chartaceous, without keels. Lower glume apex acuminate. Upper glume lanceolate, 3 mm long, chartaceous, without keels. Upper glume apex acuminate.

Florets. Fertile lemma lanceolate, 6 mm long, chartaceous, without keel, 7-veined, more than 3-veined. Apical sterile florets resembling fertile though underdeveloped.

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

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

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

TDWG4. Sichuan.

Indocalamus vulgatus W.T. Lin & X.B. Ye. *Acta Phytotax. Sin.*, 26(3): 233 (1988).

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

TYPE from China. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: China: Guangdong: Xinhui, Gudou Shan, 13 Nov. 1986, X.B. Ye 35421 (HT: SCAC).

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

Derivation (Clifford & Bostock 2007): *L. vulgo*, make public. Species recognized by its formal publication.

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

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

Country /Province /State. **China.** China Southeast.

TDWG4. Guangdong.

Indocalamus wilsonii (Rendle) C.S. Chao & C.D. Chu. *J. Nanjing Techn. Coll. Forest Prod.*, 1981(3): 43 (1981).

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

TYPE from China. **Basionym or Replaced Name:** *Arundinaria wilsonii* Rendle, *J. Linn. Soc., Bot.* 36(254): 437–438 (1904). T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: China: Hubei: Fang, forms scrub on the top of highest mountains, 7700–9600 Ft., *Wilson 1887* (HT: K).

Illustrations (Books): S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 184).

Derivation (Clifford & Bostock 2007): In honor of Ernest Henry Wilson (1876–1930) English-born United States botanist who collected in China.

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo. Rhizomes elongated, leptomorph. Butt sheaths absent. Culms erect, 3 mm diam., woody. Culm-internodes terete, distally glabrous. Lateral branches suffrutescent. Culm-sheaths present. Leaves cauline. Leaf-sheaths glabrous on surface. Ligule an eciliate membrane. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades lanceolate, 10–13 cm long, 22 mm wide. Leaf-blade venation with 10–12 secondary veins. Leaf-blade surface puberulous, hairy abaxially. Leaf-blade margins scaberulous. Leaf-blade apex attenuate.

Inflorescence. Inflorescence a panicle. Panicle open, elliptic, 7 cm long, 7 cm wide. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, flexuous, glabrous.

Fertile Spikelets. Spikelets comprising 5–7 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets linear, subterete, 20–25 mm long, breaking up at maturity, disarticulating below each fertile floret. Rachilla internodes pubescent.

Glumes. Glumes persistent, similar, shorter than spikelet. Lower glume ovate, 3 mm long, chartaceous, 1-keeled, 5-veined. Upper glume ovate, 5.5 mm long, chartaceous, 1-keeled, 7-veined.

Florets. Fertile lemma ovate, 8 mm long, chartaceous, keeled, 7 -veined, more than 3-veined. Lemma margins ciliate. Lemma apex obtuse. Palea 7 mm long, chartaceous. Palea keels ciliate. Palea surface puberulous, hairy on flanks. Palea apex obtuse. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 3, ciliate. Anthers 3. Stigmas 3. Ovary glabrous. Caryopsis with adherent pericarp, oblong, 3.3 mm long, light brown, glabrous.

Distribution (TDWG). Continent. Temperate Asia.

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

TDWG4. Guizhou, Hubei, Sichuan.

Indocalamus wuxiensis T.P. Yi. *Bull. Bot. Res. North-East. Forest. Inst.*, 5(4): 129 (1985).

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

TYPE from China. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: China: Sichuan: Wuxi Xian, Guan Mountain 2200–2400 m, 11 Dec. 1984, *T.P. Yi 84188* (HT: SFS).

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

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Distribution (TDWG). Continent. Temperate Asia.

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

TDWG4. Sichuan.

Indocalamus youxiuensis T.P. Yi. *J. Bamboo Res.*, 11(3): 53 (1992).

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: Sichuan: Xiushan Xian, 580 m, 11 Nov. 1991, *T.P. Yi 91442* (HT: Herb. Forestry School of Sichuan Prov.).

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

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo, caespitose. Rhizomes elongated, leptomorph. Butt sheaths absent. Culms erect, 100–150 cm long, 4–7 mm diam., woody. Culm-internodes terete, thick-walled, 15–28 cm long, distally mealy. Lateral branches suffrutescent. Branch complement one. Culm-sheaths present, persistent, 1 length of internode, coriaceous, hispid, with appressed hairs, with dark brown hairs, hairy on margins, without auricles, glabrous on shoulders. Culm-sheath blade linear or lanceolate, erect or spreading, 0.7–4 cm long, 1.5–4.5 mm wide. Leaves cauline, 3–6 per branch. Leaf-sheaths 10–16 cm long, glabrous on surface, outer margin glabrous. Leaf-sheath oral hairs lacking. Leaf-sheath auricles absent. Ligule an eciliate membrane, 2–2.5 mm long, obtuse. Leaf-blade base cuneate, with a brief petiole-like connection to sheath, petiole 0.3–0.5 cm long. Leaf-blades lanceolate or oblong, 20–35 cm long, 40–80 mm wide, fleshy, mid-green and glaucous, discoloured with last colour beneath. Leaf-blade venation with 20–28 secondary veins, with distinct cross veins. Leaf-blade surface glabrous. Leaf-blade margins scabrous. Leaf-blade apex attenuate. Flowering specimens unknown.

Distribution (TDWG). Continent. Temperate Asia.

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

Sichuan.

Indopoa paupercula (Stapf) Bor. *Kew Bull.* 226 (1958).

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

TYPE from India. **Basionym or Replaced Name:** *Tripogon pauperculus* Stapf, *Hook. Ic. Pl.* 25 t. 2442 (1896). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: India, Western Ghats: Woodrow (K holotype).

Illustrations (Books): N.L.Bor, *The grasses of Burma, Ceylon, India and Pakistan* (1960) (523, Fig 57 *Tripogon pauperculus*), S.W.L.Jacobs & J.Everett (2000) (374, Fig. 4).

Derivation (Clifford & Bostock 2007): *L. pauper*, poor; -ulus, diminutive. Habit depauperate.

Classification. Subfamily Chloridoideae. Tribe: Chloridoideae incertae sedis.

Habit, Vegetative Morphology. Annual, caespitose. Culms geniculately ascending, 3–16 cm long, 1–2 -noded. Ligule an eciliate membrane, obtuse. Leaf-blades involute, 1–12 cm long, 1–2 mm wide.

Inflorescence. Inflorescence composed of racemes. Racemes 1, single, flexuous, unilateral, 0.5–8 cm long, bearing few fertile spikelets, bearing 2–10 fertile spikelets on each. Rhachis angular. Spikelet packing broadside to rhachis, lax. Spikelets ascending, solitary. Fertile spikelets sessile.

Fertile Spikelets. Spikelets comprising 4–6 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets cuneate, laterally compressed, 6–12 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus evident, 0.5 mm long, pilose.

Glumes. Glumes persistent, similar, shorter than spikelet, thinner than fertile lemma. Lower glume lanceolate, 2.5 mm long, 0.5 length of upper glume, hyaline, 1-keeled, 1 -veined. Lower glume primary vein scabrous. Lower glume lateral veins absent. Lower glume apex acute, mucronate. Upper glume lanceolate, 4.5–5 mm long, 0.7–0.8 length of adjacent fertile lemma, hyaline, 1-keeled, 1 -veined. Upper glume primary vein scabrous. Upper glume lateral veins absent. Upper glume apex acute, mucronate.

Florets. Fertile lemma oblong, 6 mm long, membranous, keeled, the keel enlarged into a pocket around grain, 3 -veined, 0–3 -veined. Lemma apex lobed, 2 -fid, with lanceolate lobes, incised 0.25 of lemma length, awned, 3 -awned. Principal lemma awn from a sinus, geniculate, 14 mm long overall, with twisted column. Lateral lemma awns present, arising on apex of lobes, 4 mm long, shorter than principal. Palea elliptic, 0.7 length of lemma, 2 -veined. Palea keels ciliolate. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, cuneate, fleshy. Anthers 3, subglobose, 0.25–0.3 mm long, retained within floret. Stigmas 2. Caryopsis with adherent pericarp, linear, isodiametric, biconvex, 3–4.5 mm long, glabrous, apex fleshy. Embryo 0.2 length of caryopsis. Hilum punctiform.

Distribution (TDWG). Continent. Tropical Asia.

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

Indosasa acutiligulata Z.P. Wang & G.H. Ye. *J. Nanjing Univ., Nat. Sci. Ed.* 1981(1): 100 (1981).

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

TYPE from China. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: China: Guangdong: Lian Shan, 29 April 1978, Z.P. Wang et al. 780035 (HT: NJU).

Illustrations (Books): S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig.185).

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Distribution (TDWG). Continent. Temperate Asia.

Country /Province /State. China. China Southeast.
Guangdong.

Indosasa angustata McClure. *Journ. Arn. Arb.* xxiii. 93 (1942).

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 Indochina. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: IT: *W.T. Tsang 30050*, 18 May-5 Jul 1940, Indochina: Tonkin: Sai Wong MO Shan: Lung Wan vill. Dam-ha (LE, US-1815721).

Illustrations (Books): G.Hegi, *Flora von Mitteleuropa* 1 (1909) (Fig.190).

Derivation (Clifford & Bostock 2007): *L. angusta*, narrow; -*ata*, possessing. Panicle very narrow.

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo. Rhizomes elongated, leptomorph. Butt sheaths absent. Culms erect, 800 cm long, 42 mm diam., woody. Culm-internodes terete, thick-walled, distally glabrous. Culm-nodes with distinct supra-nodal ridge. Lateral branches dendroid, spreading. Branch complement two, with 1 branch dominant. Culm-sheaths present, deciduous, chartaceous, hispid, with tawny hairs, hairy on margins, without auricles, setose on shoulders, shoulders with 3–4 mm long hairs. Culm-sheath ligule 5 mm high, ciliate. Culm-sheath blade triangular, demarcated but persistent, erect, glabrous on surface. Leaves 4–10 per branch. Leaf-sheaths deciduous, ribbed, hispid, with tubercle-based hairs. Leaf-sheath oral hairs scanty or lacking. Leaf-sheath auricles absent. Ligule an eciliate membrane, 1 mm long, pubescent on abaxial surface, obtuse. Leaf-blade base cuneate, with a brief petiole-like connection to sheath, petiole 0.5–1 cm long, petiole glabrous. Leaf-blades lanceolate, 15–21 cm long, 25–34 mm wide, fleshy. Leaf-blade venation with 10–16 secondary veins, with distinct cross veins. Leaf-blade surface hispid, hairy abaxially. Leaf-blade margins scaberulous. Leaf-blade apex acuminate. Flowering specimens unknown.

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

Country /Province /State. China. China Southeast. **Indo-China.** Vietnam.
TDWG4. Guangxi.

Indosasa bacquangensis Nguyen To Quyen. *Bot. Zhurn.*, 76(6): 878 (1991).

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

TYPE from Vietnam. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: Vietnam, Bac Quang; Vu Van Dung (HNF holo).

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

Derivation (Clifford & Bostock 2007): *L. -ensis*, denoting origin. From Bac Quang, Hu Tuyen Province, Vietnam.

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo. Rhizomes elongated, leptomorph. Butt sheaths absent. Culms erect, 800–1200 cm long, 30–50 mm diam., woody. Culm-internodes terete, thin-walled, 20–30 cm long. Lateral branches dendroid. Branch complement three. Culm-sheaths present. Leaves 3–4 per branch. Leaf-sheaths glabrous on surface, outer margin hairy. Leaf-sheath oral hairs setose. Leaf-sheath auricles falcate. Ligule an eciliate membrane, 1 mm long, truncate. Leaf-blade base with a brief petiole-like connection to sheath, petiole 0.5–0.7 cm long. Leaf-blades oblong, 20–25 cm long, 40–50 mm wide. Leaf-blade venation with 14–18 secondary veins, with distinct cross veins. Leaf-blade surface glabrous. Leaf-blade apex acuminate.

Inflorescence. Synflorescence bractiferous, paniculate, lax, with glumaceous subtending bracts, with axillary buds at base of spikelet, prophyllate below lateral spikelets.

Fertile spikelets sessile.

Fertile Spikelets. Spikelets comprising 14–20 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets linear, laterally compressed, 180–220 mm long, 6–10 mm wide, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes 12 mm long, glabrous.

Glumes. Glumes several, 2–3 empty glumes, persistent, similar, shorter than spikelet. Lower glume lanceolate. Upper glume lanceolate, 7 mm long.

Florets. Fertile lemma ovate, 17–22 mm long, 10–14 mm wide, coriaceous, without keel, 19–23 -veined, more than 3-veined. Lemma apex acute. Palea 15–20 mm long. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 3. Anthers 6. Stigmas 3. Caryopsis with adherent pericarp, ellipsoid, 10 mm long, light brown.

Distribution (TDWG). Continent. Tropical Asia.

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

Indosasa crassiflora McClure. *Lingnan Univ. Sci. Bull.*, No. 9, 29 (1940).

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

TYPE from Vietnam. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: Vietnam: 10–22 June 1939, *W.T. Tsang 29205* (HT: US).

Illustrations (Books): G.Hegi, *Flora von Mitteleuropa* 1 (1909) (Fig.187, 188).

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

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo. Butt sheaths absent. Culms erect, 300 cm long, 10 mm diam., woody. Culm-internodes terete, thick-walled or solid, distally glabrous. Culm-nodes with distinct supra-nodal ridge. Lateral branches dendroid. Branch complement one to three, with 1 branch dominant, thinner than stem. Culm-sheaths present, deciduous, chartaceous. Leaf-sheaths deciduous, glabrous on surface, outer margin glabrous or hairy. Leaf-sheath oral hairs ciliate, dark. Leaf-sheath auricles absent. Ligule a ciliolate membrane, pubescent on abaxial surface. Leaf-blade base broadly rounded, with a brief petiole-like connection to sheath, petiole 0.5–1 cm long, petiole glabrous. Leaf-blades lanceolate, 10–25 cm long, 20–45 mm wide. Leaf-blade venation with 10–16 secondary veins. Leaf-blade surface glabrous. Leaf-blade margins smooth. Leaf-blade apex acuminate.

Inflorescence. Synflorescence bractiferous, paniculate, 1–21 cm long, with glumaceous subtending bracts, with axillary buds at base of spikelet, prophyllate below lateral spikelets.

Fertile spikelets sessile.

Fertile Spikelets. Spikelets comprising 8–12 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets linear, laterally compressed, 50–90 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes 6–8 mm long, glabrous.

Glumes. Glumes several, 2–3 empty glumes, persistent, similar, shorter than spikelet.

Florets. Fertile lemma ovate, 10–13 mm long, coriaceous, without keel, more than 3-veined. Lemma margins eciliate or ciliate, hairy above. Lemma apex obtuse. Palea 1 length of lemma. Palea apex obtuse. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 3, veined, ciliate. Anthers 6. Stigmas 3. Ovary glabrous. Caryopsis with adherent pericarp.

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

Country /Province /State. China. China Southeast. **Indo-China.** Vietnam.

TDWG4. Guangxi.

Indosasa gigantea (T.H. Wen) T.H. Wen. *J. Bamboo Res.* 19(1): 22 (1991).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online (as *Acidosasa*), 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:** *Sinobambusa gigantea* T.H. Wen, *J. Bamboo Res.*, 2(1): 57 (1983). T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: China, Longquen: Wen 80556 (ZJFI holotype).

Recent Synonyms: *Acidosasa gigantea* (T.H. Wen) Q.Z. Xie & W.Y. Zhang, *Bull. Bot. Res., Harbin* 13(1): 74 (1993).

Illustrations (Books): S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 194).

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

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo. Rhizomes elongated, leptomorph. Butt sheaths absent. Culms erect, 1000–1700 cm long, 50–110 mm diam., woody. Culm-internodes channelled, thin-walled, 77 cm long, light green or glaucous, distally glabrous. Lateral branches dendroid. Branch complement three. Culm-sheaths present, hispid, with red hairs, hairy on margins, auriculate, with obtuse auricles or acute auricles, setose on shoulders, shoulders with 10–15 mm long hairs. Culm-sheath ligule 2 mm high, ciliate. Culm-sheath blade lanceolate, erect or reflexed. Leaves 3–4 per branch. Leaf-sheaths 45 cm long, glabrous on surface. Leaf-sheath oral hairs lacking. Leaf-sheath auricles absent. Ligule an eciliate membrane, 2 mm long. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades lanceolate, 8–13 cm long, 14–20 mm wide. Leaf-blade venation with distinct cross veins. Leaf-blade surface pubescent, hairy abaxially (at base). Leaf-blade apex attenuate. Flowering specimens unknown.

Distribution (TDWG). Continent. Temperate Asia.

Country /Province /State. China. China Southeast.

TDWG4. Fujian, Zhejiang (+).

GenBank (DQ861454 plus 2 others).

Indosasa glabrata C.D.Chu & C.S.Chao. *Acta Phytotax. Sin.*, 21(1): 64 (1983).

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

TYPE from China. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: China: Guangxi: Shangsi, Siwanda Shan, C.D. Chu & C.S. Chao 78021 (HT: NFU).

Illustrations (Books): G.Hegi, *Flora von Mitteleuropa* 1 (1909) (Fig.190).

Derivation (Clifford & Bostock 2007): L. *glaber*, smooth; *-ata*, possessing. Plants glabrous in whole or in part.

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo. Rhizomes elongated, leptomorph. Butt sheaths absent. Culms erect, 300 cm long, 20 mm diam., woody. Culm-internodes terete, thin-walled, 20–30 cm long. Culm-nodes flanged, with distinct supra-nodal ridge. Lateral branches dendroid. Branch complement three. Culm-sheaths present, tardily deciduous, glabrous or puberulous, with tawny hairs, without auricles, glabrous on shoulders. Culm-sheath ligule 1–2 mm high, entire. Culm-sheath blade inconspicuous. Leaves 2–4 per branch. Leaf-sheaths deciduous. Leaf-sheath oral hairs setose. Leaf-sheath auricles absent. Ligule an eciliate membrane. Leaf-blade base cuneate, with a brief petiole-like connection to sheath. Leaf-blades lanceolate or elliptic, 11–23 cm long, 20–50 mm wide, fleshy. Leaf-blade venation with 10–14 secondary veins. Leaf-blade surface glabrous. Leaf-blade margins scaberulous. Leaf-blade apex acuminate. Flowering specimens unknown.

Distribution (TDWG). Continent. Temperate Asia.

Country /Province /State. China. China Southeast.

TDWG4. Guangxi.

Indosasa hispida McClure. *Lingnan Univ. Sci. Bull.*, No. 9, 31 (1940).

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

TYPE from China. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: China: Guangdong: marginal lands, 28 April 1932, *W.T. Tsang 20361* (HT: US).

Illustrations (Books): S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 195, 196).

Derivation (Clifford & Bostock 2007): L. bearing coarse stiff hairs. Plant wholly or partly rough to the touch.

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo. Rhizomes elongated, leptomorph. Butt sheaths absent. Culms erect, 200–300 cm long, woody. Culm-internodes terete, thin-walled, distally glabrous or hispid. Lateral branches dendroid. Branch complement three, in a horizontal line, with subequal branches or 1 branch dominant, thinner than stem. Culm-sheaths present. Leaf-sheaths antrorsely scabrous. Leaf-sheath oral hairs lacking. Ligule an eciliate membrane, 1–2 mm long. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades lanceolate, 6–23 cm long, 9–28 mm wide. Leaf-blade venation with distinct cross veins. Leaf-blade surface pilose, hairy abaxially. Leaf-blade margins spinulose. Leaf-blade apex acuminate.

Inflorescence. Synflorescence bractiferous, scanty, 24 cm long, lax, with glumaceous subtending bracts, bracts 20–30 mm long, without axillary buds at base of spikelet, prophyllate below lateral spikelets.

Fertile spikelets sessile.

Fertile Spikelets. Spikelets comprising 4–7 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets linear, laterally compressed, 30–50 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, similar, shorter than spikelet. Lower glume ovate, 8–12 mm long, 0.7–0.8 length of upper glume, chartaceous, without keels, 9 -veined. Lower glume surface hispid. Lower glume apex obtuse. Upper glume ovate, 11–17 mm long, 0.9–1.2 length of adjacent fertile lemma, chartaceous, without keels, 9 -veined. Upper glume surface hispid. Upper glume apex obtuse.

Florets. Fertile lemma ovate, 12–14 mm long, chartaceous, without keel, 9 -veined, more than 3-veined. Lemma lateral veins with cross-veins. Lemma surface hispid. Lemma apex acuminate. Palea keels ciliate. Palea surface pilose, hairy on back. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 3, glabrous or ciliate. Anthers 6. Stigmas 3. Ovary glabrous. Caryopsis with adherent pericarp.

Distribution (TDWG). Continent. Temperate Asia.

Country /Province /State. China. China Southeast.

TDWG4. Guangdong.

Indosasa ingens C.J.Hsueh & T.P.Yi. *Acta Bot. Yunnanica*, 5(1): 39 (1983).

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

TYPE from China. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: China: Yunnan: Mau'an Xian, streams, 1000 m, 19 Dec. 1977, *T.P. Yi 77331* (HT: SFS).

Illustrations (Books): G.Hegi, *Flora von Mitteleuropa* 1 (1909) (Fig.191).

Derivation (Clifford & Bostock 2007): L. enormous. Exceeding in size that which is usual for related species.

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo. Rhizomes elongated, leptomorph. Butt sheaths absent. Culms erect, 200–600 cm long, 30–50 mm diam., woody, 15 -noded. Culm-internodes terete, thin-walled, 30–40 cm long. Lateral branches dendroid. Bud complement 1. Branch complement three. Culm-sheaths present, deciduous, 12–24 cm long, 1.5 times as long as wide, coriaceous, hispid, with tawny hairs, without auricles, glabrous on shoulders. Culm-sheath ligule 1–1.5 mm high. Culm-sheath blade ovate, narrower than sheath, reflexed, 2–5 cm long, 8–20 mm wide, glabrous on surface. Leaves 4–10 per branch. Leaf-sheaths 5–12 cm long, outer margin hairy. Leaf-sheath oral hairs scanty. Leaf-sheath auricles absent. Ligule an eciliate membrane, 1 mm long, truncate. Leaf-blade base cuneate, with a brief petiole-like connection to sheath. Leaf-blades lanceolate or oblong, 12–24 cm long, 25–45 mm wide. Leaf-blade venation with 12–14 secondary veins, with distinct cross veins. Leaf-blade surface glabrous. Leaf-blade margins scaberulous. Leaf-blade apex acuminate.

Inflorescence. Synflorescence bractiferous, paniculate, lax, with glumaceous subtending bracts, with axillary buds at base of spikelet, prophyllate below lateral spikelets.

Fertile spikelets sessile.

Fertile Spikelets. Spikelets comprising 5–15 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets linear, laterally compressed, 45–200 mm long, 5–8 mm wide, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes 4–8 mm long, glabrous.

Glumes. Glumes two, persistent, similar, shorter than spikelet, shiny. Lower glume lanceolate, 7–10 mm long. Upper glume lanceolate, 9–13 mm long.

Florets. Fertile lemma ovate, 14–18 mm long, coriaceous, shiny, without keel, 14–18 -veined, more than 3-veined. Lemma lateral veins without cross-veins. Lemma apex acute, awned. Palea 1 length of lemma. Palea keels ciliolate. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 3, 3.5 mm long, veined, ciliate. Anthers 6, 6–10 mm long, yellow. Stigmas 3. Ovary glabrous. Caryopsis with adherent pericarp, ellipsoid, 8 mm long, light brown.

Distribution (TDWG). Continent. Temperate Asia.

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

TDWG4. Yunnan.

Indosasa laotica (A. Camus) C.S.Chao & S.A.Renvoize. *Kew Bull.*, 44(2): 365: (1989).

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

TYPE from Laos. **Basionym or Replaced Name:** *Arundinaria laotica* A. Camus, *Bull. Mus. Natl. Hist. Nat.*, ser. 2, 3(8): 760 (1931). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Laos: environs de Nape, *Delacour, 1928* (HT: P).

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

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo. Rhizomes elongated, leptomorph. Butt sheaths absent. Culms woody. Culm-internodes terete, thin-walled, smooth, distally glabrous. Lateral branches dendroid. Culm-sheaths present. Leaf-sheaths smooth, glabrous on surface. Ligule an eciliate membrane. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades lanceolate, 7–11 cm long, 13–15 mm wide, stiff. Leaf-blade venation with 6–8 secondary veins, with distinct cross veins. Leaf-blade apex acuminate.

Inflorescence. Synflorescence bractiferous, paniculate, with glumaceous subtending bracts, with axillary buds at base of spikelet, prophyllate below lateral spikelets.

Fertile spikelets sessile.

Fertile Spikelets. Spikelets comprising 5–18 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets linear, subterete, 40–100 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes glabrous.

Glumes. Glumes two or several, 2–3 empty glumes, persistent, similar, shorter than spikelet. Lower glume ovate, 6–8 mm long. Lower glume surface glabrous. Lower glume apex acute. Upper glume ovate, 6–8 mm long. Upper glume surface glabrous. Upper glume apex acute.

Florets. Fertile lemma ovate, 10–12 mm long, coriaceous, without keel, more than 3-veined. Lemma lateral veins with cross-veins. Lemma surface glabrous. Lemma apex obtuse. Palea 8–9 mm long. Palea keels ciliolate, adorned above. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 3. Anthers 6, 6–7 mm long, yellow. Stigmas 3. Ovary glabrous. Caryopsis with adherent pericarp.

Distribution (TDWG). Continent. Tropical Asia.

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

Indosasa lingchuanensis C.D.Chu & C.S.Chao. *Acta Phytotax. Sin.*, 21(1): 69 (1983).

TYPE from China. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: China: Guangxi: Lingchuan, *C.D. Chu & C.S. Chao 78001* (HT: NFU).

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

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Flower and Fruit. $2n = 48$ (1 ref TROPICOS).

Distribution (TDWG). Continent. Temperate Asia.

Country /Province /State. China. China Southeast.

TDWG4. Guangxi.

Indosasa lipoensis C.D.Chu & K.M.Lan. *Bamboo Res.*, 1982(1): 3 (1982).

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

TYPE from China. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: China, Li-po: Chu Chengde et al. 81014.

Illustrations (Books): G.Hegi, *Flora von Mitteleuropa* 1 (1909) (Fig.193).

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo. Rhizomes elongated, leptomorph. Butt sheaths absent. Culms erect, 800–1000 cm long, 30–40 mm diam., woody. Culm-internodes channelled, thin-walled, 30–40 cm long, dark green, scaberulous, distally pubescent. Culm-nodes swollen, with distinct supra-nodal ridge. Lateral branches dendroid, spreading. Branch complement several. Culm-sheaths present, deciduous, brown, hispid, with tawny hairs, auriculate, setose on shoulders, shoulders with curved hairs, shoulders with 7–9 mm long hairs. Culm-sheath ligule 2–3 mm high, ciliolate. Culm-sheath blade triangular, erect or spreading, wrinkled, pubescent. Leaves 2–4 per branch. Leaf-sheaths deciduous, glabrous on surface. Leaf-sheath oral hairs scanty. Leaf-sheath auricles absent. Ligule an eciliate membrane. Leaf-blade base cuneate, with a brief petiole-like connection to sheath. Leaf-blades lanceolate, 8–15 cm long, 10–23 mm wide, fleshy. Leaf-blade venation with 8–10 secondary veins. Leaf-blade margins scaberulous. Leaf-blade apex acuminate. Flowering specimens unknown.

Distribution (TDWG). Continent. Temperate Asia.

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

TDWG4. Guizhou.

Indosasa longispicata W.Y. Hsiung & C.S. Chao. *Acta Phytotax. Sin.*, 21(1): 71 (1983).

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

TYPE from China. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: China: Guangxi: Rongshui, W.Y. Hsiung 7649 (HT: NFU).

Recent Synonyms: *Sinobambusa striata* T.H. Wen, *J. Bamboo Res.*, 2(1): 63 (1983).

Illustrations (Books): G.Hegi, *Flora von Mitteleuropa* 1 (1909) (Fig.192, 194).

Derivation (Clifford & Bostock 2007): *L. longus*, long; *spica*, a point; hence, in particular, an ear or spike of grain; *-atus*, possessing. Inflorescence spicate or longer than that of related species.

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo. Rhizomes elongated, leptomorph. Butt sheaths absent. Culms erect, 1000–1500 cm long, 60 mm diam., woody. Culm-internodes terete, thin-walled, 40–50 cm long, light green, distally pubescent, with reflexed hairs. Lateral branches dendroid. Branch complement three or several, thinner than stem. Culm-sheaths present, coriaceous, brown, hispid, with erect hairs, with tawny hairs, hairy on margins, auriculate, with obtuse auricles, setose on shoulders, shoulders with curved hairs. Culm-sheath ligule ciliate. Culm-sheath blade narrowly ovate, erect, scabrid or pubescent. Leaves 3–5 per branch. Leaf-sheaths outer margin hairy. 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, 9–12 cm long, 12–26 mm wide. Leaf-blade surface glabrous. Leaf-blade apex acuminate.

Inflorescence. Synflorescence bractiferous, paniculate, dense, with glumaceous subtending bracts, with axillary buds at base of spikelet, prophyllate below lateral spikelets.

Fertile spikelets sessile.

Fertile Spikelets. Spikelets comprising 12–28 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets linear, laterally compressed, 40–100(–200) mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes 6–8 mm long, glabrous.

Glumes. Glumes several, persistent, similar, shorter than spikelet.

Florets. Fertile lemma ovate, 15–17 mm long, 10 mm wide, chartaceous, without keel, 13–15 -veined, more than 3-veined. Lemma margins eciliate or ciliolate. Palea 8–12 mm long. Palea keels ciliolate, adorned above. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 3, 4–5 mm long, glabrous. Anthers 6, 5 mm long. Stigmas 3. Ovary glabrous. Caryopsis with adherent pericarp.

$2n = 48$ (1 ref TROPICOS).

Distribution (TDWG). Continent. Temperate Asia.

Country /Province /State. China. China Southeast.

TDWG4. Guangxi.

Indosasa lunata W.T. Lin. *Acta Phytotax. Sin.*, 26(3): 226 (1988).

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

TYPE from China. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: China: Guangdong: Gaoyao, Dinghu Shan, *M.Y. Xiao, 53489* (HT: SCAC).

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

Derivation (Clifford & Bostock 2007): *L. lunar*, moon; *-ata*, possessing. Auricles crescent-shaped.

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo. Rhizomes elongated, leptomorph. Butt sheaths absent. Culms erect, 150–250 cm long, 10–20 mm diam., woody. Culm-internodes terete, thick-walled, 17–27 cm long, mid-green, distally hispid, with tubercle-based hairs. Culm-nodes flanged, with distinct supra-nodal ridge. Lateral branches dendroid, spreading. Branch complement three, with 1 branch dominant. Culm-sheaths present, deciduous, hispid, with tawny hairs, hairy on margins, auriculate, setose on shoulders. Culm-sheath ligule 1 mm high. Culm-sheath blade lanceolate, spreading or reflexed. Leaves 5–9 per branch. Leaf-sheaths deciduous, glabrous on surface or puberulous. Leaf-sheath oral hairs scanty. Leaf-sheath auricles absent. Ligule an eciliate membrane, 1 mm long. Leaf-blade base cuneate, with a brief petiole-like connection to sheath. Leaf-blades lanceolate, 7–17 cm long, 10–20 mm wide, fleshy. Leaf-blade venation with 8–14 secondary veins. Leaf-blade surface glabrous. Leaf-blade margins scaberulous. Leaf-blade apex acuminate. Flowering specimens unknown.

Distribution (TDWG). Continent. Temperate Asia.

Country /Province /State. China. China Southeast.

Indosasa parvifolia C.S.Chao & Q.H.Dai. *Acta Phytotax. Sin.*, 21(1): 67 (1983).

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

TYPE from China. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: China: Guangxi: Pingxiang, Daqing Shan, hardwood forests, 800 m, *C.D. Chu & C.S. Chao 78008* (HT: NFU).

Illustrations (Books): G.Hegi, *Flora von Mitteleuropa* 1 (1909) (Fig.189).

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

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo. Rhizomes elongated, leptomorph. Butt sheaths absent. Culms erect, 600 cm long, 35 mm diam., woody. Culm-internodes terete, thick-walled, 25–40 cm long, dark green, antrorsely scabrous, distally hispid. Culm-nodes with distinct supra-nodal ridge. Lateral branches dendroid. Branch complement three. Culm-sheaths present, yellow, hispid, auriculate, with obtuse auricles, with 10 mm high auricles, with 5–6 mm wide auricles, setose on shoulders, shoulders with curved hairs. Culm-sheath ligule 1 mm high, ciliate. Culm-sheath blade triangular, constricted at base, erect, pubescent. Leaves 4–7 per branch. Leaf-sheaths deciduous. Leaf-sheath oral hairs setose. Leaf-sheath auricles falcate. Ligule an eciliate membrane. Leaf-blade base cuneate, with a brief petiole-like connection to sheath. Leaf-blades lanceolate, 6–14 cm long, 10–15 mm wide, fleshy. Leaf-blade venation with 6–8 secondary veins. Leaf-blade surface glabrous. Leaf-blade margins scaberulous. Leaf-blade apex acuminate. Flowering specimens unknown.

Distribution (TDWG). Continent. Temperate Asia.

Country /Province /State. China. China Southeast.

TDWG4. Guangxi.

Indosasa patens C.D.Chu & C.S.Chao. *Acta Phytotax. Sin.*, 21(1): 73 (1983).

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

TYPE from China. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: China: Guangxi: Lingchuan, low hills, *C.D. Chu & C.S. Chao 78002* (HT: NFU).

Illustrations (Books): G.Hegi, *Flora von Mitteleuropa* 1 (1909) (Fig.193).

Derivation (Clifford & Bostock 2007): *L. pateo*, lie open. Inflorescence or culm branches diverging at near right angles from the parent axis.

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo. Rhizomes elongated, leptomorph. Butt sheaths absent. Culms erect, 1200 cm long, 80–100 mm diam., woody. Culm-internodes terete, thin-walled, 40–60 cm long, mid-green or purple, striped, antrorsely scabrous, distally pubescent. Culm-nodes with distinct supra-nodal ridge. Lateral branches dendroid, spreading. Branch complement three. Culm-sheaths present, brown, hispid, with tawny hairs, hairy on margins, auriculate, setose on shoulders, shoulders with 10–15 mm long hairs. Culm-

sheath ligule 2–3 mm high, ciliate. Culm-sheath blade triangular, pubescent. Leaves 2–5 per branch. Leaf-sheaths deciduous, glabrous on surface. Leaf-sheath oral hairs setose, 5–10 mm long. Leaf-sheath auricles absent. Ligule an eciliate membrane. Leaf-blade base cuneate, with a brief petiole-like connection to sheath. Leaf-blades lanceolate, 13–25 cm long, 20–40 mm wide, fleshy. Leaf-blade venation with 12 secondary veins. Leaf-blade surface glabrous or puberulous, hairy abaxially. Leaf-blade margins scaberulous. Leaf-blade apex acuminate. Flowering specimens unknown.

Distribution (TDWG). Continent. Temperate Asia.

Country /Province /State. China. China Southeast.

TDWG4. Guangxi.

Indosasa pusilloaurita W.T. Lin. *Bull. Bot. Res. North-East. Forest. Inst.*, 12(4): 351 (1992).

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

TYPE from China. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: China: Guangdong: Xinyi, Dawuling, *Z.J. Feng 36870* (HT: CANT).

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

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Distribution (TDWG). Continent. Temperate Asia.

Country /Province /State. China. China Southeast.

TDWG4. Guangdong.

Indosasa shibataeoides McClure. *Lingnan Univ. Sci. Bull.*, No. 9, 32 (1940).

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

TYPE from China. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: China, Loh Fau Mt.: Metcalf 17789.

Illustrations (Books): S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig.186).

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

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo. Butt sheaths absent. Culms erect, 150–200 cm long, woody. Culm-internodes terete, thick-walled, distally glabrous. Culm-nodes swollen. Lateral branches dendroid. Branch complement three, with 1 branch dominant, thinner than stem. Culm-sheaths present. Leaves 1–2 per branch. Leaf-sheaths glabrous on surface. Leaf-sheath oral hairs lacking. Leaf-sheath auricles absent. Ligule an eciliate membrane. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades lanceolate, 5–10 cm long, 10–18 mm wide. Leaf-blade surface glabrous. Leaf-blade apex acuminate.

Inflorescence. Synflorescence bractiferous, paniculate, with glumaceous subtending bracts, with axillary buds at base of spikelet, prophyllate below lateral spikelets.

Fertile spikelets sessile.

Fertile Spikelets. Spikelets comprising 6–10 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets linear, laterally compressed, 40–60 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes pubescent, hairy at tip.

Glumes. Glumes several, 5–6 empty glumes, persistent, similar, shorter than spikelet. Upper glume ovate, 5–10 mm long.

Florets. Fertile lemma ovate, 13.5 mm long, chartaceous, without keel, more than 3-veined. Lemma lateral veins with cross-veins. Lemma apex obtuse. Palea keels ciliolate, adorned above. Palea apex obtuse. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 3, glabrous. Anthers 6. Stigmas 3. Ovary glabrous. Caryopsis with adherent pericarp.

$2n = 48$ (1 ref TROPICOS).

Distribution (TDWG). Continent. Temperate Asia.

Country /Province /State. China. China Southeast.

TDWG4. Guangdong, Guangxi, Hunan.

Indosasa singulispicula T.H. Wen. *J. Bamboo Res.*, 7(1): 29 (1988).

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

TYPE from China. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: China, Menghai: Hua 82320 (ZJFI holo).

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

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo. Rhizomes elongated, leptomorph. Butt sheaths absent. Culms erect, 600 cm long, 20–30 mm diam., woody. Culm-internodes terete, thin-walled, 35–40 cm long, distally pubescent. Culm-nodes swollen. Lateral branches dendroid. Branch complement three. Culm-sheaths present, coriaceous, pilose, with tawny hairs, glabrous on margins, auriculate, setose on shoulders. Culm-sheath ligule 1–2 mm high, ciliolate. Culm-sheath blade lanceolate, erect. Leaf-sheaths 6–7 cm long, glabrous on surface, outer margin hairy. Leaf-sheath oral hairs setose, 13 mm long. Leaf-sheath auricles falcate. Ligule an eciliate membrane. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades lanceolate or oblong, 13–27 cm long, 22–30 mm wide. Leaf-blade venation with 12–14 secondary veins, with distinct cross veins. Leaf-blade surface glabrous. Leaf-blade apex acuminate.

Inflorescence. Synflorescence bractiferous, paniculate, lax, with glumaceous subtending bracts, with axillary buds at base of spikelet, prophyllate below lateral spikelets.

Fertile spikelets sessile.

Fertile Spikelets. Spikelets comprising 7–8 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets linear, laterally compressed, 110 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes two, persistent, similar, shorter than spikelet. Lower glume lanceolate, 17–25 mm long. Lower glume lateral veins with cross-veins. Upper glume lanceolate, 17–25 mm long. Upper glume lateral veins with cross-veins.

Florets. Fertile lemma ovate, 19 mm long, coriaceous, without keel, 15 -veined, more than 3-veined. Lemma lateral veins with cross-veins. Lemma apex acute. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 3. Anthers 6. Stigmas 3. Ovary glabrous. Caryopsis with adherent pericarp, ellipsoid, 8 mm long, light brown.

Distribution (TDWG), Continent. Temperate Asia.

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

TDWG4. Yunnan.

Indosasa sinica C.D. Chu & C.S. Chao. *Acta Phytotax. Sin.*, 21(1): 65 (1983).

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

TYPE from China. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: China: Guangxi: Nan'ning, W.Y. Xiong & C.S. Chao 77542 (HT: NFU).

Illustrations (Books): G. Hegi, *Flora von Mitteleuropa* 1 (1909) (Fig. 189).

Derivation (Clifford & Bostock 2007): L. -ica, belonging to. From Sina, now China.

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo. Rhizomes elongated, leptomorph. Butt sheaths absent. Culms erect, 500–1000 cm long, 30–60 mm diam., woody. Culm-internodes terete, thin-walled, 35–50 cm long, dark green or brown, scaberulous, distally mealy or hispid. Lateral branches dendroid, spreading. Branch complement three, thinner than stem. Culm-sheaths present, yellow, hispid, setose on shoulders, shoulders with curved hairs, shoulders with 10–15 mm long hairs. Culm-sheath ligule 2–3 mm high, ciliate. Culm-sheath blade lanceolate, reflexed, scabrid or pubescent. Leaves 3–9 per branch. Leaf-sheath oral hairs ciliate, deciduous, 4–8 mm long, dark. Leaf-sheath auricles absent or erect. Ligule an eciliate membrane. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades lanceolate, 12–22 cm long, 15–30 mm wide. Leaf-blade venation with 10–12 secondary veins. Leaf-blade apex acuminate.

Inflorescence. Synflorescence bractiferous, paniculate, lax, with glumaceous subtending bracts, with axillary buds at base of spikelet, prophyllate below lateral spikelets.

Fertile spikelets sessile.

Fertile Spikelets. Spikelets comprising 10–18 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets linear, laterally compressed, 45–130 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes 7 mm long, glabrous.

Glumes. Glumes several, persistent, similar, shorter than spikelet.

Florets. Fertile lemma ovate, 12–15 mm long, coriaceous, shiny, without keel, more than 3-veined. Lemma lateral veins with cross-veins. Lemma apex acute. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 3. Anthers 6, 7 mm long, purple. Stigmas 3. Ovary glabrous. Caryopsis with adherent pericarp, ellipsoid, 8 mm long, light brown.

$2n = 48$ (1 ref TROPICOS).

Distribution (TDWG). Continent. Temperate Asia.

Country /Province /State. China. China South Central, China Southeast.

TDWG4. Guangxi, Guizhou, Yunnan.

Indosasa solearis McClure. *Journ. Arn. Arb.* xxiii. 94 (1942). (1942).

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

TYPE from Vietnam. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: A. Petelot 4287, Dec 1930, Vietnam (US-2434123; IT: US-1610013, US-1610012).

Recent Synonyms: *Sinobambusa solearis* (McClure) Nguyen To Quyen, *Bot. Zhurn.*, 76(6): 877 (1991).

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

Derivation (Clifford & Bostock 2007): L. sandle-shaped. The apex of the palea is folded forward to form a shallow pocket.

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo. Rhizomes elongated, leptomorph. Butt sheaths absent. Culms erect, 200–300 cm long, woody. Culm-internodes terete, thin-walled, distally glabrous. Lateral branches dendroid. Branch complement one or two, thinner than stem. Culm-sheaths present. Ligule an eciliate membrane. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades lanceolate. Leaf-blade apex acuminate.

Inflorescence. Synflorescence bractiferous, paniculate, dense, with glumaceous subtending bracts, with axillary buds at base of spikelet, prophyllate below lateral spikelets.

Fertile spikelets sessile.

Fertile Spikelets. Spikelets comprising 5–13 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets linear, laterally compressed, 60–80 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes sparsely hairy, hairy above.

Glumes. Glumes several, comprising 9 gemmiferous bracts, 0–1 empty glumes, persistent, similar, shorter than spikelet.

Florets. Fertile lemma ovate, 12 mm long, chartaceous, without keel, more than 3-veined. Lemma lateral veins prominent, with cross-veins. Lemma margins eciliate. Lemma apex obtuse or acute. Palea inturned at apex. Palea keels ciliolate, adorned above. Palea apex obtuse. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 3, veined, ciliate. Anthers 6, 5 mm long. Stigmas 3. Ovary glabrous. Caryopsis with adherent pericarp.

Distribution (TDWG). Continent. Tropical Asia.

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

Indosasa sondongensis 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).

TYPE from Vietnam. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Vietnam, Son Dong: Nguyen (HNF holo).

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

Derivation (Clifford & Bostock 2007): L. *-ensis*, denoting origin. From Son-Dong, Ha Bac Province, Vietnam.

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo. Rhizomes elongated, leptomorph. Butt sheaths absent. Culms erect, 400 cm long, 30 mm diam., woody. Culm-internodes terete, thin-walled, 30–40 cm long. Lateral branches dendroid. Branch complement three. Culm-sheaths present. Leaf-sheaths outer margin hairy. Leaf-sheath oral hairs ciliate, 5–7 mm long. Ligule an eciliate membrane, 1 mm long, truncate. Leaf-blade base asymmetrical, with a brief petiole-like connection to sheath, petiole 0.4–0.5 cm long. Leaf-blades lanceolate or

oblong, 16–19 cm long, 20–30 mm wide. Leaf-blade venation with 10–14 secondary veins, with distinct cross veins. Leaf-blade surface glabrous. Leaf-blade apex acuminate.

Inflorescence. Synflorescence bractiferous, paniculate, lax, with glumaceous subtending bracts, with axillary buds at base of spikelet, prophyllate below lateral spikelets.

Fertile spikelets sessile.

Fertile Spikelets. Spikelets comprising 14–18 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets linear, laterally compressed, 100 mm long, 5–6 mm wide, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes several, 4 empty glumes, persistent, similar, shorter than spikelet. Lower glume lanceolate. Upper glume lanceolate, 5–7 mm long.

Florets. Fertile lemma ovate, 10 mm long, coriaceous, without keel, 21–23 -veined, more than 3-veined. Lemma apex acute, awned. Palea 7 mm long. Palea surface pilose, hairy on margins. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 3, 4 mm long. Anthers 6. Stigmas 3. Caryopsis with adherent pericarp, ellipsoid, 8 mm long, light brown.

Distribution (TDWG). Continent. Tropical Asia.

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

Indosasa spongiosa C.S.Chao & B.M.Yang. *Bamboo Res.*, 1982(1): 14 (1982).

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

TYPE from China. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: China: Hunan: Jianghua, ca. 800 m, 13 Sept. 1979, *B.M. Yang 06314* (HT: HNTC).

Illustrations (Books): G.Hegi, *Flora von Mitteleuropa* 1 (1909) (Fig.191).

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo. Rhizomes elongated, leptomorph. Butt sheaths absent. Culms erect, 500–800 cm long, 10–60 mm diam., woody. Culm-internodes channelled, thin-walled, 20–35 cm long, scaberulous. Culm-nodes swollen, with distinct supra-nodal ridge. Lateral branches dendroid. Branch complement three. Culm-sheaths present, deciduous, pilose, with appressed hairs, glabrous on margins, truncate at apex, without auricles, glabrous on shoulders. Culm-sheath ligule 1 mm high, entire or ciliolate. Culm-sheath blade lanceolate. Leaves 3–5 per branch. Leaf-sheaths deciduous, glabrous on surface. Leaf-sheath oral hairs scanty or lacking. Leaf-sheath auricles absent. Ligule an eciliate membrane. Leaf-blade base cuneate, with a brief petiole-like connection to sheath, petiole pubescent. Leaf-blades lanceolate, 5–17 cm long, 12–25 mm wide, fleshy. Leaf-blade venation with 10–12 secondary veins, with distinct cross veins. Leaf-blade margins scaberulous. Leaf-blade apex acuminate. Flowering specimens unknown.

Distribution (TDWG). Continent. Temperate Asia.

Country /Province /State. China. China Southeast.

TDWG4. Hunan.

Indosasa suavis W.T. Lin & Z.J. Feng. *Acta Phytotax. Sin.*, 30(6): 557 (1992).

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: Guangdong: Guangning, Wuhe, 26 April 1990, *Z.J. Feng 37003* (HT: SCAC).

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

Derivation (Clifford & Bostock 2007): *L. suavis*, sweet. Possibly a reference to the culms tasting sweet if chewed.

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Distribution (TDWG). Continent. Temperate Asia.

Country /Province /State. China. China Southeast.

Guangdong.

Indosasa triangulata C.J.Hsueh & T.P.Yi. *Acta Bot. Yunnanica*, 5(1): 41 (1983).

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

TYPE from China. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: China: Yunnan: Maguan Xian, 1200 m, 21 Dec. 1977, *T.P. Yi 77339* (HT: SFS).

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

Derivation (Clifford & Bostock 2007): *L. tria*, three; *angulus*, angle; *-ata*, possessing. Rhizome buds triangular in outline.

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo. Rhizomes elongated, leptomorph. Butt sheaths absent. Culms erect, 300–500 cm long, 10–25 mm diam., woody, 15–20-noded. Culm-internodes terete, thick-walled, 10–40 cm long, striate, distally glabrous. Culm-nodes swollen, with distinct supra-nodal ridge, glabrous. Lateral branches dendroid. Buds or branches present on lower part of culm. Branch complement three. Culm-sheaths present, deciduous, 21–32 cm long, 3 times as long as wide, coriaceous, hispid, with tawny hairs, hairy on margins, without auricles, setose on shoulders, shoulders with straight hairs, shoulders with 5–10 mm long hairs. Culm-sheath ligule 1 mm high, brown, entire. Culm-sheath blade lanceolate, narrower than sheath, deciduous, reflexed, 3–10 cm long, 2–4 mm wide, glabrous on surface. Leaves 3–5 per branch. Leaf-sheaths deciduous, 5.5–7 cm long. Leaf-sheath oral hairs scanty or lacking. Leaf-sheath auricles absent. Ligule an eciliate membrane, 1–2 mm long, purple, truncate or obtuse. Leaf-blade base cuneate, with a brief petiole-like connection to sheath, petiole 0.3–0.8 cm long, petiole glabrous. Leaf-blades lanceolate, 9–19 cm long, 12–25 mm wide, fleshy, mid-green and grey-green, discolorous with last colour beneath. Leaf-blade venation with 10–14 secondary veins, with obscure cross veins. Leaf-blade surface glabrous. Leaf-blade margins scaberulous. Leaf-blade apex acuminate. Flowering specimens unknown.

Distribution (TDWG). Continent. Temperate Asia.

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

TDWG4. Guizhou, Yunnan.

Isachne albens Trin. *Ic. Gram.* 8. t. 85. (1826).

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

TYPE from Nepal. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Nepal: Coll? (K iso).

Illustrations (Books): T. Koyama, *Grasses of Japan and its neighbouring regions* (1987) (127, Fig 39), C-C Hsu, *Flora of Taiwan*, Vol 5 (1978) (466), C-C Hsu, *Taiwan Grasses* (1975), H.J. Noltie, *The Grasses of Bhutan* (2000) (745, Fig. 47), S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 781).

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

Derivation (Clifford & Bostock 2007): *L. albo*, be white. Glumes white.

Classification. Subfamily Micrairoideae. Tribe Isachneae.

Habit, Vegetative Morphology. Perennial. Culms erect, 30–100 cm long. Leaf-sheaths 5.5–10 cm long, smooth, glabrous on surface or hirsute. Ligule a fringe of hairs. Leaf-blades linear or lanceolate, 5–30 cm long, 7–25 mm wide, stiff. Leaf-blade surface scaberulous, rough on both sides. Leaf-blade margins cartilaginous, scaberulous. Leaf-blade apex acuminate.

Inflorescence. Inflorescence a panicle. Panicle open, ovate, effuse, 8–40 cm long, 4–20 cm wide. Primary panicle branches spreading. Panicle branches capillary. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, eglandular.

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 orbicular, dorsally compressed, 1.5 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes definite, 0.5 mm long.

Glumes. Glumes deciduous, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume orbicular, 1.4 mm long, 1 length of spikelet, membranous, much thinner on margins, without keels, 5-veined. Lower glume surface asperulous, rough at apex. Lower glume apex obtuse. Upper glume orbicular, 1.4 mm long, 1.1 length of adjacent fertile lemma, membranous, without keels, 5(–7)-veined. Upper glume apex obtuse.

Florets. Fertile lemma orbicular, 1 mm long, cartilaginous, pallid, without keel. Lemma surface glabrous or puberulous. Lemma margins involute. Lemma apex obtuse. Palea coriaceous, 2-veined.

Flower and Fruit. Anthers 3, 0.8 mm long, yellow. Caryopsis with adherent pericarp.

N = 20 (1 ref TROPICOS), or 30 (2 refs TROPICOS).

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

Country /Province /State. China, Eastern Asia. China South Central, China Southeast, Tibet. Taiwan. Indian Subcontinent, Indo-China, Malesia, Papuaia. Eastern Himalaya, India, Nepal. Laos, Myanmar,

Thailand, Vietnam. Borneo, Java, Lesser Sunda Is, Malaya, Philippines, Sumatra. New Guinea West Papua (Irian Jaya). New Guinea.

TDWG4. Fujian, Guangdong, Guangxi. Guizhou, Sichuan, Yunnan. Darjeeling, Bhutan, Sikkim. Assam, Manipur, Meghalaya, Nagaland. Uttah Pradesh, West Bengal. Himachal Pradesh.

Isachne albomarginata Jansen. *Reinwardtia*, ii. 279 (1953).

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 Borneo(Sabah). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Borneo: Mount Kinabalu, *Clemens 30270* (HT: L?).

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

Derivation (Clifford & Bostock 2007): *L. albus*, white; margo, edge; -ata, possessing. Leaf-blade white edged.

Classification. Subfamily Micrairoideae. Tribe Isachneae.

Habit, Vegetative Morphology. Perennial, caespitose, clumped loosely. Culms erect or geniculately ascending, slender, 15–30 cm long. Culm-internodes 2–4 cm long, distally glabrous. Culm-nodes bearded. Leaf-sheaths 1–2 cm long, glabrous on surface or pubescent, outer margin hairy. Ligule a fringe of hairs. Leaf-blades linear or lanceolate, 3–5 cm long, 4–5 mm wide. Leaf-blade surface puberulous, hairy abaxially or on both sides. Leaf-blade margins cartilaginous. Leaf-blade apex acuminate.

Inflorescence. Inflorescence a panicle. Panicle open, ovate, effuse, 3–5 cm long. Primary panicle branches ascending, 2–3 cm long. Panicle branches capillary, flexuous, smooth. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, 2–3 mm long, tip rectangular.

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 obovate, dorsally compressed, obtuse, 1–1.2 mm long, breaking up at maturity, disarticulating above glumes but not between florets.

Glumes. Glumes deciduous, similar, reaching apex of florets, thinner than fertile lemma. Lower glume ovate, 1–1.2 mm long, 1 length of spikelet, membranous, purple, without keels, 5 -veined. Lower glume lateral veins obscure. Lower glume surface glabrous. Lower glume apex obtuse. Upper glume ovate, 1.5 mm long, 0.9 length of spikelet, membranous, purple, without keels, 5 -veined. Upper glume lateral veins obscure. Upper glume surface glabrous. Upper glume apex obtuse.

Florets. Fertile lemma ovate, 1–1.2 mm long, cartilaginous, without keel. Lemma surface puberulous. Lemma margins involute. Lemma apex obtuse. Palea cartilaginous.

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

Distribution (TDWG). Continent. Tropical Asia.

Country /Province /State. Malesia, Papuaasia. Borneo, Sulawesi. New Guinea.

Isachne angladei C. E. C. Fischer. *Kew Bull.* 1932, 323. (1932).

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

TYPE from India. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: South India: Palni Hills, Shembaganur, 6000 ft., *L. Anglade 914*.

Illustrations (Books): K.M.Mathew, *Flora Palni Hills* (1996) (837, Pl 837).

Derivation (Clifford & Bostock 2007): in honor of L. Anglade (fl. 1922–26) cleric and amateur botanist who collected in India.

Classification. Subfamily Micrairoideae. Tribe Isachneae.

Habit, Vegetative Morphology. Perennial. Culms scandent, 100–150 cm long. Culm-internodes 1.8–11.5 cm long. Lateral branches ample. Leaf-sheaths glabrous on surface, outer margin hairy. Ligule a fringe of hairs. Leaf-blades linear or lanceolate, 5–15 cm long, 3–6 mm wide. Leaf-blade venation with 7–9 secondary veins. Leaf-blade surface glabrous. Leaf-blade margins cartilaginous, scaberulous, glabrous or ciliate, hairy at base. Leaf-blade apex acuminate.

Inflorescence. Inflorescence a panicle. Panicle open, pyramidal, effuse, 6–8 cm long. Panicle branches capillary, glabrous in axils or pubescent in axils, with prominent pulvini. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 2 fertile florets, without rhachilla extension. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets obovate, dorsally compressed, obtuse, 2.4 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes deciduous, similar, reaching apex of florets, thinner than fertile lemma. Lower glume elliptic, 1 length of spikelet, membranous, without keels, 7 -veined. Lower glume surface glabrous or puberulous, hairy above. Lower glume apex acute. Upper glume elliptic, 1 length of spikelet, membranous, without keels, 7 -veined. Upper glume surface glabrous or puberulous, hairy above. Upper glume apex acute.

Florets. Fertile lemma elliptic, 2 mm long, coriaceous, without keel. Lemma margins involute. Lemma apex obtuse. Palea coriaceous, 2 -veined.

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

Distribution (TDWG). Continent. Tropical Asia.

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

Isachne angolensis Rendle. *Cat. Welw. Afr. Pl.* ii. 166. (1899).

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

TYPE from Angola. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *Welwitsch 7499*, Angola (LISU?).

Illustrations (Books): G.V.Pope et al., *Flora Zambesiaca* 10 (3(1989):194, t. 51).

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

Classification. Subfamily Micrairoideae. Tribe Isachneae.

Habit, Vegetative Morphology. Perennial. Rhizomes elongated. Culms decumbent or prostrate, 20–40 cm long, rooting from lower nodes. Ligule a fringe of hairs, 1–2 mm long. Leaf-blades 3–10 cm long, 2–4 mm wide. Leaf-blade surface scaberulous.

Inflorescence. Inflorescence a panicle. Panicle open, ovate, 4–15 cm long, 1.5–4 cm wide, contracted about primary branches. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, filiform, 0.5–1.5 mm long.

Fertile Spikelets. Spikelets comprising 2 fertile florets, without rhachilla extension. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets elliptic, dorsally compressed, 1.5–2 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes suppressed between florets.

Glumes. Glumes deciduous, similar, shorter than spikelet, thinner than fertile lemma. Lower glume ovate, 1.2–1.8 mm long, 1 length of upper glume, 0.8–0.9 length of spikelet, membranous, much thinner on margins, without keels, 5–7 -veined. Lower glume surface puberulous, hairy above (tip). Lower glume apex obtuse. Upper glume ovate, 1.2–1.8 mm long, membranous, with hyaline margins, without keels, 5–7 -veined. Upper glume apex obtuse.

Florets. Fertile florets all alike. Fertile lemma elliptic, 1.5–2 mm long, coriaceous, without keel, 5–7 -veined, more than 3-veined. Lemma lateral veins obscure. Lemma surface glabrous. Lemma margins involute. Lemma apex obtuse. Palea coriaceous, 2 -veined.

Flower and Fruit. Anthers 3, 1 mm long. Caryopsis with adherent pericarp, obovoid, 0.5 mm long, dark brown.

Distribution (TDWG). Continent. Africa.

Country /Province /State. West tropical Africa, West-central tropical Africa, South tropical Africa. Nigeria. Angola, Malawi, Zambia.

Isachne angustifolia Nash. *Bull. Torr. Bot. Club*, 1903, 377. (1903).

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

TYPE from Puerto Rico. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *Wilson 160*, Puerto Rico (NY).

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

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

Classification. Subfamily Micrairoideae. Tribe Isachneae.

Habit, Vegetative Morphology. Perennial. Culms scandent, 100–200 cm long, 1–2 mm diam., wiry. Lateral branches fastigiate, arising from upper culm. Leaf-sheaths smooth or papillose, glabrous on surface or pilose, with tubercle-based hairs, outer margin hairy. Ligule a fringe of hairs, 0.3–0.5 mm long. Leaf-blades spreading, lanceolate, 3–15 cm long, 5–12 mm wide. Leaf-blade surface smooth or scaberulous. Leaf-blade margins tuberculate-ciliate or tuberculate, hairy at base.

Inflorescence. Inflorescence a panicle. Panicle open, elliptic or oblong, 7–15 cm long. Primary panicle branches ascending or spreading, branching divaricately. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 2 fertile florets, without rhachilla extension. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets orbicular, dorsally compressed, obtuse, 1.5 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes deciduous, similar, reaching apex of florets, thinner than fertile lemma. Lower glume orbicular, 1 length of spikelet, membranous, without keels, 7 -veined. Lower glume surface hispidulous. Lower glume apex obtuse. Upper glume orbicular, 1 length of spikelet, membranous, without keels, 7 -veined. Upper glume surface hispidulous. Upper glume apex obtuse.

Florets. Fertile lemma orbicular, 1.5 mm long, coriaceous, without keel. Lemma margins involute. Lemma apex obtuse. Palea coriaceous, 2 -veined.

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

Distribution (TDWG). Continent. South America.

Country /Province /State. Caribbean. Leeward Is, Puerto Rico.

Isachne arfakensis Ohwi. *Bot. Mag., Tokyo*, lvi. 4 (1942).

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*).

T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: IT: *Kanehira & Hatusima 13588*, Netherlands New Guinea: Angi Giti, Arfak Mts., 1900 m (A (fragm.)).

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

Derivation (Clifford & Bostock 2007): L. -ensis, denoting origin. From Arfak Mountains, Irian Jaya, Indonesia.

Classification. Subfamily Micrairoideae. Tribe Isachneae.

Habit, Vegetative Morphology. Perennial. Culms geniculately ascending or rambling, 65–110 cm long. Culm-internodes smooth, distally glabrous. Lateral branches ample. Leaf-sheaths mostly shorter than adjacent culm internode, glabrous on surface, outer margin hairy. Ligule a fringe of hairs, 2 mm long. Leaf-blades lanceolate, 5–15 cm long, 6–12 mm wide. Leaf-blade surface scabrous, rough adaxially, pubescent, hairy abaxially. Leaf-blade margins scabrous.

Inflorescence. Inflorescence a panicle. Peduncle antrorsely scabrous above. Panicle open, oblong or ovate, 8–20 cm long. Primary panicle branches ascending. Panicle axis scabrous. Panicle branches stiff, scabrous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, scabrous.

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 orbicular, dorsally compressed, 1.5–1.8 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes terete.

Glumes. Glumes deciduous, similar, reaching apex of florets, thinner than fertile lemma. Lower glume ovate, 1.5–1.8 mm long, 1 length of upper glume, 1 length of spikelet, membranous, without keels, 7 -veined. Lower glume surface smooth or asperulous, glabrous or hispidulous, hairy at apex. Lower glume apex obtuse. Upper glume ovate, 1.5–1.8 mm long, 1 length of adjacent fertile lemma, membranous, without keels, 7 -veined. Upper glume surface smooth or asperulous, glabrous or hispidulous, hairy generally. Upper glume apex obtuse.

Florets. Fertile lemma elliptic or orbicular, 1.5–1.8 mm long, coriaceous, without keel. Lemma surface glabrous or puberulous. Lemma margins involute. Lemma apex obtuse. Palea coriaceous, 2 -veined.

Distribution (TDWG). Continent. Tropical Asia.

Country /Province /State. Papuaasia. New Guinea West Papua (Irian Jaya). New Guinea.

Isachne arundinacea (Sw.) Griseb. *Fl. Brit. W. Ind.* 553 (1864).

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

TYPE from Jamaica. **Basionym or Replaced Name:** *Panicum arundinaceum* Sw., *Prodr.* 24 (1788)

. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *O.P. Swartz s.n.*, no date, Jamaica (S; IT: US-80473 (fragm. & photo ex S)).

Illustrations (Books): A.S.Hitchcock, *Manual of the Grasses of the West Indies* (1936) (321, Fig. 294), W.Burger, *Flora Costaricensis* 15, Gramineae: *Fieldiana Botany New Series* 4 (1980) (279, Fig 101).

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

Classification. Subfamily Micrairoideae. Tribe Isachneae.

Habit, Vegetative Morphology. Perennial. Rootstock evident. Culms rambling, 100–500 cm long, 4–8 mm diam., woody, rooting from lower nodes. Culm-internodes thick-walled, distally glabrous. Lateral branches ample. Leaf-sheaths glabrous on surface, outer margin hairy. Ligule a fringe of hairs, 0.5–3.5 mm long. Leaf-

blades linear or lanceolate, 9–20 cm long, 7–22 mm wide. Leaf-blade surface scabrous, glabrous or hispid, hairy abaxially or on both sides.

Inflorescence. Inflorescence a panicle. Peduncle 4–11 cm long, glabrous. Panicle open, ovate, 8–12 cm long, 8–11 cm wide, with spikelets clustered towards branch tips. Primary panicle branches spreading. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 2 fertile florets, without rhachilla extension. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets orbicular or obovate, subterete, 1.4–1.8 mm long, breaking up at maturity, disarticulating above glumes but not between florets.

Glumes. Glumes deciduous, similar, with lower narrower than upper, shorter than spikelet or reaching apex of florets, thinner than fertile lemma. Lower glume ovate, 1–1.4 mm long, 0.75 length of spikelet, membranous, without keels, 5 -veined. Lower glume surface glabrous or pubescent, hairy at apex. Lower glume apex obtuse. Upper glume ovate, 1–1.7 mm long, 0.9–1 length of spikelet, membranous, without keels, 7 -veined. Upper glume surface glabrous or pubescent, hairy at apex. Upper glume apex obtuse.

Florets. Fertile florets with the lowest dissimilar. Lowest fertile lemma 1.4–1.7 mm long, of similar consistency to adjacent lemma. Fertile lemma elliptic or obovate, 1–1.3 mm long, coriaceous, without keel. Lemma margins involute. Lemma apex obtuse. Palea coriaceous, 2 -veined.

Flower and Fruit. Anthers 2–3, 1 mm long, yellow or purple. Caryopsis with adherent pericarp.

$2n = 40$ (1 ref TROPICOS).

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

Country /Province /State. **Mexico.** Central Mexico, Northeast Mexico, Gulf (Mexico), Southwest Mexico, Southeast Mexico. **Mesoamerica, Caribbean, Northern South America, Western South America, Brazil.** Belize, Costa Rica, Guatemala, Honduras, Nicaragua, Panama. Jamaica, Leeward Is, Trinidad-Tobago. Venezuela. Bolivia, Colombia, Ecuador, Peru. Brazil West Central.

TDWG4. Puebla. Hidalgo. Veracruz. Guerrero, Oaxaca. Chiapas.

Isachne ascendens Swallen. *Journ. Wash. Acad. Sc.* xxvi. 537. (1936).

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

TYPE from Vietnam. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *A. Petelot 5617*, Jul 1936, Vietnam: sentiers dans les savanes herbeuses, Massif du Sang, Van Nus, 1600 m, Chapa (US-1645231).

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

Derivation (Clifford & Bostock 2007): *L. ascendo*, climb. Scramblers.

Classification. Subfamily Micrairoideae. Tribe Isachneae.

Habit, Vegetative Morphology. Annual. Culms geniculately ascending, 15–30 cm long. Culm-internodes distally glabrous. Leaf-sheaths mostly shorter than adjacent culm internode, hispid, outer margin hairy. Ligule a fringe of hairs, 1 mm long. Leaf-blades lanceolate, 3–8 cm long, 4–8 mm wide. Leaf-blade surface pubescent, densely hairy. Leaf-blade apex acute.

Inflorescence. Inflorescence a panicle. Panicle open, elliptic, 12–14 cm long, 6 cm wide. Primary panicle branches ascending, 6–8 cm long. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, 1–2.5 mm long.

Fertile Spikelets. Spikelets comprising 2 fertile florets, without rhachilla extension. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets elliptic, dorsally compressed, 1.5 mm long, breaking up at maturity, disarticulating above glumes but not between florets.

Glumes. Glumes deciduous, similar, shorter than spikelet, thinner than fertile lemma. Lower glume ovate, 1.3 mm long, 0.9 length of spikelet, membranous, without keels. Lower glume surface glabrous or puberulous. Lower glume apex obtuse. Upper glume ovate, 1.3 mm long, 0.9 length of spikelet, membranous, without keels. Upper glume surface glabrous or puberulous. Upper glume apex obtuse.

Florets. Fertile lemma elliptic, 1.3 mm long, coriaceous, without keel. Lemma surface pubescent. Lemma margins involute. Lemma apex obtuse. Palea coriaceous, 2 -veined.

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

Distribution (TDWG). Continent. Tropical Asia.

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

Isachne beneckeii Hack. *Oesterr. Bot. Zeitschr.* 1901, 459. (1901).

Regarded by K as a synonym (*I. clarkei*).

Accepted by: U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), J.F.Veldkamp, Poaceae ms (*Flora Malesiana*), T.Koyama, *Grasses of Japan and its neighboring regions* (1987).

TYPE from Indonesia. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: Indonesia: Java: prope Prigen et Tosarie, ca. 2000 m, 23 March 1891, *F.W. Benecke 22* (LT: W).

Illustrations (Books): C-C Hsu, *Flora of Taiwan*, Vol 5 (1978) (468), C-C Hsu, *Taiwan Grasses* (1975).

Derivation (Clifford & Bostock 2007): in honor of Franz Benecke (1857–1903) German botanist.

Classification. Subfamily Micrairoideae. Tribe Isachneae.

Habit, Vegetative Morphology. Perennial. Culms decumbent, slender, 5–10 cm long, without nodal roots or rooting from lower nodes. Leaf-sheaths outer margin hairy. Ligule a fringe of hairs. Leaf-blades linear or lanceolate, 2.5–3 cm long, 5 mm wide. Leaf-blade surface scabrous, puberulous, hairy abaxially. Leaf-blade apex acute.

Inflorescence. Inflorescence a panicle. Panicle open, ovate, 5–10 cm long. Primary panicle branches spreading, 1 -nate. Panicle branches capillary. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, tip widened.

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 orbicular, dorsally compressed, 1.5 mm long, breaking up at maturity, disarticulating above glumes but not between florets.

Glumes. Glumes deciduous, similar, reaching apex of florets, thinner than fertile lemma. Lower glume ovate, 1.5 mm long, 2 length of spikelet, membranous, without keels, 7 -veined. Lower glume surface smooth or asperulous, rough at apex. Lower glume apex obtuse. Upper glume ovate, 1.5 mm long, 1 length of spikelet, membranous, without keels, 7 -veined. Upper glume surface smooth or asperulous, rough at apex. Upper glume apex obtuse.

Florets. Fertile lemma orbicular, 1–1.5 mm long, cartilaginous, without keel. Lemma surface pubescent. Lemma margins involute. Lemma apex obtuse. Palea cartilaginous, 2 -veined.

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

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

Country /Province /State. China, Eastern Asia. Taiwan. Indo-China, Malesia. Java, Lesser Sunda Is, Philippines.

Isachne bicolor V. N. Naik & B. W. Patunkar. *Bull. Bot. Surv. India*, 15(1–2): 157 (1976).

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

TYPE from India?. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: IT: *B.W. Patunkar 1849*, 8 Oct 1973, India?: Mahabakshwar (L).

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

Derivation (Clifford & Bostock 2007): L. bis, twice; color, color. Two-colored, usually with respect to spikelets or florets.

Classification. Subfamily Micrairoideae. Tribe Isachneae.

Habit, Vegetative Morphology. Annual. Culms decumbent, 30–45 cm long. Culm-internodes distally glabrous. Culm-nodes glabrous or pubescent. Leaf-sheaths glabrous on surface or pilose, outer margin hairy. Ligule absent. Leaf-blades lanceolate, 3.5–4.5 cm long, 3–7 mm wide. Leaf-blade venation distinct, with 22–30 secondary veins. Leaf-blade surface pilose, hairy on both sides, with tubercle-based hairs. Leaf-blade margins cartilaginous, smooth or scaberulous.

Inflorescence. Inflorescence a panicle. Panicle open, elliptic, 2–5 cm long. Primary panicle branches ascending, 1 -nate, 1–1.5 cm long. Panicle branches glandular. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, filiform, glandular.

Fertile Spikelets. Spikelets comprising 2 fertile florets, without rhachilla extension. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets ovate, dorsally compressed, 2.75–3.25 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes deciduous, similar, shorter than spikelet, thinner than fertile lemma. Lower glume orbicular, 2.5–3 mm long, 0.9 length of spikelet, membranous, without keels, 5–9 -veined. Lower glume surface glabrous or pilose, with tubercle-based hairs. Lower glume apex acute. Upper glume orbicular, 2.5–3 mm long, 0.9 length of spikelet, membranous, without keels, 5–9 -veined. Upper glume surface glabrous or pilose, with tubercle-based hairs. Upper glume apex acute.

Florets. Fertile lemma ovate, 2.25–2.5 mm long, coriaceous, without keel. Lemma surface pubescent. Lemma margins involute. Lemma apex obtuse. Palea coriaceous, 2 -veined.

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

Distribution (TDWG). Continent. Tropical Asia.
Country /Province /State. Indian Subcontinent. India.
TDWG4. Maharashtra.

Isachne borii Henadri. *Indian Forester*, 97(4): 223 (1971).

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

TYPE from India. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: IT: *K. Hemadri* 117968, 22 Sep 1968, India: Maharashtra: Poona District: Dak Plateau, 27 km W of Junnar, abundant on the open plateau, erect annual grass, spikelets green with a tuft of long white silky hairs on the callus, turning darker at length (L, LE, MO-2489366).

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

Derivation (Clifford & Bostock 2007): in honor of Norman Loftus Bor (1893–1972) Irish-born Indian forest botanist.

Classification. Subfamily Micrairoideae. Tribe Isachneae.

Habit, Vegetative Morphology. Annual, culms solitary or caespitose. Culms erect, 15–75 cm long. Culm-nodes glabrous or pubescent. Leaf-sheaths 3–14 cm long, pilose, with tubercle-based hairs, outer margin hairy. Ligule a fringe of hairs, 2 mm long. Leaf-blades 7–15 cm long, 3–6 mm wide. Leaf-blade venation with 7–19 secondary veins. Leaf-blade surface scabrous, pubescent, with tubercle-based hairs. Leaf-blade margins cartilaginous, scabrous. Leaf-blade apex acuminate.

Inflorescence. Inflorescence a panicle. Peduncle 2–10 cm long. Panicle open, elliptic, 5–20 cm long, 2–10 cm wide. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, filiform, 3–20 mm long, eglandular or glandular, scabrous.

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 orbicular, dorsally compressed, obtuse, 2.5–3 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus woolly. Floret callus hairs 1–3 mm long.

Glumes. Glumes deciduous, similar, reaching apex of florets, thinner than fertile lemma. Lower glume ovate, 1 length of spikelet, membranous, without keels. Lower glume surface hispidulous, with tubercle-based hairs. Lower glume apex obtuse. Upper glume ovate, 1 length of spikelet, membranous, without keels. Upper glume surface hispidulous, with tubercle-based hairs. Upper glume apex obtuse.

Florets. Fertile lemma elliptic, 2–2.8 mm long, coriaceous, without keel. Lemma surface puberulous. Lemma margins involute. Lemma apex obtuse. Palea coriaceous, 2 -veined.

Flower and Fruit. Anthers 3, 1.9 mm long. Caryopsis with adherent pericarp, ellipsoid, 1.8 mm long.

Distribution (TDWG). Continent. Tropical Asia.

Country /Province /State. Indian Subcontinent. India.

TDWG4. Kerala. Tamilnadu.

Isachne bourneorum C. E. C. Fischer. *Kew Bull.* 1932, 324. (1932).

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

TYPE from India. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: IT: *A.G. Bourne & Bourne* 2491, 14 Jun 1898, India: Tamil Nadu (US-1258199).

Illustrations (Books): K.M.Mathew, *Flora Palni Hills* (1996) (839, Pl 839).

Derivation (Clifford & Bostock 2007): in honor of Albert Gibbs Bourne (1859–1940) and his wife, collectors in India, Thailand and Myanmar.

Classification. Subfamily Micrairoideae. Tribe Isachneae.

Habit, Vegetative Morphology. Perennial. Rhizomes elongated. Culms erect or geniculately ascending, 10–80 cm long. Culm-nodes glabrous or pubescent. Leaf-sheaths pilose, with tubercle-based hairs. Ligule a fringe of hairs. Leaf-blades lanceolate or elliptic or ovate, 1–6 cm long, 2–12 mm wide. Leaf-blade surface glabrous or pubescent. Leaf-blade margins cartilaginous. Leaf-blade apex acute.

Inflorescence. Inflorescence a panicle. Panicle open, ovate, 2–12 cm long. Primary panicle branches spreading. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, eglandular.

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 ovate or obovate, dorsally compressed, 3–4 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes deciduous, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume ovate, 3–4 mm long, 1 length of spikelet, membranous, without keels, 7–9 -veined. Lower glume apex acuminate. Upper glume ovate, 3–4 mm long, 1 length of spikelet, membranous, without keels, 5–7 -veined. Upper glume surface pilose, with tubercle-based hairs. Upper glume apex acuminate.

Florets. Fertile florets with the lowest dissimilar. Lowest fertile lemma oblong, 2–2.5 mm long, 1.5–1.8 length of adjacent lemma, lobed. Fertile lemma ovate or orbicular, 1–1.5 mm long, coriaceous, without keel. Lemma surface puberulous. Lemma margins involute. Lemma apex obtuse. Palea coriaceous, 2 -veined. Palea surface puberulous.

Flower and Fruit. Anthers 3, 1–2 mm long. Caryopsis with adherent pericarp.

Distribution (TDWG). Continent. Tropical Asia.

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

Isachne brassii Hitchcock. *Proc. Linn. Soc., N. S. Wales*, liv. 146 (1929).

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

TYPE from Papua New Guinea. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *L.J. Brass 1018*, 20 Feb 1926, Papua New Guinea: in swamps, Ihu, Vailala River (US-1385088; IT: A).

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

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

Classification. Subfamily Micrairoideae. Tribe Isachneae.

Habit, Vegetative Morphology. Perennial. Culms decumbent, weak, 8–50 cm long, rooting from lower nodes. Culm-internodes distally glabrous. Lateral branches sparse. Leaf-sheaths glabrous on surface to pubescent, outer margin hairy. Ligule a fringe of hairs, 1–2 mm long. Leaf-blades lanceolate or oblong, 1.5–7 cm long, 3–8 mm wide. Leaf-blade surface scabrous, rough on both sides, glabrous or pilose, sparsely hairy.

Inflorescence. Inflorescence a panicle. Panicle open, elliptic, 3–10 cm long, contracted about primary branches. Primary panicle branches ascending. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 2 fertile florets, without rhachilla extension. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets orbicular, tilted on the pedicel, dorsally compressed, 1.5–1.7 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes flattened.

Glumes. Glumes deciduous, similar, reaching apex of florets, thinner than fertile lemma. Lower glume obovate, 1.5–1.7 mm long, 1 length of upper glume, 1 length of spikelet, membranous, without keels. Lower glume surface glabrous or hispidulous. Lower glume apex obtuse. Upper glume obovate, 1.5–1.7 mm long, 1 length of adjacent fertile lemma, membranous, without keels. Upper glume surface glabrous or hispidulous. Upper glume apex obtuse.

Florets. Fertile florets with the lowest dissimilar. Lowest fertile lemma 1.05 length of adjacent lemma, thinner than adjacent lemma (slightly). Fertile lemma elliptic or orbicular, 1.5–1.7 mm long, coriaceous, shiny, without keel. Lemma surface glabrous. Lemma margins involute. Lemma apex obtuse. Palea coriaceous, 2 -veined.

Distribution (TDWG). Continent. Tropical Asia.

Country /Province /State. Papuasia. New Guinea West Papua (Irian Jaya). New Guinea.

Isachne buettneri Hack. ex Buettm. *Verh. Bot. Ver. Brand.* i. 69. (1889).

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

TYPE from Gabon. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *Buettner 560*, Gabon (B).

Illustrations (Books): W. Robyns (1929 and 1934). *Flora Agrostologique du Congo Belge et du Ruanda-Urundi*, I. Maydees et Andropogonees and II. Panicees. Bruxelles, Goemaere (369, Pl. 54).

Derivation (Clifford & Bostock 2007): in honor of David Sigmund August Buettner (1724–68) German botanist.

Classification. Subfamily Micrairoideae. Tribe Isachneae.

Habit, Vegetative Morphology. Perennial. Culms prostrate, 30–60 cm long, rooting from lower nodes. Ligule a fringe of hairs. Leaf-blades lanceolate, 5–20 cm long, 5–17 mm wide. Leaf-blade surface glabrous or pubescent or pilose.

Inflorescence. Inflorescence a panicle. Panicle open, ovate, effuse, 10–20 cm long. Panicle branches capillary. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, filiform.

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 orbicular, dorsally compressed, 0.8–1.4 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes suppressed between florets.

Glumes. Glumes deciduous, similar, shorter than spikelet, thinner than fertile lemma. Lower glume elliptic, 0.6–1.2 mm long, 1 length of upper glume, 0.8–0.9 length of spikelet, membranous, without keels, 5–9 -veined. Lower glume surface glabrous or pubescent, hairy above. Lower glume apex obtuse. Upper glume elliptic, 0.6–1.2 mm long, membranous, without keels, 5–9 -veined. Upper glume surface glabrous or pubescent, hairy above. Upper glume apex obtuse.

Florets. Fertile florets all alike. Fertile lemma orbicular, 0.6–1.2 mm long, coriaceous, without keel, 5–7 -veined, more than 3-veined. Lemma lateral veins obscure. Lemma surface puberulous. Lemma margins involute, interlocking with palea keels. Lemma apex obtuse. Palea coriaceous, 2 -veined.

Flower and Fruit. Lodicules 2, cuneate, fleshy. Anthers 3, 0.6 mm long. Caryopsis with adherent pericarp, orbicular, dorsally compressed, plano-convex.

N = 20 (1 ref TROPICOS).

Distribution (TDWG). Continent. Africa.

Country /Province /State. West tropical Africa, West-central tropical Africa, Northeast tropical Africa, East tropical Africa, South tropical Africa. Guinea-Bissau, Ivory Coast, Liberia, Nigeria, Sierra Leone. Cameroon, Congo, Gabon, Annobon, Principe & Sao Tome, Bioko, DRC. Tanzania, Uganda. Angola, Zambia.

Isachne cambodiensis Ohwi. *Acta Phytotax. & Geobot.*, Kyoto, 22: 138 (1967).

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

TYPE from Cambodia. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Cambodia, Poporkville: Kira, Yoda & Kokawa 151.

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

Classification. Subfamily Micrairoideae. Tribe Isachneae.

Habit, Vegetative Morphology. Perennial. Culms erect, 20–30 cm long, 7–9 -noded. Culm-internodes smooth, distally glabrous. Leaf-sheaths mostly shorter than adjacent culm internode, striately veined, glabrous on surface or pilose. Ligule a fringe of hairs. Leaf-blades linear or lanceolate, involute, 7–15 cm long, 1–2 mm wide. Leaf-blade surface scaberulous, rough adaxially. Leaf-blade margins cartilaginous.

Inflorescence. Inflorescence a panicle. Panicle open, ovate, 1.5–3 cm long. Primary panicle branches 5–6 in number, ascending, 0.6–1.2 cm long, bearing 1–3 fertile spikelets on each lower branch. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, 0.33–0.5 length of fertile spikelet.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. 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, obtuse, 1.2 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes deciduous, similar, shorter than spikelet, thinner than fertile lemma. Lower glume ovate, 1 mm long, 0.9 length of spikelet, membranous, without keels. Lower glume surface scabrous, rough on veins. Upper glume elliptic, 1 mm long, 0.9 length of spikelet, membranous, without keels. Upper glume surface scabrous, rough on veins.

Florets. Basal sterile florets 1, male, with palea, separately deciduous. Lemma of lower sterile floret similar to fertile lemma, oblong, 1.2 mm long, 1 length of fertile lemma, herbaceous, glabrous. Fertile lemma ovate, 1.2 mm long, coriaceous, without keel. Lemma surface puberulous. Lemma margins involute. Lemma apex obtuse.

Distribution (TDWG). Continent. Tropical Asia.

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

Isachne carolinensis Ohwi. *Bot. Mag., Tokyo*, lv. 540 (1941).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, W.D.Clayton & N.Snow, Key to Pacific Grasses (2010).

TYPE from Caroline Islands. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *Hatusima 10878*, Caroline Islands: Nipit, 400 m (FU).

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

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

Classification. Subfamily Micrairoideae. Tribe Isachneae.

Habit, Vegetative Morphology. Annual. Culms prostrate, 15–20 cm long. Culm-nodes pubescent. Lateral branches ample. Leaf-sheaths outer margin hairy. Ligule a fringe of hairs, 2 mm long. Leaf-blades lanceolate, 4–5 cm long, 5–8 mm wide. Leaf-blade surface glabrous or pilose, sparsely hairy, hairy on both sides, with tubercle-based hairs. Leaf-blade margins unthickened. Leaf-blade apex acuminate.

Inflorescence. Inflorescence a panicle. Panicle open, ovate, 3–5 cm long. Primary panicle branches ascending, bearing 3–10 fertile spikelets on each lower branch. Panicle branches smooth, with scattered hairs. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 2 fertile florets, without rhachilla extension. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets ovate, dorsally compressed, 2 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes deciduous, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume ovate, 2 mm long, 1 length of upper glume, 1 length of spikelet, membranous, without keels, 7 -veined. Lower glume surface hispid. Lower glume apex obtuse. Upper glume ovate, 2 mm long, 1.1–1.3 length of adjacent fertile lemma, membranous, without keels, 7 -veined. Upper glume surface hispid. Upper glume apex obtuse.

Florets. Fertile lemma elliptic or ovate, 1.5–1.8 mm long, coriaceous, without keel. Lemma margins involute, eciliate. Lemma apex obtuse. Palea coriaceous, 2 -veined.

Flower and Fruit. Anthers 3.

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

Country /Province /State. Papuaasia. Solomon Is. **Northwestern Pacific.** Caroline Is.

Isachne chevalieri A. Camus. *Bull. Mus. Hist. Nat. Paris*, xxv. 367. (1919).

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

TYPE from Annam. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Annam: Massif du Lang bian entre Klon et Danhim, A. *Chevalier* 30940.

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

Derivation (Clifford & Bostock 2007): in honor of Jean Baptiste Auguste Chevalier (1873–1956) French botanist and collector in tropical Africa, SE Asia and Brazil.

Classification. Subfamily Micrairoideae. Tribe Isachneae.

Habit, Vegetative Morphology. Annual. Culms decumbent, 12–15 cm long. Leaf-sheaths glabrous on surface, outer margin hairy. Ligule a fringe of hairs. Leaf-blades 2–3 cm long, 2.5–3 mm wide. Leaf-blade surface scabrous, rough on both sides. Leaf-blade margins scabrous.

Inflorescence. Inflorescence a panicle. Panicle open, ovate, 4–4.5 cm long, bearing few spikelets. Primary panicle branches ascending or spreading, 1–2.5 cm long. Panicle branches capillary, smooth. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, linear.

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 orbicular, dorsally compressed, 1.2–1.5 mm long, breaking up at maturity, disarticulating above glumes but not between florets.

Glumes. Glumes deciduous, similar, shorter than spikelet, thinner than fertile lemma. Lower glume ovate, 0.8–1.1 mm long, 0.66 length of spikelet, membranous, without keels. Lower glume surface asperulous, puberulous. Lower glume apex obtuse. Upper glume ovate, 0.8–1.1 mm long, 0.66 length of spikelet, membranous, without keels. Upper glume surface asperulous, puberulous. Upper glume apex obtuse.

Florets. Fertile florets with the lowest dissimilar. Lowest fertile lemma ovate, 1.2–1.5 mm long, thinner than adjacent lemma. Fertile lemma orbicular, 1–1.2 mm long, cartilaginous, shiny, without keel, 5 -veined, more than 3-veined. Lemma margins involute. Lemma apex obtuse. Palea cartilaginous, 2 -veined.

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

Distribution (TDWG). Continent. Tropical Asia.

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

Isachne ciliaris Boivin ex A. Camus. *Bull. Soc. Bot. France*, 73: 917 (1927).

TYPE from Madagascar. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Madagascar, Nossibe: Boivin.

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

Classification. Subfamily Micrairoideae. Tribe Isachneae.

Habit, Vegetative Morphology. Perennial. Culms erect, robust, 75 cm long. Leaf-sheaths outer margin hairy. Ligule a fringe of hairs. Leaf-blades linear or lanceolate, 16–18 cm long, 12 mm wide. Leaf-blade venation with 8–12 secondary veins.

Inflorescence. Inflorescence a panicle. Panicle open, ovate, 20 cm long. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, filiform, 0.3 mm long, tip widened.

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 obovate, dorsally compressed, 1.2–1.4 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes suppressed between florets.

Glumes. Glumes deciduous, similar, shorter than spikelet, thinner than fertile lemma. Lower glume obovate, 0.9–1.2 mm long, 0.75 length of spikelet, membranous, without keels, 5 -veined. Lower glume surface pilose. Lower glume apex obtuse. Upper glume obovate, 0.9–1.2 mm long, 0.75 length of spikelet, membranous, without keels, 5 -veined. Upper glume surface pilose. Upper glume apex obtuse.

Florets. Fertile lemma obovate, 0.7–0.8 mm long, coriaceous, without keel. Lemma margins involute. Lemma apex obtuse. Palea coriaceous.

Flower and Fruit. Caryopsis with adherent pericarp.

Distribution (TDWG). Continent. Africa.

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

Isachne ciliatiflora P. C. Keng. *Acta Phytotax. Sin.* x. 13 (1965). (1965).

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

TYPE from China. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: China: Sichuan: Chingxi Xian, road side, 1800 m, 24 Jan. 1934, C.S. Liu 433 (HT: Bot. Inst. Herb., Acad. Sinica, Nanking; IT: LE (fragm.)).

Illustrations (Books): S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 778).

Derivation (Clifford & Bostock 2007): L. cilium, eyelid; -atus, possessing; flos, flower. Spikelets with hairy lemmas or glumes.

Classification. Subfamily Micrairoideae. Tribe Isachneae.

Habit, Vegetative Morphology. Perennial. Culms erect or geniculately ascending, 30–60 cm long, 2 mm diam. Culm-internodes smooth, distally glabrous. Leaf-sheaths mostly shorter than adjacent culm internode, glabrous on surface, outer margin glabrous or hairy. Leaf-sheath oral hairs lacking or ciliate. Ligule a fringe of hairs, 1 mm long. Leaf-blade base broadly rounded. Leaf-blades linear or lanceolate, 5–15 cm long, 5–10 mm wide. Leaf-blade venation with distinct cross veins. Leaf-blade surface smooth, glabrous. Leaf-blade margins cartilaginous, scabrous. Leaf-blade apex acute.

Inflorescence. Inflorescence a panicle. Panicle open, ovate, 15 cm long. Primary panicle branches ascending, 1 -nate, 5–9.5 cm long. Panicle branches eglandular, smooth, glabrous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 2 fertile florets, without rhachilla extension. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets oblong, dorsally compressed, 2.5 mm long, 1.3 mm wide, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes deciduous, similar, shorter than spikelet, thinner than fertile lemma. Lower glume ovate, 2.3 mm long, 0.9 length of spikelet, membranous, much thinner on margins, without keels, 5–7 -veined. Lower glume apex obtuse. Upper glume ovate, 2.3 mm long, 0.9 length of spikelet, membranous, with hyaline margins, without keels, 5–7 -veined. Upper glume apex obtuse.

Florets. Fertile florets bisexual or female, with the lowest dissimilar. Lowest fertile lemma bisexual, elliptic, 2.2 mm long, 1.2 length of adjacent lemma, hairy. Fertile lemma elliptic, 1.8 mm long, cartilaginous, without keel. Lemma margins involute, ciliate. Lemma apex obtuse. Palea cartilaginous. Palea surface glabrous or pilose, hairy at base. Palea apex undifferentiated or ciliate.

Flower and Fruit. Anthers 3, 1.5 mm long. Caryopsis with adherent pericarp.

Distribution (TDWG). Continent. Temperate Asia.

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

TDWG4. Sichuan.

Isachne clarkei Hook. f. *Fl. Brit. Ind.* vii. 24. (1896).

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

TYPE from India. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: ST?: *J.D. Hooker*, Sikkim: meadows in Lachoong valley, 8–11,000 ft.

Recent Synonyms: *Isachne tenuis* P. C. Keng, *Acta Phytotax. Sin.* 10: 15 (1965).

Illustrations (Books): S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 780).

Derivation (Clifford & Bostock 2007): in honor of Charles Baron Clarke (1832–1906) English-born Indian teacher-botanist.

Classification. Subfamily Micrairoideae. Tribe Isachneae.

Habit, Vegetative Morphology. Annual. Culms erect or geniculately ascending, 20–40 cm long, without nodal roots or rooting from lower nodes. Leaf-sheaths smooth, glabrous on surface. Ligule a fringe of hairs. Leaf-blades lanceolate or ovate, 2.5–9 cm long, 3–6 mm wide, membranous. Leaf-blade surface pubescent, sparsely hairy, hairy on both sides. Leaf-blade margins cartilaginous.

Inflorescence. Inflorescence a panicle. Panicle open, pyramidal, 5–7.5 cm long, 3–5 cm wide. Primary panicle branches 1–2.5 cm long. Panicle branches capillary. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets orbicular, dorsally compressed, 1 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes deciduous, similar, reaching apex of florets, thinner than fertile lemma. Lower glume ovate, 1 mm long, 1 length of spikelet, membranous, without keels, 5 -veined. Lower glume apex obtuse. Upper glume ovate, 1 mm long, 1 length of spikelet, membranous, without keels. Upper glume apex obtuse.

Florets. Basal sterile florets 1, male, with palea. Lemma of lower sterile floret ovate, 1 mm long, cartilaginous, scabrous. Fertile florets bisexual. Fertile lemma ovate, 1 mm long, cartilaginous, without keel. Lemma surface scabrous. Lemma margins involute. Lemma apex obtuse. Palea cartilaginous, 2 -veined.

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

N = 10 (2 refs TROPICOS).

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

Country /Province /State. China, Eastern Asia. China South Central, China Southeast, Tibet. Taiwan. **Indian Subcontinent, Indo-China, Malesia.** India. Myanmar, Vietnam. Malaya, Philippines.

TDWG4. Fujian. Yunnan.

Isachne clementis Merrill. *Journ. As. Soc. Straits*, lxxvi. 76 (1917).

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 Sabah. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: British North Borneo, Mount Kinabalu, Kemberanga, alt. about 2100 meters, Nov. 15, 1915, *Clemens 10503*.

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

Derivation (Clifford & Bostock 2007): in honor of Joseph (1862–1935) English-born United States missionary in southeast Asia and Mary Knapp Strong Clemens.

Classification. Subfamily Micrairoideae. Tribe Isachneae.

Habit, Vegetative Morphology. Perennial. Culms decumbent, 10–20 cm long, rooting from lower nodes. Leaves distichous. Leaf-sheaths pilose. Ligule absent. Leaf-blade base broadly rounded. Leaf-blades lanceolate, 1.5–3.5 cm long, 4–8 mm wide, stiff. Leaf-blade surface glabrous or pilose, sparsely hairy, hairy abaxially. Leaf-blade margins scabrous. Leaf-blade apex acuminate.

Inflorescence. Inflorescence a panicle. Panicle open, ovate, 3–4 cm long, bearing few spikelets. Primary panicle branches spreading, 1 -nate, simple, 0.5–1 cm long, bearing 2–3 fertile spikelets on each lower branch, bearing spikelets almost to the base. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, 1.5 mm long.

Fertile Spikelets. Spikelets comprising 2 fertile florets, without rhachilla extension. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets elliptic, dorsally compressed, 3 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes deciduous, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume oblong, 3 mm long, 1 length of spikelet, membranous, without keels, 5 -veined. Lower glume surface puberulous, hairy above. Lower glume apex obtuse. Upper glume oblong, 3 mm long, 1 length of spikelet, membranous, without keels, 5 -veined. Upper glume surface puberulous, hairy above. Upper glume apex obtuse.

Florets. Fertile lemma elliptic or oblong, 2 mm long, coriaceous, without keel. Lemma surface pubescent. Lemma margins involute. Lemma apex obtuse. Palea coriaceous, 2 -veined.

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

Distribution (TDWG). Continent. Tropical Asia.

Country /Province /State. Malesia. Borneo.

Isachne cochinchinensis Balansa. *Morot, Journ. de Bot.* iv. 137. (1890).

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

TYPE from Indochina. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: Indochina, Tonkin, Tong-Keou: Lefebvre 213.

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

Derivation (Clifford & Bostock 2007): L. -ense, denoting origin. From Cochinchina, now included in Laos and Cambodia.

Classification. Subfamily Micrairoideae. Tribe Isachneae.

Habit, Vegetative Morphology. Perennial, caespitose. Culms decumbent, 30–40 cm long. Leaf-sheaths striately veined, outer margin hairy. Ligule a fringe of hairs. Leaf-blades linear, flat or convolute, 4–6 cm long, 2–3 mm wide. Leaf-blade midrib indistinct. Leaf-blade surface scabrous, rough on both sides, glabrous. Leaf-blade margins cartilaginous, scaberulous.

Inflorescence. Inflorescence a panicle. Panicle open, lanceolate, 2–10 cm long, bearing few spikelets. Primary panicle branches appressed. Panicle axis scaberulous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, scaberulous.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets ovate, dorsally compressed, obtuse, 2 mm long, breaking up at maturity, disarticulating above glumes but not between florets.

Glumes. Glumes deciduous, similar, shorter than spikelet, thinner than fertile lemma. Lower glume ovate, 1.7–1.9 mm long, 0.9 length of spikelet, membranous, without keels. Lower glume lateral veins distinct. Lower glume surface puberulous. Lower glume apex obtuse. Upper glume ovate, 1.7–1.9 mm long, 0.9 length of spikelet, membranous, without keels. Upper glume lateral veins distinct. Upper glume surface puberulous. Upper glume apex obtuse.

Florets. Basal sterile florets 1, male, with palea, attached to and deciduous with the fertile. Lemma of lower sterile floret similar to fertile lemma, ovate, 1.6–1.8 mm long, coriaceous, 7–9 -veined, obscurely veined, puberulous, obtuse. Fertile lemma ovate, 2 mm long, coriaceous, without keel, 7–9 -veined, more than 3-veined. Lemma lateral veins obscure. Lemma surface puberulous. Lemma margins involute. Lemma apex obtuse. Palea coriaceous, 2 -veined.

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

Distribution (TDWG). Continent. Tropical Asia.

Country /Province /State. Indo-China. Laos, Vietnam.

Isachne comata Munro ex Hack. *Hook. Icon. pl.* xix. t. 1866. (1889).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, W.D.Clayton & N.Snow, *Key to Pacific Grasses* (2010).

TYPE from Loyalty Island. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: Loyalty Is., *Aneitum*: Milne (K iso).

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

Derivation (Clifford & Bostock 2007): L. coma, hair of the head; -ata, possessing. With long hairs imparting a silky appearance to the spikelets.

Classification. Subfamily Micrairoideae. Tribe Isachneae.

Habit, Vegetative Morphology. Perennial. Culms rambling, 100–200 cm long. Ligule a fringe of hairs. Leaf-blades lanceolate, 15–25 cm long, 10–22 mm wide. Leaf-blade apex acuminate.

Inflorescence. Inflorescence a panicle. Panicle open, elliptic or ovate, 10–15 cm long. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 2 fertile florets, without rhachilla extension. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets orbicular, dorsally compressed, 1.5–1.7 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes suppressed between florets.

Glumes. Glumes deciduous, similar, reaching apex of florets, thinner than fertile lemma. Lower glume ovate, 1.5–1.7 mm long, 1 length of upper glume, 1 length of spikelet, membranous, without keels, 5 -veined. Lower glume surface hispid, hairy at apex. Lower glume apex acute. Upper glume ovate, 1.5–1.7 mm long, membranous, without keels, 5 -veined. Upper glume surface hispid, hairy at apex. Upper glume apex acute.

Florets. Fertile lemma orbicular, 1.5–1.7 mm long, coriaceous, without keel. Lemma surface pubescent. Lemma margins involute. Lemma apex obtuse. Palea coriaceous, 2 -veined.

Flower and Fruit. Anthers 3.

Distribution (TDWG). Continent. Pacific.

Country /Province /State. Southwestern Pacific. New Caledonia, Vanuatu.

Isachne confusa Ohwi. *Bull. Tokyo Sci. Mus.*, No. 18, 14 (1947).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), D.Sharp, D. & B.K.Simon, *AusGrass* (2002), S-L Chen et al, *Flora of China* 22 (Poaceae) (2006), J.F.Veldkamp, Poaceae ms (*Flora Malesiana*), N.L.Bor, Grasses of Burma, Ceylon, India and Pakistan (1960), W.D.Clayton & N.Snow, Key to Pacific Grasses (2010).

TYPE from Indonesia. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Indonesia: Sumatra: Sumatera Selatan, Bangka, 30 m, 18 Oct. 1917, *Bnnemeijer 1577* (HT: BO; IT: L).

Illustrations (Books): E.E.Henty, *A Manual of the Grasses of New Guinea* (1969) (119, Pl. 45).

Images: D.Sharp & B.K.Simon, *AusGrass*. Grasses of Australia. CD-Rom Version 1.0. (2002);, K.O.Mallett (ed.). *Flora of Australia*, Vol 44 A (2002) & Vol 44B (2004). *Poaceae*;, H.B.Gilliland et al., *Flora of Malaya Vol. 3 Grasses* (1971);, K.Domin, *Bibliotheca Botanica* 85 (1915) (292, Fig.65 as *I. rigida*).

Derivation (Clifford & Bostock 2007): L. confused. Likely to be mistaken for another species.

Classification. Subfamily Micrairoideae. Tribe Isachneae.

Habit, Vegetative Morphology. Perennial, caespitose. Culms geniculately ascending or decumbent, 10–45 cm long, wiry. Culm-internodes ridged. Lateral branches ample. Leaf-sheaths 0.5–0.8 cm long, pilose, with tubercle-based hairs. Ligule a fringe of hairs or absent. Leaf-blade base cordate or amplexicaul. Leaf-blades ovate, 1.5–2.5 cm long, 3–7 mm wide, stiff, glaucous. Leaf-blade margins cartilaginous, ciliate, hairy at base. Leaf-blade apex acute or acuminate.

Inflorescence. Inflorescence a panicle, comprising 50–70 fertile spikelets. Panicle open, ovate, 2–3 cm long, 2.5 cm wide. Primary panicle branches spreading. Panicle branches stiff, flexuous, secund. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets orbicular, dorsally compressed, 1 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes deciduous, similar, reaching apex of florets, thinner than fertile lemma. Lower glume oblong, 1 mm long, 1 length of spikelet, membranous, without keels, 5(–7) -veined. Lower glume surface pubescent. Lower glume apex obtuse. Upper glume oblong, 1 mm long, 1 length of adjacent fertile lemma, membranous, without keels, 5(–7) -veined. Upper glume surface pubescent. Upper glume apex obtuse.

Florets. Basal sterile florets 1, male, with palea, separately deciduous. Lemma of lower sterile floret similar to fertile lemma, ovate, 1 mm long, 1 length of fertile lemma, coriaceous. Fertile florets female. Fertile lemma orbicular, 1 mm long, coriaceous, without keel. Lemma margins involute. Lemma apex obtuse. Palea coriaceous, 2 -veined.

Flower and Fruit. Anthers 3, 0.6 mm long, yellow. Caryopsis with adherent pericarp.

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

Country /Province /State. China. China Southeast. **Indian Subcontinent, Indo-China, Malesia, Papuasiasia.** India. Andaman Is, Myanmar, Nicobar Is, Thailand, Vietnam. Borneo, Java, Malaya, Sumatra. New Guinea. **Australia.** Northern Territory, Queensland. **Northwestern Pacific.** Caroline Is.

TDWG4. Hong Kong. Darwin & Gulf. North.

Isachne deccanensis Bor. *Kew Bull.* 1949, 95 (1949).

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

TYPE from India. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: South India: Nilgiris, Ootacamund Downs, Aug. 1884, *Gamble 15290* (HT: K).

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

Derivation (Clifford & Bostock 2007): L. -ense, denoting origin. From the Deccan region of India.

Classification. Subfamily Micrairoideae. Tribe Isachneae.

Habit, Vegetative Morphology. Perennial. Rhizomes elongated, woody. Culms 15–35 cm long. Culm-nodes glabrous. Leaves cauline. Leaf-sheaths pubescent, with tubercle-based hairs, outer margin hairy. Ligule a fringe of hairs. Leaf-blades 3–15 cm long, 2–6 mm wide. Leaf-blade surface pubescent, with tubercle-based hairs. Leaf-blade margins cartilaginous, scabrous. Leaf-blade apex acuminate.

Inflorescence. Inflorescence a panicle. Panicle open, ovate, 5–10 cm long, 2–4 cm wide. Primary panicle branches 2–4 cm long. Panicle axis with scattered hairs or puberulous. Panicle branches capillary, flexuous, smooth or scaberulous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, eglandular or glandular.

Fertile Spikelets. Spikelets comprising 2 fertile florets, without rhachilla extension. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets orbicular, dorsally compressed, obtuse, 1.8–2 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes deciduous, similar, reaching apex of florets, thinner than fertile lemma. Lower glume elliptic, 1 length of spikelet, membranous, much thinner on margins, purple, without keels, 7–9 -veined. Lower glume surface pubescent, hairy at apex. Lower glume apex cuspidate. Upper glume orbicular, 1 length of spikelet, membranous, with hyaline margins, without keels, 11 -veined. Upper glume surface pubescent, hairy at apex. Upper glume apex cuspidate.

Florets. Fertile lemma oblong or obovate, 1.5 mm long, coriaceous, pallid, without keel. Lemma surface puberulous. Lemma margins involute. Lemma apex obtuse. Palea coriaceous, 2 -veined.

Flower and Fruit. Anthers 3, 1.25 mm long. Caryopsis with adherent pericarp.

Distribution (TDWG). Continent. Tropical Asia.

Country /Province /State. Indian Subcontinent. India.

TDWG4. Tamilnadu.

Isachne diabolica Ohwi. *Bull. Tokyo Sci. Mus.*, No. 18, 14 (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 Indonesia. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *Bünnemeijer 8739*, Indonesia: Sumatra: Sumtra occid., G. Koerintji (BO; IT: K-000290191).

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

Derivation (Clifford & Bostock 2007): L. devilish. Sharing characters with several other species.

Classification. Subfamily Micrairoideae. Tribe Isachneae.

Habit, Vegetative Morphology. Perennial. Culms robust, 50–70 cm long, 3–4 mm diam. Culm-internodes smooth, distally glabrous. Lateral branches ample. Ligule a fringe of hairs, 3–5 mm long. Leaf-blade base amplexicaul. Leaf-blades lanceolate, 12–15 cm long, 18–23 mm wide. Leaf-blade surface glabrous.

Inflorescence. Inflorescence a panicle. Panicle open, ovate, 15–20 cm long. Primary panicle branches spreading. Panicle axis glandular, scabrous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, filiform.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 2 or more fertile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets orbicular, dorsally compressed, 2 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes deciduous, similar, shorter than spikelet, thinner than fertile lemma. Lower glume orbicular, 1.7–1.8 mm long, 1 length of upper glume, 0.9 length of spikelet, membranous, without keels, 7 -veined. Lower glume surface glabrous. Lower glume apex obtuse. Upper glume ovate, 1.7–1.8 mm long, 0.9 length of spikelet, membranous, without keels, 7 -veined. Upper glume surface glabrous. Upper glume apex obtuse.

Florets. Basal sterile florets 1. Fertile florets with the lowest dissimilar. Lowest fertile lemma elliptic, 2 mm long, glabrous. Fertile lemma orbicular, 1.5 mm long, coriaceous, without keel. Lemma surface puberulous. Lemma margins involute. Lemma apex obtuse. Palea coriaceous.

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

Distribution (TDWG). Continent. Tropical Asia.

Country /Province /State. Malesia. Sumatra.

Isachne dimyloides Bor. *Kew Bull.* 1949, 96 (1949).

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

TYPE from India. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: India: Sikkim Terai, Dulkajhar, 200 m. 16 Oct 1884, C.B. Clarke 36764.

Illustrations (Books): H.J.Noltie, *The Grasses of Bhutan* (2000) (745, Fig. 47).

Derivation (Clifford & Bostock 2007): Gk. dis, twice; myle, millstone; -oides, resembling. The pair of florets resemble millstones.

Classification. Subfamily Micrairoideae. Tribe Isachneae.

Habit, Vegetative Morphology. Annual. Culms 20 cm long, rooting from lower nodes. Culm-nodes bearded. Leaf-sheaths glabrous on surface, outer margin hairy. Ligule a fringe of hairs. Leaf-blades elliptic, 2–

4.5 cm long, 3–7 mm wide. Leaf-blade surface glabrous. Leaf-blade margins cartilaginous, scaberulous. Leaf-blade apex acute.

Inflorescence. Inflorescence a panicle. Panicle open, ovate, 2.5 cm long, 1.5 cm wide, bearing few spikelets. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, eglandular.

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 orbicular, dorsally compressed, obtuse, 1.8–1.9 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes deciduous, similar, reaching apex of florets, thinner than fertile lemma. Lower glume oblong, 1 length of spikelet, membranous, much thinner on margins, without keels, 9–11 -veined. Lower glume apex cuspidate. Upper glume oblong, 1 length of spikelet, membranous, with hyaline margins, without keels, 9–11 -veined. Upper glume surface pilose, hairy at apex. Upper glume apex cuspidate.

Florets. Fertile lemma elliptic or orbicular, 1.8 mm long, coriaceous, without keel. Lemma margins involute, ciliolate. Lemma apex obtuse. Palea coriaceous, 2 -veined.

Flower and Fruit. Anthers 3, 0.75 mm long. Caryopsis with adherent pericarp, oblong, 1 mm long.

Distribution (TDWG). Continent. Tropical Asia.

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

TDWG4. Sikkim.

Isachne dioica Swallen. *Journ. Wash. Acad. Sc.* xxvi. 537. (1936).

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

TYPE from Vietnam. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: A. Petelot 5634, 26 Feb 1936, Vietnam: Rizière argilo-calcaire abandonnée, Village de Van Huan, Province de Quang Binh (US-1645232).

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

Derivation (Clifford & Bostock 2007): Gk. dis, twice; oikos, house. The male and female spikelets occur on different plants or in different spikelets on the same plant.

Classification. Subfamily Micrairoideae. Tribe Isachneae.

Habit, Vegetative Morphology. Annual. Culms decumbent, weak, 10–20 cm long. Lateral branches sparse or ample. Leaf-sheaths mostly shorter than adjacent culm internode, glabrous on surface or pubescent. Ligule a fringe of hairs, 0.5 mm long. Leaf-blades ovate, 0.7–1.6 cm long, 3–7 mm wide, stiff. Leaf-blade surface pilose. Leaf-blade margins scabrous.

Inflorescence. Inflorescence a panicle. Panicle open, oblong, 2–4 cm long. Primary panicle branches ascending or spreading or reflexed, 0.5–1 cm long. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets elliptic, dorsally compressed, 1.8–2 mm long, breaking up at maturity, disarticulating above glumes but not between florets. Rhachilla internodes elongated below proximal fertile floret.

Glumes. Glumes deciduous, similar, shorter than spikelet, thinner than fertile lemma, gaping. Lower glume ovate, 1.3–1.5 mm long, 0.75 length of spikelet, membranous, without keels, 5 -veined. Lower glume surface hispidulous. Lower glume apex obtuse. Upper glume ovate, 1.3–1.5 mm long, 0.75 length of spikelet, membranous, without keels, 5 -veined. Upper glume surface hispidulous. Upper glume apex obtuse.

Florets. Basal sterile florets 1, male, with palea. Lemma of lower sterile floret elliptic, 1.8 mm long, membranous. Fertile lemma orbicular, 0.8 mm long, indurate, without keel. Lemma surface puberulous. Lemma margins involute. Lemma apex obtuse. Palea indurate, 2 -veined.

Flower and Fruit. Anthers 3, 1.5 mm long. Caryopsis with adherent pericarp.

Distribution (TDWG). Continent. Tropical Asia.

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

Isachne disperma (Lam.) Doell. *Mart. Fl. Bras.* ii. II. 274 (1877).

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

TYPE from South America. **Basionym or Replaced Name:** *Panicum dispermum* Lam., *Tabl. Encycl.* 1: 173 (1791)

. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *L.C.M. Richard s.n.*, no date, South America (P; IT: US-2830913 (fragm. ex P & photo)).

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

Derivation (Clifford & Bostock 2007): Gk. dis, twice; sperma, seed. Both florets fertile.

Classification. Subfamily Micrairoideae. Tribe Isachneae.

Habit, Vegetative Morphology. Perennial. Culms scandent, 300–600 cm long, 2–5 mm diam. Lateral branches ample. Leaf-sheaths glabrous on surface or hispid, with tubercle-based hairs. Ligule a fringe of hairs, 1–2 mm long. Leaf-blades lanceolate, 10–20 cm long, 10–20 mm wide. Leaf-blade surface scabrous.

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

Fertile Spikelets. Spikelets comprising 2 fertile florets, without rhachilla extension. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets orbicular, dorsally compressed, 1 mm long, breaking up at maturity, disarticulating above glumes but not between florets.

Glumes. Glumes deciduous, similar, reaching apex of florets, thinner than fertile lemma. Lower glume oblong, 1 length of spikelet, membranous, without keels, 3 -veined. Lower glume apex acute. Upper glume ovate, 1 length of spikelet, membranous, without keels, 5 -veined. Upper glume apex acute.

Florets. Fertile lemma orbicular, 1 mm long, coriaceous, without keel. Lemma margins involute. Lemma apex obtuse. Palea coriaceous, 2 -veined.

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

Distribution (TDWG). Continent. South America.

Country /Province /State. Caribbean. Leeward Is, Windward Islands, Trinidad-Tobago.

Isachne distichophylla Hillebr. *Fl. Hawaiian IIs.* :504 (1888).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), W.D.Clayton & N.Snow, *Key to Pacific Grasses* (2010).

TYPE from Hawaiian Islands. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: In the forests of all islands, at altitudes of 2000–3000 ft, but not common,.

Illustrations (Books): W.L.Wagner et al., *Manual of the Flowering Plants of Hawai'i*, Vol. 2 (1990) (1553, Pl. 230).

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

Classification. Subfamily Micrairoideae. Tribe Isachneae.

Habit, Vegetative Morphology. Perennial. Culms erect, 60–100 cm long, rooting from lower nodes. Culm-nodes purple. Leaves distichous. Leaf-sheaths 2 cm long. Ligule a fringe of hairs, 1.5–2 mm long. Leaf-blades lanceolate, 5–15 cm long, 5–17 mm wide, coriaceous, stiff. Leaf-blade margins cartilaginous, crenate. Leaf-blade apex acute.

Inflorescence. Inflorescence a panicle. Panicle open, elliptic or ovate, (5–)10–20 cm long, 4–10 cm wide. Primary panicle branches spreading. Panicle branches stiff. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 2 fertile florets, without rhachilla extension. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets orbicular, dorsally compressed, 1.5–1.8 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes suppressed between florets.

Glumes. Glumes deciduous, similar, reaching apex of florets, thinner than fertile lemma. Lower glume ovate or orbicular, 1.5–1.8 mm long, 1 length of upper glume, 1 length of spikelet, membranous, without keels, 9–11 -veined. Lower glume surface glabrous or hispid. Lower glume apex acute. Upper glume ovate or orbicular, 1.5–1.8 mm long, membranous, without keels, 7–11 -veined. Upper glume surface glabrous or hispid. Upper glume apex acute.

Florets. Fertile lemma ovate or orbicular, 1.5–1.8 mm long, coriaceous, without keel. Lemma surface pubescent, hairy at base. Lemma margins involute, pubescent. Lemma apex obtuse. Palea coriaceous, 2 -veined.

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

Distribution (TDWG). Continent. Pacific.

Country /Province /State. Southwestern Pacific, North-central Pacific. Cook Is. Hawaii.

Isachne eberhardtii A. Camus. *Bull. Mus. Hist. Nat. Paris*, xxv 671. (1919).

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

TYPE from Annam. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Annam: pr. Quang-tri, vallee de la haute riviere de Cu-bi [Asia Orientale], *Eberhardt 1984*.

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

Derivation (Clifford & Bostock 2007): in honor of Philippe Albert Eberhardt (1874–1942) who collected in Annam.

Classification. Subfamily Micrairoideae. Tribe Isachneae.

Habit, Vegetative Morphology. Annual. Culms decumbent, 10–15 cm long, rooting from lower nodes. Culm-nodes pubescent. Leaf-sheaths outer margin hairy. Ligule a ciliate membrane. Leaf-blades lanceolate, 4–5 cm long, 7–12 mm wide, stiff. Leaf-blade midrib conspicuous. Leaf-blade surface pubescent, sparsely hairy, hairy abaxially or on both sides, with tubercle-based hairs. Leaf-blade margins cartilaginous.

Inflorescence. Inflorescence a panicle. Panicle open, ovate, 2.5–3.5 cm long, 1.5 cm wide. Primary panicle branches ascending or spreading. Panicle branches with scattered hairs. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 2 fertile florets, without rhachilla extension. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets orbicular, dorsally compressed, 2–2.5 mm long, breaking up at maturity, disarticulating above glumes but not between florets.

Glumes. Glumes deciduous, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume orbicular, 2–2.5 mm long, 1.1 length of spikelet, membranous, without keels, 9 -veined. Lower glume surface pubescent. Lower glume apex obtuse. Upper glume orbicular, 2–2.5 mm long, 1.1 length of spikelet, membranous, without keels, 9 -veined. Upper glume surface pubescent. Upper glume apex obtuse.

Florets. Fertile lemma ovate, 2–2.5 mm long, cartilaginous, without keel. Lemma margins involute. Lemma apex obtuse. Palea cartilaginous, 2 -veined.

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

Distribution (TDWG). Continent. Tropical Asia.

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

Isachne elegans Dalzell, ex Hook. f. *Fl. Brit. Ind.* vii. 23. (1896).

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

TYPE from India. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: India, Deccan: Coll? (K holo).

Illustrations (Books): K.M.Matthew, *Further Illustrations on the Flora of Tamilnadu Carnatic* (1988) (pl.786).

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

Classification. Subfamily Micrairoideae. Tribe Isachneae.

Habit, Vegetative Morphology. Perennial, caespitose. Culms geniculately ascending, 20–30 cm long, 2 mm diam. Leaf-sheath oral hairs ciliate. Ligule a fringe of hairs. Leaf-blades linear or lanceolate, 5–15 cm long, 4–6 mm wide. Leaf-blade margins cartilaginous. Leaf-blade apex acute.

Inflorescence. Inflorescence a panicle. Panicle open, ovate, 7.5–12.5 cm long. Primary panicle branches 1.3–2.5 cm long. Panicle branches smooth. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, glabrous.

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 orbicular, dorsally compressed, 2.5–3 mm long, breaking up at maturity, disarticulating above glumes but not between florets.

Glumes. Glumes deciduous, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume ovate or orbicular, 1 length of spikelet, membranous, without keels, 7 -veined. Lower glume surface hispidulous. Lower glume apex acute. Upper glume ovate or orbicular, 1 length of spikelet, membranous, without keels, 7 -veined. Upper glume surface hispidulous. Upper glume apex acute.

Florets. Fertile lemma orbicular, hemispherical, 2–2.5 mm long, coriaceous, without keel. Lemma surface puberulous. Lemma margins involute. Lemma apex obtuse. Palea coriaceous, 2 -veined.

Flower and Fruit. Anthers 1.6 mm long, yellow. Caryopsis with adherent pericarp.

Distribution (TDWG). Continent. Tropical Asia.

Country /Province /State. Indian Subcontinent, Indo-China. India.

TDWG4. Karnataka. Maharashtra.

Isachne fischeri Bor. *Kew Bull.* 1949, 69 (1949).

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

TYPE from India. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: India: Madras: summit of Anaimudi, Travancore High Range, 2900 m., Sept. 1933, *E. Barnes s.n.* (HT: K).

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

Classification. Subfamily Micrairoideae. Tribe Isachneae.

Habit, Vegetative Morphology. Annual. Culms erect or geniculately ascending, 3–5 cm long. Leaf-sheaths pilose, with tubercle-based hairs. Ligule a fringe of hairs. Leaf-blades lanceolate or elliptic, 0.5–0.8 cm long, 1–3.5 mm wide. Leaf-blade surface hirsute, hairy on both sides.

Inflorescence. Inflorescence a panicle or composed of racemes. Panicle contracted, linear, 1–1.5 cm long. Primary panicle branches indistinct the panicle almost racemose. Racemes 1, single, paucilateral, 1–1.5 cm long, bearing few fertile spikelets. Spikelet packing lax. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 2 fertile florets, without rhachilla extension. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets elliptic or obovate, dorsally compressed, 2–3 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes deciduous, similar, reaching apex of florets, thinner than fertile lemma. Lower glume lanceolate or ovate, 2–2.5 mm long, 0.75–0.9 length of spikelet, membranous, without keels, 5 -veined. Lower glume surface pubescent, with tubercle-based hairs. Lower glume apex acuminate. Upper glume lanceolate or ovate, 2–3 mm long, 1 length of spikelet, membranous, without keels, 5–7 -veined. Upper glume surface pilose, with tubercle-based hairs. Upper glume apex acuminate.

Florets. Fertile florets with the lowest dissimilar. Lowest fertile lemma oblong or ovate, 2–2.5 mm long, 1.3–2 length of adjacent lemma, thinner than adjacent lemma. Fertile lemma elliptic or ovate, 1–2 mm long, coriaceous, without keel. Lemma surface pubescent. Lemma margins involute. Lemma apex obtuse. Palea coriaceous, 2 -veined. Palea surface pubescent.

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

Distribution (TDWG). Continent. Tropical Asia.

Country /Province /State. Indian Subcontinent. India.

TDWG4. Kerala.

Isachne glaziovii Hack. ex Potztl. *Bot. Jahrb. Syst.* 75: 555, 568 (1952).

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

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

Derivation (Clifford & Bostock 2007): in honor of Auguste Francois Marie Glazieu (fl. 1833–1906) French-born artist and Brazilian botanist.

Classification. Subfamily Micrairoideae. Tribe Isachneae.

Habit, Vegetative Morphology. Perennial. Culms rambling, robust, 60–150 cm long, 8 mm diam. Culm-internodes alternately elongated and bunched, solid, 5–7 cm long, distally hirsute. Lateral branches lacking. Leaf-sheaths loose, glabrous on surface. Leaf-sheath oral hairs ciliate. Ligule a fringe of hairs. Leaf-blades 40–70 cm long, 5–10 mm wide, stiff, glaucous. Leaf-blade venation distinct. Leaf-blade surface glabrous, hairless except near base. Leaf-blade margins scabrous. Leaf-blade apex attenuate, filiform.

Inflorescence. Inflorescence a panicle. Panicle open, oblong, dense, 15–25 cm long, 3 cm wide. Primary panicle branches 1 -nate, bearing spikelets almost to the base. Panicle axis pubescent. Panicle branches pubescent. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets obovate, dorsally compressed, obtuse, 4 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes deciduous, dissimilar, reaching apex of florets, thinner than fertile lemma. Lower glume lanceolate, 0.5 length of spikelet, membranous, without keels, 3 -veined. Lower glume apex acute. Upper glume ovate, 1 length of spikelet, membranous, without keels, 5 -veined. Upper glume lateral veins obscure. Upper glume apex obtuse or acute.

Florets. Basal sterile florets 1, male, with palea. Lemma of lower sterile floret ovate, 1 length of spikelet, chartaceous, obtuse or acute. Fertile lemma elliptic, 4 mm long, coriaceous, pallid, shiny, without keel. Lemma margins involute. Lemma apex acute. Palea coriaceous, 2 -veined.

Flower and Fruit. Caryopsis with adherent pericarp.

Distribution (TDWG). Continent. South America.

Country /Province /State. Brazil. Brazil West Central.

Goiás, Minas Gerais, Rio de Janeiro, Espírito Santo, São Paulo Parana.

Isachne globosa (Thunb.) Kuntze. *Rev. Gen.* 778 (1891).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), D.Sharp, D. & B.K.Simon, *AusGrass* (2002), E.Edgar, & H.Connor, *Flora of New Zealand Gramineae* 5 (2000), S-L Chen et al, *Flora of China* 22 (Poaceae) (2006), J.F.Veldkamp, *Poaceae ms (Flora Malesiana)* (& as *I.dispar*), N.L.Bor, *Grasses of Burma, Ceylon, India and Pakistan* (1960) (& as *I. dispar*), T.Koyama, *Grasses of Japan and its neighboring regions* (1987) (& as *I. dispar*), W.D.Clayton & N.Snow, *Key to Pacific Grasses* (2010).

TYPE from Japan. **Basionym or Replaced Name:** *Milium globosum* Thunb. ex Murray, *Syst. Veg.*, 109 (1784). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Japan: without specific locality, *Thunberg 2041* (HT: UPS).

Recent Synonyms: *Isachne dispar* Trin., *Ic. Gram.* 8. t. 86. (1828). *Isachne miliacea* Roth in Roem. & Schult., *Syst.* 2 476 (1817).

Illustrations (Books): T.Koyama, *Grasses of Japan and its neighbouring regions* (1987) (134, Fig. 42), C-C Hsu, *Flora of Taiwan*, Vol 5 (1978) (474), C-C Hsu, *Taiwan Grasses* (1975) (520, Pl. 1418 & as *I. dispar* & *I. miliacea*), K.M.Matthew, *Illustrations on the Flora of Tamilnadu Carnatic* (1982) (Pl. 882 & 883 & as *I. miliacea* & *I. dispar*), K.M.Matthew, *Further Illustrations on the Flora of Tamilnadu Carnatic* (1988) (Pl. 787 & Pl.785 as *I.dispar*), H.J.Noltie, *The Grasses of Bhutan* (2000) (745, Fig. 47), H.B.Gilliland, *Grasses of Malaya* (1971) (124, Fig. 22), H.Duistermaat, *Field Guide to the Grasses of Singapore* (2005) (81, Fig. 76), J.P.Jessop, G.R.M. Dashorst & F.M.James, *Grasses of South Australia* (2006) (508, Fig. 436), N.Walsh & T.Entwistle, *Flora of Victoria* Vol 2 (1994) (616, Fig. 124), S.W.L.Jacobs, R.D.B.Whalley & D.J.B.Wheeler., *Grasses of New South Wales*, 4th edn (2008) (284), J.C.Tothill,& J.B.Hacker. *The grasses of southern Queensland* (1983) (280), T.D.Stanley & E.Ross, *Flora of South East Queensland, Gramineae* (1989) (248, Fig. 38), D.Sharp & B.K.Simon, *AusGrass*. *Grasses of Australia*. CD-Rom Version 1.0. (2002), E.Edgar. & H.E.Connor, *Flora of New Zealand* 5, *Gramineae* (2000) (597, Fig. 23), S-L Chen et al, *Flora of China*, *Illustrations*, *Poaceae* (2007) (Fig. 775).

Images: D.Sharp & B.K.Simon, *AusGrass*. *Grasses of Australia*. CD-Rom Version 1.0. (2002);, H.B.Gilliland et al., *Flora of Malaya Vol. 3 Grasses* (1971);

Derivation (Clifford & Bostock 2007): *L. globus*, sphere; -osa, abundance. Spikelets spherical.

Classification Subfamily Micrairoideae. Tribe Isachneae.

Habit, Vegetative Morphology. Annual or perennial. Glands annular. Culms erect or geniculately ascending or decumbent or prostrate, 10–90 cm long, rooting from lower nodes. Leaf-sheaths glabrous on surface or pilose, outer margin hairy. Ligule a fringe of hairs, 1–4 mm long. Leaf-blade base cuneate or broadly rounded or cordate. Leaf-blades linear or lanceolate or ovate, 1–10 cm long, 4–20 mm wide. Leaf-blade margins unthickened or cartilaginous, scaberulous.

Inflorescence. Inflorescence a panicle. Panicle open, ovate, 1–15 cm long, 1–8 cm wide. Panicle branches capillary. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, filiform, eglandular or glandular.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets orbicular, dorsally compressed, 1.5–2 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes deciduous, similar, shorter than spikelet or reaching apex of florets, thinner than fertile lemma. Lower glume elliptic to orbicular, 1.4–2 mm long, 1 length of upper glume, 0.8–1 length of spikelet, membranous, without keels, 5–7 -veined. Lower glume surface glabrous or puberulous, hairy at apex. Lower glume apex obtuse. Upper glume oblong or ovate, 1–1.8 mm long, 0.75–1 length of spikelet, membranous, without keels, 7–9 -veined. Upper glume surface glabrous or puberulous, hairy at apex. Upper glume apex obtuse.

Florets. Basal sterile florets 1, male, with palea, separately deciduous. Lemma of lower sterile floret elliptic to ovate, 1.5–2 mm long, 1.3–1.5 length of fertile lemma, 1 length of spikelet, chartaceous or cartilaginous, glabrous. Fertile florets bisexual or female. Fertile lemma ovate or orbicular, 1–1.5 mm long, coriaceous, without keel, 5–7 -veined, more than 3-veined. Lemma lateral veins obscure. Lemma surface glabrous or puberulous. Lemma margins involute. Lemma apex obtuse. Palea coriaceous, 2 -veined.

Flower and Fruit. Anthers 3, 0.75–1 mm long. Caryopsis with adherent pericarp.

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

Country /Province /State. **Arabian Peninsula, China, Eastern Asia.** Oman. China South Central, Manchuria, China North-Central, China Southeast. Japan, Korea, Nansei-Shoto, Taiwan. Japan Hokkaido, or Honshu, or Shikoku, or Kyushu. **Indian Subcontinent, Indo-China, Malesia, Papuasia.** Bangladesh, Eastern Himalaya, India, Nepal, Sri Lanka. Laos, Myanmar, Thailand, Vietnam. Borneo, Java, Lesser Sunda Is, Malaya, Singapore, Philippines, Sulawesi, Sumatra. New Guinea PNG. New Guinea, Solomon Is. **Australia, New Zealand.** Northern Territory, South Australia, Queensland, New South Wales, A.C.T., Victoria. New Zealand

North I, New Zealand South I. **Southwestern Pacific, Northwestern Pacific.** Fiji, New Caledonia. Cook Is. Caroline Is, Marianas.

TDWG4. Hebei, Shaanxi, Shandong. Anhui, Fujian, Guangdong, Guangxi, Henan, Hunan, Jiangsu, Jiangxi, Zhejiang. Guizhou, Hubei, Yunnan. Bhutan. Assam, Manipur, Meghalaya, Mizoram, Nagaland, Tripura. Andhra Pradesh, Bihar, Chandigarh, Chattisgarh, Dadra-Nagar-Haveli, Diu, Delhi, Daman, Goa, Gujarat, Haryana, Jharkhand, Karaikal, Karnataka, Kerala. Mahe, Madhya Pradesh, Maharashtra, Orissa, Pondicherry, Punjab, Rajasthan, Tamilnadu, Uttah Pradesh, West Bengal, Yanam. Darwin & Gulf. Southern. North, Central, South East. Coast, Tablelands, Western Slopes.

Isachne goiasensis S.A. Renvoize. *Kew Bull.*, 42(4): 928 (1987).

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

TYPE from Brazil. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Brazil: Goias, *Glaziou 22533* (HT: K).

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

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

Classification. Subfamily Micrairoideae. Tribe Isachneae.

Habit, Vegetative Morphology. Perennial. Culms decumbent or rambling, 100–300 cm long, wiry or woody, rooting from lower nodes. Culm-internodes scaberulous. Lateral branches ample. Leaf-sheaths outer margin glabrous or hairy. Ligule a fringe of hairs. Leaf-blades lanceolate, 7–18 cm long, 7–13 mm wide. Leaf-blade surface scabrous, glabrous. Leaf-blade apex acute or acuminate.

Inflorescence. Inflorescence a panicle. Panicle open, oblong, 16–30 cm long. Primary panicle branches ascending or spreading. Panicle branches stiff or flexible. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets orbicular, dorsally compressed, 1.5–2 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes deciduous, similar, shorter than spikelet, thinner than fertile lemma. Lower glume orbicular, 0.75 length of spikelet, membranous, without keels. Lower glume surface puberulous, hairy at apex. Lower glume apex obtuse. Upper glume orbicular, 0.66 length of spikelet, membranous, without keels. Upper glume surface glabrous. Upper glume apex obtuse.

Florets. Basal sterile florets 1, male, with palea. Lemma of lower sterile floret elliptic, glabrous, obtuse. Fertile lemma orbicular, coriaceous, without keel. Lemma surface pubescent. Lemma margins involute. Lemma apex obtuse. Palea coriaceous.

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

Distribution (TDWG). Continent. South America.

Country /Province /State. Brazil. Brazil West Central.

TDWG4.

Isachne gossweileri Stapf & C. E. Hubbard. *Kew Bull.* 1933, 301. (1934).

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

TYPE from Angola. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Angola: Cuanza Norte, sources of the River Bengue, Camabatela, *Gossweiler 7334*.

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

Derivation (Clifford & Bostock 2007): in honor of John Gossweiler (1873–1952) Swiss-born Angolan botanist.

Classification. Subfamily Micrairoideae. Tribe Isachneae.

Habit, Vegetative Morphology. Perennial. Culms rambling, slender, 30–50 cm long. Culm-internodes terete, smooth, distally glabrous. Lateral branches sparse. Leaf-sheaths loose, mostly shorter than adjacent culm internode, striately veined, smooth, glabrous on surface, outer margin hairy. Leaf-sheath oral hairs ciliate. Ligule a fringe of hairs, 1–2 mm long. Leaf-blades linear or lanceolate, 6–10 cm long, 3–6 mm wide. Leaf-blade venation with 6–8 secondary veins. Leaf-blade surface scaberulous, rough adaxially, pubescent, sparsely hairy, hairy abaxially. Leaf-blade margins cartilaginous, smooth or scaberulous. Leaf-blade apex acute.

Inflorescence. Inflorescence a panicle. Panicle open, ovate, loose, 6–10 cm long, contracted about primary branches. Primary panicle branches spreading, 1 -nate, 2–3.5 cm long. Panicle axis smooth. Panicle branches bearing approximate spikelets. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, filiform, unequal, 0.5–2 mm long, tip widened.

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 elliptic, dorsally compressed, 1.2–1.5 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes definite.

Glumes. Glumes deciduous, similar, shorter than spikelet or reaching apex of florets, thinner than fertile lemma. Lower glume elliptic, 1.1–1.5 mm long, 1 length of upper glume, 0.95–1 length of spikelet, membranous, without keels, 7 -veined. Lower glume surface puberulous, hairy at apex. Lower glume apex obtuse. Upper glume elliptic, 1.1–1.5 mm long, 0.95–1 length of spikelet, membranous, without keels, 5–7 -veined. Upper glume surface puberulous, hairy at apex. Upper glume apex obtuse.

Florets. Fertile florets female, with the lowest dissimilar. Lowest fertile lemma bisexual or female, elliptic, 1.2–1.5 mm long, thinner than adjacent lemma, glabrous. Fertile lemma elliptic, 1 mm long, coriaceous, without keel, 0 -veined, 0–3 -veined, without veins. Lemma surface puberulous. Lemma margins involute. Lemma apex obtuse. Palea 1 length of lemma, coriaceous.

Flower and Fruit. Anthers 3, 0.6–0.7 mm long. Caryopsis with adherent pericarp.

Distribution (TDWG). Continent. Africa.

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

Isachne gracilis C. E. Hubbard. *Kew Bull.* 1927, 77. (1927).

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

TYPE from India. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: India: Mysore: Baba, Budan Hills, Santavera, 4000 Ft. in deep shade on rocks, *Meebold 10781*.

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

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

Classification. Subfamily Micrairoideae. Tribe Isachneae.

Habit, Vegetative Morphology. Annual. Culms erect or geniculately ascending, slender, 5–25 cm long. Culm-nodes glabrous. Ligule an eciliate membrane or absent. Leaf-blades lanceolate or elliptic or oblong, 1–3 cm long, 2–15 mm wide, membranous. Leaf-blade surface hirsute, sparsely hairy.

Inflorescence. Inflorescence a panicle. Panicle open, ovate, 1–10 cm long. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 2 fertile florets, without rhachilla extension. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets orbicular, dorsally compressed, 0.5–1 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes deciduous, similar, reaching apex of florets, thinner than fertile lemma. Lower glume oblong, 0.2–0.5 mm long, 0.5 length of spikelet, membranous, without keels, 5–7 -veined. Lower glume surface pubescent. Lower glume apex obtuse. Upper glume oblong, 0.5–1 mm long, 1 length of spikelet, membranous, without keels, 7–9 -veined. Upper glume surface pubescent. Upper glume apex obtuse.

Florets. Fertile florets with the lowest dissimilar. Lowest fertile lemma oblong, 0.5–1 mm long, 1–2 length of adjacent lemma, thinner than adjacent lemma. Fertile lemma orbicular or obovate, 0.5 mm long, coriaceous, without keel. Lemma surface pubescent. Lemma margins involute. Lemma apex obtuse. Palea coriaceous, 2 -veined. Palea surface pubescent.

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

Distribution (TDWG). Continent. Tropical Asia.

Country /Province /State. Indian Subcontinent. India.

TDWG4. Karnataka. Madhya Pradesh, Maharashtra.

Isachne guangxiensis W.Z. Fang. *Acta Phytotax. Sin.*, 22(4): 306 (1984).

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

TYPE from China. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: China: Guangxi: Lingui, in valley on fertile soil, 3 Nov. 1958, *Sino-German Exped. 472* (HT: SCBI).

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

Derivation (Clifford & Bostock 2007): L. -ense, denoting origin. From Guangxi Province, China.

Classification. Subfamily Micrairoideae. Tribe Isachneae.

Habit, Vegetative Morphology. Perennial. Culms geniculately ascending, slender, 20–40 cm long, rooting from lower nodes. Culm-internodes distally glabrous. Culm-nodes swollen, bearded. Lateral branches lacking. Leaf-sheaths longer than adjacent culm internode, glabrous on surface, outer margin hairy. Leaf-sheath oral

hairs ciliate. Ligule a fringe of hairs, 2 mm long. Leaf-blades linear or lanceolate, 5–9 cm long, 6–8 mm wide. Leaf-blade surface scabrous, rough abaxially. Leaf-blade margins cartilaginous. Leaf-blade apex acuminate.

Inflorescence. Inflorescence a panicle. Panicle open, ovate, 7–10 cm long, 3–5 cm wide. Primary panicle branches ascending, 1-nate. Panicle axis glandular. Panicle branches glandular. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, filiform, 1 length of fertile spikelet, glandular.

Fertile Spikelets. Spikelets comprising 1 fertile florets or 2 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets, or of 2 or more fertile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile, or one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets elliptic, dorsally compressed, 1.5–1.8 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes deciduous, similar, reaching apex of florets, thinner than fertile lemma. Lower glume elliptic or ovate, 1.5–1.8 mm long, 1.1 length of spikelet, membranous, without keels, 7–9 -veined. Lower glume lateral veins obscure. Lower glume surface pubescent, hairy above. Lower glume apex acute or acuminate. Upper glume elliptic or ovate, 1.5–1.8 mm long, 1.1 length of spikelet, membranous, without keels, 7–9 -veined. Upper glume lateral veins obscure. Upper glume surface pubescent, hairy above. Upper glume apex acute or acuminate.

Florets. Basal sterile florets absent or 1, when present male. Lemma of lower sterile floret similar to fertile lemma. Fertile lemma orbicular, 1.4 mm long, cartilaginous, without keel. Lemma margins involute. Lemma apex obtuse. Palea cartilaginous.

Flower and Fruit. Lodicules 1, 0.3 mm long. Anthers 3. Caryopsis with adherent pericarp, ellipsoid, 1.2 mm long, dark brown.

Distribution (TDWG). Continent. Temperate Asia.

Country /Province /State. China. China Southeast.

TDWG4. Fujian, Guangxi, Hong Kong.

Isachne guineensis Stapf & C. E. Hubbard. *Kew Bull.* 1933, 302. (1933).

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

TYPE from French Guinea. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: French Guinea: between Mali and Mt. Loura, in a stream, *Chevalier 34601*.

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

Derivation (Clifford & Bostock 2007): L. -ense, denoting origin. From British Guiana, now Guyana.

Classification. Subfamily Micrairoideae. Tribe Isachneae.

Habit, Vegetative Morphology. Perennial. Culms geniculate ascending, 15–30 cm long, rooting from lower nodes. Ligule a fringe of hairs. Leaf-blades linear, 6–12 cm long, 5–10 mm wide. Leaf-blade surface smooth, glabrous. Leaf-blade margins cartilaginous, scaberulous.

Inflorescence. Inflorescence a panicle. Panicle open, ovate, 2.5–7.5 cm long, contracted about primary branches. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, filiform, unequal, 2–8 mm long.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets or 0 basal sterile florets, 1 fertile florets or 2 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets, or of 2 or more fertile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile, or one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets elliptic, dorsally compressed, 2.5 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes definite.

Glumes. Glumes deciduous, similar, shorter than spikelet, thinner than fertile lemma. Lower glume elliptic, 1.9 mm long, 1 length of upper glume, 0.9 length of spikelet, membranous, without keels, 5–7 -veined. Lower glume apex obtuse. Upper glume elliptic, 1.9 mm long, membranous, without keels, 5–7 -veined. Upper glume apex obtuse.

Florets. Basal sterile florets absent or 1, male, with palea, separately deciduous. Lemma of lower sterile floret elliptic, 1.7 length of fertile lemma, 1 length of spikelet, membranous, glabrous. Fertile florets female, with the lowest dissimilar (bisexual, or male when see above). Lowest fertile lemma elliptic, 1.7 length of adjacent lemma, thinner than adjacent lemma, glabrous. Fertile lemma ovate, 2 mm long, coriaceous, without keel, 5–7 -veined, more than 3-veined. Lemma lateral veins obscure. Lemma surface puberulous. Lemma margins involute. Lemma apex obtuse. Palea coriaceous, 2 -veined.

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

Distribution (TDWG). Continent. Africa.

Country /Province /State. West tropical Africa. Guinea.

Isachne hainanensis P. C. Keng. *Acta Phytotax. Sin.* x. 23 (1965).

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

TYPE from China. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: China: Hainan: Yai Xian, 300–500 m, 12 Dec. 1933, C. Wang 35341 (HT: Guangxi Bot. Inst. Herb., Acad. Sinica, Guilin).

Illustrations (Books): S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 776).

Derivation (Clifford & Bostock 2007): L. -ense, denoting origin. From Hainan Province, China.

Classification. Subfamily Micrairoideae. Tribe Isachneae.

Habit, Vegetative Morphology. Annual. Culms prostrate, slender, 40–50 cm long, rooting from lower nodes. Leaf-sheaths 3–5 cm long, mostly shorter than adjacent culm internode, puberulous, with tubercle-based hairs. Ligule absent. Leaf-blade base broadly rounded. Leaf-blades elliptic or ovate, 8–15 cm long, 5–10 mm wide, flaccid. Leaf-blade surface glabrous or pilose, hairy on both sides, with tubercle-based hairs. Leaf-blade margins cartilaginous, tuberculate-ciliate, hairy at base. Leaf-blade apex acuminate.

Inflorescence. Inflorescence a panicle, terminal and axillary, exerted or embraced at base by subtending leaf. Peduncle 5–15 cm long. Panicle open, ovate, 15–25 cm long, 5–10 cm wide. Primary panicle branches ascending, 1–2 -nate. Panicle branches eglandular, 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 two-flowered - the lower floret male or barren, the upper fertile. Spikelets oblong, dorsally compressed, 1.8 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes elongated below proximal fertile floret. Rhachilla elongation 0.4 mm long.

Glumes. Glumes deciduous, similar, shorter than spikelet, thinner than fertile lemma. Lower glume lanceolate, 1.5 mm long, 0.8 length of spikelet, herbaceous, without keels, 3–5 -veined. Lower glume apex obtuse. Upper glume lanceolate, 1.5 mm long, 0.8 length of spikelet, herbaceous, without keels, 3–5 -veined. Upper glume apex obtuse.

Florets. Basal sterile florets 1, male. Lemma of lower sterile floret oblong, 1.8 mm long, 1.5 length of fertile lemma, membranous. Fertile lemma orbicular, hemispherical, 1.2 mm long, cartilaginous, without keel. Lemma surface puberulous. Lemma margins involute. Lemma apex obtuse. Palea cartilaginous.

Flower and Fruit. Anthers 3, 1.5 mm long, brown. Caryopsis with adherent pericarp.

Distribution (TDWG). Continent. Temperate Asia.

Country /Province /State. China. Hainan, China Southeast.

TDWG4. Guangdong.

Isachne henryi S.R. Srinivasan & P.V. Sreekumar. *J. Bombay Nat. Hist. Soc.*, 84(3): 647 (1988).

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

TYPE from India. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: India, Kerala, Poothumoolo: Srinivasan 72358 (CAL holo).

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

Classification. Subfamily Micrairoideae. Tribe Isachneae.

Habit, Vegetative Morphology. Annual. Culms geniculately ascending or decumbent, slender, 15–50 cm long. Culm-nodes glabrous. Ligule a fringe of hairs. Leaf-blades lanceolate, 2–8 cm long, 2–5 mm wide. Leaf-blade surface scabrous.

Inflorescence. Inflorescence a panicle. Panicle open, elliptic, 2–12 cm long, 1–5 cm wide. Primary panicle branches 1 -nate, 1–4 cm long. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, 1–8 mm long, tip widened.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets ovate or orbicular, dorsally compressed, 1.75–2 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes deciduous, similar, reaching apex of florets, thinner than fertile lemma. Lower glume ovate or orbicular, 1.75–2 mm long, 1 length of upper glume, 1 length of spikelet, chartaceous, without keels, 9–11 -veined. Lower glume surface pubescent, hairy on veins. Lower glume apex obtuse. Upper glume ovate or orbicular, 1.75–2 mm long, 1 length of spikelet, chartaceous, without keels, 9–11 -veined. Upper glume surface pubescent, hairy on veins. Upper glume apex obtuse.

Florets. Basal sterile florets 1, male, with palea, separately deciduous. Lemma of lower sterile floret elliptic or ovate, 1.75–2 mm long, 1.3–1.4 length of fertile lemma, 1 length of spikelet, chartaceous, 5–7 -veined, obscurely veined, glabrous, obtuse. Palea of lower sterile floret hyaline, 1.5–1.75 mm long. Fertile florets

bisexual. Fertile lemma orbicular, 1.25–1.5 mm long, 1.25–1.5 mm wide, coriaceous, without keel, 5–7 -veined, more than 3-veined. Lemma surface glabrous. Lemma margins involute. Lemma apex obtuse. Palea orbicular, 1–1.5 mm long, coriaceous, 2 -veined.

Flower and Fruit. Anthers 3, 0.75–2 mm long. Caryopsis with adherent pericarp.

Distribution (TDWG). Continent. Tropical Asia.

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

Isachne himalaica Hook. f. *Fl. Brit. Ind.* vii. 23. (1896).

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

TYPE from India, Nepal. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: ST: *Strach. & Winterb. s.n.*, India: Kumaon

ST: *Wallich s.n.*, Nepal

ST: *Aitchison s.n.*, Pakistan: Peshawur

ST: *Jacquemont s.n.*, India?: Rajaori.

Illustrations (Books): T.A.Cope, *Flora of Pakistan* 143: *Poaceae* (1982), H.J.Noltie, *The Grasses of Bhutan* (2000) (745, Fig. 47).

Derivation (Clifford & Bostock 2007): L. -ica, belonging to. From the Himalayas.

Classification. Subfamily Micrairoideae. Tribe Isachneae.

Habit, Vegetative Morphology. Perennial. Culms erect, 30–60 cm long. Leaf-sheaths glabrous on surface, outer margin hairy. Leaf-sheath oral hairs ciliate. Ligule a fringe of hairs. Leaf-blades linear, 3–13 cm long, 4–9 mm wide. Leaf-blade midrib conspicuous. Leaf-blade surface scabrous, glabrous. Leaf-blade margins cartilaginous.

Inflorescence. Inflorescence a panicle. Panicle open, pyramidal, 5–12 cm long. Primary panicle branches 2.5–3.5 cm long. Panicle branches smooth. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, glandular.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets orbicular, dorsally compressed, 1.8–2.5 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes deciduous, similar, reaching apex of florets, thinner than fertile lemma. Lower glume ovate, 1.8–2.5 mm long, 1 length of spikelet, membranous, without keels, 5 -veined. Lower glume surface smooth or scabrous. Lower glume apex obtuse. Upper glume ovate, 1.8–2.5 mm long, 1 length of spikelet, membranous, without keels. Upper glume surface smooth or asperulous. Upper glume apex obtuse.

Florets. Basal sterile florets 1, male, with palea. Lemma of lower sterile floret ovate, 1.5 mm long, chartaceous. Fertile florets bisexual. Fertile lemma ovate, 1.5 mm long, chartaceous, without keel. Lemma margins involute. Lemma apex obtuse. Palea chartaceous, 2 -veined.

Flower and Fruit. Anthers 3, 1.5 mm long. Caryopsis with adherent pericarp.

$N = 20$ (1 ref TROPICOS). $2n = 50$ (2 refs TROPICOS).

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

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

TDWG4. Bhutan. Assam, Meghalaya. Punjab, Uttah Pradesh. Himachal Pradesh, Jammu Kashmir.

Isachne hoi P. C. Keng. *Acta Phytotax. Sin.* x. 11 (1965).

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

TYPE from China. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: China: Zhejiang: West Tien-mu Shan, I-Chien Xian, 2 Sept. 1957, *Y.Y. Ho* 25692 (HT: Botan. Inst. Herb., Academia Sinica Nanking).

Illustrations (Books): S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 777).

Derivation (Clifford & Bostock 2007): in honor of Y.Y. Ho (fl. 1957) Chinese plant collector.

Classification. Subfamily Micrairoideae. Tribe Isachneae.

Habit, Vegetative Morphology. Perennial, caespitose. Butt sheaths glabrous or pilose. Culms decumbent, 45–85 cm long, rooting from lower nodes. Culm-internodes 3–15 cm long, distally glabrous. Culm-nodes glabrous. Lateral branches lacking or sparse. Leaf-sheaths 2–7 cm long, mostly shorter than adjacent culm

internode, glabrous on surface, outer margin hairy. Leaf-sheath oral hairs ciliate. Ligule a fringe of hairs, 2 mm long. Leaf-blade base broadly rounded. Leaf-blades lanceolate, 4.5–13.5 cm long, 8–18 mm wide. Leaf-blade midrib indistinct. Leaf-blade surface scabrous, pubescent, hairy on both sides, with tubercle-based hairs. Leaf-blade margins cartilaginous. Leaf-blade apex acuminate.

Inflorescence. Inflorescence a panicle, terminal or terminal and axillary. Panicle open, ovate, effuse, 10–20 cm long, 10–15 cm wide. Primary panicle branches 1-nate, 8–10 cm long. Panicle axis glandular, scaberulous. Panicle branches straight or flexuous, glandular, scaberulous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 2 fertile florets, without rhachilla extension. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets elliptic, dorsally compressed, 2 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes deciduous, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume ovate, 2 mm long, 1.1–1.3 length of spikelet, herbaceous, much thinner on margins, mid-green or purple, without keels, 7–9 -veined. Lower glume surface pubescent, hairy above. Lower glume apex obtuse. Upper glume ovate, 2 mm long, 1.1–1.3 length of spikelet, herbaceous, with hyaline margins, mid-green or purple, without keels, 7–9 -veined. Upper glume surface pubescent, hairy above. Upper glume apex obtuse.

Florets. Fertile florets alike but female above. Fertile lemma orbicular, 1.5–1.8 mm long, cartilaginous, light brown, without keel. Lemma surface puberulous. Lemma margins involute. Lemma apex obtuse. Palea cartilaginous.

Flower and Fruit. Anthers 3, 1 mm long, brown. Caryopsis with adherent pericarp, ellipsoid or orbicular, laterally compressed, 1.2 mm long, dark brown.

Distribution (TDWG). Continent. Temperate Asia.

Country /Province /State. China. China Southeast.

TDWG4. Guangdong, Hunan, Zhejiang.

Isachne homonyma Veldkamp. *Reinwardtia* 12:174 (2004).

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

TYPE from Reunion. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: : Based on *I. angusta* Stapf ; Reunion: Balfour (K iso).

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

Derivation (Clifford & Bostock 2007): Gk. homos, alike; onoma, name. Species that have synonyms which are also homonyms.

Classification. Subfamily Micrairoideae. Tribe Isachneae.

Habit, Vegetative Morphology. Perennial, caespitose, clumped loosely. Cataphylls evident. Rhizomes elongated. Basal innovations extravaginal. Culms geniculately ascending, 10–25 cm long. Culm-internodes distally pubescent. Leaf-sheaths longer than adjacent culm internode, pubescent, outer margin hairy. Ligule a fringe of hairs. Leaf-blade base broadly rounded. Leaf-blades lanceolate, 1.5–3 cm long, 3–6 mm wide, stiff, glaucous. Leaf-blade surface smooth, glabrous. Leaf-blade apex acute.

Inflorescence. Inflorescence a panicle. Panicle open, ovate, 1.5–4 cm long, contracted about primary branches. Primary panicle branches ascending, 1–2 cm long. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, 3–4 mm long.

Fertile Spikelets. Spikelets comprising 2 fertile florets, without rhachilla extension. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets orbicular, dorsally compressed, 1.25 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes definite.

Glumes. Glumes deciduous, similar, shorter than spikelet, thinner than fertile lemma. Lower glume ovate, 1.5 mm long, 0.9 length of spikelet, membranous, without keels. Lower glume surface asperulous. Lower glume apex obtuse or acute. Upper glume ovate, 1.5 mm long, 0.9 length of spikelet, membranous, without keels. Upper glume surface asperulous. Upper glume apex obtuse or acute.

Florets. Fertile florets alike but female above. Fertile lemma oblong, 1.75 mm long, chartaceous, without keel, 5 -veined, more than 3-veined. Lemma margins involute. Lemma apex obtuse. Palea chartaceous, 2 -veined.

Flower and Fruit. Anthers 3, 0.25 mm long. Caryopsis with adherent pericarp.

Distribution (TDWG). Continent. Africa.

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

Isachne humbertiana A. Camus. *Bull. Soc. Bot. France*, 99: 142 (1952).

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

TYPE from Madagascar. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: Madagascar, Antongondrika: Humbert & Capuron 24308.

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

Classification. Subfamily Micrairoideae. Tribe Isachneae.

Habit, Vegetative Morphology. Perennial. Culms erect or geniculately ascending, 40–50 cm long. Culm-internodes striate, smooth, distally glabrous. Lateral branches sparse. Leaf-sheaths loose, mostly shorter than adjacent culm internode, outer margin hairy. Ligule a fringe of hairs. Leaf-blades lanceolate, 7–9 cm long, 5–6 mm wide, indurate. Leaf-blade venation prominent, with 6 secondary veins. Leaf-blade surface pilose, hairy adaxially. Leaf-blade margins cartilaginous, scaberulous. Leaf-blade apex acuminate.

Inflorescence. Inflorescence a panicle. Panicle open, ovate, 4.5–5.5 cm long, 3–3.5 cm wide. Primary panicle branches spreading, 1-nate. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, filiform, 1–2.5 mm long.

Fertile Spikelets. Spikelets comprising 2 fertile florets, without rhachilla extension. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets elliptic, dorsally compressed, 2 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes 0.75–0.9 mm long.

Glumes. Glumes deciduous, similar, shorter than spikelet, thinner than fertile lemma. Lower glume lanceolate or oblong, 1.7–1.8 mm long, 0.9 length of spikelet, membranous, without keels, 5 -veined. Lower glume lateral veins obscure. Lower glume surface pubescent, hairy at apex. Lower glume apex acuminate. Upper glume ovate, 1.7–1.8 mm long, 0.9 length of spikelet, membranous, without keels, 5 -veined. Upper glume lateral veins obscure. Upper glume surface puberulous, hairy at apex. Upper glume apex obtuse.

Florets. Fertile florets with the lowest dissimilar. Lowest fertile lemma bisexual, elliptic, 1.9–2 mm long. Fertile lemma elliptic, 1.3–1.4 mm long, coriaceous, without keel. Lemma margins involute. Lemma apex obtuse. Palea coriaceous.

Flower and Fruit. Caryopsis with adherent pericarp.

Distribution (TDWG). Continent. Africa.

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

Isachne humicola A. Camus. *Bull. Soc. Bot. France*, 96: 52 (1949).

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

TYPE from Madagascar. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: Madagascar, Simiana R.: Perrier 10776.

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

Classification. Subfamily Micrairoideae. Tribe Isachneae.

Habit, Vegetative Morphology. Perennial. Culms geniculately ascending, 22–30 cm long. Culm-internodes striate, smooth, distally glabrous. Leaf-sheaths mostly shorter than adjacent culm internode, striately veined, outer margin hairy. Ligule a fringe of hairs. Leaf-blades lanceolate, 4.5–8 cm long, 3.5–4 mm wide. Leaf-blade surface hirsute, hairy adaxially, with tubercle-based hairs. Leaf-blade margins scaberulous, ciliate. Leaf-blade apex acuminate.

Inflorescence. Inflorescence a panicle. Panicle open, lanceolate, 2.5–3 cm long. Primary panicle branches appressed. Panicle branches flexuous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, filiform, 0.2–0.8 mm long.

Fertile Spikelets. Spikelets comprising 2 fertile florets, without rhachilla extension. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets obovate, dorsally compressed, 1.3–1.4 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes deciduous, similar, reaching apex of florets, thinner than fertile lemma. Lower glume elliptic or obovate, 1.3–1.4 mm long, 1 length of spikelet, membranous, without keels, 5 -veined. Lower glume surface pubescent, hairy above. Lower glume apex obtuse. Upper glume elliptic or obovate, 1.3–1.4 mm long, 1 length of spikelet, membranous, without keels, 5 -veined. Upper glume surface pubescent, hairy above. Upper glume apex obtuse.

Florets. Fertile lemma elliptic or obovate, 1–1.2 mm long, coriaceous, without keel. Lemma surface pilose, hairy above. Lemma margins involute. Lemma apex obtuse. Palea coriaceous.

Flower and Fruit. Caryopsis with adherent pericarp.

Distribution (TDWG). Continent. Africa.

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

Isachne incrassata (Hack.) Merrill. *Philipp. Journ. Sci.* v. 168 (1910).

Regarded by K as a synonym (*I. myosotis*).

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

TYPE from Philippines. **Basionym or Replaced Name:** *Isachne debilis* var. *incrassata* Hack., *Philipp. J. Sci.* 1, Suppl.:268 (1906). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Mindanao, District of Davao, Mount Apo ... May 1903, *De Vore & Hoover* 358.

Illustrations (Books): C-C Hsu, *Taiwan Grasses* (1975) (518, Pl. 1417 as *I. debilis*).

Derivation (Clifford & Bostock 2007): L. thickened. Culm base swollen.

Classification. Subfamily Micrairoideae. Tribe Isachneae.

Distribution (TDWG). Continent. Tropical Asia.

Country /Province /State. Malesia. Philippines.

Isachne jayachandranii R. Gopalan & V. Chandrasekaran. *Kew Bull.*, 55(4): 1005 (2000).

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

TYPE from India. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: India: Kerala: Thiruvananthapuram Distr., southern Western Ghats, western slopes of Agasthiyamalai, c. 1400 m, 6 Oct 1973, *J. Joseph* 44628 (HT: CAL; IT: K, MH).

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

Derivation (Clifford & Bostock 2007): In honor of V. Jayachandran Nair (1940-) Indian botanist.

Classification. Subfamily Micrairoideae. Tribe Isachneae.

Habit, Vegetative Morphology. Annual, caespitose. Culms erect or geniculately ascending, 25–50 cm long. Culm-internodes distally glabrous. Culm-nodes bearded. Leaf-sheaths 1–2.5 cm long, mostly shorter than adjacent culm internode, hispid. Ligule a fringe of hairs. Leaf-blades ovate, 1–3 cm long, 4–10 mm wide. Leaf-blade venation prominent (above), with 10–36 secondary veins. Leaf-blade surface hispid, densely hairy, hairy abaxially, with tubercle-based hairs. Leaf-blade margins scabrous. Leaf-blade apex acute or acuminate.

Inflorescence. Inflorescence a panicle. Panicle open, ovate, 2–4 cm long. Panicle axis hirsute. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, 1–3 mm long.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets ovate, dorsally compressed, 2.5–3.4 mm long, 2–2.5 mm wide, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes deciduous, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume ovate, 2.5–3.4 mm long, 1 length of spikelet, membranous, much thinner on margins, without keels, 7 -veined. Lower glume surface setose, hairy above. Lower glume margins ciliate. Lower glume apex acuminate. Upper glume obovate, 2.5–3 mm long, 1 length of spikelet, membranous, with hyaline margins, without keels, 7 -veined. Upper glume surface setose, hairy above and in lines. Upper glume apex caudate.

Florets. Basal sterile florets 1, male, with palea. Lemma of lower sterile floret elliptic or ovate, 2.5 mm long, 1.6–1.7 length of fertile lemma, 5 -veined, obscurely veined, acute. Palea of lower sterile floret 2.5 mm long. Fertile lemma elliptic or ovate, 1.5 mm long, 1 mm wide, coriaceous, without keel. Lemma surface puberulous. Lemma margins involute. Lemma apex acute. Palea ovate, 1 mm long, coriaceous.

Flower and Fruit. Lodicules 2, 0.2 mm long. Anthers 3, 1.5 mm long. Caryopsis with adherent pericarp, ovoid, plano-convex, 1 mm long, light brown.

Distribution (TDWG). Continent. Tropical Asia.

Country /Province /State. Indian Subcontinent. India.

Isachne kinabaluensis Merrill. *Journ. As. Soc. Straits*, lxxvi. 77 (1917).

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

TYPE from Sabah. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: British North Borneo, Mount Kinabalu, Paka Cave to Lobang, between the altitudes of 1450 and 3000 meters, 15 Nov 1916, *Clemens* 10704.

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

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

Classification. Subfamily Micrairoideae. Tribe Isachneae.

Habit, Vegetative Morphology. Perennial, caespitose. Culms erect, 30–60 cm long, woody. Culm-nodes pubescent. Leaf-sheaths 4–7 cm long, longer than adjacent culm internode, glabrous on surface, outer margin

hairy. Ligule a fringe of hairs. Leaf-blade base cordate. Leaf-blades ascending, lanceolate, 4–15 cm long, 5–10 mm wide, stiff, glaucous. Leaf-blade margins cartilaginous, scaberulous. Leaf-blade apex acuminate.

Inflorescence. Inflorescence a panicle. Panicle open, ovate, 11 cm long, 7 cm wide. Primary panicle branches 1.5–3.5 cm long. Panicle branches bearded in axils. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, glandular.

Fertile Spikelets. Spikelets comprising 2 fertile florets, without rhachilla extension. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets orbicular, dorsally compressed, 2.5 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes deciduous, similar, reaching apex of florets, thinner than fertile lemma, incurved at apex. Lower glume ovate, 2.4 mm long, 1 length of spikelet, membranous, without keels, 7 -veined. Lower glume apex cuspidate. Upper glume ovate, 2.2 mm long, 1 length of adjacent fertile lemma, membranous, without keels, 9 -veined. Upper glume apex cuspidate.

Florets. Fertile lemma ovate, 2 mm long, coriaceous, without keel. Lemma surface pubescent, hairy above. Lemma margins involute. Lemma apex obtuse. Palea coriaceous, 2 -veined.

Flower and Fruit. Anthers 3, 1.5 mm long. Caryopsis with adherent pericarp.

Distribution (TDWG). Continent. Tropical Asia.

Country /Province /State. Indian Subcontinent, Indo-China, Malesia, Papuasia. India. Myanmar, Thailand. Borneo, Malaya, Sumatra. Solomon Is.

TDWG4. Meghalaya.

Isachne kiyalaensis Robyns. *Bull. Jard. Bot. Brux.* ix. 199 (1932).

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

TYPE from DRC. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *Vanderyst 5936*, Zaire (BR).

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

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

Classification. Subfamily Micrairoideae. Tribe Isachneae.

Habit, Vegetative Morphology. Perennial. Culms decumbent or prostrate, 30–60 cm long, rooting from lower nodes. Ligule a fringe of hairs, 1.5–2.5 mm long. Leaf-blades lanceolate, 3–6 cm long, 4–12 mm wide. Leaf-blade surface scaberulous, rough adaxially, pubescent, hairy abaxially. Leaf-blade margins cartilaginous, scaberulous.

Inflorescence. Inflorescence a panicle. Panicle open, ovate, 2.5–7.5 cm long, 2–4 cm wide, contracted about primary branches. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, filiform, unequal, 1–5 mm long.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets or 0 basal sterile florets, 1 fertile florets or 2 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets, or of 2 or more fertile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile, or one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets elliptic or obovate, dorsally compressed, 1.5–2 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes definite.

Glumes. Glumes deciduous, similar, shorter than spikelet, thinner than fertile lemma. Lower glume elliptic or obovate, 1.4 mm long, 1 length of upper glume, 0.9 length of spikelet, membranous, without keels, 5–7 -veined. Lower glume surface glabrous or pubescent. Lower glume apex obtuse. Upper glume elliptic, 1.4 mm long, membranous, without keels, 5–9 -veined. Upper glume surface glabrous or puberulous. Upper glume apex obtuse.

Florets. Basal sterile florets absent or 1, male, with palea, separately deciduous. Lemma of lower sterile floret elliptic, 1.3–1.5 length of fertile lemma, 1 length of spikelet, membranous, glabrous. Fertile florets female or bisexual, with the lowest dissimilar (bisexual, or male when see above). Lowest fertile lemma lanceolate, 1.3–1.5 length of adjacent lemma, thinner than adjacent lemma, glabrous. Fertile lemma elliptic, 1–1.5 mm long, coriaceous, without keel, 5–7 -veined, more than 3-veined. Lemma lateral veins obscure. Lemma surface puberulous. Lemma margins involute. Lemma apex obtuse. Palea coriaceous, 2 -veined.

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

Distribution (TDWG). Continent. Africa.

Country /Province /State. West tropical Africa, West-central tropical Africa, South tropical Africa. Ghana, Guinea, Ivory Coast, Liberia, Nigeria, Sierre Leone. DRC. Angola.

Isachne kunthiana (Wight & Arn. ex Steud.) Miq. *Fl. Ind. Bat.* iii. 460 (1857).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), J.F.Veldkamp, Poaceae ms (*Flora Malesiana*), N.L.Bor, Grasses of Burma, Ceylon, India and Pakistan (1960), T.Koyama, *Grasses of Japan and its neighboring regions* (1987), W.D.Clayton & N.Snow, Key to Pacific Grasses (2010).

TYPE from India. **Basionym or Replaced Name:** *Panicum kunthianum* Wight & Arn. ex Steud., *Syn. Pl. Glumac.* 1: 96 (1854)

. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *Herb. Wight 1659*, India (?; IT: K).

Recent Synonyms: *Isachne dispar* Trin., *Is. Gram.* 8. t. 86. (1828).

Illustrations (Books): C-C Hsu, *Flora of Taiwan*, Vol 5 (1978) (472, 476, & 478 as *isachne miliacea*), C-C Hsu, *Taiwan Grasses* (1975) (522, Pl. 1419), K.M.Matthew, *Flora Palni Hills* (1996) (840 & 841, Pl. 840 & 841 as var. *latifolia*), K.M.Matthew, Further Illustrations on the *Flora of Tamilnadu Carnatic* (1988) (1.788), H.B.Gilliland, *Grasses of Malaya* (1971) (Pl. 3), H.Duistermaat, *Field Guide to the Grasses of Singapore* (2005) (81, Fig. 77), R.Pilger, *Die Naturlichen Pflanzenfamilien* 14e (1940) (86, Fig. 54).

Derivation (Clifford & Bostock 2007): L. -ana, indicating connection. In honor of Karl Sigismund Kunth (1788–1850), German botanist.

Classification. Subfamily Micrairoideae. Tribe Isachneae.

Habit, Vegetative Morphology. Perennial. Culms erect or geniculately ascending, 10–60 cm long. Culm-nodes bearded. Leaf-sheaths pilose, with tubercle-based hairs, outer margin hairy. Ligule a fringe of hairs. Leaf-blades lanceolate or elliptic or oblong or ovate, 1–6 cm long, 3–15 mm wide. Leaf-blade surface pilose, sparsely hairy, with tubercle-based hairs. Leaf-blade margins cartilaginous. Leaf-blade apex acute or acuminate.

Inflorescence. Inflorescence a panicle. Panicle open, ovate, 2–10 cm long. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 2 fertile florets, without rhachilla extension. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets elliptic or obovate, dorsally compressed, 2–3.5 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes deciduous, similar, reaching apex of florets, thinner than fertile lemma. Lower glume lanceolate or ovate, 1.9–3.2 mm long, 0.9 length of spikelet, membranous, without keels, 5 -veined. Lower glume surface hispidulous, hairy above. Lower glume apex acuminate. Upper glume lanceolate or ovate, 2–2.5 mm long, 1 length of spikelet, membranous, without keels. Upper glume surface setose, hairy above. Upper glume apex attenuate.

Florets. Fertile lemma lanceolate or ovate, 2–3.5 mm long, chartaceous, without keel. Lemma margins involute. Lemma apex acuminate. Palea chartaceous, 2 -veined.

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

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

Country /Province /State. **China, Eastern Asia.** Hainan, China Southeast. Nansei-Shoto, Taiwan. **Indian Subcontinent, Indo-China, Malesia, Papuasia.** India, Sri Lanka. Borneo, Java, Sumatra, Malaya, Singapore. New Guinea, Solomon Is.

TDWG4. Guangdong, Guangxi. Karnataka, Kerala. Tamilnadu.

Isachne langkawiensis Jansen. *Reinwardtia*, ii. 284 (1953).

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. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *Corner & Nauen SF 37959*, Malaysia: Kedah, Langkawi, Pulau (SING; IT: L).

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

Derivation (Clifford & Bostock 2007): L. -ensis, denoting origin. From Langkawi Islands, off the Malay Peninsula.

Classification. Subfamily Micrairoideae. Tribe Isachneae.

Habit, Vegetative Morphology. Perennial, caespitose. Culms geniculately ascending or decumbent, slender, 15–40 cm long. Leaf-sheaths 1 cm long, pilose, with tubercle-based hairs, outer margin hairy. Ligule a fringe of hairs. Leaf-blades lanceolate, 2–8 cm long, 2–9 mm wide. Leaf-blade surface pilose, hairy on both sides, with tubercle-based hairs. Leaf-blade margins cartilaginous, scabrous, ciliate, hairy at base. Leaf-blade apex acuminate.

Inflorescence. Inflorescence a panicle, comprising 30 fertile spikelets. Panicle open, ovate, 5–12 cm long, 4 cm wide. Spikelets solitary. Fertile spikelets pedicelled, heteromorphic (distal hairy). Pedicels present.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets orbicular, dorsally compressed, 2 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes deciduous, similar, shorter than spikelet, thinner than fertile lemma. Lower glume ovate, 1.6 mm long, 1 length of upper glume, 1 length of spikelet, membranous, without keels, 3(-5) -veined. Lower glume surface glabrous. Lower glume apex obtuse. Upper glume ovate, 1.4 mm long, 1 length of adjacent fertile lemma, membranous, purple, without keels, 5 -veined. Upper glume surface glabrous or pilose, with tubercle-based hairs. Upper glume apex obtuse.

Florets. Basal sterile florets 1, male, with palea. Lemma of lower sterile floret elliptic, 1.8 mm long, membranous, glabrous, obtuse. Fertile lemma orbicular, 1.4 mm long, coriaceous, without keel. Lemma surface pubescent. Lemma margins involute. Lemma apex obtuse. Palea coriaceous, 2 -veined.

Flower and Fruit. Anthers 1.2 mm long.

Distribution (TDWG). Continent. Tropical Asia.

Country /Province /State. Malesia. Malaya.

Isachne leersioides Griseb. *Mem. Am. Acad. N. S.* viii. 533. (1863).

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

TYPE from Cuba. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *Wright* 755, 1856–1857, Cuba: in Cuba orietali, Monte Verde (GOET?; IT: GH, MO-209554, NY-71109 [1865], NY-71110 [1860–1864]).

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

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

Classification. Subfamily Micrairoideae. Tribe Isachneae.

Habit, Vegetative Morphology. Annual. Culms rambling, 100–200 cm long. Lateral branches ample. Leaf-sheaths glabrous on surface or pilose, with tubercle-based hairs. Ligule a ciliate membrane, 1 mm long. Leaf-blades 5–15 cm long, 0.5–4 mm wide. Leaf-blade surface scabrous, rough on both sides. Leaf-blade margins cartilaginous.

Inflorescence. Inflorescence a panicle. Panicle open, oblong or ovate, 5–15 cm long, 3–7 cm wide. Primary panicle branches ascending or spreading, 1 -nate, rebranched below middle. Panicle branches stiff. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, 2–3 mm long.

Fertile Spikelets. Spikelets comprising 2 fertile florets, without rhachilla extension. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets orbicular, dorsally compressed, 1 mm long, breaking up at maturity, disarticulating above glumes but not between florets.

Glumes. Glumes deciduous, similar, shorter than spikelet, thinner than fertile lemma. Lower glume oblong, 0.9 length of spikelet, membranous, without keels, 3 -veined. Lower glume surface hispidulous. Lower glume apex acute. Upper glume ovate, 0.9 length of spikelet, membranous, without keels, 3 -veined. Upper glume surface hispidulous. Upper glume apex acute.

Florets. Fertile lemma orbicular, 1 mm long, coriaceous, without keel. Lemma surface pubescent. Lemma margins involute. Lemma apex obtuse. Palea coriaceous, 2 -veined.

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

Distribution (TDWG). Continent. South America.

Country /Province /State. Caribbean. Cuba.

Isachne ligulata Swallen. *Caldasia*, ii. 305 (1943).

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

TYPE from Colombia. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *F.W. Pennell, E.P. Killip* 6343, 5 Jun 1922, Colombia: Cauca: Cuatro Esquinasuca (US-1140437). CS.

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

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

Classification. Subfamily Micrairoideae. Tribe Isachneae.

Habit, Vegetative Morphology. Perennial. Culms rambling, 60–200 cm long, rooting from lower nodes. Ligule a fringe of hairs. Leaf-blades lanceolate, 10–15 cm long, 6–12 mm wide. Leaf-blade margins cartilaginous. Leaf-blade apex attenuate.

Inflorescence. Inflorescence a panicle. Panicle open, ovate, dense, 6–8 cm long, with spikelets clustered towards branch tips. Primary panicle branches profusely divided. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 2 fertile florets, without rhachilla extension. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets oblong or orbicular, dorsally compressed, obtuse, 1.7–2 mm long, breaking up at maturity, disarticulating above glumes but not between florets.

Glumes. Glumes deciduous, similar, shorter than spikelet, thinner than fertile lemma. Lower glume ovate, 0.66 length of spikelet, membranous, without keels, 5 -veined. Lower glume apex obtuse. Upper glume ovate, 0.75 length of spikelet, membranous, without keels, 5 -veined. Upper glume apex obtuse.

Florets. Fertile florets with the lowest dissimilar. Lowest fertile lemma bisexual, elliptic, 1.7–2 mm long, thinner than adjacent lemma. Fertile lemma orbicular, 1.4–1.7 mm long, indurate, without keel. Lemma margins involute. Lemma apex obtuse. Palea indurate, 2 -veined.

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

Distribution (TDWG). Continent. South America.

Country /Province /State. Northern South America, Western South America. Guyana, Venezuela. Colombia, Peru.

Isachne lisboae Hook. f. *Fl. Brit. Ind.* vii. 22. (1896).

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

TYPE from India. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: India, Mahableshwar: Lisboa (K holo).

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

Derivation (Clifford & Bostock 2007): in honor of Josi Camillo Lisboa (c. 1822–1897) Indian physician and botanist.

Classification. Subfamily Micrairoideae. Tribe Isachneae.

Habit, Vegetative Morphology. Annual. Culms decumbent, 10–15 cm long. Leaf-sheaths glabrous on surface or pubescent. Ligule absent. Leaf-blades lanceolate, 2.5–5 cm long, 17 mm wide. Leaf-blade margins unthickened, ciliate. Leaf-blade apex acute.

Inflorescence. Inflorescence a panicle. Panicle open, elliptic, 2.5–5 cm long. Primary panicle branches spreading, simple, 13–20 cm long. Panicle branches secund, pilose. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, pubescent.

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 orbicular, dorsally compressed, 2.5–3 mm long, breaking up at maturity, disarticulating above glumes but not between florets.

Glumes. Glumes deciduous, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume ovate or orbicular, 1 length of spikelet, membranous, without keels, 5 -veined. Lower glume surface pubescent, hairy generally, with tubercle-based hairs. Lower glume apex cuspidate. Upper glume ovate or orbicular, 1 length of spikelet, membranous, without keels, 5 -veined. Upper glume surface pubescent, hairy generally, with tubercle-based hairs. Upper glume apex cuspidate.

Florets. Fertile lemma orbicular, hemispherical, 2–2.5 mm long, coriaceous, shiny, without keel. Lemma surface punctate, glabrous. Lemma margins involute. Lemma apex obtuse. Palea coriaceous, 2 -veined.

Flower and Fruit. Caryopsis with adherent pericarp.

Distribution (TDWG). Continent. Tropical Asia.

Country /Province /State. Indian Subcontinent. India.

TDWG4. Karnataka. Maharashtra.

Isachne lutchuensis Hatusima & Koyama. *Journ. Jap. Bot.* i. 235 (1956).

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

TYPE from Japan. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: HT: *S. Hatusima 18762*, 16 Jul 1955, Japan: Ryukyu Is., Okinawa Prefect. (KAG; L, US-2237053).

Illustrations (Books): T.Koyama, *Grasses of Japan and its neighbouring regions* (1987) (130, Fig 40).

Derivation (Clifford & Bostock 2007): *L. -ensis*, denoting origin. From Lutschu or Liukiu Island, Okinawa.

Classification. Subfamily Micrairoideae. Tribe Isachneae.

Habit, Vegetative Morphology. Annual or perennial, short-lived, caespitose, clumped loosely. Culms geniculately ascending, slender, 10–25 cm long, 0.5–0.8 mm diam., rooting from lower nodes. Culm-internodes smooth, distally glabrous. Lateral branches sparse. Leaf-sheaths 1.5–3 cm long, mostly shorter than adjacent culm internode, glabrous on surface, outer margin glabrous. Leaf-sheath oral hairs scanty. Ligule a fringe of hairs. Leaf-blades lanceolate, 15–40 cm long, 3–7 mm wide, light green. Leaf-blade venation with 5–7 secondary veins. Leaf-blade surface glabrous. Leaf-blade margins unthickened, entire or undulate. Leaf-blade apex acute.

Inflorescence. Inflorescence a panicle. Panicle open, ovate, 2–5 cm long, 2–5 cm wide. Primary panicle branches ascending or spreading, 1-nate, 1–4.5 cm long, bearing 4–12 fertile spikelets on each lower branch. Panicle axis 4–7 noded. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, filiform.

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 orbicular or obovate, dorsally compressed, 1–1.3 mm long, 0.8–1 mm wide, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes deciduous, similar, shorter than spikelet, thinner than fertile lemma. Lower glume lanceolate or ovate, 0.8–0.9 length of spikelet, membranous, much thinner on margins, without keels, 5–9 -veined. Lower glume surface hispid, hairy above. Lower glume apex obtuse or acute. Upper glume lanceolate or ovate, 0.8–0.9 length of spikelet, membranous, with hyaline margins, without keels, 5–9 -veined. Upper glume surface hispid, hairy above. Upper glume apex obtuse or acute.

Florets. Fertile lemma elliptic or ovate, 1–1.3 mm long, indurate, light green, without keel. Lemma lateral veins obscure. Lemma surface glabrous or puberulous. Lemma margins involute. Lemma apex obtuse. Palea indurate, 2 -veined.

Flower and Fruit. Caryopsis with adherent pericarp.

Distribution (TDWG). Continent. Temperate Asia.

Country /Province /State. Eastern Asia. Ogosawara-shoto.

Isachne mauritiana Kunth. *Rev. Gram.* i. 243. t. 33. (1830).

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

TYPE from Mauritius. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Mauritius: Coll? (P holo).

Illustrations (Books): R.M.Phill, F.T.E.A., *Gramineae* (2(1974):435, Fig.118).

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

Classification. Subfamily Micrairoideae. Tribe Isachneae.

Habit, Vegetative Morphology. Perennial. Culms prostrate, 30–60 cm long, rooting from lower nodes. Ligule a fringe of hairs. Leaf-blades lanceolate, 5–20 cm long, 5–17 mm wide. Leaf-blade surface glabrous or pubescent or pilose.

Inflorescence. Inflorescence a panicle. Panicle open, ovate, effuse, 10–20 cm long. Panicle branches capillary. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, filiform.

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 obovate, dorsally compressed, 1.2–1.8 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes suppressed between florets.

Glumes. Glumes deciduous, similar, reaching apex of florets, thinner than fertile lemma. Lower glume elliptic, 1.2–1.8 mm long, 1 length of upper glume, 1 length of spikelet, membranous, without keels, 5–9 -veined. Lower glume surface glabrous or pubescent, hairy above. Lower glume apex obtuse. Upper glume elliptic, 1.2–1.8 mm long, membranous, without keels, 5–9 -veined. Upper glume surface glabrous or pubescent, hairy above. Upper glume apex obtuse.

Florets. Fertile florets all alike. Fertile lemma orbicular, 1–1.5 mm long, coriaceous, without keel, 5–7 -veined, more than 3-veined. Lemma lateral veins obscure. Lemma surface glabrous. Lemma margins involute, interlocking with palea keels. Lemma apex obtuse. Palea coriaceous, 2 -veined.

Flower and Fruit. Lodicules 2, cuneate, fleshy. Anthers 3, 0.6 mm long. Caryopsis with adherent pericarp, orbicular, dorsally compressed, plano-convex.

Distribution (TDWG). Continent. Africa.

Country /Province /State. West tropical Africa, West-central tropical Africa, Northeast tropical Africa, East tropical Africa, South tropical Africa, Western Indian ocean. Ghana, Nigeria. Cameroon, Annobon, Principe & Sao Tome, Bioko, Rwanda, DR Congo. Ethiopia (inc. Eritrea). Kenya, Tanzania, Uganda. Malawi, Mozambique, Zambia, Zimbabwe. Mauritius, Madagascar.

Isachne meeboldii C. E. C. Fischer. *Kew Bull.* 1932, 323. (1932).

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

TYPE from India. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: South India. Mysore: Shimoga, 2000–3000 ft., Oct., A. Meebold 10747.

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

Derivation (Clifford & Bostock 2007): in honor of Alfred Karl Meebold (1863–1952) German botanist.

Classification. Subfamily Micrairoideae. Tribe Isachneae.

Habit, Vegetative Morphology. Perennial, caespitose. Culms erect or geniculately ascending, 30–45 cm long, 3–4 mm diam., without nodal roots or rooting from lower nodes. Culm-nodes glabrous. Leaf-sheaths 4–7 cm long, keeled, glabrous on surface. Ligule a fringe of hairs. Leaf-blades linear, 7–21 cm long, 6–12 mm wide. Leaf-blade surface glabrous or hispid. Leaf-blade margins cartilaginous. Leaf-blade apex acute.

Inflorescence. Inflorescence a panicle. Panicle open, ovate, 7–13 cm long. Primary panicle branches 3–8 cm long. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, glandular.

Fertile Spikelets. Spikelets comprising 2 fertile florets, without rhachilla extension. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets orbicular or obovate, dorsally compressed, 2–2.5 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes deciduous, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume ovate, 2.2–2.5 mm long, 1 length of spikelet, membranous, without keels, 7–8 -veined. Lower glume surface glabrous or pubescent, hairy above. Lower glume apex obtuse. Upper glume ovate, 2–2.25 mm long, 1 length of spikelet, membranous, without keels, 7–9 -veined. Upper glume surface glabrous or pubescent, hairy above. Upper glume apex obtuse.

Florets. Fertile lemma orbicular, 1.7–2 mm long, indurate, without keel. Lemma surface pubescent. Lemma margins involute. Lemma apex obtuse. Palea indurate, 2 -veined.

Flower and Fruit. Anthers 3. Caryopsis with adherent pericarp, ellipsoid, 1.5 mm long.

Distribution (TDWG). Continent. Tropical Asia.

Country /Province /State. Indian Subcontinent. India.

TDWG4. Karnataka.

Isachne minutula (Gaud.) Kunth. *Rev. Gram.* ii. I. 117 (1831).

Regarded by K as a synonym (*I. globosa*).

Accepted by: U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), J.F.Veldkamp, *Poaceae ms (Flora Malesiana)*, W.D.Clayton & N.Snow, *Key to Pacific Grasses* (2010).

TYPE from Japan. **Basionym or Replaced Name:** *Panicum minutulum* Gaudich., *Voy. Monde* 410 (1829). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Japan: without specific locality, *Thunberg 2041* (HT: UPS).

Recent Synonyms: *Isachne conferta* Merrill, *Philipp. Journ. Sc., Bot.* 9: 261 (1914).

Illustrations (Books): H.Duistermaat, *Field Guide to the Grasses of Singapore* (2005) (81, Fig. 78).

Derivation (Clifford & Bostock 2007): *L. minutus*, very small; -ula, diminutive. Spikelets small.

Classification. Subfamily Micrairoideae. Tribe Isachneae.

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

Country /Province /State. Indian Subcontinent, Indo-China, Malesia, Papuasias. India, Sri Lanka. Andaman Is, Nicobar Is, Vietnam. Borneo, Java, Malaya, Moluccas, Philippines, Sumatra. New Guinea West Papua (Irian Jaya). New Guinea. **Australia.** Western Australia, Northern Territory, Queensland. Caroline Is, Marianas.

Isachne multiflora (Thw.) Ferg. *J. Roy. Asiat. Soc., Ceylon Br.* 6:69 (1880).

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

TYPE from Sri Lanka. **Basionym or Replaced Name:** *Isachne australis* var. *multiflora* Thwaites, *Enum. Pl. Zeyl.* 361 (1864)

. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *G.H.R. Thwaites C.P. 3671*, Apr 1860, Ceylon: Uva, in wet places (K; IT: US-1298827).

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

Derivation (Clifford & Bostock 2007): *L. multus*, many; flos, flower. Spikelets with more florets than those of related species.

Classification. Subfamily Micrairoideae. Tribe Isachneae.

Habit, Vegetative Morphology. Perennial. Culms erect, 30–90 cm long. Culm-nodes glabrous. Leaf-sheaths glabrous on surface, outer margin hairy. Ligule a fringe of hairs. Leaf-blades linear, 5–15 cm long, 3–8 mm wide. Leaf-blade surface scaberulous. Leaf-blade apex acuminate.

Inflorescence. Inflorescence a panicle. Panicle open, ovate, 6–21 cm long. Primary panicle branches ascending. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 2 fertile florets, without rhachilla extension. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets ovate, dorsally compressed, 1.9–2.1 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes deciduous, similar, shorter than spikelet, thinner than fertile lemma. Lower glume ovate, 1.2–1.7 mm long, 1 length of spikelet, membranous, without keels, 7–9 -veined. Lower glume apex obtuse. Upper glume ovate, 1.1–1.6 mm long, 1 length of spikelet, membranous, without keels, 7–9 -veined. Upper glume apex obtuse.

Florets. Fertile florets with the lowest dissimilar. Lowest fertile lemma elliptic, 1.9–2.4 mm long, 2 length of adjacent lemma, thinner than adjacent lemma. Fertile lemma orbicular, 1.1–1.3 mm long, coriaceous, without keel. Lemma surface puberulous. Lemma margins involute. Lemma apex obtuse. Palea coriaceous, 2 -veined.

Flower and Fruit. Anthers 3, 1.3 mm long. Caryopsis with adherent pericarp.

Distribution (TDWG). Continent. Tropical Asia.

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

Isachne muscicola A. Camus. *Bull. Soc. Bot. France*, xciv. 41 (1947).

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

TYPE from Madagascar. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: ST: *Perrier 16117*, Madagascar, Domaine central: Mont Tsaratanana, sosubois herbacé de al foret, vers 2000 m (P).

ST: *Perrier 15537*, Madagascar, Domaine central: massif de l'Andringitra, alt. 1600 m (P).

Illustrations (Books): J.Bosser, *Graminees des Paturage et des Cultures a Madagascar* (1969) (271, Fig 99).

Derivation (Clifford & Bostock 2007): *L. muscus*, moss; -cola, dweller. Growing in moss-forests.

Classification. Subfamily Micrairoideae. Tribe Isachneae.

Habit, Vegetative Morphology. Perennial. Culms geniculately ascending or decumbent or leaning, 100–200 cm long, rooting from lower nodes. Culm-internodes distally glabrous or pubescent. Lateral branches ample. Ligule a fringe of hairs, 4–5 mm long. Leaf-blades linear, 10–20 cm long, 5–12 mm wide. Leaf-blade surface glabrous. Leaf-blade margins glabrous or ciliate.

Inflorescence. Inflorescence a panicle. Panicle open, ovate, effuse, 15–25 cm long, 10–20 cm wide. Primary panicle branches ascending or spreading, 1–2 -nate. Panicle branches capillary. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, filiform.

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 orbicular or obovate, dorsally compressed, 2–2.5 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes suppressed between florets.

Glumes. Glumes deciduous, similar, reaching apex of florets, thinner than fertile lemma. Lower glume ovate, 2–2.5 mm long, 1 length of upper glume, 1 length of spikelet, membranous, without keels, 5–9 -veined. Lower glume surface glabrous. Lower glume apex obtuse. Upper glume elliptic, 2–2.5 mm long, 1 length of spikelet, membranous, without keels, 5–9 -veined. Upper glume surface glabrous. Upper glume apex obtuse.

Florets. Fertile florets all alike. Fertile lemma orbicular, hemispherical, 2–2.5 mm long, coriaceous, without keel, 5–7 -veined, more than 3-veined. Lemma lateral veins obscure. Lemma surface glabrous. Lemma margins involute, interlocking with palea keels. Lemma apex obtuse. Palea coriaceous, 2 -veined.

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

Distribution (TDWG). Continent. Africa.

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

Isachne myosotis Nees. *Hook. Kew Journ.* ii. 98. (1850).

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)* (& as *I. incrassata*), T.Koyama, *Grasses of Japan and its neighboring regions* (1987).

TYPE from Philippines. **Basionym or Replaced Name:** *Isachne depauperata*, *I. debilis*. *I. myosotis*. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Philippine Islands:, *Cuming 947* (HT?: US (fragm.)).

Illustrations (Books): C-C Hsu, *Flora of Taiwan*, Vol 5 (1978) (470 as *I. debilis*), C-C Hsu, *Taiwan Grasses* (1975) (as *I. debilis*), E.E.Henty, *A Manual of the Grasses of New Guinea* (1969) (119, Pl. 45), S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 779).

Derivation (Clifford & Bostock 2007): Gk. myosotis, madwort (*Asperugo procumbens*) one of the borages. Habit creeping with asperous foliage.

Classification. Subfamily Micrairoideae. Tribe Isachneae.

Habit, Vegetative Morphology. Annual, mat forming or caespitose. Culms prostrate, 2–6 cm long. Lateral branches ample. Leaf-sheaths pilose, with simple hairs or tubercle-based hairs, outer margin hairy. Ligule a fringe of hairs, 1 mm long. Leaf-blades lanceolate or ovate, 5–15 cm long, 2–4 mm wide. Leaf-blade surface pubescent or pilose, densely hairy, with tubercle-based hairs.

Inflorescence. Inflorescence a panicle. Panicle contracted, elliptic, 7–16 cm long, bearing few spikelets. Panicle branches smooth. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 2 fertile florets, without rhachilla extension. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets orbicular, dorsally compressed, 1–1.5 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes deciduous, similar, shorter than spikelet, thinner than fertile lemma. Lower glume ovate, 1–1.5 mm long, 1 length of upper glume, 1 length of spikelet, membranous, without keels. Lower glume surface glabrous or hispidulous. Lower glume apex obtuse. Upper glume ovate, 1–1.5 mm long, 1 length of adjacent fertile lemma, membranous, without keels. Upper glume surface glabrous or hispidulous. Upper glume apex obtuse.

Florets. Fertile lemma elliptic or orbicular, 1–1.3 mm long, coriaceous, without keel. Lemma surface puberulous. Lemma margins involute. Lemma apex obtuse. Palea coriaceous, 2 -veined.

Flower and Fruit. Anthers 3.

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

Country /Province /State. China, Eastern Asia. China Southeast. Nansei-Shoto, Ogosawara-shoto, Taiwan. Indo-China, Malesia, Papuaasia. Cambodia, Myanmar, Vietnam. Borneo, Java, Lesser Sunda Is, Moluccas, Philippines, Sulawesi. New Guinea. Australia. Western Australia, Northern Territory, Queensland.

TDWG4. Fujian.

Isachne mysorensis Sundara Raghavan. *Indian Forester*, 97(6): 304 (1971).

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

TYPE from India. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: India, Agumbe: Sundararaghavan 90008a (CAL holo).

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

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

Classification. Subfamily Micrairoideae. Tribe Isachneae.

Habit, Vegetative Morphology. Annual, caespitose, clumped loosely. Culms erect, slender, 6–8 cm long. Culm-internodes distally pubescent. Leaf-sheaths 1.3 cm long, pilose. Ligule absent. Leaf-blade base cordate. Leaf-blades ovate, 0.3–1.2 cm long, 5–15 mm wide. Leaf-blade surface pilose, sparsely hairy, hairy adaxially. Leaf-blade margins tuberculate-ciliate. Leaf-blade apex acute.

Inflorescence. Inflorescence a panicle. Peduncle glabrous. Panicle open, pyramidal, 2.5–3 cm long, 0.8–1.2 cm wide. Primary panicle branches spreading, 1 -nate. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, 3 mm long, glabrous.

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 orbicular, dorsally compressed, 1.2 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes deciduous, similar, reaching apex of florets, thinner than fertile lemma. Lower glume ovate, 1 mm long, 0.9 length of spikelet, membranous, without keels. Lower glume surface pilose, hairy at apex. Lower glume apex obtuse. Upper glume obovate, 1.2 mm long, 1 length of spikelet, membranous, without keels. Upper glume surface pilose, hairy at apex. Upper glume apex acute.

Florets. Fertile florets bisexual (lower) or female (upper). Fertile lemma orbicular, 1 mm long, coriaceous, without keel. Lemma surface pubescent. Lemma margins involute. Lemma apex obtuse. Palea 1 length of lemma, coriaceous, 2 -veined. Palea surface pubescent.

Flower and Fruit. Anthers 3, 0.5 mm long. Caryopsis with adherent pericarp, ellipsoid, 0.5 mm long.

Distribution (TDWG). Continent. Tropical Asia.

Country /Province /State. Indian Subcontinent. India.

TDWG4. Karnataka.

Isachne nipponensis Ohwi. *Acta Phytotax. & Geobot.* iv. 30. (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), T.Koyama, *Grasses of Japan and its neighboring regions* (1987).

TYPE from Japan. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Japan: Hondo: Wakayama Prefect., Shingu in Kii, 16 Oct. 1931, *J. Ohwi & M. Tagawa* 91 (HT: ?; IT: LE, US-1964346).

Illustrations (Books): T.Koyama, *Grasses of Japan and its neighbouring regions* (1987) (130, Fig 40), C-C Hsu, *Flora of Taiwan*, Vol 5 (1978) (480), C-C Hsu, *Taiwan Grasses* (1975), S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 779).

Derivation (Clifford & Bostock 2007): L. -ensis, denoting origin. From Nippon, that is, Japan.

Classification. Subfamily Micrairoideae. Tribe Isachneae.

Habit, Vegetative Morphology. Perennial, mat forming. Culms prostrate, 20–50 cm long, 0.3–0.8 mm diam., rooting from lower nodes. Culm-internodes 1–6 cm long. Leaves cauline. Leaf-sheaths pubescent, outer margin hairy. Leaf-sheath oral hairs ciliate. Ligule a fringe of hairs, 1 mm long. Leaf-blade base cuneate or broadly rounded. Leaf-blades elliptic or ovate, 2–4.5 cm long, 7–15 mm wide. Leaf-blade surface puberulous, sparsely hairy, hairy abaxially or on both sides. Leaf-blade margins cartilaginous, entire or undulate. Leaf-blade apex acute.

Inflorescence. Inflorescence a panicle, exerted or embraced at base by subtending leaf. Panicle open, ovate, 3–6 cm long, 1.5–4 cm wide. Primary panicle branches 1–3 -nate, 1–4 cm long, bearing 1–5 fertile spikelets on each lower branch. Panicle branches capillary. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, filiform.

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 orbicular or obovate, dorsally compressed, 1.5 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes deciduous, similar, shorter than spikelet or reaching apex of florets, thinner than fertile lemma. Lower glume lanceolate or ovate, 1.3–1.5 mm long, 0.9–1 length of spikelet, membranous, much thinner on margins, without keels, 5 -veined. Lower glume surface pubescent, hairy above. Lower glume apex obtuse. Upper glume lanceolate or ovate, 1.3–1.5 mm long, 0.9–1 length of spikelet, membranous, with hyaline margins, without keels, 5 -veined. Upper glume surface pubescent, hairy above. Upper glume apex obtuse.

Florets. Fertile lemma elliptic, 1.3 mm long, indurate, without keel. Lemma surface pubescent. Lemma margins involute. Lemma apex obtuse. Palea indurate, 2 -veined. Palea surface pubescent.

Flower and Fruit. Caryopsis with adherent pericarp.

Distribution (TDWG). Continent. Temperate Asia.

Country /Province /State. China, Eastern Asia. China South Central, China Southeast. Japan, Korea, Nansei-Shoto, Taiwan. Japan Honshu.

TDWG4. Fujian, Guangdong, Guangxi, Hunan, Jiangxi, Zhejiang. Guizhou, Sichuan.

Isachne obtecta Reeder. *Journ. Arn. Arb.* xxix. 313 (1948).

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

TYPE from Papua New Guinea. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Papua New Guinea: Western Division: Palmer River, 2 mi below junction with Black River, 100 m, common in native gardens, July 1936, *Brass* 7242 (HT: A; IT: L, US-1723616).

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

Derivation (Clifford & Bostock 2007): L. obtecto, conceal. Segregated from a closely related species.

Classification. Subfamily Micrairoideae. Tribe Isachneae.

Habit, Vegetative Morphology. Perennial, caespitose. Culms erect or geniculately ascending, 30–45 cm long, 1 mm diam. Culm-nodes glabrous. Lateral branches lacking or sparse. Leaf-sheaths mostly shorter than adjacent culm internode, glabrous on surface, outer margin hairy. Ligule a fringe of hairs, 2–3 mm long. Leaf-blade base cordate. Leaf-blades linear or lanceolate, 2–6 cm long, 3–6 mm wide. Leaf-blade surface glabrous or pilose, hairy abaxially or on both sides. Leaf-blade margins scabrous. Leaf-blade apex acute.

Inflorescence. Inflorescence a panicle. Panicle contracted, lanceolate, 5–8 cm long. Primary panicle branches appressed. Panicle branches stiff, smooth or scaberulous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, clavate.

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 orbicular, dorsally compressed, 1.5 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes flattened.

Glumes. Glumes deciduous, similar, reaching apex of florets, thinner than fertile lemma. Lower glume elliptic or obovate, 1.5 mm long, 1 length of upper glume, 1 length of spikelet, membranous, without keels, 7 -veined. Lower glume lateral veins obscure. Lower glume surface glabrous. Lower glume apex obtuse. Upper glume elliptic or obovate, 1.5 mm long, 1 length of adjacent fertile lemma, membranous, without keels, 7 -veined. Upper glume lateral veins obscure. Upper glume surface glabrous. Upper glume apex obtuse.

Florets. Fertile lemma elliptic, 1.5 mm long, coriaceous, shiny, without keel. Lemma surface glabrous. Lemma margins involute. Lemma apex obtuse. Palea coriaceous, 2 -veined.

Distribution (TDWG). Continent. Tropical Asia.

Country /Province /State. Malesia, Papuasia. New Guinea West Papua (Irian Jaya). New Guinea.

Isachne oreades (Domin) Bor. *Grasses Burma, Ceyl., Ind. & Pakist.* 582 (1960).

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:** *Panicum aequiglume* Hook. f., non Hack. & Arechav.(1894), *Fl. Brit. Ind.* 7: 44 (1896). T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: : Based on *P. aequiglume* Hooker ; India, Nilgiri Hills: Lawson.

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

Derivation (Clifford & Bostock 2007): Gk. oreias, belonging to mountains. Mountain species.

Classification. Subfamily Micrairoideae. Tribe Isachneae.

Habit, Vegetative Morphology. Perennial. Culms rambling, 30–40 cm long. Ligule a fringe of hairs. Leaf-blades lanceolate, 5–8 cm long, 5–10 mm wide.

Inflorescence. Inflorescence a panicle, embraced at base by subtending leaf. Panicle open, ovate, 7–15 cm long. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets ovate, dorsally compressed, obtuse, 2–2.2 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes deciduous, similar, shorter than spikelet, thinner than fertile lemma. Lower glume ovate, 1.6 mm long, 0.75 length of spikelet, membranous, without keels, 7 -veined. Lower glume apex obtuse. Upper glume ovate, 1.6 mm long, 0.75 length of spikelet, membranous, without keels, 7 -veined. Upper glume apex obtuse.

Florets. Basal sterile florets 1, male, with palea. Lemma of lower sterile floret elliptic, 2–2.2 mm long, herbaceous, acute. Fertile lemma ovate, 1.5 mm long, coriaceous, without keel. Lemma margins involute. Lemma apex obtuse. Palea coriaceous, 2 -veined.

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

Distribution (TDWG). Continent. Tropical Asia.

Country /Province /State. Indian Subcontinent. India.

TDWG4. Tamilnadu.

Isachne pallens Hillebr. *Fl. Haw. Isl.* 504. (1888).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), W.D.Clayton & N.Snow, *Key to Pacific Grasses* (2010).

TYPE from Hawaii. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: Hawaii, Woods of the eastern division of Oahu.

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

Derivation (Clifford & Bostock 2007): L. pale. Inflorescences pale.

Classification. Subfamily Micrairoideae. Tribe Isachneae.

Habit, Vegetative Morphology. Perennial. Culms decumbent, 30–60 cm long, rooting from lower nodes. Ligule a fringe of hairs. Leaf-blades linear or lanceolate, 6–8 cm long, 2–4 mm wide. Leaf-blade surface glabrous.

Inflorescence. Inflorescence a panicle. Panicle open, ovate, 3–8 cm long, 2–3 cm wide. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 2 fertile florets, without rachilla extension. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets elliptic or obovate, dorsally compressed, 2 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes deciduous, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume ovate, 2 mm long, 1 length of upper glume, 1 length of spikelet, membranous, without keels, 5 -veined. Lower

glume apex acute. Upper glume ovate, 2 mm long, membranous, without keels, 7 -veined. Upper glume apex acute.

Florets. Fertile lemma elliptic, 1.3–1.6 mm long, coriaceous, without keel. Lemma surface pubescent. Lemma margins involute. Lemma apex obtuse. Palea coriaceous, 2 -veined.

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

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

Country /Province /State. **Indian Subcontinent, Indo-China.** India. Myanmar. **North-central Pacific.** Hawaii.

Isachne pangerangensis Zoll. & Mor. *Syst. Verz. Zoll.* 102. (1846).

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

TYPE from Indonesia. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Java, Mt. Pangerange: Zollinger 1917.

Recent Synonyms: *Isachne firmula* Büse, *Miq. Pl. Jungh.* 879. (1854).

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

Derivation (Clifford & Bostock 2007): L. -ense, denoting origin. From Mt Pangerango, Java.

Classification. Subfamily Micrairoideae. Tribe Isachneae.

Habit, Vegetative Morphology. Perennial, cushion forming or mat forming or caespitose. Culms geniculately ascending or decumbent, 10–60 cm long. Leaves distichous. Leaf-sheaths hirsute, outer margin hairy. Ligule a fringe of hairs. Leaf-blade base amplexicaul. Leaf-blades lanceolate, 1–3 cm long, 3–5 mm wide, stiff. Leaf-blade surface ribbed. Leaf-blade margins ciliate.

Inflorescence. Inflorescence a panicle. Panicle open, elliptic or ovate, 2–9 cm long. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 2 fertile florets, without rhachilla extension. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets obovate, dorsally compressed, obtuse, 2.2 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes definite, terete.

Glumes. Glumes deciduous, similar, reaching apex of florets, thinner than fertile lemma. Lower glume ovate, 2.2 mm long, 1 length of upper glume, 1 length of spikelet, membranous, without keels, 5–7 -veined. Lower glume surface glabrous or pubescent, hairy at apex. Lower glume apex acute. Upper glume ovate, 2.2 mm long, membranous, without keels, 5–7 -veined. Upper glume surface glabrous or puberulous, hairy at apex. Upper glume apex acute.

Florets. Fertile lemma ovate, 2.2 mm long, coriaceous, without keel. Lemma margins involute. Lemma apex obtuse, without ornament or pubescent. Palea coriaceous, 2 -veined.

Flower and Fruit. Anthers 3.

Distribution (TDWG), Continent. Tropical Asia.

Country /Province /State. **Malesia, Papuasias.** Borneo, Java, Lesser Sunda Is, Sumatra, Philippines. New Guinea.

Isachne pauciflora Hack. *Philipp. Gov. Lab. Bur. Bull.* v. 80. (1906).

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

TYPE from Philippines. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Philippine Islands: Luzon: Baguio, Benguet, June 1904, *Elmer 6486* (HT: ?).

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

Derivation (Clifford & Bostock 2007): L. *paucus*, few; *flos*, flower. With few florets per spikelet or few spikelets per inflorescence.

Classification. Subfamily Micrairoideae. Tribe Isachneae.

Habit, Vegetative Morphology. Annual. Culms prostrate, weak, 10–15 cm long, rooting from lower nodes. Culm-internodes distally glabrous. Leaf-sheaths loose, hirsute, with tubercle-based hairs, outer margin hairy. Ligule a fringe of hairs, 1 mm long. Leaf-blades lanceolate or ovate, 1–1.5 cm long, 4 mm wide. Leaf-blade surface glabrous or pilose, with tubercle-based hairs. Leaf-blade margins scabrous. Leaf-blade apex acute.

Inflorescence. Inflorescence a panicle. Panicle contracted, linear, 1.5 cm long, bearing few spikelets. Panicle axis glabrous. Panicle branches stiff, glabrous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 2 fertile florets, without rhachilla extension. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets orbicular, dorsally compressed, 1.8–2 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes deciduous, similar, reaching apex of florets, thinner than fertile lemma. Lower glume ovate, 1.8–2 mm long, 1 length of upper glume, 1 length of spikelet, membranous, without keels. Lower glume surface hispidulous. Lower glume apex obtuse. Upper glume ovate, 1.8–2 mm long, 1 length of adjacent fertile lemma, membranous, without keels. Upper glume surface hispidulous. Upper glume apex obtuse.

Florets. Fertile lemma elliptic, 1.5–1.8 mm long, coriaceous, without keel. Lemma surface puberulous. Lemma margins involute. Lemma apex obtuse. Palea coriaceous, 2 -veined.

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

Country /Province /State. China, Eastern Asia. Taiwan. Malesia. Philippines.

Isachne perrieri A.Camus. *Bull. Soc. Bot. France* 72: 306 (1925).

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

TYPE from Madagascar. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Madagascar, Betafo: *Perrier 13183* .

Recent Synonyms: *Isachne hirtissima* A.Camus, *Bull. Soc. Bot. France*, 73: 916 (1927).

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

Derivation (Clifford & Bostock 2007): *L. hirtus*, hairy; *-issima*, most. Leaf-sheath densely hairy.

Classification. Subfamily Micrairoideae. Tribe Isachneae.

Habit, Vegetative Morphology. Annual. Culms erect or geniculately ascending, 25–35 cm long. Culm-internodes distally hirsute. Leaf-sheaths hirsute, outer margin hairy. Ligule a fringe of hairs. Leaf-blades linear or lanceolate, 9–10 cm long, 7–10 mm wide. Leaf-blade surface scaberulous, rough adaxially, pilose, hairy abaxially. Leaf-blade margins scaberulous. Leaf-blade apex acuminate.

Inflorescence. Inflorescence a panicle. Panicle open, ovate, 8–10 cm long, 3–5 cm wide. Panicle axis hirsute. Panicle branches flexuous, hirsute. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, 0.3–0.6 mm long, ciliate.

Fertile Spikelets. Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, dorsally compressed, acute, 1.8–1.9 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes elongated between glumes.

Glumes. Glumes deciduous, similar, reaching apex of florets, thinner than fertile lemma. Lower glume lanceolate, 1.8–1.9 mm long, 1 length of spikelet, membranous, without keels, 3 -veined. Lower glume surface hirsute, with tubercle-based hairs. Lower glume apex acute. Upper glume lanceolate, 1.7 mm long, 0.9 length of spikelet, membranous, without keels, 3–5 -veined. Upper glume surface hirsute, with tubercle-based hairs. Upper glume apex acute.

Florets. Basal sterile florets 1, male, with palea, attached to and deciduous with the fertile. Lemma of lower sterile floret oblong, 1.5 mm long, chartaceous, glabrous. Fertile lemma oblong or ovate, 1 mm long, coriaceous, without keel. Lemma surface rugulose. Lemma margins involute. Lemma apex obtuse. Palea coriaceous, 2 -veined.

Flower and Fruit. Caryopsis with adherent pericarp.

Distribution (TDWG). Continent. Africa.

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

Isachne petelotii A. Camus. *Bull. Soc. Bot. France*, lxxv. 553. (1928).

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

TYPE from Indochina. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Indochina, Tonkin, Chapa: Petelot 5070.

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

Derivation (Clifford & Bostock 2007): in honor of Paul Alfred Pitelot (1885-) French entomologist and plant collector in Indo-China.

Classification. Subfamily Micrairoideae. Tribe Isachneae.

Habit, Vegetative Morphology. Perennial. Culms decumbent, 70–90 cm long. Culm-internodes distally glabrous. Leaf-sheaths pilose, with tubercle-based hairs. Ligule a fringe of hairs. Leaf-blade base broadly rounded. Leaf-blades lanceolate, 8–10 cm long, 8–10 mm wide. Leaf-blade surface pubescent, hairy abaxially. Leaf-blade margins scaberulous. Leaf-blade apex acuminate.

Inflorescence. Inflorescence a panicle. Panicle open, lanceolate, dense, 12–18 cm long, 4–6 cm wide, contracted about primary branches. Primary panicle branches appressed, 1.5–6 cm long. Panicle axis angular.

Panicle branches scabrous, bearded in axils. Spikelets appressed, in pairs. Fertile spikelets pedicelled. Pedicels present, unequal, 1–1.5 mm long or 5–6 mm long, scaberulous.

Fertile Spikelets. Spikelets comprising 2 fertile florets, without rhachilla extension. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets oblong, dorsally compressed, 2.5 mm long, breaking up at maturity, disarticulating above glumes but not between florets.

Glumes. Glumes deciduous, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume ovate, 2.5 mm long, 1.4 length of spikelet, membranous, without keels, 3 -veined. Lower glume apex acute. Upper glume ovate, 2.4 mm long, 1.4 length of spikelet, membranous, without keels, 5 -veined. Upper glume surface puberulous, hairy at apex. Upper glume apex acute.

Florets. Fertile lemma oblong, 1.7 mm long, coriaceous, without keel. Lemma surface puberulous. Lemma margins involute. Lemma apex obtuse. Palea coriaceous, 2 -veined. Palea surface puberulous.

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

Distribution (TDWG). Continent. Tropical Asia.

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

Isachne polygonoides (Lam.) Doell. *Mart. Fl. Bras.* ii. II. 273 (1877).

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

TYPE from French Guiana. **Basionym or Replaced Name:** *Panicum polygonoides* Lam., *Encycl.* 4(2): 742 (1798)

. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *J.B. Le Blond s.n.*, no date, French Guiana: Cayenne (P-LA; IT: US-80926 (fragm. ex P)).

Illustrations (Books): J.A.Steyermark et al, *Flora of the Venezuelan Guayana* Vol. 8 (2004) (134, Fig. 93), W.Burger, *Flora Costaricensis* 15, Gramineae: *Fieldiana Botany New Series* 4 (1980) (279, Fig. 101), E.Judziewicz, *Flora of the Guianas*, 187. *Poaceae* (1990) (293, Fig.50).

Illustrations (Journals): *Ruizia* (13:416 Fig 55g-h (1993)).

Derivation (Clifford & Bostock 2007): Gk. -oides, resembling. Habit creeping as with some *Polygonum* species.

Classification. Subfamily Micrairoideae. Tribe Isachneae.

Habit, Vegetative Morphology. Perennial. Culms decumbent, 50–60 cm long, rooting from lower nodes. Culm-internodes distally glabrous. Culm-nodes glabrous or pubescent. Lateral branches ample. Leaf-sheaths glabrous on surface or hispid, with tubercle-based hairs. Ligule a fringe of hairs, 1–2.5 mm long. Leaf-blade base cordate. Leaf-blades lanceolate, 2–4 cm long, 7–13 mm wide. Leaf-blade surface scabrous, rough adaxially, puberulous, hairy abaxially. Leaf-blade margins scabrous.

Inflorescence. Inflorescence a panicle, embraced at base by subtending leaf. Panicle open, pyramidal, 2–6 cm long. Primary panicle branches spreading, 1 -nate. Panicle branches glandular. Spikelets spreading, solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets elliptic or orbicular, dorsally compressed, 1.3–2 mm long, breaking up at maturity, disarticulating above glumes but not between florets. Rhachilla internodes elongated between glumes.

Glumes. Glumes deciduous, similar, reaching apex of florets, thinner than fertile lemma. Lower glume ovate, 1.2–1.8 mm long, 0.9 length of spikelet, membranous, without keels, 5 -veined. Lower glume surface glabrous or pubescent, hairy at apex. Lower glume apex acute. Upper glume ovate, 1.3–1.9 mm long, 1 length of spikelet, membranous, without keels, 7 -veined. Upper glume surface glabrous or pubescent, hairy at apex. Upper glume apex acute.

Florets. Basal sterile florets 1, male, with palea, attached to and deciduous with the fertile. Lemma of lower sterile floret ovate, 1.5–1.7 mm long, chartaceous, 5 -veined, glabrous, obtuse. Fertile florets female. Fertile lemma ovate, 1.2–1.5 mm long, coriaceous, without keel. Lemma surface puberulous. Lemma margins involute. Lemma apex obtuse. Palea coriaceous, 2 -veined.

Flower and Fruit. Anthers 3, 0.4–0.5 mm long. Caryopsis with adherent pericarp.

$2n = 20$ (1 ref TROPICOS).

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

Country /Province /State. Indo-China. Vietnam. **Mexico.** Southwest Mexico, Southeast Mexico. **Mesoamerica, Caribbean, Northern South America, Western South America, Brazil.** Belize, Costa Rica, Guatemala, Honduras, Nicaragua, Panama. Cuba, Dominican Republic, Trinidad-Tobago. French Guiana,

Guyana, Surinam, Venezuela. Bolivia, Colombia, Peru. Brazil West Central, Brazil Northeast, Brazil North, Brazil Southeast.

TDWG4. Para, Amapa, Amazonas, Acre, Rondonia, Goias. Guerrero. Chiapas.

Isachne ponapensis Hosokawa. *Trans. Nat. Hist. Soc. Formosa*, xxiv. 200. (1934).

Regarded by K as a synonym (*I. globosa*).

TYPE from Caroline Islands. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *Hosokawa 5989*, 24 Aug 1933, Caroline Islands: Ponape Island: Mt. Nanaraut (FU; IT: US (fragm.)).

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

Derivation (Clifford & Bostock 2007): L. *-ensis*, denoting origin. From Ponape (Phonpei), an island in the Federated States of Micronesia.

Classification. Subfamily Micrairoideae. Tribe Isachneae.

Distribution (TDWG). Continent. Pacific.

Country /Province /State. **Northwestern Pacific.** Caroline Is.

Isachne puberula Bor. *Dansk Bot. Arkiv*, xxiii. 147 (1965).

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

TYPE from Thailand. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Thailand, Makam: Kai Larsen 9781 (K holo, C).

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

Derivation (Clifford & Bostock 2007): L. *pubes*, signs of puberty; *-ula*, diminutive. Plant covered in whole or in part with short hairs.

Classification. Subfamily Micrairoideae. Tribe Isachneae.

Habit, Vegetative Morphology. Perennial. Culms decumbent, 15–30 cm long. Culm-internodes distally glabrous or pubescent. Culm-nodes pubescent. Leaf-sheaths glabrous on surface or pilose, with tubercle-based hairs, outer margin hairy. Ligule a fringe of hairs. Leaf-blades 2–5 cm long, 2–3 mm wide, stiff. Leaf-blade surface scabrous, rough on both sides, glabrous or pilose, with tubercle-based hairs. Leaf-blade margins cartilaginous, scabrous. Leaf-blade apex acute.

Inflorescence. Inflorescence a panicle. Panicle open, ovate, 3–6 cm long, 1.5–3 cm wide. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 2 fertile florets, without rhachilla extension. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets elliptic, dorsally compressed, 1.75 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes suppressed between florets.

Glumes. Glumes deciduous, similar, shorter than spikelet, thinner than fertile lemma. Lower glume elliptic or oblong, 0.75 length of spikelet, membranous, without keels, 7–9 -veined. Lower glume surface flat, scabrous, rough between veins. Lower glume apex obtuse. Upper glume elliptic or oblong, 0.8 length of spikelet, membranous, without keels, 7 -veined. Upper glume surface scabrous, rough between veins. Upper glume apex obtuse.

Florets. Fertile lemma elliptic or obovate, 1.5 mm long, chartaceous, without keel. Lemma surface puberulous. Lemma margins involute. Lemma apex obtuse. Palea chartaceous, 2 -veined.

Flower and Fruit. Anthers 3, 1–1.2 mm long. Caryopsis with adherent pericarp.

Distribution (TDWG). Continent. Tropical Asia.

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

Isachne pubescens Swallen. *Contrib. U. S. Nat. Herb.* xxix. 426 (1950).

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

TYPE from Guatemala. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *H. Pittier 252*, 6 May 1905, Guatemala: Secanquim: Alta Verapaz (US-472909). CS.

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

Derivation (Clifford & Bostock 2007): L. *pubesco*, become hairy. Plant whole or in part hairy.

Classification. Subfamily Micrairoideae. Tribe Isachneae.

Habit, Vegetative Morphology. Perennial. Culms rambling or scandent, 100–200 cm long, 2–3 mm diam. Lateral branches ample. Leaf-sheaths pilose, with tubercle-based hairs, outer margin hairy. Ligule a fringe of

hairs, 2–3 mm long. Leaf-blades lanceolate, 7–16 cm long, 10–14 mm wide. Leaf-blade surface pubescent. Leaf-blade apex acuminate.

Inflorescence. Inflorescence a panicle. Peduncle pubescent above. Panicle open, oblong, 11–12 cm long, 4 cm wide. Primary panicle branches ascending, rebranched near base. Panicle axis pubescent. Panicle branches pubescent. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 2 fertile florets, without rhachilla extension. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets elliptic, dorsally compressed, 1.9–2 mm long, breaking up at maturity, disarticulating above glumes but not between florets. Rhachilla internodes pubescent.

Glumes. Glumes deciduous, similar, shorter than spikelet, thinner than fertile lemma. Lower glume oblong, 0.75 length of spikelet, membranous, without keels, 5 -veined. Lower glume surface puberulous, hairy above. Lower glume apex acute. Upper glume ovate, 0.75 length of spikelet, membranous, without keels, 7 -veined. Upper glume surface puberulous, hairy above. Upper glume apex obtuse.

Florets. Fertile florets with the lowest dissimilar. Lowest fertile lemma elliptic, 1.8 mm long, 1.8 length of adjacent lemma. Fertile lemma ovate, 1 mm long, coriaceous, without keel. Lemma margins involute. Lemma apex obtuse. Palea coriaceous, 2 -veined.

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

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

Country /Province /State. Mexico. Gulf (Mexico), Southeast Mexico. **Mesoamerica, Western South America.** Belize, Guatemala, Honduras. Colombia. Veracruz. Chiapas.

Isachne pulchella Roth ex Roem. & Schult. *Syst.* ii. 476 (1817).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), D.Sharp, D. & B.K.Simon, *AusGrass* (2002), S-L Chen et al, *Flora of China* 22 (Poaceae) (2006), J.F.Veldkamp, Poaceae ms (*Flora Malesiana*), N.L.Bor, Grasses of Burma, Ceylon, India and Pakistan (1960), W.D.Clayton & N.Snow, Key to Pacific Grasses (2010).

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

Illustrations (Books): K.M.Matthew, Further Illustrations on the *Flora of Tamilnadu Carnatic* (1988) (1.789), H.Duistermaat, *Field Guide to the Grasses of Singapore* (2005) (81, Fig. 79), D.Sharp & B.K.Simon, *AusGrass*. Grasses of Australia. CD-Rom Version 1.0. (2002), S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 776).

Images: D.Sharp & B.K.Simon, *AusGrass*. Grasses of Australia. CD-Rom Version 1.0. (2002);, H.B.Gilliland et al., *Flora of Malaya Vol. 3 Grasses* (1971);

Derivation (Clifford & Bostock 2007): L. pretty. Attractive in some respect, usually the inflorescence.

Classification. Subfamily Micrairoideae. Tribe Isachneae.

Habit, Vegetative Morphology. Annual. Culms prostrate, slender, 10–25 cm long. Culm-nodes bearded. Lateral branches sparse. Leaf-sheaths striately veined, glabrous on surface or pilose, with tubercle-based hairs, outer margin hairy. Ligule a fringe of hairs. Leaf-blade base broadly rounded. Leaf-blades elliptic, 1–4 cm long, 5–10 mm wide, mid-green or glaucous, discolourous with last colour beneath. Leaf-blade surface puberulous, hairy on both sides. Leaf-blade margins cartilaginous, undulate, ciliate, hairy at base. Leaf-blade apex acute.

Inflorescence. Inflorescence a panicle. Panicle open, elliptic or oblong, 3–10 cm long, 0.5–3 cm wide. Primary panicle branches spreading, sparsely divided, 2.5 cm long. Panicle branches straight or flexuous, glandular. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, filiform, glandular.

Fertile Spikelets. Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets elliptic, dorsally compressed, 1.5–1.6 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes deciduous, similar, shorter than spikelet, thinner than fertile lemma. Lower glume elliptic, 1–1.2 mm long, 1 length of upper glume, 0.66–0.75 length of spikelet, herbaceous, without keels, 5 -veined. Lower glume apex obtuse. Upper glume elliptic, 1.25 mm long, 0.8 length of spikelet, herbaceous, without keels, 7 -veined. Upper glume apex obtuse.

Florets. Basal sterile florets 1, male, with palea. Lemma of lower sterile floret elliptic, 1.5 mm long, 5 -veined, obtuse. Fertile lemma elliptic, 1 mm long, coriaceous, pallid, without keel. Lemma surface pubescent. Lemma margins involute. Lemma apex obtuse. Palea coriaceous, 2 -veined.

Flower and Fruit. Lodicules 2, cuneate, fleshy. Anthers 3, 0.3–0.4 mm long. Caryopsis with adherent pericarp.

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

Country /Province /State. China, Eastern Asia. China South Central, China Southeast. Taiwan. **Indian Subcontinent, Indo-China, Malesia, Papuasia.** Bangladesh, India, Nepal. Myanmar, Nicobar Is, Thailand, Vietnam. Borneo, Java, Lesser Sunda Is, Malaya, Singapore, Moluccas, Philippines, Sulawesi, Sumatra. New Guinea. Marianas.

TDWG4. Anhui, Fujian, Guangdong, Guangxi, Hunan, Jiangxi, Zhejiang. Guizhou, Yunnan. Assam, Manipur, Nagaland. Andhra Pradesh, Bihar. Madhya Pradesh, Maharashtra, Orissa, Tamilnadu, Uttah Pradesh, West Bengal. Kimberley. Darwin & Gulf. North.

Isachne pygmaea Griseb. *Fl. Brit. W. Ind.* 558. (1864).

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

TYPE from Jamaica. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Jamaica: Macfayden (GOET holo, K).

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

Derivation (Clifford & Bostock 2007): L. dwarf. Culms shorter than those of many other species in the genus.

Classification. Subfamily Micrairoideae. Tribe Isachneae.

Habit, Vegetative Morphology. Perennial. Culms prostrate, 5–15 cm long. Leaf-sheaths glabrous on surface, outer margin hairy. Ligule a fringe of hairs. Leaf-blades lanceolate, 0.5–2 cm long, 2–2.5 mm wide. Leaf-blade surface glabrous or puberulous. Leaf-blade margins cartilaginous, scabrous.

Inflorescence. Inflorescence a panicle. Panicle spiciform, linear, 1–2(–3) cm long. Primary panicle branches appressed. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 2 fertile florets, without rhachilla extension. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets elliptic or orbicular, dorsally compressed, obtuse, 1.3 mm long, breaking up at maturity, disarticulating above glumes but not between florets.

Glumes. Glumes deciduous, similar, shorter than spikelet, thinner than fertile lemma. Lower glume oblong, 0.66 length of spikelet, membranous, without keels, 3 -veined. Lower glume apex obtuse. Upper glume orbicular, 0.66 length of spikelet, membranous, without keels, 5 -veined. Upper glume apex truncate or obtuse.

Florets. Fertile lemma orbicular, 1.3 mm long, coriaceous, without keel. Lemma margins involute. Lemma apex obtuse. Palea coriaceous, 2 -veined.

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

Distribution (TDWG). Continent. South America.

Country /Province /State. Caribbean. Jamaica.

Isachne repens Keng. *Sunyatsenia*, 1: 129 (1933).

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

TYPE from China. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: China, Ting Wu Shan: Tao 21292.

Illustrations (Books): S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 779).

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

Classification. Subfamily Micrairoideae. Tribe Isachneae.

Habit, Vegetative Morphology. Annual or perennial, short-lived. Stolons present. Culms prostrate, 10–25 cm long, rooting from lower nodes. Culm-nodes pubescent. Leaf-sheaths glabrous on surface or hispid, outer margin hairy. Ligule a fringe of hairs, 1–2 mm long. Leaf-blades lanceolate, 5–7 cm long, 10–18 mm wide. Leaf-blade surface glabrous or pilose, sparsely hairy, hairy adaxially. Leaf-blade apex acuminate.

Inflorescence. Inflorescence a panicle. Panicle open, elliptic or ovate, 3–5.5 cm long. Primary panicle branches ascending or spreading. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 2 fertile florets, without rhachilla extension. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets elliptic, dorsally compressed, 2.1–2.4 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes deciduous, similar, reaching apex of florets, thinner than fertile lemma. Lower glume ovate, 1 length of spikelet, membranous, without keels, 7–9 -veined. Lower glume surface hispidulous. Lower glume apex acute. Upper glume ovate, 1 length of spikelet, membranous, without keels, 9–11 -veined. Upper glume surface hispidulous. Upper glume apex acute.

Florets. Fertile lemma ovate or orbicular, coriaceous, without keel. Lemma margins involute, pubescent. Lemma apex obtuse. Palea coriaceous. Palea surface puberulous (upper floret).

Distribution (TDWG). Continent. Temperate Asia.

Country /Province /State. China, Eastern Asia. Hainan, China Southeast. Japan, Nansei-Shoto, Taiwan.

TDWG4. Fujian, Guangdong, Guangxi.

Isachne rigens (Sw.) Trin. *Gram. Panic.* 252. (1826).

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

TYPE from Jamaica. **Basionym or Replaced Name:** *Panicum rigens* Sw., *Prodr.* 23 (1788)

. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *O.P. Swartz s.n.*, no date, Jamaica (S; IT: US-80958 (fragm. ex B, M, S & photo)).

Illustrations (Books): J.A.Steyermark et al, *Flora of the Venezuelan Guayana* Vol. 8 (2004) (134, Fig. 92), G.Harling & C.Persson, *Flora of Ecuador* (2006) (78: 171, Fig. 20 (2006)), R.Pilger, *Die Natürlichen Pflanzenfamilien* 14e (1940) (87, Fig. 55).

Derivation (Clifford & Bostock 2007): *L. rigeo*, be stiff. Leaf-blades cylindrical or inrolled when dry.

Classification. Subfamily Micrairoideae. Tribe Isachneae.

Habit, Vegetative Morphology. Perennial, caespitose. Culms rambling, 100–200 cm long, 0.5–1 mm diam., wiry. Lateral branches ample. Leaves distichous. Leaf-sheaths longer than adjacent culm internode, glabrous on surface or pubescent, outer margin hairy. Ligule a fringe of hairs, 0.5 mm long. Leaf-blades lanceolate, 2–5 cm long, 2–5 mm wide, herbaceous, firm. Leaf-blade midrib evident. Leaf-blade surface scabrous, rough on both sides. Leaf-blade margins cartilaginous, scabrous.

Inflorescence. Inflorescence a panicle. Panicle open, oblong or ovate, 2–5 cm long. Primary panicle branches ascending or spreading. Panicle branches stiff. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, 1–2 mm long.

Fertile Spikelets. Spikelets comprising 2 fertile florets, without rhachilla extension. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets ovate or orbicular, dorsally compressed, 1.8–2 mm long, breaking up at maturity, disarticulating above glumes but not between florets. Rhachilla internodes pubescent.

Glumes. Glumes deciduous, similar, shorter than spikelet, thinner than fertile lemma. Lower glume oblong, 0.66–0.75 length of spikelet, membranous, without keels, 5 -veined. Lower glume surface puberulous. Lower glume apex obtuse. Upper glume orbicular, 0.66–0.75 length of spikelet, membranous, without keels, 5 -veined. Upper glume surface puberulous. Upper glume apex obtuse.

Florets. Fertile lemma ovate or orbicular, 1.8–2 mm long, coriaceous, without keel. Lemma margins involute. Lemma apex obtuse. Palea coriaceous, 2 -veined. Palea surface of upper floret puberulous.

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

Distribution (TDWG). Continent. South America.

Country /Province /State. Mesoamerica, Caribbean, Northern South America, Western South America. Guatemala. Jamaica, Leeward Is. Venezuela. Colombia, Ecuador, Peru.

Isachne rigidifolia (Poir.) Urb. *Symb. Antill.* iv. 85 (1903).

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

TYPE from Dominican Republic. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *Anon.*, Dominican Republic: Santo Domingo (FI; IT: US-80961 (fragm. ex FI)). Hitchcock (1920): "The type has been examined at the Florence Herbarium. It is now in the Webb Herb., which contains the Desfontaines Herb."

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

Derivation (Clifford & Bostock 2007): *L. rigidus*, stiff; folium, leaf. Leaf-blades rigid.

Classification. Subfamily Micrairoideae. Tribe Isachneae.

Habit, Vegetative Morphology. Perennial. Stolons present. Culms rambling, 15–40 cm long. Lateral branches ample. Leaves distichous. Leaf-sheaths longer than adjacent culm internode, glabrous on surface, outer margin hairy. Ligule a ciliate membrane. Leaf-blades lanceolate, 2–4 cm long, 2–4 mm wide, coriaceous, stiff. Leaf-blade midrib conspicuous. Leaf-blade margins cartilaginous. Leaf-blade apex pungent.

Inflorescence. Inflorescence a panicle. Panicle open, oblong, 2–5 cm long. Primary panicle branches ascending or spreading. Panicle branches stiff. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, 1–2 mm long.

Fertile Spikelets. Spikelets comprising 2 fertile florets, without rhachilla extension. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets

orbicular, tilted on the pedicel, dorsally compressed, 2 mm long, breaking up at maturity, disarticulating above glumes but not between florets.

Glumes. Glumes deciduous, similar, shorter than spikelet, thinner than fertile lemma. Lower glume oblong, 0.9 length of spikelet, membranous, without keels, 5 -veined. Lower glume surface glabrous or pubescent, hairy above. Lower glume apex obtuse. Upper glume orbicular, 0.9 length of spikelet, membranous, without keels, 5 -veined. Upper glume surface glabrous or puberulous, hairy above. Upper glume apex obtuse.

Florets. Fertile lemma orbicular, 2 mm long, coriaceous, without keel. Lemma margins involute. Lemma apex obtuse. Palea coriaceous, 2 -veined.

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

Distribution (TDWG). Continent. South America.

Country /Province /State. Caribbean. Cuba, Dominican Republic, Haiti, Leeward Is, Windward Islands.

Isachne salzmannii (Trin. ex Steud.) S.A. Renvoize. *Kew Bull.*, 39(1): 184: (1984).

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

TYPE from Brazil. **Basionym or Replaced Name:** *Panicum salzmannii* Trin. ex Steud., *Syn. Pl. Glumac.* 1: 95 (1854)

. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *P. Salzmann s.n.*, Brazil: Bahia: in paludosis (P; IT: K, LE-TRIN-0556.01 (fragm. & illust.), MO-2099177, US-975976 (fragm. ex P)).

Illustrations (Books): S.A.Renvoize, *The Grasses of Bahia*, 1984 (98, Fig. 34).

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

Classification. Subfamily Micrairoideae. Tribe Isachneae.

Habit, Vegetative Morphology. Annual. Culms decumbent, 35–40 cm long, rooting from lower nodes. Ligule a fringe of hairs. Leaf-blades linear or lanceolate, 5–10 cm long, 4–10 mm wide. Leaf-blade apex acute.

Inflorescence. Inflorescence a panicle. Panicle open, oblong, 7–10 cm long. Primary panicle branches ascending. Panicle branches flexuous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets orbicular, dorsally compressed, 1.5–2 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes deciduous, similar, shorter than spikelet or reaching apex of florets, thinner than fertile lemma. Lower glume orbicular, 0.9–1 length of spikelet, membranous, without keels, 5 -veined. Lower glume apex obtuse. Upper glume orbicular, 0.9–1 length of spikelet, membranous, without keels, 5 -veined. Upper glume apex obtuse.

Florets. Basal sterile florets 1, male, with palea. Lemma of lower sterile floret elliptic, 1.5–2 mm long, chartaceous, obtuse. Fertile lemma orbicular, 1.3–1.7 mm long, coriaceous, without keel. Lemma margins involute. Lemma apex obtuse. Palea coriaceous, 2 -veined.

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

Distribution (TDWG). Continent. South America.

Country /Province /State. Brazil. Brazil Northeast.

TDWG4. Bahia.

Isachne saxicola (Ridl.) Ridley. *Fl. Mal. Penins.* v. 237 (1925).

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

TYPE from Malaysia. **Basionym or Replaced Name:** *Isachne javana* var. *saxicola* Ridl., *J. Fed. Malay States Mus.* 6: 196 (1915)

. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Malaya, Gunong Tahan: Ridley (K iso).

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

Derivation (Clifford & Bostock 2007): *L. saxum*, rock; -cola, dweller. Growing on or amongst boulders.

Classification. Subfamily Micrairoideae. Tribe Isachneae.

Habit, Vegetative Morphology. Perennial, cushion forming. Culms erect, 20–45 cm long, rooting from lower nodes. Lateral branches ample. Leaf-sheaths 1.5–2 cm long, longer than adjacent culm internode, glabrous on surface or pilose, with tubercle-based hairs, outer margin hairy. Ligule a fringe of hairs. Leaf-blades lanceolate, 2–4 cm long, 4–9 mm wide, stiff. Leaf-blade surface ribbed, glabrous or pubescent. Leaf-blade margins ciliate.

Inflorescence. Inflorescence a panicle. Panicle open, ovate, 6 cm long, 3 cm wide. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 2 fertile florets, without rhachilla extension. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets orbicular, dorsally compressed, 2.4 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes definite, 0.2 mm long.

Glumes. Glumes deciduous, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume ovate, 2.2 mm long, 0.9 length of spikelet, membranous, without keels, 5 -veined. Lower glume surface glabrous or puberulous, hairy above. Lower glume apex acute. Upper glume ovate, 2.4 mm long, 1.7 length of adjacent fertile lemma, membranous, without keels, 5 -veined. Upper glume surface pubescent. Upper glume apex acute.

Florets. Fertile florets with the lowest dissimilar. Lowest fertile lemma 1.1–1.2 length of adjacent lemma. Fertile lemma ovate, 1.4 mm long, coriaceous, yellow, without keel. Lemma surface puberulous. Lemma margins involute. Lemma apex obtuse. Palea coriaceous, 2 -veined.

Flower and Fruit. Anthers 3, 0.8 mm long, yellow. Caryopsis with adherent pericarp, 1 mm long.

Distribution (TDWG). Continent. Tropical Asia.

Country /Province /State. Malesia. Malaya.

Isachne scabrosa Hook. f. *Fl. Brit. Ind.* vii. 23. (1896).

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

TYPE from India. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: India: Khasia Hills, 4500–5000 ft., *C.B. Clarke s.n.* (HT: ?).

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

Derivation (Clifford & Bostock 2007): *L. scaber*, rough; -osa, abundance. Leaf-blades distinctly scabrous.

Classification. Subfamily Micrairoideae. Tribe Isachneae.

Habit, Vegetative Morphology. Perennial. Culms geniculately ascending, 30–100 cm long, woody. Culm-nodes glabrous. Leaf-sheaths antrorsely scabrous, glabrous on surface or pilose, with tubercle-based hairs, outer margin hairy. Ligule a fringe of hairs. Leaf-blades lanceolate, 8–15 cm long, 8–10 mm wide, stiff. Leaf-blade surface scabrous, rough on both sides. Leaf-blade margins cartilaginous.

Inflorescence. Inflorescence a panicle. Panicle open, pyramidal, 5–10 cm long. Primary panicle branches 3–7 cm long. Panicle branches flexuous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 2 fertile florets, without rhachilla extension. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets orbicular, dorsally compressed, 1.8 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes suppressed between florets.

Glumes. Glumes deciduous, similar, reaching apex of florets, thinner than fertile lemma. Lower glume ovate, 1.8 mm long, 1 length of spikelet, membranous, without keels, 5 -veined. Lower glume surface hispidulous. Lower glume apex obtuse. Upper glume ovate, 1.8 mm long, 1 length of spikelet, membranous, without keels. Upper glume surface hispidulous. Upper glume apex obtuse.

Florets. Fertile lemma orbicular, 1.5 mm long, coriaceous, without keel. Lemma margins involute. Lemma apex obtuse. Palea coriaceous, 2 -veined.

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

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

Country /Province /State. China. Tibet. Indian Subcontinent, Indo-China. India, Nepal.

TDWG4. Meghalaya.

Isachne schmidtii Hackel. *Bot. Tidsskr.* xxiv. 97 (1901).

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

TYPE from Thailand. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *J. Schmidt s.n.*, Thailand: Koh Chang island (W; IT: US).

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

Derivation (Clifford & Bostock 2007): in honor of Johann Anton Schmidt (1823–1905) German botanist.

Classification. Subfamily Micrairoideae. Tribe Isachneae.

Habit, Vegetative Morphology. Annual. Culms prostrate, 5–20 cm long. Leaf-sheaths glabrous on surface, outer margin hairy. Ligule a fringe of hairs, 1 mm long. Leaf-blades lanceolate or ovate, 1.5–5 cm long, 5–9 mm wide. Leaf-blade surface glabrous or hispid. Leaf-blade margins scabrous.

Inflorescence. Inflorescence a panicle. Panicle open or contracted, ovate, 1–4 cm long. Primary panicle branches ascending. Panicle branches scabrous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, clavate.

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 ovate or orbicular, dorsally compressed, 2.5–3.5 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes deciduous, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume ovate, 2.5–3.5 mm long, 1 length of upper glume, 1 length of spikelet, membranous, without keels. Lower glume surface hispid. Lower glume apex acute. Upper glume ovate, 2.5–3.5 mm long, 1.3–2 length of adjacent fertile lemma, membranous, without keels. Upper glume surface hispid. Upper glume apex acute.

Florets. Fertile lemma elliptic or ovate, 1.7 mm long, coriaceous, without keel. Lemma margins involute, eciliate or pubescent. Lemma apex obtuse. Palea coriaceous, 2 -veined.

Flower and Fruit. Anthers 3.

Distribution (TDWG). Continent. Tropical Asia.

Country /Province /State. Indo-China, Papuasia. Thailand. New Guinea.

Isachne setosa C. E. C. Fischer. *Kew Bull.* 1932, 247. (1932).

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

TYPE from India. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: India, Kavalai: Meebold 12125 (K holo).

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

Derivation (Clifford & Bostock 2007): L. seta, bristle; -osa, abundance.

Classification. Subfamily Micrairoideae. Tribe Isachneae.

Habit, Vegetative Morphology. Annual. Culms erect or geniculately ascending, 5–30 cm long. Culm-nodes bearded. Leaf-sheaths pilose, with tubercle-based hairs. Ligule a fringe of hairs. Leaf-blade base broadly rounded or cordate. Leaf-blades lanceolate or ovate, 0.3–2.5 cm long, 1–12 mm wide. Leaf-blade surface pubescent.

Inflorescence. Inflorescence a panicle. Panicle open, ovate, 0.5–5 cm long. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 2 fertile florets, without rhachilla extension. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets elliptic or obovate, dorsally compressed, 2–3 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes deciduous, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate or ovate, 2–3 mm long, 1 length of spikelet, membranous, without keels, 5 -veined. Lower glume surface setose, with tubercle-based hairs. Lower glume apex acuminate. Upper glume lanceolate or ovate, 2–3 mm long, 1 length of spikelet, membranous, without keels. Upper glume surface setose, with tubercle-based hairs. Upper glume apex acuminate.

Florets. Fertile florets with the lowest dissimilar. Lowest fertile lemma oblong or ovate, 1.5–2.5 mm long, 1.5–3 length of adjacent lemma, thinner than adjacent lemma. Fertile lemma orbicular, 0.5–1.5 mm long, coriaceous, without keel. Lemma surface pubescent. Lemma margins involute. Lemma apex obtuse. Palea coriaceous, 2 -veined.

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

Distribution (TDWG). Continent. Tropical Asia.

Country /Province /State. Indian Subcontinent. India.

TDWG4. Karnataka, Kerala. Tamilnadu.

Isachne sharpii B.K.Simon. *Austrobaileya* 8: 207 (2010).

TYPE from Australia. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Queensland. Cook District: Palm Road, Cape Tribulation, 21 April 2001, *D.Sharp* 293 (holo: BRI; iso: CANB, K, L, MO, NSW).

Illustrations (Journals): *Austrobaileya* (8: 208, Fig.3 (2010)).

Derivation (Clifford & Bostock 2007): Named for Donovan Sharp co-author of *AusGrass* (Sharp & Simon 2002) and collector of the type specimen.

Classification. Subfamily Micrairoideae. Tribe Isachneae.

Habit, Vegetative Morphology. Annual. Culms geniculately ascending, 26–44 cm long, 5–10 -noded. Ligule a fringe of hairs, 1.5–1.7 mm long. Leaf-blades linear or lanceolate, 2.5–5.5 cm long, 7–13 mm wide.

Inflorescence. Inflorescence a panicle. Panicle open, ovate, 3.5–4 cm long. Primary panicle branches 1–1.4 cm long, bearing 3–7 fertile spikelets on each lower branch. Panicle branches capillary. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 2 fertile florets, without rhachilla extension. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets elliptic, dorsally compressed, 2.5–2.8 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes deciduous, similar, reaching apex of florets, thinner than fertile lemma. Lower glume ovate, 2.5–2.8 mm long, 1 length of spikelet, membranous, without keels, 9 -veined. Lower glume surface pilose. Lower glume apex obtuse. Upper glume ovate, 2.5–2.8 mm long, 1 length of spikelet, membranous, without keels, 9–10 -veined. Upper glume surface pilose. Upper glume apex obtuse.

Florets. Fertile lemma ovate or orbicular, 2 mm long, 1.5 mm wide, cartilaginous or indurate, without keel, 5 -veined, more than 3-veined. Lemma lateral veins obscure. Lemma surface smooth. Lemma margins involute. Lemma apex obtuse. Palea 1.8 mm long, coriaceous, 2 -veined.

Flower and Fruit. Anthers 3, 1.5 mm long, pallid. Caryopsis with adherent pericarp, 1.2 mm long, red.

Distribution (TDWG). Continent. Australasia.

Country /Province /State. Australia. Queensland.

TDWG4. North.

Isachne sikkimensis Bor. *Kew Bull.* 1949, 115 (1949).

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

TYPE from Sikkim, India. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: Sikkim: Karponang, 2800 m, 5 Aug. 1945, *Dr. Bor's collector s.n.* (HT: K).

Illustrations (Books): H.J.Noltie, *The Grasses of Bhutan* (2000) (745, Fig. 47).

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

Classification. Subfamily Micrairoideae. Tribe Isachneae.

Habit, Vegetative Morphology. Annual. Culms decumbent, 5–10 cm long, rooting from lower nodes. Culm-nodes bearded. Leaf-sheaths pilose. Ligule a fringe of hairs. Leaf-blades lanceolate, 3–7 cm long, 3–7 mm wide. Leaf-blade surface pubescent, with tubercle-based hairs. Leaf-blade margins cartilaginous, scabrous. Leaf-blade apex acuminate.

Inflorescence. Inflorescence a panicle. Panicle open, ovate, 4 cm long. Primary panicle branches 2 -nate. Panicle branches scaberulous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, eglandular.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets oblong or ovate, dorsally compressed, acute, 2.25 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes deciduous, similar, reaching apex of florets, thinner than fertile lemma. Lower glume elliptic, 1 length of spikelet, chartaceous, much thinner on margins, without keels, 5–7 -veined. Lower glume apex cuspidate. Upper glume elliptic, 1 length of spikelet, chartaceous, with hyaline margins, without keels, 5–7 -veined. Upper glume apex cuspidate.

Florets. Basal sterile florets 1, male, with palea. Lemma of lower sterile floret similar to fertile lemma. Fertile lemma elliptic, 1.5 mm long, coriaceous, without keel. Lemma margins involute. Lemma apex acute. Palea coriaceous, 2 -veined.

Flower and Fruit. Anthers 3, 3.6 mm long (male) or 1 mm long (bisexual). Caryopsis with adherent pericarp.

N = 20 (2 refs TROPICOS).

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

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

TDWG4. Darjeeling, Bhutan, Sikkim. Uttah Pradesh, West Bengal.

Isachne smitinandiana A. Camus. *Not. Syst.* xiv. 256 (1953).

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 Thailand. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: Thailand, Phukrading Lois: Smitinand 340 (K iso).

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

Derivation (Clifford & Bostock 2007): L. -ana, indicating connection. In honor of Tem Smitinand (1920-) Thai botanist.

Classification. Subfamily Micrairoideae. Tribe Isachneae.

Habit, Vegetative Morphology. Annual. Culms erect, 6–8 cm long. Leaf-sheaths pilose. Ligule a fringe of hairs. Leaf-blades lanceolate or ovate, 1.2–2 cm long, 2.5–5 mm wide, stiff. Leaf-blade surface pilose, sparsely hairy. Leaf-blade margins cartilaginous, scaberulous. Leaf-blade apex acuminate.

Inflorescence. Inflorescence a panicle. Panicle open, ovate, 2–3.5 cm long. Primary panicle branches 1–2 cm long. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, 1.5–5 mm long.

Fertile Spikelets. Spikelets comprising 2 fertile florets, without rhachilla extension. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets oblong or obovate, dorsally compressed, obtuse, 2 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes deciduous, similar, shorter than spikelet, thinner than fertile lemma. Lower glume ovate, 1.5 mm long, 0.75 length of spikelet, membranous, without keels. Lower glume surface pubescent, hairy above. Lower glume apex acute. Upper glume ovate, 1.5 mm long, 0.75 length of spikelet, membranous, without keels. Upper glume surface pubescent, hairy above. Upper glume apex acute.

Florets. Fertile lemma elliptic, 1.8 mm long, coriaceous, yellow, without keel. Lemma margins involute. Lemma apex obtuse. Palea coriaceous, 2 -veined.

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

Distribution (TDWG). Continent. Tropical Asia.

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

Isachne stanantha (Steud.) Veldkamp. *Reinwardtia* 12(2): 175 (2004).

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

Derivation (Clifford & Bostock 2007): Gk. stenos, narrow; anthos, flower. Spikelets narrow.

Classification. Subfamily Micrairoideae. Tribe Isachneae.

Distribution (TDWG). Continent. Africa.

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

Isachne stricta Elmer. *Leaflets Philipp. Bot.* ii. 463 (1908).

Regarded by K as a synonym (*I. albens*).

Accepted by: J.F.Veldkamp, Poaceae ms (*Flora Malesiana*).

TYPE from Philippines. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: IT: A.D.E. Elmer 10425, Jun 1908, Philippines: Negros I., Negros Oriental Prov. (L, US-705881).

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

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

Classification. Subfamily Micrairoideae. Tribe Isachneae.

Habit, Vegetative Morphology. Perennial, caespitose. Culms erect, 90–140 cm long, 2 mm diam. Lateral branches sparse. Leaf-sheaths smooth, glabrous on surface, outer margin hairy. Ligule a fringe of hairs. Leaf-blades linear or lanceolate, 15 cm long, 8 mm wide, stiff, light green or glaucous, discolourous with last colour beneath. Leaf-blade surface pubescent, sparsely hairy, hairy abaxially. Leaf-blade margins cartilaginous, scabrous.

Inflorescence. Inflorescence a panicle, embraced at base by subtending leaf. Panicle open, elliptic, 20 cm long, 2 cm wide. Primary panicle branches ascending. Panicle branches angular. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, 1 mm long.

Fertile Spikelets. Spikelets comprising 2 fertile florets, without rhachilla extension. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets orbicular, dorsally compressed, 1 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes deciduous, similar, reaching apex of florets, thinner than fertile lemma. Lower glume ovate, 1 mm long, 1 length of upper glume, 1 length of spikelet, membranous, without keels. Lower glume surface puberulous, hairy above. Lower glume apex obtuse. Upper glume ovate, 1 mm long, 1 length of adjacent fertile lemma, membranous, without keels. Upper glume surface glabrous. Upper glume apex obtuse.

Florets. Fertile lemma elliptic or orbicular, 0.75 mm long, coriaceous, without keel. Lemma surface glabrous. Lemma margins involute. Lemma apex obtuse. Palea coriaceous, 2 -veined.

Flower and Fruit. Anthers 0.3 mm long. Filaments 0.25 mm long.

Distribution (TDWG). Continent. Tropical Asia.

Country /Province /State. Malesia, Papuasia. Philippines, Sulawesi. New Guinea.

Isachne subglobosa Hatusima & Koyama. *Journ. Jap. Bot.* i. 237 (1956).

Regarded by K as a synonym (*I. globosa*).

Accepted by: J.F.Veldkamp, Poaceae ms (*Flora Malesiana*), T.Koyama, *Grasses of Japan and its neighboring regions* (1987).

TYPE from Japan. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *T. Amano 7531*, 16 Nov 1955, Japan: Liukiu Island (TI; IT: US-2237054).

Illustrations (Books): T.Koyama, *Grasses of Japan and its neighbouring regions* (1987) (135, Fig 43).

Derivation (Clifford & Bostock 2007): L. sub, approaching; globa, sphere; -osa, abundance. Spikelets almost globose.

Classification. Subfamily Micrairoideae. Tribe Isachneae.

Distribution (TDWG). Continent. Temperate Asia.

Country /Province /State. Eastern Asia. Ogosawara-shoto.

Isachne surgens Jansen. *Reinwardtia*, ii. 281 (1953).

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

TYPE from Indonesia. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *Binnemeijer 11268*, Indonesia: Celebes: peak of Bonthain (BO).

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

Derivation (Clifford & Bostock 2007): L. surgo, raise. Culms long, ascending.

Classification. Subfamily Micrairoideae. Tribe Isachneae.

Habit, Vegetative Morphology. Perennial. Culms geniculately ascending or decumbent, 80–100 cm long, 1 mm diam., rooting from lower nodes. Culm-internodes smooth, distally glabrous. Culm-nodes glabrous. Lateral branches ample. Leaf-sheaths 15–80 cm long, mostly shorter than adjacent culm internode, glabrous on surface, outer margin hairy. Leaf-sheath oral hairs scanty. Ligule absent. Leaf-blades linear or lanceolate, 6–7 cm long, 5–8 mm wide. Leaf-blade venation with 4–6 secondary veins. Leaf-blade surface scabrous, rough on both sides, glabrous or puberulous, hairy abaxially. Leaf-blade margins unthickened or cartilaginous, scaberulous.

Inflorescence. Inflorescence a panicle. Panicle open, ovate, 4–5 cm long. Primary panicle branches spreading, 1 -nate, 1–2 cm long. Panicle branches capillary, flexuous, smooth. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, filiform.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets oblong, dorsally compressed, 1.7 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes deciduous, similar, shorter than spikelet, thinner than fertile lemma. Lower glume oblong, 1.7 mm long, 1.1 length of upper glume, 1 length of spikelet, membranous, without keels, 7 -veined. Lower glume lateral veins obscure. Lower glume surface glabrous. Lower glume apex obtuse. Upper glume oblong, 1.5 mm long, 0.9 length of spikelet, membranous, without keels, 7 -veined. Upper glume primary vein obscure. Upper glume surface glabrous. Upper glume apex obtuse.

Florets. Basal sterile florets 1, male, with palea, separately deciduous. Lemma of lower sterile floret oblong, 1.7 mm long, 1.4 length of fertile lemma, 1 length of spikelet, chartaceous, 5 -veined, obscurely veined, glabrous, obtuse. Fertile florets bisexual or female. Fertile lemma oblong, 1.2 mm long, coriaceous, without keel. Lemma surface puberulous. Lemma margins involute. Lemma apex obtuse. Palea coriaceous, 2 -veined.

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

Distribution (TDWG). Continent. Tropical Asia.

Country /Province /State. Malesia. Sulawesi.

Isachne swaminathanii V. Prakash & S.K. Jain. *Proc. Indian Acad. Sci., Pl. Sci.*, 92(1): 19 (1983).

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

TYPE from India. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: India, Mahabaleswar: Prakash 337 (CAL holo).

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

Classification. Subfamily Micrairoideae. Tribe Isachneae.

Habit, Vegetative Morphology. Perennial, caespitose, clumped loosely. Culms decumbent, 30–95 cm long, 2.5 mm diam., rooting from lower nodes. Culm-internodes terete, 7–15.5 cm long, striate, distally glabrous. Culm-nodes glabrous or pubescent. Lateral branches ample. Leaf-sheaths loose, subequal to internodes, glabrous on surface or hirsute. Ligule a fringe of hairs, 2–3 mm long. Leaf-blades lanceolate, 1–16 cm long, 3–17 mm wide. Leaf-blade midrib prominent beneath. Leaf-blade venation comprising 5–7 vascular bundles. Leaf-blade surface hirsute, hairy adaxially or on both sides, with tubercle-based hairs. Leaf-blade margins cartilaginous, scabrous. Leaf-blade apex acute or acuminate.

Inflorescence. Inflorescence a panicle. Panicle open, pyramidal, effuse, 8–18 cm long. Primary panicle branches 1-nate, 3–6 cm long. Panicle branches capillary, flexuous, glandular. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, filiform, flexuous, 1–8 mm long, glandular, glabrous.

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 orbicular, globose, dorsally compressed, 2.2–2.5 mm long, breaking up at maturity, disarticulating above glumes but not between florets.

Glumes. Glumes deciduous, similar, reaching apex of florets, thinner than fertile lemma. Lower glume elliptic, 1 length of spikelet, membranous, without keels, 7–9 -veined. Lower glume surface glabrous or setose. Lower glume apex obtuse. Upper glume elliptic, 1 length of spikelet, membranous, without keels, 7–9 -veined. Upper glume surface glabrous or setose. Upper glume apex obtuse.

Florets. Fertile lemma elliptic or orbicular, hemispherical, 1.8–2.2 mm long, coriaceous, without keel. Lemma surface puberulous. Lemma margins involute. Lemma apex obtuse. Palea elliptic, coriaceous, 0 -veined.

Flower and Fruit. Anthers 3, 1.5 mm long.

Distribution (TDWG). Continent. Tropical Asia.

Country /Province /State. Indian Subcontinent. India.

TDWG4. Maharashtra.

Isachne sylvestris Ridley. *Journ. As. Soc. Straits*, xliv. 206 (1905).

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

TYPE from Malaysia. **Basionym or Replaced Name:** *Isachne hirsuta* (Hook. f.) Keng f., *Acta Phytotax. Sin.* 10: 11 (1965)

. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: Malaya, Telok Sera: Ridley 7265.

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

Derivation (Clifford & Bostock 2007): *L. silva*, wood; -*estris*, place of growth. Plants of woodlands.

Classification. Subfamily Micrairoideae. Tribe Isachneae.

Habit, Vegetative Morphology. Perennial. Culms erect, 20–50 cm long. Culm-nodes pubescent. Leaf-sheaths 3–5 cm long, pilose, with tubercle-based hairs, outer margin hairy. Ligule a fringe of hairs, 4 mm long. Leaf-blades lanceolate, 5–10 cm long, 7–14 mm wide, glaucous. Leaf-blade surface scaberulous, rough adaxially, pubescent, densely hairy, hairy abaxially. Leaf-blade margins cartilaginous, scaberulous.

Inflorescence. Inflorescence a panicle. Panicle open, ovate, 8–17 cm long, 3–6.5 cm wide. Primary panicle branches ascending, 3–7 cm long. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, glandular.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets orbicular, dorsally compressed, 2 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes deciduous, similar, reaching apex of florets, thinner than fertile lemma. Lower glume ovate, 1.8 mm long, 0.9 length of spikelet, membranous, purple, without keels, 7(–9) -veined. Lower glume surface pubescent. Lower glume apex obtuse. Upper glume ovate, 1.8 mm long, 1 length of adjacent fertile lemma, membranous, purple, without keels, 9 -veined. Upper glume surface pubescent. Upper glume apex obtuse.

Florets. Basal sterile florets 1, male, with palea, separately deciduous. Lemma of lower sterile floret unlike other scales, ovate, 1.6 mm long, 1.3 length of fertile lemma, coriaceous, pubescent. Fertile lemma ovate, 1.2 mm long, coriaceous, without keel. Lemma surface glabrous or puberulous. Lemma margins involute. Lemma apex obtuse. Palea coriaceous, 2 -veined.

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

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

Country /Province /State. China. China Southeast. **Indian Subcontinent, Malesia.** Bangladesh, Eastern Himalaya, Malaya, Sumatra.

TDWG4. Fujian, Guangdong. Assam.

Isachne trachycaula Ohwi. *Bull. Tokyo Sci. Mus.*, No. 18, 14 (1947).

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

TYPE from Indonesia. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Sumatra: Padanglawas, *Veearts Sibolge 19* (HT: BO).

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

Derivation (Clifford & Bostock 2007): Gk. trachys, rough; kaulos, stem. Nodes scabrid.

Classification. Subfamily Micrairoideae. Tribe Isachneae.

Habit, Vegetative Morphology. Perennial, caespitose. Culms erect, 40–50 cm long. Culm-internodes distally hispid. Culm-nodes pubescent. Leaf-sheaths hispid, with tubercle-based hairs. Ligule a fringe of hairs. Leaf-blades 4–6 cm long, 2–3 mm wide. Leaf-blade surface pilose, with tubercle-based hairs.

Inflorescence. Inflorescence a panicle. Panicle open, ovate, 6–8 cm long. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, filiform.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets orbicular, dorsally compressed, 2 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes deciduous, similar, shorter than spikelet, thinner than fertile lemma. Lower glume orbicular, 1.5 mm long, 1 length of upper glume, 0.75 length of spikelet, membranous, without keels, 9–11 -veined. Lower glume surface scabrous, glabrous. Lower glume apex obtuse. Upper glume ovate, 1.3 mm long, 0.75 length of spikelet, membranous, without keels, 9–11 -veined. Upper glume surface scabrous, glabrous. Upper glume apex obtuse.

Florets. Basal sterile florets 1. Fertile lemma oblong, 2 mm long, coriaceous, without keel. Lemma surface puberulous. Lemma margins involute. Lemma apex obtuse. Palea coriaceous.

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

Distribution (TDWG). Continent. Tropical Asia.

Country /Province /State. Malesia. Sumatra.

Isachne truncata A. Camus. *Lecomte, Not. Syst.* ii. 205 (1912).

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

TYPE from China. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: China: Guizhou: Pinfa, near streams, 1000–1500 m, 24 Sept. 1902, *Cavalerie 502* (HT: P?).

Illustrations (Books): S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 777).

Derivation (Clifford & Bostock 2007): L. trunco, shorten by cutting off. Truncate with respect to apices of lemmas or glumes.

Classification. Subfamily Micrairoideae. Tribe Isachneae.

Habit, Vegetative Morphology. Perennial. Culms decumbent, 40–50 cm long. Leaf-sheaths outer margin hairy. Ligule a fringe of hairs. Leaf-blades lanceolate, 8–10 cm long, 5–11 mm wide. Leaf-blade surface pilose, sparsely hairy. Leaf-blade margins cartilaginous, scaberulous. Leaf-blade apex attenuate.

Inflorescence. Inflorescence a panicle. Panicle open, pyramidal, 12–20 cm long, 15–25 cm wide. Primary panicle branches 8–10 in number, spreading, 1–2 -nate. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, 3–15 mm long.

Fertile Spikelets. Spikelets comprising 2 fertile florets, without rhachilla extension. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets orbicular or obovate, dorsally compressed, truncate, 2 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes deciduous, similar, reaching apex of florets, thinner than fertile lemma. Lower glume orbicular, 1 length of spikelet, membranous, without keels. Lower glume surface pubescent. Lower glume apex emarginate or truncate. Upper glume orbicular, 1 length of spikelet, membranous, without keels. Upper glume surface pubescent. Upper glume apex emarginate or truncate.

Florets. Fertile lemma oblong, 2 mm long, coriaceous, without keel. Lemma margins involute. Lemma apex obtuse. Palea coriaceous, 2 -veined.

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

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

Country /Province /State. **China.** China South Central, China Southeast. **Indo-China.** Laos, Vietnam.

TDWG4. Fujian, Guangdong, Guangxi, Jiangxi, Zhejiang. Guizhou, Sichuan, Yunnan.

Isachne vaughanii C. E. Hubbard. *Kew Bull.* 1927, 360. (1927).

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

TYPE from Mauritius. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Mauritius: Stream banks near Grand Bassin, rare, 13th Nov. 1926, *Vaughan A. 102.*

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

Classification. Subfamily Micrairoideae. Tribe Isachneae.

Habit, Vegetative Morphology. Perennial, caespitose, clumped loosely. Culms erect or geniculately ascending, 20–45 cm long. Lateral branches lacking. Leaf-sheaths pubescent, with tubercle-based hairs, outer margin hairy. Ligule a fringe of hairs or absent. Leaf-blades linear or lanceolate, 1–6 cm long, 2.5–5 mm wide. Leaf-blade surface puberulous, hairy abaxially.

Inflorescence. Inflorescence a panicle. Panicle contracted, linear, 3.5–10 cm long, 0.3–0.7 cm wide. Primary panicle branches appressed. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, filiform, 1–5 mm long.

Fertile Spikelets. Spikelets comprising 2 fertile florets, without rhachilla extension. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets elliptic, dorsally compressed, 2.6–3 mm long, breaking up at maturity, disarticulating above glumes but not between florets. Rhachilla internodes definite.

Glumes. Glumes deciduous, similar, reaching apex of florets, thinner than fertile lemma, gaping. Lower glume elliptic, 1 length of spikelet, membranous, without keels, 5–9 -veined. Lower glume apex obtuse. Upper glume elliptic, 1 length of spikelet, membranous, without keels, 5–9 -veined. Upper glume apex obtuse.

Florets. Fertile florets female, with the lowest dissimilar. Lowest fertile lemma bisexual, glabrous or hairy. Fertile lemma elliptic, 2 mm long, coriaceous, without keel. Lemma surface puberulous. Lemma margins involute. Lemma apex obtuse. Palea coriaceous.

Flower and Fruit. Anthers 3.

Distribution (TDWG). Continent. Africa.

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

Isachne veldkampii K.G. Bhat & C.R. Nagendran. *Curr. Sci.*, 52(6): 258 (1983).

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

TYPE from India. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: IT: *K.G. Bhat* 4688, 1981, India: South Kanara, Manipal, 150 m (L).

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

Derivation (Clifford & Bostock 2007): in honor of Jan Frederik Veldkamp (1941-) Dutch botanist.

Classification. Subfamily Micrairoideae. Tribe Isachneae.

Habit, Vegetative Morphology. Annual. Culms slender, 3–8.5 cm long. Culm-nodes glabrous. Leaf-sheaths longer than adjacent culm internode, glabrous on surface. Leaf-sheath oral hairs scanty or lacking. Ligule absent. Leaf-blades ovate, 15 cm long, 7 mm wide. Leaf-blade midrib indistinct. Leaf-blade surface smooth or scaberulous, rough adaxially, glabrous. Leaf-blade margins scabrous.

Inflorescence. Inflorescence a panicle. Panicle open, elliptic, 0.7–1.2 cm long, 0.6–1 cm wide. Primary panicle branches spreading, 1-nate, 0.3–0.5 cm long, bearing 1–3 fertile spikelets on each lower branch. Panicle branches glandular. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 2 fertile florets, without rhachilla extension. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets ovate, dorsally compressed, 1.5 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus woolly.

Glumes. Glumes deciduous, similar, shorter than spikelet, thinner than fertile lemma. Lower glume ovate, 1.1 mm long, 0.75 length of spikelet, membranous, without keels, 3 -veined. Lower glume lateral veins obscure. Lower glume surface puberulous. Lower glume apex obtuse. Upper glume ovate, 1.2–1.4 mm long, 0.9 length of spikelet, membranous, without keels, 5 -veined. Upper glume lateral veins obscure. Upper glume surface puberulous. Upper glume apex obtuse.

Florets. Fertile lemma elliptic, 1.2–1.5 mm long, coriaceous, without keel. Lemma surface puberulous. Lemma margins involute. Lemma apex obtuse. Palea elliptic, coriaceous, 2 -veined. Palea apex obtuse.

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

Distribution (TDWG). Continent. Tropical Asia.

Country /Province /State. Indian Subcontinent. Assam.

TDWG4. Karnataka.

Isachne venusta Veldkamp. *Reinwardtia* 12(2): 175 (2004).

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

Derivation (Clifford & Bostock 2007): L. beautiful, graceful. Mostly a reference to habit.

Classification. Subfamily Micrairoideae. Tribe Isachneae.

Distribution (TDWG). Continent. Africa.

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

Isachne villosa (Hitchcock) Reeder. *Journ. Arn. Arb.* xxix. 314 (1948).

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

TYPE from Papua New Guinea. **Basionym or Replaced Name:** *Isachne brassii* var. *villosa* Hitchc., *Brittonia* 2(2): 123 (1936)

. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *Brass* 4132, 29 May 1933, Papua New Guinea: Central Division: Mt. Tafa, along roadside, 2100 m (NY; IT: A, US-1614568).

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

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

Classification. Subfamily Micrairoideae. Tribe Isachneae.

Habit, Vegetative Morphology. Annual. Culms decumbent, 10–40 cm long, rooting from lower nodes. Culm-nodes bearded. Leaf-sheaths pilose, with tubercle-based hairs, outer margin hairy. Ligule a fringe of hairs, 1–2 mm long. Leaf-blades lanceolate, 1.5–10 cm long, 3–7 mm wide. Leaf-blade surface hirsute.

Inflorescence. Inflorescence a panicle. Panicle open, ovate, 3–12 cm long. Primary panicle branches ascending. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 2 fertile florets, without rhachilla extension. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets ovate, dorsally compressed, 1.2–1.7 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes terete.

Glumes. Glumes deciduous, similar, shorter than spikelet, thinner than fertile lemma. Lower glume elliptic or obovate, 1.2–1.7 mm long, 1 length of upper glume, 1 length of spikelet, membranous, without keels. Lower glume surface puberulous. Lower glume apex obtuse. Upper glume elliptic or obovate, 1.2–1.7 mm long, 1 length of adjacent fertile lemma, membranous, without keels. Upper glume surface puberulous. Upper glume apex obtuse.

Florets. Fertile lemma ovate, 1–1.5 mm long, coriaceous, without keel. Lemma surface papillose, puberulous. Lemma margins involute. Lemma apex obtuse. Palea coriaceous, 2 -veined.

Flower and Fruit. Anthers 3.

Distribution (TDWG). Continent. Tropical Asia.

Country /Province /State. Papuasia. New Guinea West Papua (Irian Jaya). New Guinea, Solomon Is.

Isachne vitiensis Rendle. *Journ. Linn. Soc., Bot.* ix. 181 (1909).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, W.D.Clayton & N.Snow, Key to Pacific Grasses (2010).

TYPE from Fiji. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Fiji, Nadarivatu: Coll?.

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

Classification. Subfamily Micrairoideae. Tribe Isachneae.

Habit, Vegetative Morphology. Perennial. Culms decumbent, 30–105 cm long, rooting from lower nodes. Ligule a fringe of hairs. Leaf-blades lanceolate, 5–20 cm long, 6–19 mm wide, stiff.

Inflorescence. Inflorescence a panicle. Panicle open, elliptic, 5–25 cm long. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 2 fertile florets, without rhachilla extension. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets

orbicular, dorsally compressed, 1.3–1.5 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes deciduous, similar, shorter than spikelet, thinner than fertile lemma. Lower glume ovate, 0.8 length of upper glume, 0.66 length of spikelet, membranous, without keels. Lower glume apex acute. Upper glume ovate, 0.75 length of spikelet, membranous, without keels. Upper glume apex acute.

Florets. Fertile lemma obovate, 1–1.3 mm long, coriaceous, without keel. Lemma margins involute. Lemma apex obtuse. Palea coriaceous, 2 -veined.

Flower and Fruit. Anthers 3.

Distribution (TDWG). Continent. Pacific.

Country /Province /State. Southwestern Pacific. Fiji, Vanuatu.

Isachne walkeri (Arn. ex Steud.) Wight & Arn. ex Thw. *Enum. Pl. Zeyl.* :361 (1864).

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

TYPE from India. **Basionym or Replaced Name:** *Panicum walkeri* Arn. ex Steud., *Syn. Pl. Glumac.* 1: 97 (1854)

. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *Wight 2045*, India: Khoondah Ghat (K).

Derivation (Clifford & Bostock 2007): in honor of George Warren (? -1844) British soldier and his wife A.W. Walker, who collected in Sri Lanka.

Classification. Subfamily Micrairoideae. Tribe Isachneae.

Habit, Vegetative Morphology. Perennial, mat forming. Culms rambling, 30–150 cm long, woody, rooting from lower nodes. Culm-nodes glabrous. Leaf-sheaths outer margin hairy. Ligule a fringe of hairs. Leaf-blade base broadly rounded. Leaf-blades lanceolate, 3.5–20 cm long, 5–25 mm wide. Leaf-blade margins cartilaginous. Leaf-blade apex acuminate.

Inflorescence. Inflorescence a panicle. Panicle open, ovate, 5–35 cm long, bearing few spikelets. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, glandular.

Fertile Spikelets. Spikelets comprising 2 fertile florets, without rhachilla extension. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets obovate, dorsally compressed, 3–4.5 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes deciduous, similar, reaching apex of florets, thinner than fertile lemma. Lower glume lanceolate or ovate, 3–4 mm long, 1 length of spikelet, membranous, without keels, 7–9 -veined. Lower glume surface puberulous. Lower glume apex obtuse. Upper glume lanceolate or ovate, 3–4.5 mm long, 1 length of spikelet, membranous, without keels, 9–11 -veined. Upper glume surface puberulous. Upper glume apex obtuse.

Florets. Fertile lemma ovate or obovate, 3–3.5 mm long, coriaceous, without keel. Lemma surface puberulous. Lemma margins involute. Lemma apex obtuse. Palea coriaceous, 2 -veined.

Flower and Fruit. Anthers 3, 1.8–2.4 mm long. Caryopsis with adherent pericarp.

Distribution (TDWG). Continent. Tropical Asia.

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

TDWG4. Kerala. Tamilnadu.

Ischaemum afrum (J. F. Gmel.) Dandy. *F. W. Andrews, Fl. Pl. Sudan*, iii. 476 (1956).

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

TYPE from Ethiopia/Sudan border. **Basionym or Replaced Name:** *Andropogon afer* J.F. Gmel., *Syst. Nat.* 2: 166 (1791)

. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Ethiopia: Figure in Bruce, *Travels* 5:47(1790).

Recent Synonyms: *Ischaemum pilosum* (Willd.) Wight, *Madras Lit. Sci. J.* 1835:138 (1835).

Illustrations (Books): R.M.Polhill, F.T.E.A., *Gramineae* (3(1982):748, Fig 175), G.V.Pope et al., *Flora Zambesiaca* 10, L.K.A. Chippindall, *Grasses and Pastures of South Africa* (1955) (Plt. 17 as *I. brachyatherum*), S.Phillips, *Poaceae* (Gramineae) in I.Hedberg & S.Edwards, *Flora of Ethiopia and Eritrea* (1995) (315, Fig 127), T.A.Cope, in M.Thulin, *Poaceae* (Gramineae). *Flora of Somalia* (1995) (257, Fig 151), S.W.L.Jacobs, R.D.B.Whalley & D.J.B.Wheeler., *Grasses of New South Wales*, 4th edn (2008) (285).

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

Derivation (Clifford & Bostock 2007): L. Africa. From Africa.

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

Habit, Vegetative Morphology. Perennial, caespitose. Rhizomes elongated, scaly. Culms 20–200 cm long. Ligule an eciliate membrane. Leaf-blades 10–50 cm long, 3–10 mm wide, glaucous. Leaf-blade apex attenuate, filiform.

Inflorescence. Inflorescence composed of racemes. Racemes (1–)2–5, paired or digitate, 6–20 cm long. Rhachis fragile at the nodes, subterete, glabrous on margins to villous on margins. Rhachis internodes cuneate. Rhachis internode tip transverse, cupuliform. Spikelets in pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, oblong, terete, glabrous to villous.

Sterile Spikelets. Companion sterile spikelets rudimentary or well-developed, containing empty lemmas or male, dorsally compressed, 1–6 mm long, shorter than fertile, separately deciduous. Companion sterile spikelet glumes chartaceous, muticous. Companion sterile spikelet lemmas 2, enclosed by glumes, muticous or 1-awned (rarely).

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets lanceolate, dorsally compressed, 5–8 mm long, falling entire, deciduous with accessory branch structures. Spikelet callus base obtuse, inserted.

Glumes. Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma. Lower glume lanceolate, 1 length of spikelet, chartaceous, 2-keeled, keeled all along, keeled laterally, wingless. Lower glume surface concave, glabrous to villous. Upper glume lanceolate, chartaceous, 1-keeled.

Florets. Basal sterile florets 1, male, with palea. Lemma of lower sterile floret lanceolate, 1 length of spikelet, membranous. Fertile lemma oblong, membranous, without keel. Lemma apex lobed, 2-fid, awned, 1-awned. Principal lemma awn from a sinus, geniculate, 5–20 mm long overall, with twisted column. Column of lemma awn glabrous. Palea 1 length of lemma.

Flower and Fruit. *N* = 10 (2 refs TROPICOS).

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

Country /Province /State. West tropical Africa, West-central tropical Africa, Northeast tropical Africa, East tropical Africa, South tropical Africa, Southern Africa. Nigeria. Eritrea, Ethiopia (inc. Eritrea), Somalia, Sudan. Kenya, Tanzania, Uganda. Angola, Malawi, Mozambique, Zambia, Zimbabwe. Namibia, Botswana, Limpopo, North-West, Gauteng, Mpumalanga, Swaziland, Kwazulu-Natal. **Indian Subcontinent.** India.

TDWG4. Gujarat, Karnataka. Madhya Pradesh, Maharashtra, Rajasthan, Tamilnadu.

Ischaemum agastyamalayanum P.V. Sreekumar, M.K. Janarthanam & A.N. Henry. *J. Bombay Nat. Hist. Soc.*, 84(3): 643 (1988).

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

TYPE from India. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: India, Kerala, Agastyamalai: Joseph 44634 (CAL holo).

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

Derivation (Clifford & Bostock 2007): *L. ana*, indicating connection. From Agastyamalai region of Kerala, Western Ghats, India.

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

Habit, Vegetative Morphology. Perennial. Culms geniculately ascending or decumbent, 20–80 cm long, rooting from lower nodes. Culm-nodes glabrous or bearded. Leaf-sheaths keeled. Ligule an eciliate membrane, 2–4 mm long, acute. Leaf-blades linear or lanceolate, 3–20 cm long, 5–10 mm wide. Leaf-blade surface pilose, sparsely hairy or moderately hairy or densely hairy, with tubercle-based hairs. Leaf-blade apex acuminate.

Inflorescence. Inflorescence composed of racemes. Racemes 2, paired, appressed back to back, 3–5 cm long. Rhachis fragile at the nodes, angular, ciliate on margins. Rhachis hairs 0.5–3 mm long. Rhachis internodes inflated, 2–3 mm long, flat and forming a U or V shape with the pedicel in rear view. Rhachis internode tip transverse, cupuliform. Spikelets in pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, oblong, 2–2.5 mm long, villous.

Sterile Spikelets. Companion sterile spikelets well-developed, male, lanceolate, laterally compressed, 4–7 mm long, shorter than fertile, separately deciduous. Companion sterile spikelet glumes chartaceous, keeled, 9–11-veined, villous (on keel), awned, one glume awned. Companion sterile spikelet lemmas 2, enclosed by glumes, 1-awned.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets lanceolate or oblong, dorsally compressed, 5–8 mm long, falling entire, deciduous with accessory branch structures. Spikelet callus cuneate, bearded, base truncate, inserted. Spikelet callus hairs 1–2 mm long.

Glumes. Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma. Lower glume ovate, 1 length of spikelet, chartaceous, 2-keeled, keeled above, keeled laterally, 11–13 -veined. Lower glume surface flat, pilose. Lower glume hairs 1–3 mm long. Lower glume apex dentate, 3 -fid. Upper glume ovate, chartaceous, 1-keeled, winged on keel, winged near apex, 5 -veined. Upper glume primary vein ciliate. Upper glume lateral veins obscure. Upper glume apex acuminate, awned, 1 -awned, awn 2–3 mm long.

Florets. Basal sterile florets 1, male, with palea. Lemma of lower sterile floret oblong or ovate, 4–5.5 mm long, hyaline, 3–5 -veined, ciliolate on margins, fringed above, acute. Palea of lower sterile floret 4–4.5 mm long. Fertile lemma oblong, 4–5 mm long, membranous, without keel, 3 -veined, 0–3 -veined. Lemma apex lobed, 2 -fid, awned, 1 -awned. Principal lemma awn from a sinus, geniculate, 12–15 mm long overall, with twisted column. Column of lemma awn 5–6 mm long, glabrous. Palea 4–4.5 mm long.

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

Distribution (TDWG). Continent. Tropical Asia.

Country /Province /State. Indian Subcontinent. India.

TDWG4. Kerala.

Ischaemum albavillosum B.K. Simon. *Austrobaileya*, 3(1): 86 (1989).

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

TYPE from Australia. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: Australia: Western Australia: Hamersley Railway line between Dampier and Mount Tom Price, Oct 1968, *Campion s.n.* (HT: PERTH-00349925 (photo, BRI)).

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

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

Derivation (Clifford & Bostock 2007): L. albus, white: villus, shaggy hair; -osum, abundance. Plant in whole or in part covered with long, white hairs.

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

Habit, Vegetative Morphology. Perennial, caespitose. Culms 20–40 cm long. Culm-nodes bearded. Lateral branches lacking. Ligule an eciliate membrane, 1 mm long. Leaf-blades 5–12 cm long, 2–3 mm wide.

Inflorescence. Inflorescence composed of racemes. Racemes 1, single, 6–8 cm long, bearing 10–12 fertile spikelets on each. Rhachis fragile at the nodes, angular, ciliate on margins. Rhachis hairs white. Rhachis internodes oblong, 5 mm long. Rhachis internode tip transverse, cupuliform. Spikelets in pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, oblong, 6 mm long, 0.6 length of fertile spikelet, ciliate, with white hairs.

Sterile Spikelets. Companion sterile spikelets well-developed, male, elliptic, 10 mm long, as long as fertile, separately deciduous. Companion sterile spikelet glumes chartaceous, keeled, 15–17 -veined, villous, muticous. Companion sterile spikelet lemmas muticous.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets elliptic, dorsally compressed, 10 mm long, 2 mm wide, falling entire, deciduous with accessory branch structures. Spikelet callus oblong, base truncate, inserted.

Glumes. Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma. Lower glume elliptic, 1 length of spikelet, coriaceous, 2-keeled, keeled all along, keeled laterally, 9 -veined. Lower glume surface convex, glabrous, inner surface villous. Lower glume apex erose. Upper glume lanceolate, coriaceous, 1-keeled, 5 -veined. Upper glume primary vein ciliate. Upper glume inner surface villous. Upper glume apex acuminate.

Florets. Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret lanceolate, membranous. Fertile lemma linear, 5 mm long, membranous, without keel. Lemma apex lobed, 2 -fid, incised 0.5 of lemma length, awned, 1 -awned. Principal lemma awn from a sinus, geniculate, 20–30 mm long overall, with twisted column. Column of lemma awn glabrous. Palea absent or minute.

Flower and Fruit. Anthers 3, 1 mm long.

Distribution (TDWG). Continent. Australasia.

Country /Province /State. Australia. Western Australia.

TDWG4. Ereman.

Ischaemum amethystinum Lebrun. *Journ. Agric. Trop. & Bot. Appliq.* xiii. 44 (1966). (1966).

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

TYPE from Chad. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: Chad, Bekao: Audru 1311 (K iso).

Illustrations (Books): S. Phillips, *Poaceae* (Gramineae) in I. Hedberg & S. Edwards, *Flora of Ethiopia and Eritrea* (1995) (315, Fig 127).

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

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

Habit, Vegetative Morphology. Perennial, caespitose. Butt sheaths woolly. Culms 150–300 cm long. Culm-nodes bearded. Ligule an eciliate membrane. Leaf-blades 30–60 cm long, 3–15 mm wide.

Inflorescence. Inflorescence composed of racemes. Racemes (1–)3–4(–6), digitate, 12–22 cm long. Rhachis fragile at the nodes, subterete, villous on margins. Rhachis internodes cuneate. Rhachis internode tip transverse, cupuliform. Spikelets in pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, narrowly elliptic, terete, villous.

Sterile Spikelets. Companion sterile spikelets well-developed, containing empty lemmas or male, lanceolate, 8–10 mm long, as long as fertile, separately deciduous. Companion sterile spikelet glumes chartaceous, muticous. Companion sterile spikelet lemmas 2, enclosed by glumes, muticous.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets lanceolate or elliptic, dorsally compressed, 7–11 mm long, falling entire, deciduous with accessory branch structures. Spikelet callus base obtuse, inserted.

Glumes. Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma. Lower glume elliptic, 1 length of spikelet, coriaceous, 2-keeled, keeled above, keeled laterally, winged on keel, winged narrowly, winged near apex. Lower glume surface convex, villous. Lower glume hairs purple. Lower glume apex dentate, 3-fid. Upper glume lanceolate, chartaceous, 1-keeled.

Florets. Basal sterile florets 1, male, with palea. Lemma of lower sterile floret lanceolate, 1 length of spikelet, membranous. Fertile lemma oblong, membranous, without keel. Lemma apex lobed, 2-fid, awned, 1-awned. Principal lemma awn from a sinus, geniculate, 20–45 mm long overall, with twisted column. Column of lemma awn glabrous. Palea 1 length of lemma.

Distribution (TDWG). Continent. Africa.

Country /Province /State. West tropical Africa, West-central tropical Africa, Northeast tropical Africa, East tropical Africa. Ghana, Nigeria, Togo. Burundi, Cameroon. Chad, Ethiopia (inc. Eritrea). Tanzania.

Ischaemum anthephoroides (Steud) Miq. *Ann. Mus. Bot. Lugd. Bat.* iii. 193. (1867).

Accepted by: W.D. Clayton & K. Harman, *GrassBase* (2008) and online, U. Quattrocchi, *CRC World Dictionary of Grasses* (2006), S-L Chen et al, *Flora of China* 22 (Poaceae) (2006), T. Koyama, *Grasses of Japan and its neighboring regions* (1987).

TYPE from Japan. **Basionym or Replaced Name:** *Rottboellia anthephoroides* Steud., *Flora* 29: 22 (1846)

. T: <Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Japan: Goering.

Illustrations (Books): S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 857).

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

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

Habit, Vegetative Morphology. Perennial, caespitose, clumped loosely. Rhizomes short. Culms decumbent, 30–60 cm long, 1.8–2.5 mm diam., rooting from lower nodes. Culm-internodes 2–10 cm long. Culm-nodes bearded. Lateral branches sparse. Leaf-sheaths pilose. Ligule an eciliate membrane, 1–2 mm long. Leaf-blades lanceolate, 3–15 cm long, 3–9 mm wide. Leaf-blade surface pubescent, hairy on both sides. Leaf-blade apex acuminate.

Inflorescence. Inflorescence composed of racemes. Racemes 2, paired, appressed back to back, 5–8 cm long, 8–10 mm wide. Rhachis fragile at the nodes, angular, villous on margins. Rhachis hairs 3 mm long. Rhachis internodes oblong, 4–5.5 mm long, flat and forming a U or V shape with the pedicel in rear view. Rhachis internode tip transverse, cupuliform. Spikelets in pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, oblong, 4–5.5 mm long, 0.5 length of fertile spikelet, villous, with 3 mm long hairs.

Sterile Spikelets. Companion sterile spikelets well-developed, male, lanceolate, 7–9 mm long, as long as fertile, separately deciduous. Companion sterile spikelet glumes chartaceous, keeled, pubescent, muticous. Companion sterile spikelet lemmas muticous.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets elliptic or ovate, dorsally compressed, 8–10 mm long, 2.5–3 mm wide, falling entire, deciduous with accessory branch structures. Spikelet callus oblong, base truncate, inserted.

Glumes. Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma. Lower glume elliptic or ovate, 1 length of spikelet, coriaceous, much thinner above, 2-keeled, keeled all along, keeled laterally, winged on keel, winged all along, 1–8 -veined. Lower glume primary vein scaberulous. Lower glume surface flat, pubescent. Lower glume apex emarginate or obtuse. Upper glume lanceolate, coriaceous, 1-keeled, 3 -veined. Upper glume surface pubescent. Upper glume apex acute.

Florets. Basal sterile florets 1, male, with palea. Lemma of lower sterile floret lanceolate, membranous, ciliate on margins. Fertile lemma oblong, membranous, without keel. Lemma apex lobed, 2 -fid, incised 0.5 of lemma length, awned, 1 -awned. Principal lemma awn from a sinus, geniculate, 5–15 mm long overall, with twisted column. Column of lemma awn glabrous.

Flower and Fruit. Anthers 3, 4–5 mm long.

Distribution (TDWG). Continent. Temperate Asia.

Country /Province /State. China, Eastern Asia. China North-Central, China Southeast. Japan, Korea. Japan Hokkaido, or Honshu, or Shikoku, or Kyushu.

TDWG4. Hebei, Shandong. Zhejiang.

Ischaemum apricum Ridley. *Fl. Mal. Penins.* v. 203 (1925).

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

T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: ST: *Burkill 4629*, Hab. Open spaces. Panang. Waterfall Gardens covering sunny slopes (T: US).

ST: *Burkill 4630*, Hab. Open spaces. Penang. Waterfall Gardens covering sunny slopes.

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

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

Derivation (Clifford & Bostock 2007): L. growing in the sunshine. Savanna or grassland species.

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

Habit, Vegetative Morphology. Perennial. Culms prostrate, 60–90 cm long, rooting from lower nodes. Culm-internodes 5–6 cm long. Culm-nodes pubescent. Lateral branches ample. Leaf-sheaths 5–6 cm long. Leaf-sheath oral hairs ciliate. Ligule a ciliolate membrane, 1.5 mm long. Leaf-blades 10–20 cm long, 4–5 mm wide. Leaf-blade surface pilose, sparsely hairy, hairy on both sides. Leaf-blade apex acuminate.

Inflorescence. Inflorescence composed of racemes. Racemes 2, paired, appressed back to back, 4–8 cm long. Rhachis fragile at the nodes, angular, ciliate on margins. Rhachis internodes oblong, flat and forming a U or V shape with the pedicel in rear view. Rhachis internode tip transverse, cupuliform. Spikelets in pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, oblong, 1 length of internode, ciliate.

Sterile Spikelets. Companion sterile spikelets well-developed, male, elliptic, laterally compressed, 5.6 mm long, as long as fertile, separately deciduous. Companion sterile spikelet glumes chartaceous, keeled, winged on keels, 9–11 -veined, rugose, muticous. Companion sterile spikelet lemmas 2, enclosed by glumes.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets oblong, dorsally compressed, 5.8 mm long, falling entire, deciduous with accessory branch structures. Spikelet callus pubescent, base truncate, inserted.

Glumes. Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma. Lower glume oblong, 5.6 mm long, 0.8 length of spikelet, coriaceous, much thinner above, 2-keeled, keeled above, keeled laterally, winged on keel, winged moderately, winged above, 8–9 -veined. Lower glume surface convex, rugose, rough above. Lower glume apex dentate, 2 -fid. Upper glume ovate, 1 length of spikelet, coriaceous, 1-keeled, keeled above, winged on keel, 7 -veined. Upper glume apex acuminate, awned, 1 -awned, awn 3.5 mm long.

Florets. Basal sterile florets 1, male, with palea. Lemma of lower sterile floret lanceolate, 4.6 mm long, hyaline, 3 -veined. Fertile lemma lanceolate, 4.2 mm long, hyaline, without keel, 3 -veined, 0–3 -veined. Lemma apex lobed, 2 -fid, incised 0.5 of lemma length, awned, 1 -awned. Principal lemma awn from a sinus, geniculate, 11 mm long overall, with twisted column. Column of lemma awn glabrous. Palea 3.8 mm long.

Flower and Fruit. Anthers 3, 2.2 mm long, yellow.

Distribution (TDWG). Continent. Tropical Asia.

Country /Province /State. Malesia. Malaya.

Ischaemum arenosum Sohns. *Mem. New York Bot. Gard.* 9(3): 404, f. 75 (1957).

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

TYPE from Venezuela. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *J.A. Steyermark & J.J. Wurdack 122*, 16 Jan 1955, Venezuela: Bolívar: Chimanta Massif along Río Tirica (Río

Aparurén), just above Techiné-merú, 470 m, locally frequent in moist sand along river (US-2182116; IT: NY, VEN).

Illustrations (Books): J.A.Steyermark et al, *Flora of the Venezuelan Guayana* Vol. 8 (2004) (136, Fig. 95).

Derivation (Clifford & Bostock 2007): *L. arena*, sandy place; -osa, abundance. Growing on sandy soils.

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

Habit, Vegetative Morphology. Perennial. Culms decumbent, 20–60 cm long, rooting from lower nodes. Culm-nodes glabrous or pubescent. Leaf-sheaths longer than adjacent culm internode, glabrous on surface. Ligule an eciliate membrane, 1.5 mm long. Leaf-blades 2–10 cm long, 3–7 mm wide. Leaf-blade venation prominent. Leaf-blade surface glabrous, hairless except near base.

Inflorescence. Inflorescence composed of racemes. Racemes 1, single, 5 cm long. Rhachis fragile at the nodes, angular, ciliate on margins. Rhachis internodes oblong, 4.5 mm long. Rhachis internode tip transverse, cupuliform. Spikelets in pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, oblong, ciliate.

Sterile Spikelets. Companion sterile spikelets well-developed, male, elliptic, laterally compressed, 3.5–4.5 mm long, as long as fertile, separately deciduous. Companion sterile spikelet glumes chartaceous, keeled, 9 -veined, pilose. Companion sterile spikelet lemmas 2, enclosed by glumes, 2.5–3 mm long, 1-awned, with 4–5.5 mm long awn.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets elliptic, dorsally compressed, 3.8–4.8 mm long, falling entire, deciduous with accessory branch structures. Spikelet callus pubescent, base truncate, inserted.

Glumes. Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma. Lower glume elliptic, 3.5–4.5 mm long, 1 length of spikelet, coriaceous, 2-keeled, keeled all along, keeled laterally, wingless, 9 -veined. Lower glume surface convex, pilose. Lower glume margins ciliate. Lower glume apex emarginate. Upper glume elliptic, 1 length of spikelet, coriaceous, 1-keeled, 3(–5) -veined. Upper glume surface pilose, hairy above. Upper glume muticous.

Florets. Basal sterile florets 1, male, with palea. Lemma of lower sterile floret elliptic, 3.5 mm long, hyaline, 3(–5) -veined, acuminate. Palea of lower sterile floret 1 length of lemma. Fertile lemma lanceolate, 3–3.4 mm long, hyaline, without keel, 3(–5) -veined, 0–3 -veined or more than 3-veined. Lemma apex lobed, 2 -fid, awned, 1 -awned. Principal lemma awn from a sinus, geniculate, 3.5–6 mm long overall, with twisted column. Column of lemma awn glabrous. Palea 1 length of lemma.

Flower and Fruit. Lodicules 2, adnate to palea, 0.4–0.5 mm long. Anthers 3, 0.8–1 mm long.

Distribution (TDWG). Continent. South America.

Country /Province /State. Northern South America. Venezuela.

Ischaemum aristatum Linn., appl. incert. *Sp. Pl.* 1049. (1753).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), S-L Chen et al, *Flora of China* 22 (Poaceae) (2006), J.F.Veldkamp, Poaceae ms (*Flora Malesiana*), T.Koyama, *Grasses of Japan and its neighboring regions* (1987), W.D.Clayton & N.Snow, *Key to Pacific Grasses* (2010).

TYPE from India. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: India: Herb. Linn. 1214.2 (LINN lecto).

Recent Synonyms: *Ischaemum crassipes* (Steud.) Thell., *Fedde, Repert.* 10: 289 (1912).

Illustrations (Books): T.Koyama, *Grasses of Japan and its neighbouring regions* (1987) (461, Fig 181), C-C Hsu, *Flora of Taiwan*, Vol 5 (1978) (706), C-C Hsu, *Taiwan Grasses* (1975) (665, Pl. 1470).

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

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

Habit, Vegetative Morphology. Perennial, caespitose, clumped loosely. Rhizomes short. Culms decumbent or prostrate, 30–80 cm long, 1.2–2 mm diam. Culm-internodes terete or channelled, 4–12(–25) cm long, smooth, distally glabrous. Culm-nodes glabrous or pubescent. Lateral branches lacking or sparse, arising from lower culm. Leaves cauline. Leaf-sheaths outer margin glabrous or hairy. Ligule an eciliate membrane, 3–4 mm long, scarious, brown, truncate. Leaf-blades linear or lanceolate, 5–30 cm long, 4–10 mm wide. Leaf-blade surface glabrous or pilose, sparsely hairy. Leaf-blade margins smooth or scabrous. Leaf-blade apex acuminate.

Inflorescence. Inflorescence composed of racemes. Racemes 2, paired, appressed back to back, 4–7 cm long, 5–8 mm wide. Rhachis fragile at the nodes, angular, scaberulous on margins, glabrous on margins or pubescent on margins. Rhachis internodes columnar, 3–4 mm long, flat and forming a U or V shape with the pedicel in rear view. Rhachis internode tip transverse, cupuliform. Spikelets in pairs. Fertile spikelets sessile, 1

in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, columnar, glabrous or puberulous.

Sterile Spikelets. Companion sterile spikelets well-developed, male, ovate, 4–6 mm long, shorter than fertile, separately deciduous. Companion sterile spikelet glumes chartaceous, keeled, muticous. Companion sterile spikelet lemmas 2, enclosed by glumes, muticous or 1-awned, with 0–3 mm long awn.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets obovate or rhomboid, dorsally compressed, 5–8 mm long, 2–2.3 mm wide, falling entire, deciduous with accessory branch structures. Spikelet callus glabrous, base truncate, inserted.

Glumes. Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma. Lower glume elliptic, 1 length of spikelet, coriaceous, much thinner above, 2-keeled, keeled above, keeled laterally, winged on keel, winged broadly, winged above, 5 -veined. Lower glume primary vein scabrous. Lower glume lateral veins obscure, with cross-veins, intercarinal veins distinct, intercarinal veins 3 in number. Lower glume surface convex. Lower glume apex dentate, 2 -fid. Upper glume lanceolate, 1 length of spikelet, coriaceous, 1-keeled, keeled above, 5 -veined. Upper glume primary vein scabrous. Upper glume apex acute.

Florets. Basal sterile florets 1, male, with palea. Lemma of lower sterile floret ovate, hyaline, acute. Fertile lemma elliptic, hyaline, without keel, 0–3 -veined. Lemma apex lobed, 2 -fid, awned, 1 -awned. Principal lemma awn from a sinus, straight or geniculate, 1–10 mm long overall, clearly exerted from spikelet or not or scarcely exerted from spikelet, without a column or with twisted column. Palea 1 length of lemma.

Flower and Fruit. Anthers 3, 2.5 mm long.

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

Country /Province /State. Western Indian ocean. Mauritius (*). **China, Eastern Asia.** China South Central, Hainan, Manchuria, China North-Central, China Southeast. Japan, Korea, Nansei-Shoto, Ogasawara-shoto, Taiwan. Japan Honshu, or Shikoku, or Kyushu. **Indo-China, Papuasias.** Myanmar, Vietnam. Solomon Is. Fiji, Niue, Samoa. Caroline Is. Hawaii.

TDWG4. Hebei, Shandong. Anhui, Fujian, Guangdong, Guangxi, Henan, Hunan, Jiangsu, Jiangxi, Zhejiang. Guizhou, Hubei, Yunnan.

Ischaemum aureum (Hook. & Arn.) Hack. *DC. Monog. Phan.* vi 224 (1889).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), S-L Chen et al, *Flora of China* 22 (Poaceae) (2006), T.Koyama, *Grasses of Japan and its neighboring regions* (1987).

TYPE from Japan. **Basionym or Replaced Name:** *Spodiopogon aureus* Hook. & Arn., *Bot. Beechey Voy.* 273–274 (1838)

. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Japan: Ryukyu Islands,.

Illustrations (Books): T.Koyama, *Grasses of Japan and its neighbouring regions* (1987) (456, Fig 176), C-C Hsu, *Flora of Taiwan*, Vol 5 (1978) (708), C-C Hsu, *Taiwan Grasses* (1975).

Derivation (Clifford & Bostock 2007): L. golden-yellow. With spikelets or pedicels or other parts invested in golden-yellow hairs.

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

Habit, Vegetative Morphology. Perennial, caespitose. Culms erect, 25–45 cm long. Leaves cauline. Ligule an eciliate membrane, 0.8–1 mm long. Leaf-blades 3–12 cm long, 3–8 mm wide. Leaf-blade apex acuminate.

Inflorescence. Inflorescence composed of racemes. Racemes 2, paired, 2–5 cm long. Rhachis fragile at the nodes, angular, ciliate on margins. Rhachis hairs yellow, 3–5 mm long. Rhachis internodes oblong, 2.5–3 mm long, flat and forming a U or V shape with the pedicel in rear view. Rhachis internode tip transverse, cupuliform. Spikelets in pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, cuneate, angular, ciliate.

Sterile Spikelets. Companion sterile spikelets well-developed, containing empty lemmas or male, lanceolate, dorsally compressed, 4–4.5 mm long, as long as fertile, separately deciduous. Companion sterile spikelet glumes chartaceous, keeled, awned, both glumes awned, with 1.5–2 mm long awn. Companion sterile spikelet lemmas 2, enclosed by glumes, 1-awned (geniculately), with 15–18 mm long awn.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets lanceolate, dorsally compressed, 4–5 mm long, falling entire, deciduous with accessory branch structures. Spikelet callus pilose, base obtuse, inserted.

Glumes. Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma. Lower glume lanceolate or ovate, 1 length of spikelet, chartaceous, 2-keeled, keeled laterally, wingless. Lower glume primary vein ciliate (yellow hairs). Lower glume surface flat. Lower glume apex dentate, 2 -fid. Upper glume lanceolate,

chartaceous, 1-keeled. Upper glume surface pilose, hairy above. Upper glume apex dentate, 2 -fid, awned, 1 -awned, awn 2–3 mm long.

Florets. Basal sterile florets 1, male, with palea. Lemma of lower sterile floret lanceolate, 1 length of spikelet, hyaline. Fertile lemma oblong, 3–4 mm long, membranous, without keel. Lemma apex lobed, 2 -fid, incised 0.33–0.5 of lemma length, awned, 1 -awned. Principal lemma awn from a sinus, geniculate, 15–25 mm long overall, with twisted column. Column of lemma awn glabrous. Palea 1 length of lemma.

Distribution (TDWG). Continent. Temperate Asia.

Country /Province /State. China, Eastern Asia. Nansei-Shoto, Ogosawara-shoto, Taiwan.

Ischaemum australe R. Br. *Prod.* 205. (1810).

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

TYPE from Australia. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: (J.) apud Portum Jackson, inclusis ripis aestuarii Hunter's River vel Coal River,.

Illustrations (Books): C.A.Gardner, *Flora of Western Australia*, Vol 1, Part 1, *Gramineae* (1952) (299, Pl 87), J.R.Wheeler et al, *Flora of the Kimberley Region* (1992) (1180, Fig. 334), S.W.L.Jacobs, R.D.B.Whalley & D.J.B.Wheeler., *Grasses of New South Wales*, 4th edn (2008) (285), J.C.Tothill, & J.B.Hacker. *The grasses of southern Queensland* (1983) (282), D.Sharp & B.K.Simon, *AusGrass*. Grasses of Australia. CD-Rom Version 1.0. (2002).

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

Derivation (Clifford & Bostock 2007): L. of the south. From the south in general as from Africa, America, Europe or elsewhere.

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

Habit, Vegetative Morphology. Perennial, caespitose. Rhizomes short. Culms erect, 50–150 cm long, 4–5 -noded. Culm-nodes pubescent. Lateral branches lacking. Leaf-sheaths 10–15 cm long, glabrous on surface. Ligule a ciliolate membrane, 3 mm long. Leaf-blades 10–20 cm long, 3–5 mm wide. Leaf-blade surface glabrous.

Inflorescence. Inflorescence composed of racemes. Racemes 2, paired, appressed back to back, 3–10 cm long. Rhachis fragile at the nodes, angular, ciliate on margins. Rhachis internodes oblong, 3–6 mm long, flat and forming a U or V shape with the pedicel in rear view. Rhachis internode tip transverse, cupuliform. Spikelets in pairs. Fertile spikelets sessile to sessile and pedicelled, 1 in the cluster or 2 in the cluster. Companion sterile spikelets pedicelled, 0–1 in the cluster. Pedicels present, oblong, 0.7–0.8 length of internode, ciliate.

Sterile Spikelets. Companion sterile spikelets well-developed, male, lanceolate, asymmetrical, laterally compressed, 6–7 mm long, as long as fertile, separately deciduous. Companion sterile spikelet glumes chartaceous, keeled, winged on keels. Companion sterile spikelet lemmas 2, enclosed by glumes, entire, muticous.

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

Glumes. Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma. Lower glume oblong, asymmetrical, 1 length of spikelet, chartaceous, 2-keeled, keeled all along, keeled laterally, winged on keel, winged narrowly. Lower glume primary vein ciliolate. Lower glume surface flat. Lower glume apex acute. Upper glume lanceolate, chartaceous, 1-keeled, winged on keel, 7 -veined. Upper glume margins ciliolate.

Florets. Basal sterile florets 1, male, with palea. Lemma of lower sterile floret lanceolate, membranous, 3 -veined, ciliate on margins, acute. Fertile lemma oblong, membranous, without keel. Lemma apex dentate, 2 -fid, awned, 1 -awned. Principal lemma awn from a sinus, curved, 8–10 mm long overall.

Flower and Fruit. Anthers 3, 3–5 mm long.

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

Country /Province /State. Indo-China, Malesia, Papuasias. Cambodia. Philippines. New Guinea. Australia. Western Australia, Northern Territory, Queensland, New South Wales.

TDWG4. Kimberley. Darwin & Gulf, Victoria R & Barkly Tableland. North, Central, South East. Coast, Tablelands.

Ischaemum barbatum Retz. *Obs.* 6: 35 (1791).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), D.Sharp, D. & B.K.Simon, *AusGrass* (2002), S-L Chen et al, *Flora of China* 22

(Poaceae) (2006), J.F.Veldkamp, Poaceae ms (*Flora Malesiana*), T.Koyama, *Grasses of Japan and its neighboring regions* (1987), W.D.Clayton & N.Snow, Key to Pacific Grasses (2010).

TYPE from Indonesia. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Indonesia: Java., D. Wennerberg ?.

Recent Synonyms: *Ischaemum vitiense* Summerhayes, *Kew Bull.* 1930, 253, 264. (1930). *Ischaemum goebelii* Hack., *Oesterr. Bot. Zeitschr.* 1901, 149 (1901).

Illustrations (Books): C-C Hsu, *Flora of Taiwan*, Vol 5 (1978) (704 & 710 as *I. akoense* & var. *gibbum* forma *nodulosum*), C-C Hsu, *Taiwan Grasses* (1975) (667, Pl. 1471 as *I. akoense* & as var. *gibbum* forma *nodulosum*), D.Sharp & B.K.Simon, *AusGrass. Grasses of Australia. CD-Rom Version 1.0.* (2002), S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 858).

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

Derivation (Clifford & Bostock 2007): L. bearded, barbed. With hairs on the callus, glumes or lemma.

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

Habit, Vegetative Morphology. Perennial. Culms erect or geniculately ascending, 60–120 cm long. Ligule an eciliate membrane, 2–3.5 mm long. Leaf-blades 10–20 cm long, 5–10 mm wide.

Inflorescence. Inflorescence composed of racemes. Racemes 2, paired, appressed back to back, 5–7 cm long. Rhachis fragile at the nodes, angular, ciliate on margins. Rhachis internodes columnar, 4.5 mm long, flat and forming a U or V shape with the pedicel in rear view. Rhachis internode tip transverse, cupuliform. Spikelets in pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, columnar, 1–2 mm long, ciliate.

Sterile Spikelets. Companion sterile spikelets well-developed, containing empty lemmas or male, oblong, asymmetrical, 6 mm long, as long as fertile, separately deciduous. Companion sterile spikelet glumes chartaceous, winged on keels, muticous. Companion sterile spikelet lemmas 2, enclosed by glumes, muticous.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets oblong, dorsally compressed, 5.5–7 mm long, falling entire, deciduous with accessory branch structures. Spikelet callus square, glabrous or pubescent, base truncate, inserted.

Glumes. Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma. Lower glume oblong, asymmetrical, 1 length of spikelet, coriaceous, much thinner above, 2-keeled, keeled above, keeled laterally, winged on keel, winged narrowly, winged above. Lower glume surface convex, muricate, rough on flanks. Lower glume apex acute. Upper glume lanceolate, coriaceous, much thinner above, 1-keeled. Upper glume margins ciliate. Upper glume apex acuminate.

Florets. Basal sterile florets 1, male, with palea. Lemma of lower sterile floret lanceolate, 4.6 mm long, 0.75 length of spikelet, membranous, 3 -veined. Fertile lemma oblong, membranous, without keel, 3 -veined, 0–3 -veined. Lemma apex lobed, 2 -fid, incised 0.75 of lemma length, awned, 1 -awned. Principal lemma awn from a sinus, geniculate, 10–15 mm long overall, with twisted column. Column of lemma awn glabrous. Palea 1 length of lemma.

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

Country /Province /State. West tropical Africa. Nigeria. **China, Eastern Asia.** China South Central, Hainan, China Southeast. Taiwan. **Indian Subcontinent, Indo-China, Malesia, Papuasia.** India, Sri Lanka. Cambodia, Laos, Myanmar, Thailand, Vietnam. Borneo, Java, Lesser Sunda Is, Malaya, Singapore, Moluccas, Philippines, Sulawesi, Sumatra. New Guinea West Papua (Irian Jaya). New Guinea. **Australia.** Northern Territory. Fiji. Marianas.

TDWG4. Anhui, Fujian, Guangdong, Guangxi, Hunan, Jiangsu, Jiangxi, Zhejiang. Guizhou, Hubei, Yunnan. Assam, Meghalaya. Kerala, Karnataka. Madhya Pradesh, Orissa. Darwin & Gulf.

Ischaemum beccarii Hack. *DC. Monog. Phan.* vi 247. (1889).

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

TYPE from Indonesia. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Borneo: Beccari 3820 (P holotype, K).

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

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

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

Habit, Vegetative Morphology. Perennial, caespitose. Culms 40–70 cm long, wiry. Lateral branches lacking. Ligule an eciliate membrane. Leaf-blades 10–16 cm long, 2–4 mm wide. Leaf-blade surface glabrous. Leaf-blade apex attenuate, filiform.

Inflorescence. Inflorescence composed of racemes. Racemes (1–)2, single or paired, 4–6 cm long. Rhachis fragile at the nodes, angular, ciliate on margins. Rhachis internodes oblong, 4.5–5.5 mm long, flat and forming a U or V shape with the pedicel in rear view. Rhachis internode tip transverse, cupuliform. Spikelets in pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, oblong, 1 length of internode, ciliate.

Sterile Spikelets. Companion sterile spikelets well-developed, containing empty lemmas, linear, asymmetrical, laterally compressed, 3–5 mm long, shorter than fertile, separately deciduous. Companion sterile spikelet glumes chartaceous, keeled, winged on keels. Companion sterile spikelet lemmas 1-awned, with 4 mm long awn.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets elliptic, dorsally compressed, 5–6 mm long, falling entire, deciduous with accessory branch structures. Spikelet callus pilose, base truncate, inserted.

Glumes. Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma. Lower glume lanceolate, chartaceous, 2-keeled, keeled above, keeled laterally, winged on keel, winged narrowly, winged near apex, 4 -veined. Lower glume lateral veins obscure. Lower glume surface flat, glabrous. Lower glume apex dentate, 2 -fid. Upper glume lanceolate, chartaceous, 1-keeled, keeled above, 3 -veined. Upper glume apex acuminate.

Florets. Basal sterile florets 1, male, with palea. Lemma of lower sterile floret lanceolate, 4–5 mm long, hyaline. Fertile lemma oblong, 2 mm long, membranous, without keel. Lemma apex lobed, 2 -fid, incised 0.5 of lemma length, awned, 1 -awned. Principal lemma awn from a sinus, geniculate, 7–8 mm long overall, with twisted column. Column of lemma awn glabrous. Palea 1 length of lemma.

Flower and Fruit. Anthers 3, 2–2.5 mm long.

Distribution (TDWG). Continent. Tropical Asia.

Country /Province /State. Malesia. Borneo, Sulawesi.

Ischaemum bolei Almeida. *Indian Forester*, 98(4): 236 (1972).

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

TYPE from India. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: India, Savantwadi: Almeida (BLATT holo, K).

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

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

Habit, Vegetative Morphology. Annual. Culms erect or geniculately ascending, 60–80 cm long, rooting from lower nodes. Culm-internodes 1.5–13 cm long. Lateral branches ample. Leaf-sheaths 4–6 cm long, glabrous on surface, outer margin hairy. Ligule a ciliolate membrane, 2–4 mm long. Leaf-blade base cordate or sagittate, with a false petiole, petiole 1–4 cm long. Leaf-blades lanceolate, 3.5–10 cm long, 5–10 mm wide. Leaf-blade surface puberulous, hairy on both sides. Leaf-blade apex acuminate.

Inflorescence. Inflorescence composed of racemes. Racemes 2, paired, appressed back to back, 4 cm long. Rhachis fragile at the nodes, angular, glabrous on margins. Rhachis internodes cuneate, 2.5 mm long, flat and forming a U or V shape with the pedicel in rear view. Rhachis internode tip transverse, cupuliform. Spikelets in pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, oblong, 0.5 mm long, 0.15 length of fertile spikelet, glabrous.

Sterile Spikelets. Companion sterile spikelets well-developed, male, lanceolate, 3.5–4 mm long, as long as fertile, separately deciduous. Companion sterile spikelet glumes chartaceous, keeled, muticous. Companion sterile spikelet lemmas muticous.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets lanceolate, dorsally compressed, 3.5–4 mm long, 1 mm wide, falling entire, deciduous with accessory branch structures. Spikelet callus oblong, base truncate, inserted.

Glumes. Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma. Lower glume oblong, 1 length of spikelet, coriaceous, 2-keeled, keeled all along, keeled laterally. Lower glume surface convex, muricate, rough on flanks, pilose. Upper glume lanceolate, coriaceous, 1-keeled, 1 -veined. Upper glume lateral veins absent. Upper glume margins ciliate. Upper glume apex acute.

Florets. Basal sterile florets 1, male, with palea. Lemma of lower sterile floret lanceolate, 3–3.5 mm long, membranous, ciliate on margins, truncate. Palea of lower sterile floret 1 length of lemma. Fertile lemma oblong, membranous, without keel. Lemma margins ciliate, hairy above. Lemma apex entire, muticous. Palea linear.

Flower and Fruit. Anthers 3, 1–2 mm long.

Distribution (TDWG). Continent. Tropical Asia.

Country /Province /State. Indian Subcontinent. India.

TDWG4. Maharashtra.

Ischaemum bombaiense Bor. *Journ. Bombay Nat. Hist. Soc.* xlix. 165 (1950).

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

TYPE from India. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: India, Khandala: Blatter 9904 (K holo, BLATT).

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

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

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

Habit, Vegetative Morphology. Annual. Culms 15–30 cm long. Culm-internodes distally glabrous. Lateral branches sparse. Leaf-sheaths glabrous on surface or pilose, with tubercle-based hairs, outer margin hairy. Ligule an eciliate membrane, 2–3 mm long. Leaf-blade base with a brief petiole-like connection to sheath, petiole pubescent. Leaf-blades 6–12 cm long, 4–7 mm wide. Leaf-blade surface pilose, hairy on both sides, with tubercle-based hairs. Leaf-blade apex acuminate.

Inflorescence. Inflorescence composed of racemes, subtended by a spatheole, exerted (terminal) or enclosed (lateral). Spatheole lanceolate, 7–8 cm long. Racemes 2, paired, appressed back to back, 5–7 cm long. Rhachis fragile at the nodes, angular, ciliate on margins. Rhachis internodes cuneate, 7 mm long, flat and forming a U or V shape with the pedicel in rear view. Rhachis internode tip transverse, cupuliform. Spikelets in pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, oblong, 1.5 mm long, 0.2 length of fertile spikelet, ciliate.

Sterile Spikelets. Companion sterile spikelets well-developed, male, oblong, 7.5 mm long, as long as fertile, separately deciduous. Companion sterile spikelet glumes chartaceous, keeled, winged on margins, muciculate (on keel), muciculous. Companion sterile spikelet lemmas 1-awned, with 20 mm long awn.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets oblong, dorsally compressed, 8 mm long, 3–3.5 mm wide, falling entire, deciduous with accessory branch structures. Spikelet callus oblong, base truncate, inserted.

Glumes. Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma. Lower glume oblong, 1 length of spikelet, coriaceous, much thinner above, 2-keeled, keeled all along, keeled laterally. Lower glume surface convex, rugose, rough below. Lower glume apex acute. Upper glume lanceolate, coriaceous, 1-keeled, 3-veined. Upper glume surface rugose (on keel), rough below. Upper glume margins scabrous.

Florets. Basal sterile florets 1, male, with palea. Lemma of lower sterile floret oblong, 8 mm long, membranous, acute. Fertile lemma oblong, 6 mm long, membranous, without keel. Lemma apex lobed, 2-fid, incised 0.5 of lemma length, awned, 1-awned. Principal lemma awn from a sinus, geniculate, 20 mm long overall, with twisted column. Column of lemma awn 8 mm long, glabrous. Palea 6 mm long.

Flower and Fruit. Anthers 3, 2.75–3 mm long.

Distribution (TDWG). Continent. Tropical Asia.

Country /Province /State. Indian Subcontinent. India.

TDWG4. Madhya Pradesh, Maharashtra, Rajasthan.

Ischaemum borii Almeida. *Journ. Bombay Nat. Hist. Soc.* 66: 513 (1970).

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

TYPE from India. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: India, Bombay, Savantwadi: Almeida 895 (K holo, BLAT).

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

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

Habit, Vegetative Morphology. Annual. Culms erect, 15 cm long. Culm-internodes 4 cm long. Culm-nodes bearded. Lateral branches sparse. Leaf-sheaths 1–3 cm long, glabrous on surface. Leaf-sheath auricles erect. Ligule an eciliate membrane. Leaf-blade base with a false petiole, petiole 0.3–0.4 cm long. Leaf-blades linear or lanceolate, 2–3.5 cm long, 4–7.5 mm wide. Leaf-blade venation prominent. Leaf-blade apex acute or acuminate.

Inflorescence. Inflorescence composed of racemes, subtended by a spatheole, enclosed. Spatheole lanceolate. Racemes 2, paired. Rhachis fragile at the nodes, angular. Rhachis internodes clavate, flat and forming a U or V shape with the pedicel in rear view. Rhachis internode tip transverse, cupuliform. Spikelets in pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present.

Sterile Spikelets. Companion sterile spikelets well-developed, containing empty lemmas or male, elliptic, laterally compressed, 3 mm long, shorter than fertile, separately deciduous. Companion sterile spikelet glumes chartaceous, keeled, dentate, 2-fid, awned, one glume awned.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets elliptic, dorsally compressed, 4–5 mm long, falling entire, deciduous with accessory branch structures. Spikelet callus oblong, base truncate, inserted.

Glumes. Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma. Lower glume elliptic, 1 length of spikelet, coriaceous, 2-keeled, keeled all along, keeled laterally. Lower glume surface convex, with transverse tufts of hair (2 tufts). Lower glume apex dentate, 2 -fid, awned, 1 -awned, awn 9 mm long. Upper glume elliptic, coriaceous, 1-keeled. Upper glume surface with marginal tufts of hair (2 tufts). Upper glume apex lobed, 2 -fid, awned, 2 -awned (on lobes), awn 5–8 mm long.

Florets. Basal sterile florets 1, male, with palea. Lemma of lower sterile floret oblong, 3–3.5 mm long, membranous. Fertile lemma oblong, 3 mm long, hyaline, without keel. Lemma apex lobed, 2 -fid, awned, 1 -awned. Principal lemma awn from a sinus, geniculate, 60 mm long overall, with twisted column. Column of lemma awn glabrous. Palea 2.5–3 mm long.

Flower and Fruit. Anthers 3, 1.5 mm long.

Distribution (TDWG). Continent. Tropical Asia.

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

Ischaemum burmanicum Bor. *Kew Bull.* 1949, 568 (1950). (1950).

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

TYPE from Myanmar. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Burma, Rangoon: U Thein Lwin 627 (K holo).

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

Derivation (Clifford & Bostock 2007): L. -ica, belonging to. From Burma, now Myanmar.

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

Habit, Vegetative Morphology. Annual. Culms 40 cm long. Ligule an eciliate membrane, 1–1.5 mm long. Leaf-blade base sagittate, without a false petiole or with a brief petiole-like connection to sheath. Leaf-blades 10 cm long, 15 mm wide, flaccid. Leaf-blade surface pilose, sparsely hairy, hairy on both sides, with tubercle-based hairs. Leaf-blade margins scabrous. Leaf-blade apex acuminate.

Inflorescence. Inflorescence composed of racemes. Racemes 1, single, 4 cm long. Rhachis fragile at the nodes, semiterete. Rhachis internodes inflated, 5 mm long, with the lower often bearing triads (1 sessile, 2 pedicelled). Rhachis internode tip transverse, cupuliform. Spikelets in pairs. Fertile spikelets sessile, 1 in the cluster, heteromorphic (lowest awnless). Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, oblong, 0.5 mm long, 0.05 length of fertile spikelet, bearing a few hairs.

Sterile Spikelets. Companion sterile spikelets well-developed, male, lanceolate, laterally compressed, 6.5 mm long, shorter than fertile, separately deciduous. Companion sterile spikelet glumes chartaceous, keeled, muricate, pilose. Companion sterile spikelet lemmas 2, enclosed by glumes, entire, muticous.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets lanceolate or oblong, dorsally compressed, 8.5 mm long, falling entire, deciduous with accessory branch structures. Spikelet callus oblong, 2 mm long, bearded, base truncate, inserted.

Glumes. Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma. Lower glume oblong, 6.5 mm long, 1 length of spikelet, coriaceous, 2-keeled, keeled all along, keeled laterally. Lower glume surface rugose, pilose. Lower glume hairs white, 3 mm long. Lower glume apex acute. Upper glume lanceolate, coriaceous, much thinner above, 1-keeled, winged on keel (narrowly), 3 -veined.

Florets. Basal sterile florets 1, male, with palea. Lemma of lower sterile floret lanceolate or elliptic, 5.5 mm long, hyaline, 1 -veined, without lateral veins, truncate. Fertile lemma oblong, 4.5 mm long, hyaline, without keel, 1 -veined, 0–3 -veined, one-veined. Lemma apex lobed, 2 -fid, incised 0.5 of lemma length, awned, 1 -awned. Principal lemma awn from a sinus, geniculate, 15 mm long overall, with twisted column. Column of lemma awn 7 mm long, glabrous. Palea 1 length of lemma.

Flower and Fruit. Anthers 3, 3.5 mm long.

Distribution (TDWG). Continent. Tropical Asia.

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

Ischaemum byrone (Trin.) Hitchcock. *Mem. Bishop Mus., Honolulu*, viii. 213 (1922).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), W.D.Clayton & N.Snow, *Key to Pacific Grasses* (2010).

TYPE from Hawaii. **Basionym or Replaced Name:** *Spodiopogon byronis* Trin., *Mem. Acad. Petersb. Ser. VI. 2:* 301 (1833). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Hawaii: Coll?.

Recent Synonyms: *Ischaemum lutescens* Hack., *DC. Monog. Phan.* 6: 221 (1889).

Illustrations (Books): W.L.Wagner et al., *Manual of the Flowering Plants of Hawai'i*, Vol. 2 (1990) (1553, Pl. 230).

Derivation (Clifford & Bostock 2007): from Byron Bay, Hawaii.

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

Habit, Vegetative Morphology. Perennial. Stolons present. Culms geniculately ascending, 40–80 cm long. Culm-nodes bearded. Leaf-sheaths glabrous on surface. Leaf-sheath auricles erect, 3–4 mm long. Ligule an eciliate membrane, 1.5–3 mm long. Leaf-blades 7–20 cm long, 3–5 mm wide.

Inflorescence. Inflorescence composed of racemes, exerted or embraced at base by subtending leaf. Racemes 2, paired, 4–10 cm long. Rhachis fragile at the nodes, angular, ciliate on margins. Rhachis internodes oblong, 3–4 mm long, flat and forming a U or V shape with the pedicel in rear view. Rhachis internode tip transverse, cupuliform. Spikelets in pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, oblong, 3 mm long, ciliate.

Sterile Spikelets. Companion sterile spikelets well-developed, containing empty lemmas, lanceolate, laterally compressed, 5–6 mm long, shorter than fertile, separately deciduous. Companion sterile spikelet glumes chartaceous, without keels, 5 -veined, hirsute, dentate, 2 -fid, awned, both glumes awned, with 1–3 mm long awn. Companion sterile spikelet lemmas 4.5 mm long, dentate, 1-awned.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets oblong, dorsally compressed, 6–7 mm long, falling entire, deciduous with accessory branch structures. Spikelet callus bearded, base truncate, inserted. Spikelet callus hairs 0.5 length of spikelet.

Glumes. Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma. Lower glume oblong, coriaceous, 2-keeled, keeled above, keeled laterally. Lower glume surface flat, asperulous, hirsute. Lower glume hairs 4 mm long. Lower glume apex dentate, 2 -fid, muticous or awned, 2 -awned, awn 0.5–1 mm long. Upper glume lanceolate, coriaceous, 1-keeled, keeled above. Upper glume surface asperulous, rough above. Upper glume awned, 1 -awned, awn 1–7 mm long.

Florets. Basal sterile florets 1, male, with palea. Lemma of lower sterile floret lanceolate, 5 mm long, hyaline. Fertile lemma oblong, 5 mm long, membranous, without keel, 5 -veined, more than 3-veined. Lemma apex lobed, 2 -fid, incised 0.5 of lemma length, awned, 1 -awned. Principal lemma awn from a sinus, geniculate, 15–26 mm long overall, with twisted column. Column of lemma awn glabrous. Palea 1 length of lemma.

Flower and Fruit. Anthers 3, 2–2.5 mm long.

Distribution (TDWG). Continent. Pacific.

Country /Province /State. South-central Pacific, North-central Pacific. New Caledonia. Cook Is, Society Is, Tubuai Is. Hawaii.

TDWG4.

Ischaemum calicutense P.V. Sreekumar, V.J. Nair & N.C. Nair. *J. Econ. Taxon. Bot.*, 4(3): 1007 (1983).

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

TYPE from India. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: India, Kerala, Nanminda: Sreekumar 71803 (CAL holo, K).

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

Derivation (Clifford & Bostock 2007): L. -ensis, denoting origin. From the Calicut District, Kerala State, India.

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

Habit, Vegetative Morphology. Perennial, mat forming. Culms prostrate, 30–80 cm long, rooting from lower nodes. Culm-nodes glabrous or pubescent. Leaf-sheaths 1–8 cm long, mostly shorter than adjacent culm internode, keeled, glabrous on surface, outer margin hairy. Ligule an eciliate membrane, 1–2 mm long, acute. Leaf-blade base cordate or sagittate. Leaf-blades lanceolate, 2–10 cm long, 8–12 mm wide. Leaf-blade surface glabrous. Leaf-blade apex acuminate.

Inflorescence. Inflorescence composed of racemes, subtended by a spatheole, embraced at base by subtending leaf. Spatheole lanceolate, 3–10 cm long. Racemes 2, paired, 4–6 cm long. Rhachis fragile at the nodes, angular, puberulous on surface, villous on margins. Rhachis internodes cuneate, 3–4 mm long, flat and forming a U or V shape with the pedicel in rear view. Rhachis internode tip transverse, cupuliform. Spikelets in

pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, oblong, 1–1.5 mm long, 0.33 length of internode, villous, with 1–2 mm long hairs.

Sterile Spikelets. Companion sterile spikelets well-developed, male, oblong, laterally compressed, 4.5–5 mm long, shorter than fertile, separately deciduous. Companion sterile spikelet callus oblong. Companion sterile spikelet glumes coriaceous, keeled, 5–7 -veined, hirsute. Companion sterile spikelet lemmas 2, enclosed by glumes, 3–3.5 mm long, dentate, 1-awned, with 12–15 mm long awn.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets lanceolate or ovate, dorsally compressed, 5–6 mm long, falling entire, deciduous with accessory branch structures. Spikelet callus oblong, pilose, base obtuse, inserted.

Glumes. Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma. Lower glume lanceolate or ovate, 1 length of spikelet, coriaceous, 2-keeled, keeled all along, keeled laterally, keeled obtusely, 5–9 -veined. Lower glume lateral veins obscure. Lower glume surface convex, villous, hairy below. Lower glume hairs 0.5–2.5 mm long. Upper glume lanceolate, coriaceous, with hyaline margins, without keels, keel-less except near apex, winged on keel, winged near apex, 5 -veined. Upper glume primary vein obscure. Upper glume surface pubescent. Upper glume margins ciliolate.

Florets. Basal sterile florets 1, male, with palea. Lemma of lower sterile floret lanceolate, 4.5–5 mm long, hyaline, 5–7 -veined, obscurely veined, ciliolate on margins. Palea of lower sterile floret 4–4.5 mm long. Fertile lemma oblong, 3–3.5 mm long, hyaline, without keel, 3 -veined, 0–3 -veined. Lemma lateral veins obscure. Lemma apex lobed, 2 -fid, awned, 1 -awned. Principal lemma awn from a sinus, geniculate, 20–25 mm long overall, with twisted column. Column of lemma awn 5–10 mm long, glabrous. Palea 2.5–3 mm long, hyaline, 2 -veined.

Flower and Fruit. Lodicules 2, 0.5 mm long. Anthers 3, 1.25–2 mm long.

Distribution (TDWG). Continent. Tropical Asia.

Country /Province /State. Indian Subcontinent. India.

TDWG4. Kerala.

Ischaemum kannanorensis P.V. Sreekumar, V.J. Nair & N.C. Nair. *J. Econ. Taxon. Bot.*, 4(3): 1009 (1983).

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

TYPE from India. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: India, Kerala, Chattamchal: Sreekumar 71702 (MH holo, K).

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

Derivation (Clifford & Bostock 2007): L. -ensis, denoting origin. From the Cannanore District, Kerala, India.

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

Habit, Vegetative Morphology. Perennial, caespitose. Culms erect or geniculately ascending, 15–60 cm long. Culm-nodes bearded. Leaf-sheaths 2–6 cm long, mostly shorter than adjacent culm internode, keeled, striately veined, glabrous on surface. Ligule an eciliate membrane, 2–3 mm long, acute. Leaf-blade base broadly rounded or cordate. Leaf-blades lanceolate, 2–10 cm long, 3–6 mm wide. Leaf-blade surface glabrous or pilose, sparsely hairy, with tubercle-based hairs. Leaf-blade apex attenuate.

Inflorescence. Inflorescence composed of racemes, subtended by a spatheole. Spatheole 3–6 cm long, glabrous. Racemes 2, paired, appressed back to back, 2–5 cm long. Rhachis fragile at the nodes, villous on surface. Rhachis hairs 0.5–1.5 mm long. Rhachis internodes oblong, 2.5–3 mm long. Rhachis internode tip transverse, cupuliform. Spikelets in pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, oblong, 2–2.5 mm long, ciliate.

Sterile Spikelets. Companion sterile spikelets well-developed, male, oblong or ovate, laterally compressed, 3.5–5 mm long, as long as fertile, separately deciduous. Companion sterile spikelet glumes chartaceous, keeled, winged on keels (1 keel), 11–13 -veined, glabrous or pilose. Companion sterile spikelet lemmas 2, enclosed by glumes, 3–3.5 mm long, muticous.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets oblong, dorsally compressed, 3.5–5 mm long, falling entire, deciduous with accessory branch structures. Spikelet callus oblong, 1 mm long, pilose, base truncate, inserted. Spikelet callus hairs 0.5–1 mm long.

Glumes. Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma. Lower glume oblong or ovate, 3.5–5 mm long, 1 length of spikelet, coriaceous, much thinner on margins, 2-keeled, keeled all along, keeled laterally, 11–13 -veined. Lower glume surface flat, smooth or rugose, glabrous or villous. Lower glume apex acute. Upper glume lanceolate, coriaceous, 1-keeled, 3 -veined. Upper glume margins ciliolate.

Florets. Basal sterile florets 1, male, with palea. Lemma of lower sterile floret elliptic or oblong, hyaline, 3–5 -veined. Fertile lemma oblong, 3–3.5 mm long, membranous, without keel, 3–5 -veined, 0–3 -veined or more than 3-veined. Lemma apex dentate, 2 -fid, awned, 1 -awned. Principal lemma awn from a sinus, geniculate, 18–20 mm long overall, with twisted column. Column of lemma awn 8–10 mm long, glabrous. Palea oblong, 2.5–3 mm long, hyaline, 2 -veined.

Flower and Fruit. Lodicules 2, obovate, 0.5 mm long. Anthers 3, 1.5–2 mm long, yellow or purple. Filaments 0.5 mm long.

Distribution (TDWG). Continent. Tropical Asia.

Country /Province /State. Indian Subcontinent. India.

TDWG4. Kerala.

Ischaemum celebicum Jansen. *Reinwardtia*, ii. 296 (1953).

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

TYPE from Indonesia. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: T: *H.A.B. B nmemeyer 11689*, 24 May 1921, Indonesia: Sulawesi, Sulawesi Tengah, Lombasang 950 m (L).

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

Derivation (Clifford & Bostock 2007): L. -ica, belonging to. From Celebes, now Suluwasi.

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

Habit, Vegetative Morphology. Perennial. Culms erect, robust, 100–200 cm long, 4–8 mm diam., woody. Culm-internodes channelled, smooth, distally glabrous. Culm-nodes glabrous. Lateral branches ample, arising from upper culm. Leaf-sheaths mostly shorter than adjacent culm internode, glabrous on surface. Ligule a ciliolate membrane, 1.5–2 mm long. Leaf-blades 10–20 cm long, 5–10 mm wide. Leaf-blade surface glabrous or pilose, sparsely hairy, hairy adaxially.

Inflorescence. Inflorescence composed of racemes. Racemes 2, paired, 3–4 cm long. Rhachis fragile at the nodes, angular, ciliate on margins. Rhachis internodes clavate, flat and forming a U or V shape with the pedicel in rear view. Rhachis internode tip transverse, cupuliform. Spikelets in pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, columnar, angular, ciliate, hairy on surface.

Sterile Spikelets. Companion sterile spikelets well-developed, containing empty lemmas or male, lanceolate, 5 mm long, shorter than fertile, separately deciduous. Companion sterile spikelet glumes chartaceous, winged on margins (one margin), mucous. Companion sterile spikelet lemmas 2, enclosed by glumes, 1-awned, with 4–6 mm long awn.

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

Glumes. Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma, shiny. Lower glume lanceolate, 1 length of spikelet, coriaceous, much thinner above, 2-keeled, keeled above, keeled laterally, winged on keel, winged narrowly, winged near apex, 7–9 -veined. Lower glume surface convex, glabrous. Lower glume apex dentate, 2 -fid. Upper glume lanceolate, coriaceous, much thinner above, 1-keeled, keeled above, wingless, 3 -veined. Upper glume apex acuminate.

Florets. Basal sterile florets 1, male, with palea. Lemma of lower sterile floret lanceolate, 1 length of spikelet, membranous. Fertile lemma oblong, hyaline, without keel. Lemma apex lobed, 2 -fid, awned, 1 -awned. Principal lemma awn from a sinus, geniculate, 10 mm long overall, with twisted column. Column of lemma awn glabrous.

Flower and Fruit. Anthers 3.

Distribution (TDWG). Continent. Tropical Asia.

Country /Province /State. Malesia. Sulawesi.

Ischaemum ciliare Retz. *Observ. Bot.* 6: 26 (1791).

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

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

Recent Synonyms: *Spodiopogon villosus* Nees, Hook. & Arn. *Bot. Beech. Voy.* 242 (1838).

Illustrations (Books): H.Duistermaat, *Field Guide to the Grasses of Singapore* (2005) (85, Fig. 80), S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 857).

Images: H.Duistermaat, *Field Guide to the Grasses of Singapore* (2005);.

Derivation (Clifford & Bostock 2007): *L. cilium*, eyelid; -are, pertaining to. Glumes or lemmas ciliate on nerves or margins.

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

Habit, Vegetative Morphology. Perennial, mat forming. Stolons present. Culms prostrate, 20–60 cm long, rooting from lower nodes. Culm-nodes glabrous or bearded. Ligule an eciliate membrane, 0.8–2 mm long. Leaf-blade base broadly rounded. Leaf-blades 15–35 cm long, 2.5–4 mm wide. Leaf-blade surface hirsute, hairy on both sides.

Inflorescence. Inflorescence composed of racemes. Racemes 2, paired, 2–10 cm long. Rhachis fragile at the nodes, angular, ciliate on margins. Rhachis internodes oblong, 2.5–3 mm long, flat and forming a U or V shape with the pedicel in rear view. Rhachis internode tip transverse, cupuliform. Spikelets in pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, oblong, ciliate.

Sterile Spikelets. Companion sterile spikelets well-developed, containing empty lemmas or male, lanceolate, laterally compressed, 4–4.5 mm long, shorter than fertile, separately deciduous. Companion sterile spikelet glumes chartaceous, keeled, winged on keels, 11 -veined, mucronate. Companion sterile spikelet lemmas 2, enclosed by glumes, 1-awned, with 7–9 mm long awn.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets oblong, dorsally compressed, 5–6 mm long, falling entire, deciduous with accessory branch structures. Spikelet callus pilose, base truncate, inserted.

Glumes. Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma. Lower glume oblong, 0.8 length of spikelet, coriaceous, much thinner above, 2-keeled, keeled above, keeled laterally, winged on keel, winged broadly, winged above, 8–9 -veined. Lower glume surface convex, glabrous or pilose. Lower glume apex dentate, 2 -fid. Upper glume lanceolate, coriaceous, much thinner above, 1-keeled, keeled above, winged on keel, winged above, 5 -veined. Upper glume awned, 1 -awned, awn 2–2.5 mm long.

Florets. Basal sterile florets 1, male, with palea. Lemma of lower sterile floret lanceolate, 3.75–4 mm long, 0.7–0.8 length of spikelet, membranous, 3 -veined. Fertile lemma oblong, 2–2.5 mm long, membranous, without keel, 3 -veined, 0–3 -veined. Lemma apex lobed, 2 -fid, incised 0.5 of lemma length, awned, 1 -awned. Principal lemma awn from a sinus, geniculate, 9–20 mm long overall, with twisted column. Column of lemma awn glabrous. Palea 1 length of lemma.

Flower and Fruit. Anthers 3, 2–2.5 mm long.

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

Country /Province /State. West tropical Africa, West-central tropical Africa, Western Indian ocean. Burkina, Ivory Coast, Liberia, Nigeria, Sierre Leone. Madagascar. **China, Eastern Asia.** China South Central, Hainan, China Southeast. Taiwan. **Indian Subcontinent, Indo-China, Malesia, Papuasias.** India, Sri Lanka. Andaman Is, Laos, Myanmar, Thailand, Vietnam. Java, Malaya, Singapore. **Southwestern Pacific, Northwestern Pacific, North-central Pacific.** Fiji (*), Wallis-Futuna Is (*). **Southeastern USA.** Maryland. **Mesoamerica, Northern South America.** Costa Rica, Panama. Guyana, Surinam.

TDWG4. Anhui, Fujian, Guangdong, Guangxi, Hunan, Jiangsu, Zhejiang. Guizhou, Hubei, Sichuan, Yunnan.

Ischaemum commutatum Hack. *DC. Monog. Phan.* vi. 209. (1889).

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

TYPE from Sri Lanka. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Sri Lanka: Thwaites CP 2625 (K iso).

Illustrations (Books): K.M.Matthew, *Illustrations on the Flora of Tamilnadu Carnatic* (1982) (Pl.884 & 885).

Derivation (Clifford & Bostock 2007): *L. commuto*, change. Of species that in the opinion of the proposer may be confused with another.

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

Habit, Vegetative Morphology. Perennial. Culms decumbent or rambling, 30–100 cm long, rooting from lower nodes. Culm-nodes glabrous. Lateral branches ample. Leaf-sheaths outer margin hairy. Leaf-sheath auricles erect. Ligule an eciliate membrane, 1–5 mm long. Leaf-blade base simple or broadly rounded, with a false petiole (lower leaves), petiole 0.5–6 cm long. Leaf-blades lanceolate, 4–15 cm long, 8–15 mm wide. Leaf-blade surface hirsute. Leaf-blade margins cartilaginous, scabrous. Leaf-blade apex acuminate.

Inflorescence. Inflorescence composed of racemes. Racemes 2, paired, appressed back to back, 3–6 cm long. Rhachis fragile at the nodes, angular, ciliate on margins. Rhachis internodes oblong, 3–4 mm long, flat and forming a U or V shape with the pedicel in rear view. Rhachis internode tip transverse, cupuliform. Spikelets in

pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, oblong, 3–4 mm long, 1 length of internode, ciliate, hairy on one margin.

Sterile Spikelets. Companion sterile spikelets well-developed, male, ovate, asymmetrical, laterally compressed, 5 mm long, as long as fertile, separately deciduous. Companion sterile spikelet glumes chartaceous, keeled, winged on keels (1 keel). Companion sterile spikelet lemmas 2, enclosed by glumes, muticous.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets oblong, dorsally compressed, 5–6.5 mm long, falling entire, deciduous with accessory branch structures. Spikelet callus glabrous or pubescent, base truncate, inserted.

Glumes. Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma. Lower glume oblong, 1 length of spikelet, coriaceous, 2-keeled, keeled all along, keeled laterally, wingless or winged on keel, winged narrowly, 11–13 -veined. Lower glume surface flat, smooth or muricate, rough on flanks. Lower glume apex acute. Upper glume lanceolate, coriaceous, 1-keeled, 3 -veined. Upper glume margins ciliolate. Upper glume apex acuminate.

Florets. Basal sterile florets 1, male, with palea. Lemma of lower sterile floret lanceolate or oblong, membranous, 3–5 -veined, ciliate on margins, fringed above, acuminate. Fertile lemma oblong, 4.5–5 mm long, membranous, without keel. Lemma margins ciliolate, hairy above. Lemma apex dentate, 2 -fid, awned, 1 -awned. Principal lemma awn from a sinus, geniculate, 10–15 mm long overall, with twisted column. Column of lemma awn glabrous.

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

N = 10 (1 ref TROPICOS).

Distribution (TDWG). Continent. Tropical Asia.

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

TDWG4. Kerala. Maharashtra, Tamilnadu.

Ischaemum copeanum P.V. Sreekumar, V.J. Nair & N.C. Nair. *J. Bombay Nat. Hist. Soc.*, 82(2): 390 (1985).

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

TYPE from India. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: India, Kerala, Cherkala: Sreekumar 71838 (CAL holo, K, MH).

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

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

Habit, Vegetative Morphology. Annual, mat forming. Culms prostrate, 20–40 cm long, rooting from lower nodes. Culm-nodes glabrous or pubescent. Leaf-sheaths 1.5 cm long, mostly shorter than adjacent culm internode, glabrous on surface. Ligule an eciliate membrane, 1–2 mm long, acute. Leaf-blade base broadly rounded or cordate. Leaf-blades lanceolate or oblong, 2–5 cm long, 4–10 mm wide. Leaf-blade surface hirsute, sparsely hairy, with tubercle-based hairs. Leaf-blade apex acuminate.

Inflorescence. Inflorescence composed of racemes, subtended by an inflated leaf-sheath, with 1–2 peduncles per sheath. Racemes 2, paired, 2–3 cm long. Rhachis fragile at the nodes, angular, pilose on surface, villous on margins. Rhachis internodes oblong, 3–3.5 mm long, flat and forming a U or V shape with the pedicel in rear view or with the lower often bearing triads. Rhachis internode tip transverse, cupuliform. Spikelets in pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, clavate, 0.5–1 mm long, 0.33 length of internode, villous.

Sterile Spikelets. Companion sterile spikelets well-developed, male, linear or oblong, laterally compressed, 4–4.5 mm long, as long as fertile, separately deciduous. Companion sterile spikelet callus oblong. Companion sterile spikelet glumes chartaceous, keeled, scaberulous, hirsute. Companion sterile spikelet lemmas 2, enclosed by glumes, muticous.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets ovate, dorsally compressed, 4–4.5 mm long, falling entire, deciduous with accessory branch structures. Spikelet callus oblong, pilose, base obtuse, inserted.

Glumes. Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma. Lower glume oblong, 1 length of spikelet, chartaceous, 2-keeled, keeled all along, keeled laterally, keeled obtusely, winged on keel, winged narrowly, 11–13 -veined. Lower glume lateral veins obscure. Lower glume surface convex, scabrous, rough above, villous, hairy below. Upper glume lanceolate, chartaceous, with membranous margins, 1-keeled, 3 -veined. Upper glume primary vein obscure or distinct. Upper glume margins ciliolate.

Florets. Basal sterile florets 1, male, with palea. Lemma of lower sterile floret lanceolate or elliptic, 3.5–4 mm long, hyaline, 3–5 -veined, obscurely veined, ciliolate on margins, fringed above. Palea of lower sterile floret 3–3.5 mm long. Fertile lemma oblong, 3–3.5 mm long, hyaline, without keel, 3 -veined, 0–3 -veined.

Lemma lateral veins obscure. Lemma apex lobed, 2 -fid, awned, 1 -awned. Principal lemma awn from a sinus, geniculate, 10–15 mm long overall, with twisted column. Column of lemma awn 4–6 mm long, glabrous. Palea 2.5–3 mm long, hyaline, 2 -veined. Palea surface papillose (above).

Flower and Fruit. Anthers 3, 1.5–3 mm long.

Distribution (TDWG). Continent. Tropical Asia.

Country /Province /State. Indian Subcontinent. India.

TDWG4. Kerala.

Ischaemum dalzellii Stapf ex Bor. *Kew Bull.* 1951, 448 (1952).

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

TYPE from India. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: India Or.: Bombay: Yellapur, 25 Oct. 1884, "roadsides in forest, common.", W.A. Talbot 738 (HT:K).

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

Derivation (Clifford & Bostock 2007): in honor of Nicholas Alexander Dalzell (1817–1878) Scots-born Indian forester and botanist.

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

Habit, Vegetative Morphology. Annual. Culms geniculately ascending or decumbent, 30–50 cm long. Ligule an eciliate membrane, 4 mm long, pilose on abaxial surface. Leaf-blade base with a false petiole, petiole 1–5 cm long. Leaf-blades 3–7 cm long, 7–14 mm wide. Leaf-blade surface pilose, hairy on both sides, with tubercle-based hairs. Leaf-blade margins scabrous.

Inflorescence. Inflorescence composed of racemes. Racemes 2, paired, 2–3 cm long. Rhachis fragile at the nodes, semiterete, ciliate on margins. Rhachis internodes clavate, 3.5 mm long. Rhachis internode tip transverse, cupuliform. Spikelets in pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, oblong, 0.5 mm long, 0.1 length of fertile spikelet, ciliate.

Sterile Spikelets. Companion sterile spikelets well-developed, male, oblong, laterally compressed, 5 mm long, as long as fertile, separately deciduous. Companion sterile spikelet glumes chartaceous, keeled. Companion sterile spikelet lemmas 2, enclosed by glumes, entire, muticous.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets oblong, dorsally compressed, 5–5.5 mm long, falling entire, deciduous with accessory branch structures. Spikelet callus square, 1 mm long, pilose, base truncate, inserted.

Glumes. Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma. Lower glume oblong, 1 length of spikelet, coriaceous, 2-keeled, keeled all along, keeled laterally, winged on keel, winged narrowly, winged above, 3 -veined. Lower glume primary vein scabrous. Lower glume surface convex or flat, pilose. Lower glume apex obtuse. Upper glume lanceolate, coriaceous, much thinner above, 1-keeled, 3 -veined. Upper glume surface scabrous.

Florets. Basal sterile florets 1, male, with palea. Lemma of lower sterile floret lanceolate, 4.5 mm long, hyaline, 3 -veined. Fertile lemma oblong, 3 mm long, hyaline, without keel, 3 -veined, 0–3 -veined. Lemma margins ciliate, hairy above. Lemma apex lobed, 2 -fid, incised 0.5 of lemma length, awned, 1 -awned. Principal lemma awn from a sinus, geniculate, 14 mm long overall, with twisted column. Column of lemma awn 7 mm long, glabrous. Palea 1 length of lemma.

Flower and Fruit. Anthers 3, 2.5–4 mm long.

Distribution (TDWG). Continent. Tropical Asia.

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

TDWG4. Goa, Kerala. Maharashtra.

Ischaemum decumbens Benth. *Fl. Austral.* vii. 521. (1878).

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

TYPE from Australia. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: N. Australia, Port Darwin, *Schultz* 126.

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

Derivation (Clifford & Bostock 2007): L. decumbo, fall down. Culms prostrate.

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

Habit, Vegetative Morphology. Annual. Culms rambling, 5–30 cm long. Culm-nodes bearded. Leaf-sheaths glabrous on surface. Ligule a ciliolate membrane, 1–1.5 mm long. Leaf-blades linear or lanceolate, 2–5 cm long, 3–5 mm wide. Leaf-blade surface pilose, sparsely hairy.

Inflorescence. Inflorescence composed of racemes. Racemes 2, paired, appressed back to back, 2–4 cm long. Rhachis fragile at the nodes, angular, ciliate on margins. Rhachis internodes clavate, 2 mm long, flat and forming a U or V shape with the pedicel in rear view. Rhachis internode tip transverse, cupuliform. Spikelets in pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, clavate, 0.5 mm long, 0.25 length of internode, ciliate.

Sterile Spikelets. Companion sterile spikelets well-developed, comprising 2 subequal glumes without lemmas, lanceolate, laterally compressed, 2–6 mm long, shorter than fertile, separately deciduous. Companion sterile spikelet glumes chartaceous, keeled, awned, one glume awned.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets oblong, dorsally compressed, 5–6 mm long, falling entire, deciduous with accessory branch structures. Spikelet callus base truncate, inserted.

Glumes. Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma, shiny. Lower glume ovate, 1 length of spikelet, coriaceous, 2-keeled, keeled above, keeled laterally, wingless. Lower glume surface convex. Lower glume apex dentate, 2 -fid, acuminate, awned, 1–2 -awned, awn 0.5 mm long. Upper glume lanceolate, coriaceous, 1-keeled. Upper glume awned, 1 -awned, awn 2–6 mm long.

Florets. Basal sterile florets 1, male, with palea. Lemma of lower sterile floret lanceolate, membranous, 3 -veined. Fertile lemma oblong, membranous, without keel. Lemma apex lobed, 2 -fid, awned, 1 -awned. Principal lemma awn from a sinus, geniculate, 12–14 mm long overall, with twisted column. Column of lemma awn glabrous.

Flower and Fruit. Anthers 3.

Distribution (TDWG). Continent. Australasia.

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

TDWG4. Darwin & Gulf. North.

Ischaemum diplopogon Hook. f. *Fl. Brit. Ind.* vii. 129. (1896).

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

TYPE from India. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: India: Bombay, near Bhorkus, *Woodrow s.n.* (HT:K).

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

Derivation (Clifford & Bostock 2007): Gk. diploos, double; pogon, beard. A reference to there being awns on both the glumes and lemmas or to the palea being two-awned.

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

Habit, Vegetative Morphology. Annual. Culms 30–50 cm long. Culm-nodes glabrous. Lateral branches ample. Leaf-sheaths glabrous on surface. Ligule an eciliate membrane. Leaf-blades linear or lanceolate, 7.5–15 cm long, 6–16 mm wide, dark green. Leaf-blade apex acuminate.

Inflorescence. Inflorescence composed of racemes, subtended by a spatheole. Spatheole lanceolate, 2.5–7.5 cm long. Racemes 2, paired, 2.5–4.5 cm long. Rhachis fragile at the nodes, angular, ciliate on margins. Rhachis internodes clavate, 0.5 length of fertile spikelet, flat and forming a U or V shape with the pedicel in rear view. Rhachis internode tip transverse, cupuliform. Spikelets in pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, clavate, 0.5 length of fertile spikelet, ciliate.

Sterile Spikelets. Companion sterile spikelets well-developed, containing empty lemmas or male, lanceolate, laterally compressed, 6 mm long, as long as fertile, separately deciduous. Companion sterile spikelet glumes chartaceous, keeled.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets oblong, dorsally compressed, 6 mm long, falling entire, deciduous with accessory branch structures. Spikelet callus oblong, 1.25 mm long, base truncate, inserted.

Glumes. Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma. Lower glume oblong, 1 length of spikelet, coriaceous, 2-keeled, keeled all along, keeled laterally. Lower glume surface convex, laterally waisted, with marginal tufts of hair (2 tufts). Lower glume apex dentate, 2 -fid. Upper glume lanceolate, coriaceous, 1-keeled, 3 -veined. Upper glume margins ciliate. Upper glume awned, 1 -awned, awn 5 mm long.

Florets. Basal sterile florets 1, male, with palea. Lemma of lower sterile floret oblong, membranous, 1 -veined. Fertile lemma oblong, 4 mm long, membranous, without keel. Lemma apex lobed, 2 -fid, incised 0.5 of

lemma length, awned, 1 -awned. Principal lemma awn from a sinus, geniculate, 10–16 mm long overall, with twisted column. Column of lemma awn glabrous.

Flower and Fruit. Anthers 3.

Distribution (TDWG). Continent. Tropical Asia.

Country /Province /State. Indian Subcontinent. India.

TDWG4. Maharashtra.

Ischaemum eberhardtii A.Camus. *Bull. Mus. Hist. Nat. Paris*, xxv. 202. (1919).

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

TYPE from Indochina. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: Indochina, Thua-thien: Eberhardt 1297 ; Indochina, Annam, Quang-tri: Eberhardt 2002 ; Indochina, Annam, Quang-tri: Eberhardt 2059.

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

Derivation (Clifford & Bostock 2007): In honor of Philippe Albert Eberhardt (1874–1942) who collected in Annam, now included in Vietnam.

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

Habit, Vegetative Morphology. Annual. Culms rambling, 40–60 cm long. Culm-internodes striate, distally glabrous. Lateral branches lacking. Leaf-sheaths mostly shorter than adjacent culm internode, wider than blade at the collar, pubescent, outer margin hairy. Ligule an eciliate membrane, brown. Leaf-blades lanceolate, 5–12 cm long, 5–10 mm wide. Leaf-blade midrib prominent beneath. Leaf-blade venation indistinct, of 3 orders, with 8–10 secondary veins. Leaf-blade surface smooth, pilose, sparsely hairy or moderately hairy, hairy abaxially. Leaf-blade margins smooth. Leaf-blade apex acute.

Inflorescence. Inflorescence composed of racemes. Racemes 1–3, single or paired or digitate, 3–6 cm long. Rhachis fragile at the nodes, angular, ciliate on margins. Rhachis internodes linear, 3.5–4 mm long, flat and forming a U or V shape with the pedicel in rear view and with a basal circular pore between internode and pedicel. Rhachis internode tip transverse, cupuliform. Spikelets in pairs. Fertile spikelets sessile and pedicelled, 2 in the cluster, heteromorphic (lower glume of pedicelled spikelet without keel, entire.). Pedicels present, linear, angular, 3.5–4 mm long, ciliate.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets ovate, dorsally compressed, acuminate, 5–6 mm long, falling entire, deciduous with accessory branch structures. Spikelet callus square, pilose, base obtuse, inserted.

Glumes. Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma. Lower glume ovate, 4.5–5.5 mm long, 0.9 length of spikelet, cartilaginous, 2-keeled, keeled laterally, wingless, 7 -veined. Lower glume surface flat, hirsute. Lower glume apex dentate, 2 -fid. Upper glume lanceolate, 5–6 mm long, cartilaginous, 1-keeled, wingless, 5 -veined. Upper glume surface hirsute. Upper glume apex dentate, 2 -fid, awned, 1 -awned, awn 1.5 mm long.

Florets. Basal sterile florets 1, male, with palea. Lemma of lower sterile floret ovate, 4.5–6.5 mm long, 1 length of spikelet, membranous. Palea of lower sterile floret 4.5–5.5 mm long, pubescent. Fertile lemma ovate, 3.5–4 mm long, hyaline, without keel. Lemma margins ciliolate. Lemma apex lobed, 2 -fid, incised 0.75 of lemma length, awned, 1 -awned. Principal lemma awn from a sinus, geniculate, 8–12 mm long overall, with twisted column. Column of lemma awn glabrous. Palea 1 length of lemma.

Flower and Fruit. Anthers 3, 2.5 mm long.

Distribution (TDWG). Continent. Tropical Asia.

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

Ischaemum elimalayanum P.V. Sreekumar, V.J. Nair & N.C. Nair. P.V. Sreekumar & V.J. Nair, *Fl. Kerala - Grasses*: 459, 134 (1991).

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

TYPE from India. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: India, Kerala, Elimala: Sreekumar 71773 (CAL holo, K, MH).

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

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

Habit, Vegetative Morphology. Perennial, caespitose. Culms erect, 30–120 cm long. Culm-nodes pubescent. Lateral branches ample. Leaf-sheaths 5–15 cm long, mostly shorter than adjacent culm internode, keeled, striately veined, pilose, with tubercle-based hairs. Ligule an eciliate membrane, 3–6 mm long. Leaf-

blades lanceolate, 5–20 cm long, 4–10 mm wide. Leaf-blade surface pilose, with tubercle-based hairs. Leaf-blade apex acuminate.

Inflorescence. Inflorescence composed of racemes. Racemes 2, paired, 4–8 cm long. Rhachis fragile at the nodes, angular, villous on margins. Rhachis internodes clavate, 2.5–3 mm long. Rhachis internode tip transverse, cupuliform. Spikelets in pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, oblong, 2.5–3 mm long, villous, with 0.5–2 mm long hairs.

Sterile Spikelets. Companion sterile spikelets well-developed, male with a few bisexual, oblong, laterally compressed, 4–4.5 mm long, shorter than fertile, separately deciduous. Companion sterile spikelet glumes chartaceous, keeled, winged on keels (1 keel), 7–9 -veined, villous. Companion sterile spikelet lemmas 2, enclosed by glumes.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets elliptic, dorsally compressed, 5–5.5 mm long, falling entire, deciduous with accessory branch structures. Spikelet callus bearded, base truncate, inserted.

Glumes. Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma. Lower glume oblong or ovate, 1 length of spikelet, coriaceous, much thinner above, 2-keeled, keeled all along, keeled laterally, 9–11 -veined. Lower glume surface flat, rugose. Lower glume apex acute. Upper glume ovate, coriaceous, 1-keeled, winged on keel, winged near apex. Upper glume surface scabrous, rough at apex, puberulous.

Florets. Basal sterile florets 1, male, with palea. Lemma of lower sterile floret lanceolate or oblong, 4–4.5 mm long, membranous, 3 -veined, ciliate on margins, fringed above. Palea of lower sterile floret 4–4.5 mm long. Fertile lemma oblong, 3–3.5 mm long, membranous, without keel, 3 -veined, 0–3 -veined. Lemma margins ciliolate, hairy above. Lemma apex dentate, 2 -fid, awned, 1 -awned. Principal lemma awn from a sinus, geniculate, 12–15 mm long overall, with twisted column. Column of lemma awn 5–7 mm long, glabrous. Palea 2.5–3 mm long.

Flower and Fruit. Lodicules 2, 0.5 mm long. Anthers 3, 1–1.5 mm long.

Distribution (TDWG). Continent. Tropical Asia.

Country /Province /State. Indian Subcontinent. India.

TDWG4. Kerala.

Ischaemum fieldingianum Rendle. *Journ. Bot.* 32: 101 (1894).

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

TYPE from Malaysia. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Malaya, Gunong Leydang; Fielding (K iso).

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

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

Derivation (Clifford & Bostock 2007): L. -anum, indicating connection. In honor of J. B. Feilding who collected in Malaya.

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

Habit, Vegetative Morphology. Perennial. Culms erect, 60–100 cm long. Culm-nodes bearded. Leaf-sheaths glabrous on surface or hirsute, with tubercle-based hairs. Leaf-sheath auricles erect. Ligule an eciliate membrane or a ciliolate membrane, 1–2.5 mm long. Leaf-blade base cordate, with a brief petiole-like connection to sheath, petiole 0.1–0.2 cm long. Leaf-blades lanceolate, 10–20 cm long, 10–20 mm wide. Leaf-blade surface scaberulous, glabrous or pubescent. Leaf-blade margins smooth or scaberulous.

Inflorescence. Inflorescence composed of racemes. Racemes 2, paired, appressed back to back, 5–11 cm long. Rhachis fragile at the nodes, angular, ciliate on margins. Rhachis internodes oblong, 4–5 mm long, flat and forming a U or V shape with the pedicel in rear view. Rhachis internode tip transverse, cupuliform. Spikelets in pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, oblong, 4–5 mm long, 1 length of internode, ciliate.

Sterile Spikelets. Companion sterile spikelets well-developed, male, lanceolate, laterally compressed, 5–6 mm long, as long as fertile, separately deciduous. Companion sterile spikelet glumes chartaceous, keeled, winged on keels (1 keel). Companion sterile spikelet lemmas 2, enclosed by glumes, 1-awned, with 6 mm long awn.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets oblong, dorsally compressed, 5–6 mm long, falling entire, deciduous with accessory branch structures. Spikelet callus pubescent, base truncate, inserted.

Glumes. Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma. Lower glume obovate, 1 length of spikelet, coriaceous, much thinner above, 2-keeled, keeled all along, keeled laterally, winged on keel, winged narrowly, winged above, 5–7 -veined. Lower glume surface flat, glabrous or pubescent. Lower glume

margins ciliate. Lower glume apex acute. Upper glume lanceolate, 5–6 mm long, coriaceous, 1-keeled, 5 -veined. Upper glume surface asperulous, rough on veins. Upper glume apex acuminate.

Florets. Basal sterile florets 1, male, with palea. Lemma of lower sterile floret ovate, membranous, 3 -veined, pilose. Fertile lemma oblong, 4.8 mm long, membranous, without keel. Lemma margins ciliate. Lemma apex lobed, 2 -fid, incised 0.33 of lemma length, awned, 1 -awned. Principal lemma awn from a sinus, geniculate, 12.5 mm long overall. Palea 4.6 mm long. Palea keels scaberulous.

Flower and Fruit. Anthers 3, 2.8 mm long.

Distribution (TDWG). Continent. Tropical Asia.

Country /Province /State. Malesia. Borneo, Java, Malaya, Sumatra.

Ischaemum flumineum Bor. *Kew Bull.* 1949, 572 (1950).

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

TYPE from India. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: India, Bombay: Bor 11390 (K holo).

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

Derivation (Clifford & Bostock 2007): L. relating to a river. Growing near water.

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

Habit, Vegetative Morphology. Perennial, caespitose. Butt sheaths pubescent. Culms geniculately ascending, 25–30 cm long, wiry. Culm-nodes bearded. Ligule an eciliate membrane, 1.5–2 mm long. Leaf-blades elliptic, 5–10 cm long, 3–5 mm wide. Leaf-blade surface smooth or scaberulous, glabrous or pilose, sparsely hairy, with tubercle-based hairs. Leaf-blade margins scabrous. Leaf-blade apex acuminate.

Inflorescence. Inflorescence composed of racemes. Racemes 2, paired, appressed back to back, 4–5 cm long. Rhachis fragile at the nodes, angular, ciliate on margins. Rhachis internodes linear, 3 mm long, flat and forming a U or V shape with the pedicel in rear view. Rhachis internode tip transverse, cupuliform. Spikelets in pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, linear, 2.5 mm long, 0.5 length of fertile spikelet, ciliate.

Sterile Spikelets. Companion sterile spikelets well-developed, male, lanceolate, 5 mm long, as long as fertile, separately deciduous. Companion sterile spikelet glumes chartaceous, keeled, pilose, awned, one glume awned, with 2.5 mm long awn. Companion sterile spikelet lemmas 1-awned, with 10 mm long awn.

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

Glumes. Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma. Lower glume ovate, 1 length of spikelet, coriaceous, much thinner above, 2-keeled, keeled above, keeled laterally. Lower glume surface convex. Lower glume margins ciliate. Lower glume apex dentate, 2 -fid, mucronate, 2 -awned (mucronate). Upper glume lanceolate, coriaceous, 1-keeled, 3 -veined. Upper glume primary vein ciliate. Upper glume awned, 1 -awned, awn 2–3 mm long.

Florets. Basal sterile florets 1, male, with palea. Lemma of lower sterile floret lanceolate, 4 mm long, membranous, 5 -veined. Fertile lemma oblong, 2–2.5 mm long, membranous, without keel, 3 -veined, 0–3 -veined. Lemma apex lobed, 2 -fid, incised 0.5 of lemma length, awned, 1 -awned. Principal lemma awn from a sinus, geniculate, 13 mm long overall, with twisted column. Column of lemma awn glabrous.

Flower and Fruit. Anthers 3, 1–1.25 mm long.

Distribution (TDWG). Continent. Tropical Asia.

Country /Province /State. Indian Subcontinent. India.

TDWG4. Maharashtra, Tamilnadu.

Ischaemum fluviatile Ridley. *Fl. Mal. Penins.* v. 202 (1925).

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

TYPE from Malaysia. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Malaya, Kelumpur: Haniff (K iso).

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

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

Derivation (Clifford & Bostock 2007): L. *fluvius*, river; -*atilis*, place of growth. Growing along riverbanks.

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

Habit, Vegetative Morphology. Perennial. Culms prostrate, weak, 25–50 cm long. Leaf-sheaths loose, 5–10 cm long, longer than adjacent culm internode, glabrous on surface. Leaf-sheath auricles erect. Ligule an

eciliate membrane, 2.5 mm long. Leaf-blade base with a false petiole. Leaf-blades 10–20 cm long, 4–8 mm wide. Leaf-blade surface glabrous or pilose, sparsely hairy, hairy abaxially. Leaf-blade apex acuminate.

Inflorescence. Inflorescence composed of racemes. Racemes 2, paired, appressed back to back, 5–6 cm long. Rhachis fragile at the nodes, angular, ciliate on margins. Rhachis internodes oblong, 5 mm long, flat and forming a U or V shape with the pedicel in rear view. Rhachis internode tip transverse, cupuliform. Spikelets in pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, oblong, 2.5 mm long, ciliate.

Sterile Spikelets. Companion sterile spikelets well-developed, male, elliptic, laterally compressed, 6.6 mm long, as long as fertile, separately deciduous. Companion sterile spikelet glumes chartaceous, keeled, winged on keels, smooth, mucous. Companion sterile spikelet lemmas 2, enclosed by glumes.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets oblong, dorsally compressed, 6.6 mm long, falling entire, deciduous with accessory branch structures. Spikelet callus pubescent, base truncate, inserted.

Glumes. Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma. Lower glume oblong, 1 length of spikelet, chartaceous, much thinner above, 2-keeled, keeled laterally, wingless, 9 -veined. Lower glume lateral veins with cross-veins. Lower glume surface convex, muricate, rough on flanks, pubescent, hairy below. Lower glume margins ciliate. Upper glume ovate, 1 length of spikelet, chartaceous, 1-keeled, 7 -veined. Upper glume lateral veins with cross-veins. Upper glume apex acuminate, mucous.

Florets. Basal sterile florets 1, male, with palea. Lemma of lower sterile floret lanceolate, 5.4 mm long, hyaline, 3 -veined, acuminate. Palea of lower sterile floret 5.2 mm long. Fertile lemma lanceolate, 5.2 mm long, hyaline, without keel, 3 -veined, 0–3 -veined. Lemma apex lobed, 2 -fid, incised 0.75 of lemma length, awned, 1 -awned. Principal lemma awn from a sinus, geniculate, 21 mm long overall, with twisted column. Column of lemma awn glabrous. Palea 4.2 mm long.

Flower and Fruit. Anthers 3, 2.8 mm long, purple. Stigmas purple.

Distribution (TDWG). Continent. Tropical Asia.

Country /Province /State. Malesia. Malaya.

Ischaemum fragile R. Br. *Prod.* 205. (1810).

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

TYPE from Australia. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Littora Novae Hollandiae intra tropicum, *Collected on Cook's journey by Banks*. T: Australia.

Recent Synonyms: *Digastrium fragile* (R.Br.) A.Camus, *Bull. Soc. Bot. France*, 70: 850 (1924), *Digastrium baileyi* (C. E. Hubbard) Pilger, *Engl. & Prantl, Nat. Pflanzenfam. Aufl.* 2, 14 e. 128 (1940).

Illustrations (Books): T.D.Stanley & E.Ross, *Flora of South East Queensland, Gramineae* (1989) (248, Fig. 38), D.Sharp & B.K.Simon, *AusGrass. Grasses of Australia*. CD-Rom Version 1.0. (2002).

Illustrations (Journals): *Hooker's Icones Plantarum* (t.3263 (1935)).

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

Derivation (Clifford & Bostock 2007): L. weak. Rhachilla readily disarticulating shortly after maturity.

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

Habit, Vegetative Morphology. Perennial. Culms erect or geniculately ascending, 40–110 cm long, 3–7 -noded. Culm-nodes glabrous or bearded. Leaf-sheaths keeled, glabrous on surface or pilose. Ligule an eciliate membrane, 2–3 mm long. Leaf-blades 10–20 cm long, 3–7 mm wide. Leaf-blade surface glabrous or pubescent. Leaf-blade apex acuminate.

Inflorescence. Inflorescence composed of racemes. Racemes 1, single, 4–6 cm long. Rhachis fragile at the nodes, angular, ciliate on margins. Rhachis internodes inflated, 3.5–4 mm long. Rhachis internode tip transverse, cupuliform. Spikelets in pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, inflated, 3.5–4 mm long, 1 length of internode, ciliate.

Sterile Spikelets. Companion sterile spikelets well-developed, comprising 2 subequal glumes without lemmas or containing empty lemmas, lanceolate, laterally compressed, 2–4 mm long, shorter than fertile, separately deciduous. Companion sterile spikelet glumes chartaceous, keeled. Companion sterile spikelet lemmas 2, enclosed by glumes, mucous.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets oblong, dorsally compressed, 5–6 mm long, falling entire, deciduous with accessory branch structures. Spikelet callus pubescent, base truncate, inserted.

Glumes. Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma, shiny. Lower glume oblong, 1 length of spikelet, coriaceous, much thinner above, 2-keeled, keeled above, keeled laterally, winged

on keel, winged narrowly, winged above. Lower glume surface convex. Lower glume apex emarginate. Upper glume lanceolate, coriaceous, 1-keeled, winged on keel. Upper glume awned, 1-awned, awn 1–3 mm long.

Florets. Basal sterile florets 1, male, with palea. Lemma of lower sterile floret lanceolate, membranous, 3-veined. Fertile lemma oblong, membranous, without keel. Lemma apex lobed, 2-fid, awned, 1-awned. Principal lemma awn from a sinus, geniculate, 10–18 mm long overall, with twisted column. Column of lemma awn glabrous.

Flower and Fruit. Anthers 3.

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

Country /Province /State. **Malesia, Papuasias.** New Guinea. **Australia.** Northern Territory, Queensland.

TDWG4. Darwin & Gulf. North, Central, South East.

Ischaemum glaucescens Merrill. *Philipp. Journ. Sc., Bot.* 1914, ix.263. (1914).

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 Philippines. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: IT: *E.D. Merrill 9453*, Apr 1953, Philippines: Palawan, Manguao (L).

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

Derivation (Clifford & Bostock 2007): *L. glaucesco*, become glaucous. Foliage and/or other parts bluish-green.

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

Habit, Vegetative Morphology. Perennial. Culms decumbent, 100–150 cm long, 5 mm diam., wiry. Culm-internodes glaucous. Lateral branches lacking or sparse. Leaf-sheaths loose. Ligule an eciliate membrane, 2–3 mm long, truncate. Leaf-blades linear or lanceolate, 15–20 cm long, 10 mm wide. Leaf-blade surface glabrous. Leaf-blade apex acuminate.

Inflorescence. Inflorescence composed of racemes. Racemes 2, paired, appressed back to back, 12–15 cm long. Rhachis fragile at the nodes, angular, ciliate on margins. Rhachis internodes oblong, 6 mm long, flat and forming a U or V shape with the pedicel in rear view. Rhachis internode tip transverse, cupuliform. Spikelets in pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, oblong, 2.5 mm long, ciliate, hairy on one margin.

Sterile Spikelets. Companion sterile spikelets well-developed, male, lanceolate, laterally compressed, 8 mm long, as long as fertile, separately deciduous. Companion sterile spikelet glumes chartaceous, keeled, winged on keels, smooth, ciliolate on margins, acute or acuminate, mucous. Companion sterile spikelet lemmas 2, enclosed by glumes.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets lanceolate, dorsally compressed, 8 mm long, falling entire, deciduous with accessory branch structures. Spikelet callus pubescent, base truncate, inserted.

Glumes. Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma. Lower glume oblong, 1 length of spikelet, coriaceous, much thinner above, glaucous, 2-keeled, keeled all along, keeled laterally, wingless. Lower glume surface convex, asperulous or rugose, glabrous. Lower glume apex acuminate. Upper glume lanceolate, 1 length of spikelet, coriaceous, 1-keeled. Upper glume apex acuminate, mucous.

Florets. Basal sterile florets 1, male, with palea. Lemma of lower sterile floret lanceolate, 7 mm long, hyaline, 3-veined, acuminate. Fertile lemma lanceolate, 6 mm long, hyaline, without keel, 3-veined, 0–3-veined. Lemma apex lobed, 2-fid, incised 0.5 of lemma length, awned, 1-awned. Principal lemma awn from a sinus, geniculate, 12–13 mm long overall, with twisted column. Column of lemma awn glabrous.

Flower and Fruit. Anthers 3, 3 mm long.

Distribution (TDWG). Continent. Tropical Asia.

Country /Province /State. **Malesia.** Borneo, Philippines.

Ischaemum guianense Hack. *DC., Monogr. Phan.* 6:235 (1889).

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

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

Illustrations (Books): J.A.Steyermark et al, *Flora of the Venezuelan Guayana* Vol. 8 (2004) (136, Fig. 94), E.Judziewicz, *Flora of the Guianas*, 187. *Poaceae* (1990) (295, Fig. 51).

Derivation (Clifford & Bostock 2007): *L. -ense*, denoting origin. From British Guiana, now Guyana.

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

Habit, Vegetative Morphology. Perennial, caespitose. Culms 50–170 cm long. Culm-internodes distally glabrous. Leaf-sheaths glabrous on surface or hispid, with tubercle-based hairs. Ligule a ciliolate membrane, 1.3–2 mm long. Leaf-blades 15–25 cm long, 8–20 mm wide. Leaf-blade surface glabrous or pubescent.

Inflorescence. Inflorescence composed of racemes. Racemes 2–5(–9), digitate, 4–8.5 cm long. Rhachis fragile at the nodes, angular, ciliate on margins. Rhachis internodes oblong, 2.5–3 mm long, flat and forming a U or V shape with the pedicel in rear view. Rhachis internode tip transverse, cupuliform. Spikelets in pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, oblong, 2.5–3 mm long, 0.33–0.5 length of fertile spikelet, ciliate.

Sterile Spikelets. Companion sterile spikelets well-developed, male, oblong, 4.5–8 mm long, as long as fertile, separately deciduous. Companion sterile spikelet glumes chartaceous, keeled, muticous. Companion sterile spikelet lemmas 1-awned.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets oblong, dorsally compressed, 4.5–8 mm long, falling entire, deciduous with accessory branch structures. Spikelet callus oblong, pubescent, base truncate, inserted.

Glumes. Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma. Lower glume oblong, 1 length of spikelet, coriaceous, much thinner above, 2-keeled, keeled above, keeled laterally, 7 -veined. Lower glume surface convex, scabrous. Lower glume apex dentate, 2 -fid. Upper glume lanceolate, coriaceous, 1-keeled, keeled above, 5 -veined. Upper glume primary vein scabrous. Upper glume mucronate or awned, 1 -awned, awn 0.5 mm long.

Florets. Basal sterile florets 1, male, with palea. Lemma of lower sterile floret lanceolate, 4–5 mm long, membranous. Fertile lemma oblong, 3.5–4.5 mm long, membranous, without keel. Lemma apex lobed, 2 -fid, incised 0.5 of lemma length, awned, 1 -awned. Principal lemma awn from a sinus, geniculate, 7–10 mm long overall, with twisted column. Column of lemma awn 1–2 mm long, glabrous.

Flower and Fruit. Anthers 3.

Distribution (TDWG). Continent. South America.

Country /Province /State. Northern South America, Brazil. French Guiana, Guyana, Surinam, Venezuela. Brazil North.

Ischaemum hansenii Bor. *Dansk Bot. Arkiv*, xxiii. 470 (1968).

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

TYPE from Thailand. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Thailand, Ko Talibong; Hansen & Smitinand 12198 (C holo, K).

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

Derivation (Clifford & Bostock 2007): in honor of Bertel Hansen (1932-) Danish botanist.

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

Habit, Vegetative Morphology. Annual. Culms decumbent, 20–45 cm long, rooting from lower nodes. Ligule an eciliate membrane, 1–2 mm long. Leaf-blade base broadly rounded. Leaf-blades lanceolate, 5–8 cm long, 5–12 mm wide, red. Leaf-blade surface glabrous.

Inflorescence. Inflorescence composed of racemes. Racemes 2, paired, appressed back to back, 3–5 cm long. Rhachis fragile at the nodes, angular, ciliate on margins. Rhachis internodes oblong, 2.5 mm long, 0.33 length of fertile spikelet, flat and forming a U or V shape with the pedicel in rear view. Rhachis internode tip transverse, cupuliform. Spikelets in pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, oblong, 2.5 mm long, 0.33 length of fertile spikelet, ciliate.

Sterile Spikelets. Companion sterile spikelets well-developed, male, ovate, laterally compressed, 6 mm long, shorter than fertile, separately deciduous. Companion sterile spikelet glumes chartaceous, keeled, scaberulous on margins. Companion sterile spikelet lemmas 2, enclosed by glumes, 1-awned, with 10 mm long awn.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets oblong, dorsally compressed, 8–9 mm long, falling entire, deciduous with accessory branch structures. Spikelet callus oblong, 3 mm long, pubescent, base truncate, inserted.

Glumes. Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma, shiny. Lower glume elliptic, 1 length of spikelet, coriaceous, much thinner above, 2-keeled, keeled above, keeled laterally, 6 -veined. Lower glume surface convex. Lower glume apex dentate, 2 -fid. Upper glume lanceolate, coriaceous, 1-keeled, keeled above, winged on keel. Upper glume margins ciliolate.

Florets. Basal sterile florets 1, male, with palea. Lemma of lower sterile floret lanceolate, membranous. Fertile lemma oblong, 5 mm long, membranous, without keel, 3 -veined, 0–3 -veined. Lemma apex lobed, 2 -

fid, awned, 1-awned. Principal lemma awn from a sinus, geniculate, 14 mm long overall, with 9 mm long limb, with twisted column. Column of lemma awn 5 mm long, glabrous.

Flower and Fruit. Anthers 3, 2 mm long.

Distribution (TDWG). Continent. Tropical Asia.

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

Ischaemum heterotrichum Hack. *DC. Monog. Phan.* vi. 220. (1889).

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

TYPE from Madagascar. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: Madagascar, Mayotte: Boivin (W holo, K).

Illustrations (Books): J.Bosser, *Graminees des Paturage et des Cultures a Madagascar* (1969) (197, Fig 69).

Derivation (Clifford & Bostock 2007): Gk. heteros, different; thrix, hair. Glumes and sterile lemma bear hairs of various lengths.

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

Habit, Vegetative Morphology. Perennial. Culms rambling, 60–120 cm long, rooting from lower nodes. Ligule an eciliate membrane, 1–2 mm long. Leaf-blade base broadly rounded. Leaf-blades lanceolate, 5–15 cm long, 9–15 mm wide. Leaf-blade surface glabrous. Leaf-blade margins scabrous.

Inflorescence. Inflorescence composed of racemes, subtended by a spatheole, exerted or embraced at base by subtending leaf. Spatheole lanceolate, 4–5 cm long. Racemes 2, paired, appressed back to back, 5–6 cm long. Rhachis fragile at the nodes, angular, ciliate on margins. Rhachis internodes columnar, 4 mm long, flat and forming a U or V shape with the pedicel in rear view. Rhachis internode tip transverse, cupuliform. Spikelets in pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, columnar, 4 mm long, 0.4–0.5 length of fertile spikelet, ciliate.

Sterile Spikelets. Companion sterile spikelets well-developed, male, lanceolate, 5–7 mm long, shorter than fertile, separately deciduous. Companion sterile spikelet glumes chartaceous, keeled, winged on keels, 7 -veined, glabrous, muticous. Companion sterile spikelet lemmas muticous.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets elliptic, dorsally compressed, 9 mm long, falling entire, deciduous with accessory branch structures. Spikelet callus oblong, 2 mm long, base truncate, inserted.

Glumes. Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma. Lower glume elliptic, 1 length of spikelet, coriaceous, much thinner above, 2-keeled, keeled above, keeled laterally, winged on keel, winged narrowly, winged above, 4 -veined. Lower glume surface convex. Lower glume apex dentate, 2 -fid. Upper glume lanceolate, coriaceous, 1-keeled, keeled above, winged on keel. Upper glume margins ciliolate. Upper glume mucronate.

Florets. Basal sterile florets 1, male, with palea. Lemma of lower sterile floret lanceolate, membranous, 3 -veined, ciliate on margins. Fertile lemma oblong, membranous, without keel. Lemma apex lobed, 2 -fid, incised 0.5 of lemma length, awned, 1 -awned. Principal lemma awn from a sinus, geniculate, 12–15 mm long overall, with twisted column. Column of lemma awn glabrous.

Flower and Fruit. Anthers 3.

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

Country /Province /State. Western Indian ocean. Comoros, Madagascar, Seychelles. Indo-China. Nicobar Is.

Ischaemum hubbardii Bor. *Indian Forest Rec., n. s. Bot., i.* 98 (1938).

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

TYPE from India. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: India, Cherrapungi: Coll? (K holo).

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

Derivation (Clifford & Bostock 2007): in honor of Charles Edward Hubbard (1900–1980) English agrostologist.

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

Habit, Vegetative Morphology. Perennial. Butt sheaths persistent and investing base of culm, with compacted dead sheaths. Culms 30–40 cm long. Ligule an eciliate membrane, lacerate. Leaf-blade base with a

false petiole. Leaf-blades 5–14 cm long, 6–12 mm wide. Leaf-blade surface pilose, hairy on both sides, with tubercle-based hairs.

Inflorescence. Inflorescence composed of racemes. Racemes 2, paired, appressed back to back, 5 cm long. Rhachis fragile at the nodes, angular, ciliate on margins. Rhachis internodes oblong, 6 mm long, flat and forming a U or V shape with the pedicel in rear view. Rhachis internode tip transverse, cupuliform. Spikelets in pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, oblong, 3–5 mm long, 0.5–0.8 length of internode, ciliate.

Sterile Spikelets. Companion sterile spikelets well-developed, comprising 2 subequal glumes without lemmas or male, oblong, laterally compressed, 5 mm long, shorter than fertile, separately deciduous. Companion sterile spikelet glumes chartaceous, keeled, winged on keels, awned, one glume awned. Companion sterile spikelet lemmas 2, enclosed by glumes, 4 mm long, muticous.

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

Glumes. Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma. Lower glume oblong, 1 length of spikelet, coriaceous, 2-keeled, keeled all along, keeled laterally, winged on keel, winged narrowly, winged above. Lower glume surface flat. Lower glume apex obtuse. Upper glume lanceolate, coriaceous, 1-keeled, winged on keel.

Florets. Basal sterile florets 1, male, with palea. Lemma of lower sterile floret lanceolate, 6 mm long, membranous, 3 -veined, obscurely veined. Fertile lemma oblong, 5 mm long, membranous, without keel. Lemma apex lobed, 2 -fid, awned, 1 -awned. Principal lemma awn from a sinus, geniculate, 15–20 mm long overall, with twisted column. Column of lemma awn glabrous. Palea 3.5 mm long.

Flower and Fruit. Anthers 3.

$N = 20$ (2 refs TROPICOS).

Distribution (TDWG). Continent. Tropical Asia.

Country /Province /State. Indian Subcontinent. Assam.

TDWG4. Meghalaya.

Ischaemum huegelii Hack. *DC. Monog. Phan.* vi. 252. (1889).

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

TYPE from India. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: India: Huegel 1658 (W holotype).

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

Derivation (Clifford & Bostock 2007): in honor of Carl Alexander Anselm Huegel (1794–1870) German botanist.

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

Habit, Vegetative Morphology. Annual. Culms decumbent, 35–70 cm long, rooting from lower nodes. Culm-nodes glabrous. Leaf-sheaths glabrous on surface. Ligule an eciliate membrane, 3 mm long. Leaf-blade base sagittate, with a false petiole, petiole 0.5–2 cm long. Leaf-blades lanceolate, 7–15 cm long, 10–20 mm wide. Leaf-blade surface glabrous. Leaf-blade margins scabrous. Leaf-blade apex acuminate.

Inflorescence. Inflorescence composed of racemes. Racemes 2, paired, appressed back to back, 4–5(–9) cm long. Rhachis fragile at the nodes, angular, glabrous on margins. Rhachis internodes pyriform, 4 mm long, flat and forming a U or V shape with the pedicel in rear view. Rhachis internode tip transverse, cupuliform. Spikelets in pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, pyriform, 0.5 mm long, 0.1–0.2 length of fertile spikelet, glabrous.

Sterile Spikelets. Companion sterile spikelets well-developed, male, lanceolate, 6.5–7.5 mm long, as long as fertile, separately deciduous. Companion sterile spikelet glumes chartaceous, keeled, winged on keels, rugose, muticous. Companion sterile spikelet lemmas muticous.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets elliptic, dorsally compressed, 6.5–7.5 mm long, falling entire, deciduous with accessory branch structures. Spikelet callus oblong, 1 mm long, pilose, base truncate, inserted.

Glumes. Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma. Lower glume oblong, 1 length of spikelet, coriaceous, much thinner above, 2-keeled, keeled all along, keeled laterally, winged on keel, winged narrowly, winged above. Lower glume surface convex, rugose, rough below, glabrous or pubescent. Upper glume lanceolate, coriaceous, 1-keeled, 3 -veined. Upper glume primary vein scabrous.

Florets. Basal sterile florets 1, male, with palea. Lemma of lower sterile floret lanceolate, 7 mm long, membranous, 7 -veined, ciliate on margins. Fertile lemma oblong, 6.5 mm long, membranous, without keel, 3 -veined, 0–3 -veined. Lemma apex dentate or lobed, 2 -fid, incised 0.2–0.6 of lemma length, muticous or awned only on distal spikelets, 1 -awned. Principal lemma awn from a sinus, geniculate, 15 mm long overall, with twisted column. Column of lemma awn glabrous.

Flower and Fruit. Anthers 3.

Distribution (TDWG). Continent. Tropical Asia.

Country /Province /State. Indian Subcontinent. India.

TDWG4. Maharashtra.

Ischaemum impressum Hack. *DC. Monog. Phan.* vi. 210. (1889).

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

TYPE from India. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: India: Huegel 4018 (W holo).

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

Derivation (Clifford & Bostock 2007): *L. imprimo*, press in. Lower glume of sessile spikelet deeply concave.

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

Habit, Vegetative Morphology. Annual, caespitose. Culms 40–60 cm long. Culm-nodes glabrous. Leaf-sheaths 8.5–9 cm long. Ligule an eciliate membrane, 2–2.5 mm long, erose. Leaf-blades lanceolate, 7–10 cm long, 7–15 mm wide. Leaf-blade surface hispid. Leaf-blade margins scabrous. Leaf-blade apex acute.

Inflorescence. Inflorescence composed of racemes. Racemes 2, paired, appressed back to back, 5 cm long. Rhachis fragile at the nodes, angular, ciliate on margins. Rhachis internodes clavate, 4.25–4.5 mm long, flat and forming a U or V shape with the pedicel in rear view. Rhachis internode tip transverse, cupuliform. Spikelets in pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, clavate, 4–4.25 mm long, 0.9 length of internode, ciliate, hairy on one margin.

Sterile Spikelets. Companion sterile spikelets well-developed, male, lanceolate or oblong, laterally compressed, 5–5.25 mm long, shorter than fertile, separately deciduous. Companion sterile spikelet glumes chartaceous, keeled, winged on keels, 9–11 -veined. Companion sterile spikelet lemmas 2, enclosed by glumes, 4–4.6 mm long, muticous.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets oblong, dorsally compressed, 6.5–6.7 mm long, falling entire, deciduous with accessory branch structures. Spikelet callus pilose, base truncate, inserted.

Glumes. Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma. Lower glume lanceolate or oblong, 1 length of spikelet, chartaceous, 2-keeled, keeled all along, keeled laterally, winged on keel, winged narrowly, winged above, 7–9 -veined. Lower glume surface flat, impressed above (convex below), laterally waisted. Lower glume apex dentate, 2 -fid, acuminate, awned, 2 -awned. Upper glume lanceolate, membranous, 1-keeled, winged on keel, 3 -veined. Upper glume surface with a dorsal tuft of hair. Upper glume apex acuminate to setaceously acuminate.

Florets. Basal sterile florets 1, male, with palea. Lemma of lower sterile floret lanceolate, 4.8–5 mm long, membranous, 3 -veined. Fertile lemma oblong, 4–4.25 mm long, membranous, without keel, 3 -veined, 0–3 -veined. Lemma apex lobed, 2 -fid, awned, 1 -awned. Principal lemma awn from a sinus, geniculate, 17–18 mm long overall, with twisted column. Column of lemma awn glabrous. Palea 4–4.25 mm long.

Flower and Fruit. Anthers 3, 1.75–2 mm long. Caryopsis with adherent pericarp, oblong, dorsally compressed, 2–2.25 mm long.

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

Country /Province /State. Northeast tropical Africa. Socotra. **Indian Subcontinent.** India.

TDWG4. Maharashtra, Rajasthan.

Ischaemum jayachandranii R. Ansari, V.S. Ramachandran & P.V. Sreekumar. *Current Sci.*, 53(3): 151 (1984).

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

TYPE from India. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: India, Kerala, Nileswar: Nair 59981 (CAL holo, K, MH).

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

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

Habit, Vegetative Morphology. Perennial. Stolons present. Culms erect or geniculately ascending, slender, 30–50 cm long. Culm-nodes glabrous. Leaf-sheaths 4–10 cm long, longer than adjacent culm internode, striately veined, glabrous on surface. Ligule an eciliate membrane, 2–4 mm long, acute. Leaf-blades lanceolate, 4–12 cm long, 3–6 mm wide. Leaf-blade margins scaberulous.

Inflorescence. Inflorescence composed of racemes. Racemes 2, paired, appressed back to back, 4–8 cm long. Rhachis fragile at the nodes, angular, glabrous on margins. Rhachis internodes columnar, 4–4.5 mm long, flat and forming a U or V shape with the pedicel in rear view. Rhachis internode tip transverse, cupuliform. Spikelets in pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, clavate, 1 mm long, glabrous.

Sterile Spikelets. Companion sterile spikelets well-developed, male with a few bisexual, oblong, 5–5.5 mm long, as long as fertile, separately deciduous. Companion sterile spikelet glumes chartaceous, keeled, winged on margins, 11–13 -veined, muticous. Companion sterile spikelet lemmas 2, enclosed by glumes, muticous.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets elliptic or oblong, dorsally compressed, 5.5–6 mm long, falling entire, deciduous with accessory branch structures. Spikelet callus glabrous, base truncate, inserted.

Glumes. Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma. Lower glume oblong, 1 length of spikelet, coriaceous, much thinner above, 2-keeled, keeled laterally, 11–13 -veined. Lower glume surface convex, scabrous, rough above, glabrous. Upper glume lanceolate, coriaceous, 1-keeled, winged on keel, winged near apex, 3–5 -veined.

Florets. Basal sterile florets 1, male, with palea. Lemma of lower sterile floret lanceolate, 5–6 mm long, membranous, 3–5 -veined, acuminate. Palea of lower sterile floret 4.5–5 mm long. Fertile lemma lanceolate, 4.5–5 mm long, membranous, without keel, 5 -veined, more than 3-veined. Lemma apex entire or lobed, 2 -fid, muticous or mucronate.

Flower and Fruit. Lodicules 2, 0.75–1 mm long. Anthers 3, 1.5–2 mm long.

Distribution (TDWG). Continent. Tropical Asia.

Country /Province /State. Indian Subcontinent. India.

TDWG4. Kerala.

Ischaemum keralense P.V. Sreekumar, V.J. Nair & N.C. Nair. *Bull. Mus. Nation. Hist. Nat., B, Adansonia*, 1985(2) : 135 (1985).

Regarded by K as a synonym (*I. copeanum*).

TYPE from India. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: India, Kerala, Cherkala: Sreekumar 71839 (CAL holo, K, MH).

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

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

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

Distribution (TDWG). Continent. Tropical Asia.

Country /Province /State. Indian Subcontinent. India.

TDWG4. Kerala.

Ischaemum kingii Hook. f. *Fl. Brit. Ind.* vii. 129. (1896).

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

TYPE from India. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: India, Rajputana, Mt Aboo: King (K holo).

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

Derivation (Clifford & Bostock 2007): in honor of George King (1840–1909) Scots-born physician and Indian botanist.

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

Habit, Vegetative Morphology. Annual. Culms 20–40 cm long. Ligule an eciliate membrane, 1 mm long. Leaf-blades lanceolate, 4–8 cm long, 6–10 mm wide. Leaf-blade surface pilose.

Inflorescence. Inflorescence composed of racemes, subtended by a spatheole, enclosed. Spatheole lanceolate, 4–6 cm long. Racemes 2, paired, appressed back to back, 4–5 cm long. Rhachis fragile at the nodes, angular, ciliate on margins. Rhachis internodes clavate, 5 mm long, flat and forming a U or V shape with the pedicel in rear view. Rhachis internode tip transverse, cupuliform. Spikelets in pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, clavate, 5 mm long, 0.75 length of fertile spikelet, ciliate.

Sterile Spikelets. Companion sterile spikelets well-developed, male, elliptic, 7–8 mm long, as long as fertile, separately deciduous. Companion sterile spikelet glumes chartaceous, keeled, muticous. Companion sterile spikelet lemmas muticous.

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

Glumes. Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma. Lower glume oblong, 1 length of spikelet, coriaceous, 2-keeled, keeled all along, keeled laterally. Lower glume surface concave, laterally waisted, pilose, hairy above. Lower glume apex dentate, 2 -fid, awned, 2 -awned, awn 1.5–3.5 mm long. Upper glume lanceolate, coriaceous, 1-keeled. Upper glume surface with a dorsal tuft of hair. Upper glume awned, 1 -awned, awn 6 mm long.

Florets. Basal sterile florets 1, male, with palea. Lemma of lower sterile floret lanceolate, membranous. Fertile lemma oblong, membranous, without keel. Lemma apex lobed, 2 -fid, incised 0.5 of lemma length, awned, 1 -awned. Principal lemma awn from a sinus, geniculate, 30 mm long overall, with twisted column. Column of lemma awn glabrous.

Flower and Fruit. Anthers 3.

Distribution (TDWG). Continent. Tropical Asia.

Country /Province /State. Indian Subcontinent. India.

TDWG4. Maharashtra, Rajasthan.

Ischaemum koenigii (Hook. f.) Stapf ex C. E. C. Fischer. *Gamble, Fl. Madras*, 1722 (1934).

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

TYPE from India. **Basionym or Replaced Name:** *Ischaemum aristatum* subsp. *koenigii* Hook. f., *Fl. Brit. India* 7:127 (1896). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: India, Deccan: Koenig (K holo).

Recent Synonyms: *Ischaemum fasciculatum* Rottl. ex Hook. f., in syn, *Fl. Brit. India* 7:127 (1896).

Illustrations (Books): G.E.Gibbs Russell et al, *Grasses of Southern Africa* (1990) (190, Fig 112 as *I. fasciculatum*), S.Phillips, *Poaceae* (Gramineae) in I.Hedberg & S.Edwards, *Flora of Ethiopia and Eritrea* (1995) (315, Fig 127 as *I. fasciculatum*).

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

Derivation (Clifford & Bostock 2007): in honor of Johan Gerhard Koenig (1728–1784). Born in Duchy of Courland between present-day Poland and former Soviet Union; missionary-surgeon and economic botanist in India.

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

Habit, Vegetative Morphology. Perennial. Culms robust, 100–150 cm long. Ligule an eciliate membrane, 4 mm long. Leaf-blades lanceolate, 30–40 cm long, 15–25 mm wide. Leaf-blade surface glabrous.

Inflorescence. Inflorescence composed of racemes. Racemes 3, digitate, 5–6 cm long. Rhachis fragile at the nodes, angular, glabrous on margins. Rhachis internodes oblong, 5 mm long, flat and forming a U or V shape with the pedicel in rear view. Rhachis internode tip transverse, cupuliform. Spikelets in pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, cuneate, 1.5–2 mm long, 0.15–0.2 length of fertile spikelet, glabrous.

Sterile Spikelets. Companion sterile spikelets well-developed, containing empty lemmas, elliptic, 8–11 mm long, as long as fertile, separately deciduous. Companion sterile spikelet glumes chartaceous, keeled, winged on keels, muticous. Companion sterile spikelet lemmas muticous.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets elliptic, dorsally compressed, 10–11 mm long, falling entire, deciduous with accessory branch structures. Spikelet callus oblong, base truncate, inserted.

Glumes. Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma. Lower glume oblong, 1 length of spikelet, coriaceous, 2-keeled, keeled all along, keeled laterally, winged on keel, winged narrowly, winged above. Lower glume surface convex, rugose, rough on flanks, glabrous. Lower glume apex obtuse. Upper glume lanceolate, coriaceous, 1-keeled.

Florets. Basal sterile florets 1, male, with palea. Lemma of lower sterile floret lanceolate, membranous. Fertile lemma oblong, membranous, without keel. Lemma apex lobed, 2 -fid, incised 0.5 of lemma length, awned, 1 -awned. Principal lemma awn from a sinus, geniculate, 7 mm long overall, with twisted column. Column of lemma awn glabrous.

Flower and Fruit. Anthers 3.

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

Country /Province /State. West-central tropical Africa, Northeast tropical Africa, East tropical Africa, South tropical Africa, Southern Africa, Western Indian ocean. Cameroon. Chad, Ethiopia (inc. Eritrea). Tanzania. Angola, Malawi, Mozambique, Zambia, Zimbabwe. Namibia, Botswana, Limpopo, North-West, Gauteng, Mpumalanga, Swaziland, Kwazulu-Natal, Eastern Cape. Mauritius. **Indian Subcontinent.** India.

TDWG4. Tamilnadu.

Ischaemum koleostachys (Steud.) Hack. *DC. Monog. Phan.* vi. 220 (1889).

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

TYPE from Reunion. **Basionym or Replaced Name:** *Andropogon koleostachys* Steud., *Syn. Pl. Gram.* 376 (1854). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Reunion: Coll? 157 (P holo).

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

Derivation (Clifford & Bostock 2007): Gk. koleos, sheath; stachys, ear of corn.

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

Habit, Vegetative Morphology. Perennial, caespitose. Culms erect or geniculately ascending, 20–60 cm long. Culm-nodes bearded. Lateral branches lacking or sparse. Leaf-sheaths glabrous on surface or pilose. Ligule an eciliate membrane, 1–2 mm long. Leaf-blades lanceolate, 3–11 cm long, 3–7 mm wide. Leaf-blade surface glabrous. Leaf-blade apex attenuate, filiform.

Inflorescence. Inflorescence composed of racemes. Racemes 2, paired, unilateral, 2–5 cm long. Rhachis fragile at the nodes, angular, ciliate on margins. Rhachis internodes columnar, flat and forming a U or V shape with the pedicel in rear view. Rhachis internode tip transverse, cupuliform. Spikelets in pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, oblong, angular, ciliate.

Sterile Spikelets. Companion sterile spikelets well-developed, containing empty lemmas or male, elliptic, laterally compressed, as long as fertile, separately deciduous. Companion sterile spikelet glumes chartaceous, villous, acuminate, mucous. Companion sterile spikelet lemmas 2, enclosed by glumes.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets oblong, dorsally compressed, 4.5–5 mm long, falling entire, deciduous with accessory branch structures. Spikelet callus oblong, 1–1.5 mm long, bearded, base obtuse, inserted. Spikelet callus hairs 2–3 mm long.

Glumes. Glumes dissimilar, reaching apex of florets, firmer than fertile lemma. Lower glume oblong, 1 length of spikelet, chartaceous, 2-keeled, winged on keel, winged narrowly, winged above, 8–11 -veined. Lower glume surface flat, asperulous, rough above, pilose, hairy above. Lower glume apex dentate, 2 -fid. Upper glume lanceolate, chartaceous, 1-keeled. Upper glume apex acuminate.

Florets. Basal sterile florets 1, male, with palea. Lemma of lower sterile floret lanceolate, 1 length of spikelet, membranous. Fertile lemma oblong, 4 mm long, membranous, without keel. Lemma apex lobed, 2 -fid, incised 0.5 of lemma length, awned, 1 -awned. Principal lemma awn from a sinus, geniculate, 14–20 mm long overall, with twisted column. Column of lemma awn glabrous. Palea 1 length of lemma.

Distribution (TDWG). Continent. Africa.

Country /Province /State. Western Indian ocean. Mauritius, Madagascar, Reunion.

Ischaemum kumarakodiense N. Ravi, N. Mohanan & M.S. Kiran Raj. *Rheedea*, 8(2): 149 (1998).

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

TYPE from India. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: India, Kerala, Pallona: Ravi 33084 (TBGT holo, K, KFRI, MH).

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

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

Habit, Vegetative Morphology. Perennial, caespitose. Culms erect or decumbent, 30–75 cm long, without nodal roots or rooting from lower nodes. Culm-internodes smooth. Culm-nodes glabrous or bearded. Lateral branches ample. Leaves cauline. Leaf-sheaths 4–8 cm long, keeled, striately veined, glabrous on surface. Ligule a ciliolate membrane, 3–4 mm long, truncate. Leaf-blades ascending, linear, 15 cm long, 5 mm wide. Leaf-blade midrib keeled beneath. Leaf-blade surface glabrous. Leaf-blade margins scaberulous. Leaf-blade apex acuminate.

Inflorescence. Inflorescence composed of racemes. Racemes 2, paired, 4–7 cm long. Rhachis fragile at the nodes, angular, villous on margins. Rhachis internodes clavate, 3–4 mm long. Rhachis internode tip transverse,

cupuliform. Spikelets in pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, oblong, 2.5–3 mm long, ciliate.

Sterile Spikelets. Companion sterile spikelets well-developed, male with a few bisexual, elliptic, laterally compressed, 4–5 mm long, as long as fertile, separately deciduous. Companion sterile spikelet glumes chartaceous, keeled, winged on keels (1 keel), 9–11 -veined. Companion sterile spikelet lemmas 2, enclosed by glumes.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets elliptic, dorsally compressed, 5 mm long, falling entire, deciduous with accessory branch structures. Spikelet callus 0.5–0.75 mm long, pubescent, base truncate, inserted.

Glumes. Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma. Lower glume elliptic or oblong, 1 length of spikelet, coriaceous, much thinner above, 2-keeled, keeled all along, keeled laterally, winged on keel, winged narrowly, winged above, 9–11 -veined. Lower glume surface flat, rugose. Lower glume apex obtuse or acute. Upper glume elliptic or oblong, coriaceous, 1-keeled, 5 -veined. Upper glume lateral veins obscure. Upper glume margins ciliate.

Florets. Basal sterile florets 1, male, with palea. Lemma of lower sterile floret oblong, 4.5 mm long, membranous, 3 -veined, scaberulous, rough above, ciliate on margins, fringed above. Palea of lower sterile floret 4.25 mm long. Fertile lemma oblong, 3.5 mm long, membranous, without keel, 3 -veined, 0–3 -veined. Lemma margins ciliolate, hairy above. Lemma apex dentate, 2 -fid, incised 0.5 of lemma length, mucicous.

Flower and Fruit. Lodicules 2, 0.5 mm long. Anthers 3, 1.25–2.5 mm long.

Distribution (TDWG). Continent. Tropical Asia.

Country /Province /State. Indian Subcontinent. India.

TDWG4. Kerala.

Ischaemum lanatum Ravi, N.Mohanan, Shaju. *Rheedea* 10(2): 91 (2000).

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

TYPE from India. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: India, Kerala, Hosdurg Taluk: Ravi 41535 (TBGT holo, CAL, K, KFRI, MH).

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

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

Habit, Vegetative Morphology. Annual. Culms erect or geniculately ascending or decumbent, slender, 50–100 cm long, rooting from lower nodes. Culm-nodes pubescent. Leaf-sheaths 5–9 cm long, keeled, striately veined, pilose, with tubercle-based hairs, outer margin hairy. Ligule an eciliate membrane, 3–5 mm long, pubescent on abaxial surface, truncate. Leaf-blade base broadly rounded or cordate, with a false petiole, petiole 0.5–1 cm long. Leaf-blades lanceolate, 5–10 cm long, 5–10 mm wide. Leaf-blade surface scaberulous, rough on both sides, glabrous or pilose, sparsely hairy, hairy on both sides. Leaf-blade margins scaberulous. Leaf-blade apex acuminate.

Inflorescence. Inflorescence composed of racemes. Racemes 2, paired, appressed back to back, 4–7 cm long. Rhachis fragile at the nodes, angular, woolly on surface. Rhachis hairs 2.5 mm long. Rhachis internodes clavate, 4–6.5 mm long. Rhachis internode tip transverse, cupuliform. Spikelets in pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, oblong, 1.5–2.5 mm long, 0.4 length of internode, villous.

Sterile Spikelets. Companion sterile spikelets well-developed, male, lanceolate, laterally compressed, 4.5–6.5 mm long, as long as fertile, separately deciduous. Companion sterile spikelet glumes chartaceous, keeled, 7–11 -veined, villous. Companion sterile spikelet lemmas 2, enclosed by glumes, 4.25–4.75 mm long, mucicous.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets lanceolate or elliptic, dorsally compressed, 5–5.5 mm long, falling entire, deciduous with accessory branch structures. Spikelet callus oblong, 1–2 mm long, pilose, base truncate, inserted.

Glumes. Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma. Lower glume lanceolate or elliptic, 1 length of spikelet, coriaceous, much thinner above, 2-keeled, keeled all along, keeled laterally, 9–11 -veined. Lower glume primary vein scaberulous. Lower glume surface smooth or rugose, woolly. Lower glume hairs 2–3 mm long. Upper glume lanceolate or oblong, coriaceous, 1-keeled, 5–7 -veined. Upper glume surface villous. Upper glume apex acuminate.

Florets. Basal sterile florets 1, male, with palea. Lemma of lower sterile floret ovate, 4.5–5.5 mm long, hyaline, acuminate. Palea of lower sterile floret 4.25–5.5 mm long. Fertile lemma elliptic, 3.75–5 mm long, hyaline, without keel, 3 -veined, 0–3 -veined. Lemma margins ciliolate. Lemma apex lobed, 2 -fid, awned, 1 -

awned. Principal lemma awn from a sinus, geniculate, 13–19 mm long overall, with twisted column. Column of lemma awn 5–8 mm long, glabrous. Palea 3.5–4.5 mm long.

Flower and Fruit. Lodicules 2, 0.75–1 mm long. Anthers 3, 3 mm long. Caryopsis with adherent pericarp, obovoid, 1.8 mm long.

Distribution (TDWG). Continent. Tropical Asia.

Country /Province /State. Indian Subcontinent. India.

TDWG4. Kerala.

Ischaemum latifolium (Spreng.) Kunth. *Rev. Gram.* i. 168. (1829).

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

TYPE from Leeward Islands. **Basionym or Replaced Name:** *Andropogon latifolius* Spreng., *Syst. Veg.* 1: 286 (1825)

. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: IST: *C.G. Bertero s.n.*, 1817, Leeward Islands: Guadeloupe Is: Basse-Terre (US-76578 (fragm.)).

Illustrations (Books): A.S.Hitchcock, *Manual of the Grasses of the West Indies* (1936) (417, Fig. 367), W.Burger, *Flora Costaricensis* 15, Gramineae: *Fieldiana Botany New Series* 4 (1980) (282, Fig 103), G.Harling & C.Persson, *Flora of Ecuador* (2006) (78: 185, Fig. 22 (2006)).

Derivation (Clifford & Bostock 2007): *L. latus*, broad; *folium*, leaf. Leaf-blades broad or relatively broad with respect to related species.

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

Habit, Vegetative Morphology. Perennial. Culms decumbent, 30–60 cm long, rooting from lower nodes. Leaf-sheaths wider than blade at the collar. Ligule an eciliate membrane. Leaf-blade base broadly rounded. Leaf-blades lanceolate, 8–20 cm long, 10–30 mm wide.

Inflorescence. Inflorescence composed of racemes. Racemes 5–14, digitate, 4–8 cm long. Rhachis fragile at the nodes, subterete, ciliate on margins. Rhachis internodes linear, 3 mm long. Rhachis internode tip transverse, cupuliform. Spikelets in pairs. Fertile spikelets sessile and pedicelled, 2 in the cluster. Pedicels present, linear, terete, 2.5 mm long, ciliate.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets oblong, laterally compressed, 5–6.5 mm long, falling entire, deciduous from the base or with accessory branch structures. Spikelet callus oblong, 1–2 mm long, bearded, base truncate, inserted. Spikelet callus hairs white, 2–3 mm long.

Glumes. Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma. Lower glume oblong, 4.5 mm long, 1 length of spikelet, coriaceous, without keels, 5 -veined. Lower glume surface convex. Lower glume apex acute. Upper glume ovate, coriaceous, without keels, 5 -veined. Upper glume apex acute, mucronate.

Florets. Basal sterile florets 1, male, with palea. Lemma of lower sterile floret elliptic, 1 length of spikelet, hyaline, 3 -veined, acute. Fertile lemma elliptic, 3 mm long, membranous, without keel, 1 -veined, 0–3 -veined. Lemma apex entire or dentate, 2 -fid, awned, 1 -awned. Principal lemma awn apical or from a sinus, straight, 7 mm long overall. Palea 1 length of lemma.

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

Country /Province /State. Mexico. Gulf (Mexico), Southwest Mexico, Southeast Mexico. **Mesoamerica, Caribbean, Northern South America, Western South America, Brazil.** Belize, Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua, Panama. Leeward Is, Windward Islands, Trinidad-Tobago. Venezuela. Colombia, Ecuador, Peru. Brazil Northeast, Brazil North.

Para, Amapa, Amazonas, Acre, Rondonia. Veracruz. Oaxaca. Chiapas, Quintana Roo.

Ischaemum lisboae Hook. f. *Fl. Brit. Ind.* vii. 133. (1896).

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

TYPE from India. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: India, Canara: Lisboa (K holo).

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

Derivation (Clifford & Bostock 2007): in honor of Josi Camillo Lisboa (c. 1822–1897) Indian physician and botanist.

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

Habit, Vegetative Morphology. Perennial. Culms decumbent, 20–35 cm long, 3-noded. Leaves distichous. Leaf-sheaths 13–25 cm long, hirsute. Ligule an eciliate membrane. Leaf-blades spreading, lanceolate, 2.5–5 cm long, 6–10 mm wide. Leaf-blade surface pubescent, hairy on both sides. Leaf-blade apex acute.

Inflorescence. Inflorescence composed of racemes. Racemes 2, paired, 5 cm long. Rhachis fragile at the nodes, angular, ciliate on margins. Rhachis internodes oblong, 0.5 length of fertile spikelet, flat and forming a U or V shape with the pedicel in rear view. Rhachis internode tip transverse, cupuliform. Spikelets in pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, oblong, 0.5 length of fertile spikelet, ciliate.

Sterile Spikelets. Companion sterile spikelets well-developed, containing empty lemmas or male, lanceolate, laterally compressed, 5 mm long, as long as fertile, separately deciduous. Companion sterile spikelet glumes chartaceous, keeled, winged on keels.

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

Glumes. Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma. Lower glume oblong, 1 length of spikelet, coriaceous, 2-keeled, keeled above, keeled laterally, winged on keel, winged broadly, winged above. Lower glume surface convex. Lower glume margins ciliate. Lower glume apex dentate, 2-fid. Upper glume lanceolate, coriaceous, 1-keeled, keeled above, winged on keel, winged above. Upper glume awned, 1-awned.

Florets. Basal sterile florets 1, male, with palea. Lemma of lower sterile floret oblong or ovate, membranous, ciliate on margins. Palea of lower sterile floret winged on keels. Fertile lemma oblong, 2 mm long, membranous, without keel. Lemma apex lobed, 2-fid, incised 0.5 of lemma length, awned, 1-awned. Principal lemma awn from a sinus, geniculate, 4 mm long overall, with twisted column. Column of lemma awn glabrous.

Flower and Fruit. Anthers 3.

Distribution (TDWG). Continent. Tropical Asia.

Country /Province /State. Indian Subcontinent. India.

Ischaemum longisetum Merrill. *Philipp. Journ. Sc., Bot.* 1914, ix. 52. (1914).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), W.D.Clayton & N.Snow, *Key to Pacific Grasses* (2010).

TYPE from Philippines. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Philippine Is., Cabras Is.: McGregor 502 (K iso).

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

Derivation (Clifford & Bostock 2007): L. longus, long; seta, bristle. Glumes or lemmas long awned.

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

Habit, Vegetative Morphology. Perennial, caespitose. Culms 30–50 cm long, 1–1.5 mm diam. Lateral branches lacking. Ligule an eciliate membrane, 1 mm long. Leaf-blades linear or lanceolate, 8–12 cm long, 7–12 mm wide. Leaf-blade surface glabrous. Leaf-blade apex acuminate.

Inflorescence. Inflorescence composed of racemes. Racemes 2, paired, 6–10 cm long. Rhachis fragile at the nodes, angular, villous on surface, ciliate on margins. Rhachis hairs tawny, 2–4 mm long. Rhachis internodes oblong, 3–4 mm long, flat and forming a U or V shape with the pedicel in rear view. Rhachis internode tip transverse, cupuliform. Spikelets in pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, oblong, 3–4 mm long, 1 length of internode, villous, with tawny hairs, with 3–4 mm long hairs.

Sterile Spikelets. Companion sterile spikelets well-developed, containing empty lemmas, lanceolate, laterally compressed, 6 mm long, shorter than fertile, separately deciduous. Companion sterile spikelet glumes chartaceous, keeled. Companion sterile spikelet lemmas 1-awned, with 17–20 mm long awn.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets elliptic, dorsally compressed, 7–9 mm long, falling entire, deciduous with accessory branch structures. Spikelet callus pilose, base truncate, inserted.

Glumes. Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma, shiny. Lower glume lanceolate, coriaceous, 2-keeled, keeled above, keeled laterally, winged on keel, winged narrowly, winged above. Lower glume surface glabrous. Lower glume margins ciliate. Lower glume apex dentate, 2-fid. Upper glume lanceolate, coriaceous, 1-keeled, keeled above. Upper glume apex acuminate.

Florets. Basal sterile florets 1, male, with palea. Lemma of lower sterile floret lanceolate, 5 mm long, hyaline. Fertile lemma oblong, 5 mm long, membranous, without keel. Lemma apex lobed, 2-fid, incised 0.5 of

lemma length, awned, 1 -awned. Principal lemma awn from a sinus, geniculate, 30–35 mm long overall, with twisted column. Column of lemma awn glabrous. Palea 1 length of lemma.

Flower and Fruit. Anthers 3, 2–2.5 mm long.

Distribution (TDWG). Continent. Pacific.

Country /Province /State. **Northwestern Pacific.** Marianas.

Ischaemum magnum Rendle. *Journ. Bot.* ii. 102. (1894).

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 Malaysia. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Malaya, Singapore: Feilding 1892 (K iso).

Illustrations (Books): H.Duistermaat, *Field Guide to the Grasses of Singapore* (2005) (85, Fig. 81).

Images: H.Duistermaat, *Field Guide to the Grasses of Singapore* (2005);, H.B.Gilliland et al., *Flora of Malaya Vol. 3 Grasses* (1971);.

Derivation (Clifford & Bostock 2007): L. large. Plants large and generally with tall culms.

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

Habit, Vegetative Morphology. Perennial. Culms 100–200 cm long. Leaf-sheaths pilose, with tubercle-based hairs, outer margin hairy. Leaf-sheath auricles erect. Ligule an eciliate membrane, 4 mm long. Leaf-blade base with a false petiole. Leaf-blades lanceolate, 15–30 cm long, 9–18 mm wide. Leaf-blade margins scabrous. Leaf-blade apex acuminate.

Inflorescence. Inflorescence composed of racemes. Racemes 2, paired, appressed back to back, 9–15 cm long. Rhachis fragile at the nodes, angular, ciliate on margins. Rhachis internodes oblong, flat and forming a U or V shape with the pedicel in rear view. Rhachis internode tip transverse, cupuliform. Spikelets in pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, oblong, 0.25 length of internode, ciliate.

Sterile Spikelets. Companion sterile spikelets well-developed, male, lanceolate, laterally compressed, 6.4 mm long, as long as fertile, separately deciduous. Companion sterile spikelet glumes chartaceous, keeled, winged on keels (1 keel). Companion sterile spikelet lemmas 2, enclosed by glumes, 1-awned, with 5 mm long awn.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets oblong, dorsally compressed, 6.4 mm long, falling entire, deciduous with accessory branch structures. Spikelet callus pilose, base truncate, inserted.

Glumes. Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma. Lower glume oblong, 1 length of spikelet, coriaceous, much thinner above, 2-keeled, keeled all along, keeled laterally, wingless. Lower glume surface flat, muricate, rough on flanks. Lower glume margins ciliate. Lower glume apex acute. Upper glume lanceolate, 6 mm long, coriaceous, 1-keeled, 5 -veined. Upper glume primary vein ciliate. Upper glume margins ciliate. Upper glume apex acuminate.

Florets. Basal sterile florets 1, male, with palea. Lemma of lower sterile floret ovate, 5.2 mm long, membranous, 3 -veined. Fertile lemma oblong, 4.6 mm long, membranous, without keel, 3 -veined, 0–3 -veined. Lemma apex lobed, 2 -fid, incised 0.33 of lemma length, awned, 1 -awned. Principal lemma awn from a sinus, curved, 5–10 mm long overall, with twisted column. Column of lemma awn glabrous.

Flower and Fruit. Anthers 3, 3 mm long.

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

Country /Province /State. **China.** China South Central. **Indo-China, Malesia.** Myanmar, Thailand. Borneo, Malaya, Singapore.

TDWG4. Yunnan.

Ischaemum malabaricum P.V. Sreekumar, V.J. Nair & N.C. Nair. *Kew Bull.*, 39(4): 743 (1984).

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

TYPE from India. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: India, Paramba: Sreekumar 71720 (CAL holo, K, MH).

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

Derivation (Clifford & Bostock 2007): L. -ica, belonging to. From Malibar, India.

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

Habit, Vegetative Morphology. Annual. Culms decumbent or rambling, weak, 30–50 cm long. Culm-nodes bearded. Leaf-sheaths 1–6 cm long, mostly shorter than adjacent culm internode, striately veined,

glabrous on surface. Ligule an eciliate membrane, 2–3 mm long. Leaf-blade base cordate or sagittate. Leaf-blades lanceolate, 1–10 cm long, 5–15 mm wide. Leaf-blade surface glabrous or pilose, sparsely hairy. Leaf-blade apex acute or acuminate.

Inflorescence. Inflorescence composed of racemes, subtended by a spatheole. Spatheole 2–8 cm long, pilose. Racemes 2, paired, appressed back to back, 2–6 cm long. Rhachis fragile at the nodes, ciliate on margins. Rhachis internodes oblong, 2–3 mm long. Rhachis internode tip transverse, cupuliform. Spikelets in pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, oblong, 2 mm long, ciliate.

Sterile Spikelets. Companion sterile spikelets well-developed, male, elliptic, laterally compressed, 3.5–4 mm long, as long as fertile, separately deciduous. Companion sterile spikelet glumes chartaceous, keeled, 9–11 -veined, glabrous or pilose. Companion sterile spikelet lemmas 2, enclosed by glumes, 2.5–3.5 mm long, muticous.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets oblong, dorsally compressed, 3.5–4.5 mm long, falling entire, deciduous with accessory branch structures. Spikelet callus bearded, base truncate, inserted.

Glumes. Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma. Lower glume elliptic or oblong, 3–4 mm long, 1 length of spikelet, chartaceous, 2-keeled, keeled all along, keeled laterally, 11–13 -veined. Lower glume surface flat, smooth, villous. Lower glume hairs 1–2 mm long. Lower glume apex acute. Upper glume lanceolate, 3–3.5 mm long, chartaceous, with hyaline margins, 1-keeled, 3–5 -veined. Upper glume surface pubescent. Upper glume margins ciliolate.

Florets. Basal sterile florets 1, male, with palea. Lemma of lower sterile floret elliptic or oblong, 3.5–4 mm long, hyaline, 2-keeled, 3–5 -veined, ciliolate on margins, acute. Palea of lower sterile floret 3–3.5 mm long. Fertile lemma oblong, 2.5–3 mm long, membranous, without keel, 3 -veined, 0–3 -veined. Lemma lateral veins obscure. Lemma margins ciliolate. Lemma apex dentate, 2 -fid, awned, 1 -awned. Principal lemma awn from a sinus, geniculate, 12–15 mm long overall, with twisted column. Column of lemma awn 5 mm long, glabrous. Palea lanceolate or oblong, 2–2.5 mm long, hyaline, 2 -veined.

Flower and Fruit. Lodicules 2, 0.4 mm long. Anthers 3, 1–2 mm long, yellow.

Distribution (TDWG). Continent. Tropical Asia.

Country /Province /State. Indian Subcontinent. India.

TDWG4. Kerala.

Ischaemum mangaluricum (Hackel) Stapf ex C. E. C. Fischer. Gamble, *Fl. Madras*, 1723 (1934).

Regarded by K as a synonym (*I. barbatum*).

Accepted by: U. Quattrocchi, *CRC World Dictionary of Grasses* (2006), N.L. Bor, *Grasses of Burma, Ceylon, India and Pakistan* (1960).

TYPE from India, Sri Lanka. **Basionym or Replaced Name:** *Ischaemum aristatum* var. *fallax* Hack., *DC., Monogr. Phan.* 6:204 (1889). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: India: Wight ; Sri Lanka: Thwaites 700 ; Sri Lanka: Wight 2353.

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

Derivation (Clifford & Bostock 2007): L. -icum, belonging to. From Mangalum that is Mangalore, Madras State, Southern India.

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

Habit, Vegetative Morphology. Perennial, caespitose, clumped densely. Culms erect or geniculately ascending, 30–80 cm long, without nodal roots or rooting from lower nodes. Culm-nodes glabrous. Ligule an eciliate membrane, 1–6 mm long, acute. Leaf-blades linear or lanceolate, 3–20 cm long, 3–8 mm wide. Leaf-blade surface pilose, with tubercle-based hairs.

Inflorescence. Inflorescence composed of racemes. Racemes 2, paired, appressed back to back, 3–10 cm long. Rhachis fragile at the nodes, angular, ciliate on margins. Rhachis internodes oblong, 4–5 mm long. Rhachis internode tip transverse, cupuliform. Spikelets in pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, oblong, 1–1.5 mm long, 0.25 length of internode, ciliate.

Sterile Spikelets. Companion sterile spikelets well-developed, male, oblong or ovate, laterally compressed, 4–6 mm long, as long as fertile, separately deciduous. Companion sterile spikelet glumes chartaceous, keeled, winged on keels. Companion sterile spikelet lemmas 2, enclosed by glumes, 1-awned.

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

Glumes. Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma. Lower glume oblong, asymmetrical, 1 length of spikelet, coriaceous, much thinner above, 2-keeled, keeled all along, keeled laterally, winged on keel, winged broadly (on one side), winged above, 11–15 -veined. Lower glume surface flat, smooth or muricate, rough on flanks. Upper glume lanceolate or oblong, chartaceous, 1-keeled, winged on keel, winged near apex, 5 -veined. Upper glume surface glabrous or pubescent.

Florets. Basal sterile florets 1, male, with palea. Lemma of lower sterile floret lanceolate or oblong, 4–5.5 mm long, membranous, 3–5 -veined. Fertile lemma oblong, 4–4.5 mm long, membranous, without keel. Lemma apex lobed, 2 -fid, awned, 1 -awned. Principal lemma awn from a sinus, geniculate, 10–15 mm long overall, with twisted column. Column of lemma awn 5–6 mm long, glabrous. Palea 3–4 mm long. Palea surface papillose.

Flower and Fruit. Anthers 3, 1–2 mm long.

N = 10 (1 ref TROPICOS).

Distribution (TDWG). Continent. Tropical Asia.

Country /Province /State. Indian Subcontinent, Indo-China. Thailand.

TDWG4. Goa, Kerala, Karnataka. Tamilnadu.

Ischaemum merrillii Hackel. *Philipp. Journ. Sci. i. Suppl.* 266 (1906).

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

TYPE from Philippines. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Philippine Is., Luzon, Mt. Data: Merrill 4622 (K iso).

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

Derivation (Clifford & Bostock 2007): in honor of Elmer Drew Merrill (1876–1956) American botanist.

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

Habit, Vegetative Morphology. Perennial. Culms erect, 30–50 cm long. Culm-internodes distally glabrous. Lateral branches lacking or sparse. Leaf-sheaths mostly shorter than adjacent culm internode, keeled, outer margin hairy. Leaf-sheath oral hairs ciliate. Ligule an eciliate membrane, 2.5–4 mm long, pilose on abaxial surface, obtuse. Leaf-blade base with a false petiole, petiole 0.5–1.5 cm long. Leaf-blades linear or lanceolate, 5–8 cm long, 6–8 mm wide, stiff. Leaf-blade surface pilose, sparsely hairy, hairy on both sides, with tubercle-based hairs. Leaf-blade margins scabrous. Leaf-blade apex acuminate.

Inflorescence. Inflorescence composed of racemes. Racemes 2, paired, appressed back to back, 5 cm long. Rhachis fragile at the nodes, angular, ciliate on margins. Rhachis internodes oblong, 0.5 length of fertile spikelet, flat and forming a U or V shape with the pedicel in rear view. Rhachis internode tip transverse, cupuliform. Spikelets in pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, oblong, 4 mm long, ciliate.

Sterile Spikelets. Companion sterile spikelets well-developed, male, lanceolate, laterally compressed, 6 mm long, shorter than fertile, separately deciduous. Companion sterile spikelet glumes chartaceous, keeled, winged on keels, 7 -veined, scaberulous, muticous. Companion sterile spikelet lemmas 2, enclosed by glumes.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets oblong or obovate, dorsally compressed, 7 mm long, 2 mm wide, falling entire, deciduous with accessory branch structures. Spikelet callus cuneate, 1.5 mm long, pubescent, base truncate, inserted.

Glumes. Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma. Lower glume oblong, 1 length of spikelet, coriaceous, much thinner above, purple, 2-keeled, keeled all along, keeled laterally, wingless, 6 -veined. Lower glume lateral veins without connecting veins, all extending to apex. Lower glume surface flat, asperulous, rough above. Lower glume apex dentate, 2 -fid. Upper glume ovate, 1 length of spikelet, chartaceous, 1-keeled, 5 -veined. Upper glume surface scabrous, rough above. Upper glume apex obtuse, muticous.

Florets. Basal sterile florets 1, male, with palea. Lemma of lower sterile floret lanceolate, hyaline, 3 -veined, acute. Fertile lemma lanceolate, hyaline, without keel, 3 -veined, 0–3 -veined. Lemma apex lobed, 2 -fid, incised 0.33 of lemma length, awned, 1 -awned. Principal lemma awn from a sinus, geniculate, 12 mm long overall, with twisted column. Column of lemma awn 4 mm long, glabrous. Palea 1 length of lemma.

Flower and Fruit. Anthers 3.

Distribution (TDWG). Continent. Tropical Asia.

Country /Province /State. Malesia. Philippines.

Ischaemum minus J. & C. Presl. *Rel. Haenk.* 1: 329 (1829).

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

TYPE from Philippines. **Basionym or Replaced Name:** *Ischaemum urvilleanum* Kunth, *Rev. Gram.* 1: 167. (1829). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Philippine Is.: Haenke.

Recent Synonyms: *Ischaemum urvilleanum* Kunth, *Rev. Gram.* 1: 167 (1829).

Illustrations (Books): E.G.Nicora, *Los Generos de Gramineas de America Austral* (1987) (539, Fig. 195), L.B. Smith, D.C. Wasshausen, R.M. Klein *Flora Illustrada Catarinensis Gramineas* (1981–1982) (1141 & 1142, Fig. 222 & 223), A.Burkat, *Flora Illustrada de Entre Rios (Argentina)*, Pt II, Gramineas (1969) (457, Fig. 194 as *I. urvilleanum*), A.L.Cabrera, *Flora de la Provincia de Buenos Aires, IV Pt 2 Gramineas* (1970) (570, Fig. 151 as *I. urvilleanum*), B.Rosengurtt, *Gramineas Uruguayas I* (1970) (180, Fig. 72 as *I. urvilleanum*), R.Pilger, *Die Natürlichen Pflanzenfamilien* 14e (1940) (127, Fig. 71 as *I. urvilleanum*).

Derivation (Clifford & Bostock 2007): L. less. Differing in several respects from a related species.

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

Habit, Vegetative Morphology. Perennial. Culms decumbent, 10–30 cm long, rooting from lower nodes. Culm-internodes 0.6–5 cm long. Leaf-sheaths 2.5–5 cm long. Ligule an eciliate membrane, 1–2 mm long. Leaf-blades lanceolate, 2.5–8 cm long, 3.5–7 mm wide. Leaf-blade surface glabrous. Leaf-blade apex acute.

Inflorescence. Inflorescence composed of racemes. Racemes 2, paired, 2–4 cm long. Rhachis fragile at the nodes, angular, ciliate on margins. Rhachis internodes oblong, 2–3 mm long, flat and forming a U or V shape with the pedicel in rear view. Rhachis internode tip transverse, cupuliform. Spikelets in pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, oblong, 2.5–4 mm long, 0.5–0.66 length of fertile spikelet, ciliate.

Sterile Spikelets. Companion sterile spikelets well-developed, male, ovate, 5–6 mm long, as long as fertile, separately deciduous. Companion sterile spikelet glumes chartaceous, keeled, muticous. Companion sterile spikelet lemmas 1-awned.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets ovate, dorsally compressed, 5–6 mm long, falling entire, deciduous with accessory branch structures. Spikelet callus oblong, base truncate, inserted.

Glumes. Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma. Lower glume oblong, 1 length of spikelet, coriaceous, much thinner above, 2-keeled, keeled all along, keeled laterally. Lower glume surface flat, asperulous. Upper glume lanceolate, coriaceous, 1-keeled, 5 -veined. Upper glume surface asperulous.

Florets. Basal sterile florets 1, male, with palea. Lemma of lower sterile floret lanceolate, membranous. Fertile lemma oblong, membranous, without keel. Lemma apex dentate, 2 -fid, incised 0.1 of lemma length, awned, 1 -awned. Principal lemma awn from a sinus, flexuous, 2–3.5 mm long overall, without a column.

Flower and Fruit. Anthers 3, 2.8 mm long.

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

Country /Province /State. Eastern Asia. Ogosawara-shoto. **Malesia.** Philippines. **Brazil, Southern South America.** Brazil Southeast, Brazil South. Argentina Northeast, Paraguay.

TDWG4. Sao Paulo Parana, Catarina, Rio Grande do Sul. Buenos Aires, Distrito Federal, Entre Rios.

Ischaemum molle Hook. f. *Fl. Brit. Ind.* vii. 128. (1896).

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

TYPE from India. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: India, Concan: Dalzell (K syn) ; India, Chanda district: Duthie (K syn).

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

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

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

Habit, Vegetative Morphology. Perennial, caespitose. Culms erect or geniculately ascending, 25–130 cm long. Culm-nodes bearded. Lateral branches ample. Leaf-sheaths pilose, with tubercle-based hairs. Ligule an eciliate membrane. Leaf-blade base broadly rounded or cordate, with a false petiole (upper leaves), petiole pubescent. Leaf-blades 15–30 cm long, 6–13 mm wide. Leaf-blade surface glabrous or pilose, sparsely hairy, with tubercle-based hairs.

Inflorescence. Inflorescence composed of racemes, terminal and axillary. Racemes 2, paired, appressed back to back, 4–14 cm long. Rhachis fragile at the nodes, angular, ciliate on margins. Rhachis internodes oblong, 3–4 mm long. Rhachis internode tip transverse, cupuliform. Spikelets in pairs. Fertile spikelets sessile, 1

in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, oblong, 1–2 mm long, 0.25–0.33 length of internode, ciliate.

Sterile Spikelets. Companion sterile spikelets well-developed, male, lanceolate or oblong, asymmetrical, laterally compressed, 5–6 mm long, as long as fertile, separately deciduous. Companion sterile spikelet glumes chartaceous, keeled, winged on keels (1 keel). Companion sterile spikelet lemmas 2, enclosed by glumes, muticous or 1-awned.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets ovate, dorsally compressed, 5–6 mm long, falling entire, deciduous with accessory branch structures. Spikelet callus base truncate, inserted.

Glumes. Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma. Lower glume elliptic, 1 length of spikelet, coriaceous, much thinner above, 2-keeled, keeled all along, keeled laterally, 9–11 -veined. Lower glume surface flat, muricate, rough on flanks (or faintly rugose across back), glabrous or pilose. Upper glume lanceolate, coriaceous, 1-keeled. Upper glume surface pilose, hairy above.

Florets. Basal sterile florets 1, male, with palea. Lemma of lower sterile floret oblong, 4.5–5.5 mm long, membranous, 3–5 -veined, ciliate on margins, fringed above. Fertile lemma oblong, 4–5 mm long, membranous, without keel, 3 -veined, 0–3 -veined. Lemma apex dentate, 2 -fid, awned, 1 -awned. Principal lemma awn from a sinus, geniculate, 12–20 mm long overall, with twisted column. Column of lemma awn glabrous.

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

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

Country /Province /State. Arabian Peninsula. Saudi Arabia. **Indian Subcontinent, Indo-China.** India, Pakistan. Myanmar.

Kerala. Maharashtra, Tamilnadu.

Ischaemum murinum G. Forst. *Nova Acta Soc. Sci. Upsal.* iii. 185 (1780).

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

TYPE from Vanuatu. **Basionym or Replaced Name:** *Ischaemum foliosum* G. Forst., *Nova Acta Soc. Sci. Upsal.* 3: 185 (1780). T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: Vanuatu, Tanna: Coll?.

Recent Synonyms: *Ischaemum stokesii* Forest Brown, *Bull. Bishop Mus., Honolulu, No.* 84, 53 (1931).

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

Derivation (Clifford & Bostock 2007): L. murus, wall; -ina, belonging to. Growing on walls.

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

Habit, Vegetative Morphology. Perennial. Culms geniculately ascending or decumbent, 20–50 cm long. Culm-nodes bearded. Ligule an eciliate membrane, 0.5–3 mm long. Leaf-blades linear or lanceolate, 3–10 cm long, 2–7 mm wide.

Inflorescence. Inflorescence composed of racemes. Racemes 2, paired, 2–4 cm long. Rhachis fragile at the nodes, angular, ciliate on margins. Rhachis hairs yellow, 1–3 mm long. Rhachis internodes oblong, 2.5–4 mm long, flat and forming a U or V shape with the pedicel in rear view. Rhachis internode tip transverse, cupuliform. Spikelets in pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, oblong, 2.5–4 mm long, 1 length of internode, ciliate, with yellow hairs, with 1–4 mm long hairs.

Sterile Spikelets. Companion sterile spikelets well-developed, male, lanceolate, laterally compressed, 4–6 mm long, as long as fertile, separately deciduous. Companion sterile spikelet glumes chartaceous, keeled, glabrous or pilose, awned, both glumes awned, with 0.5–4 mm long awn. Companion sterile spikelet lemmas 1-awned.

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

Glumes. Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma. Lower glume lanceolate, coriaceous, 2-keeled, keeled above, keeled laterally. Lower glume surface convex, glabrous. Lower glume apex dentate, 2 -fid, awned, 2 -awned, awn 0.5–2 mm long. Upper glume lanceolate, coriaceous, 1-keeled, keeled above. Upper glume awned, 1 -awned, awn 1–6 mm long.

Florets. Basal sterile florets 1, male, with palea. Lemma of lower sterile floret lanceolate, 4–5 mm long, hyaline, 3 -veined. Fertile lemma oblong, 3–4 mm long, membranous, without keel. Lemma apex lobed, 2 -fid,

incised 0.33–0.5 of lemma length, awned, 1 -awned. Principal lemma awn from a sinus, geniculate, 15–20 mm long overall, with twisted column. Column of lemma awn glabrous. Palea 1 length of lemma.

Flower and Fruit. Anthers 3, 2 mm long.

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

Country /Province /State. **Malesia, Papuaasia.** New Guinea, Solomon Is. **Southwestern Pacific, South-central Pacific.** Niue, New Caledonia, Samoa, Tonga, Vanuatu, Wallis-Futuna Is. Cook Is, Society Is, Tubuai Is.

Ischaemum muticum Linn. *Sp. Pl.* 1049. (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), S-L Chen et al, *Flora of China* 22 (Poaceae) (2006), J.F.Veldkamp, Poaceae ms (*Flora Malesiana*), N.L.Bor, Grasses of Burma, Ceylon, India and Pakistan (1960), T.Koyama, *Grasses of Japan and its neighboring regions* (1987), W.D.Clayton & N.Snow, Key to Pacific Grasses (2010).

TYPE from India. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: India., (LT: LINN-1214.1).

Illustrations (Books): T.Koyama, *Grasses of Japan and its neighbouring regions* (1987) (459, Fig. 180), C-C Hsu, *Flora of Taiwan*, Vol 5 (1978) (716), C-C Hsu, *Taiwan Grasses* (1975), H.B.Gilliland, *Grasses of Malaya* (1971) (256, Fig. 56), H.Duistermaat, *Field Guide to the Grasses of Singapore* (2005) (85, Fig. 82), S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 856), E.Hafliger & E.Schultz, *Grass Weeds*, CIBA-GEIGY (1:65(1980)).

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

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

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

Habit, Vegetative Morphology. Perennial, mat forming. Stolons present. Culms prostrate or rambling, 15–40 cm long, 2–6 mm diam., rooting from lower nodes. Leaf-sheaths outer margin hairy. Leaf-sheath auricles erect. Ligule an eciliate membrane, 1 mm long. Leaf-blade base cordate. Leaf-blades 2–15 cm long, 4–14 mm wide. Leaf-blade apex acute or acuminate.

Inflorescence. Inflorescence composed of racemes. Racemes 2, paired, appressed back to back, 1.5–4.5 cm long. Rhachis fragile at the nodes, angular, ciliate on margins. Rhachis internodes columnar, 5 mm long, flat and forming a U or V shape with the pedicel in rear view. Rhachis internode tip transverse, cupuliform. Spikelets in pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, columnar, 5 mm long, ciliate.

Sterile Spikelets. Companion sterile spikelets well-developed, containing empty lemmas or male, ovate, 6.2–6.6 mm long, as long as fertile, separately deciduous. Companion sterile spikelet glumes chartaceous, keeled, winged on keels, acute or acuminate, muticous. Companion sterile spikelet lemmas 2, enclosed by glumes, muticous.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets ovate, dorsally compressed, acute, 5–8 mm long, falling entire, deciduous with accessory branch structures. Spikelet callus glabrous, base truncate, inserted.

Glumes. Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma. Lower glume ovate, 1 length of spikelet, coriaceous, pallid, 2-keeled, keeled above, keeled laterally, winged on keel, winged narrowly, winged above, 6–8 -veined. Lower glume surface convex. Upper glume lanceolate, coriaceous, 1-keeled, keeled above, winged on keel, winged above, 3–5 -veined. Upper glume margins ciliate. Upper glume apex acute.

Florets. Basal sterile florets 1, male, with palea. Lemma of lower sterile floret ovate, 5.8 mm long, 0.9 length of spikelet, membranous, 3 -veined, ciliate on margins, acute. Fertile lemma ovate, 5.4 mm long, membranous, without keel, 3 -veined, 0–3 -veined. Lemma margins ciliate. Lemma apex lobed, 2 -fid, muticous or mucronate or awned, 1 -awned. Principal lemma awn from a sinus, 1–3 mm long overall, not or scarcely exerted from spikelet. Palea 1 length of lemma.

Flower and Fruit. Anthers 3, 2.6 mm long. Stigmas white.

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

Country /Province /State. **China, Eastern Asia.** Nansei-Shoto, Ogosawara-shoto, Taiwan. **Indian Subcontinent, Indo-China, Malesia, Papuaasia.** India, Sri Lanka. Andaman Is, Cambodia, Myanmar, Nicobar Is, Thailand, Vietnam. Borneo, Cocos (Keeling) Is, Java, Lesser Sunda Is, Malaya, Singapore, Moluccas, Philippines, Sulawesi, Sumatra, Christmas I. New Guinea West Papua (Irian Jaya). New Guinea, Solomon Is.

Australia. Queensland. **Southwestern Pacific, Northwestern Pacific, North-central Pacific.** New Caledonia, Vanuatu. Caroline Is.

TDWG4. Kerala. Tamilnadu. North.

Ischaemum nairii V.J. Nair & P.V. Sreekumar. *J. Econ. Taxon. Bot.*, 5(5): 1205 (1984).

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

TYPE from India. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: India, Kerala, Kakkayam: Sreekumar 71843 (CAL holo, K, MH).

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

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

Habit, Vegetative Morphology. Perennial, caespitose. Culms erect, 100–200 cm long. Culm-nodes bearded. Lateral branches ample. Leaf-sheaths 10–80 cm long, mostly shorter than adjacent culm internode, keeled, striately veined, pilose, with tubercle-based hairs. Ligule an eciliate membrane, 2–6 mm long. Leaf-blades lanceolate, 10–60 cm long, 10–20 mm wide. Leaf-blade surface pilose, with tubercle-based hairs. Leaf-blade margins scabrous. Leaf-blade apex acuminate.

Inflorescence. Inflorescence composed of racemes. Racemes 2, paired, 5–12 cm long. Rhachis fragile at the nodes, angular, ciliate on margins. Rhachis internodes clavate, 2.5–3 mm long. Rhachis internode tip transverse, cupuliform. Spikelets in pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, oblong, 1–1.5 mm long, ciliate, with 0.5–2 mm long hairs.

Sterile Spikelets. Companion sterile spikelets well-developed, male with a few bisexual, ovate, laterally compressed, 5–5.5 mm long, as long as fertile, separately deciduous. Companion sterile spikelet glumes chartaceous, keeled, winged on keels (1 keel), 7–9 -veined, smooth or rugose. Companion sterile spikelet lemmas 2, enclosed by glumes.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets elliptic, dorsally compressed, 5.5–6 mm long, falling entire, deciduous with accessory branch structures. Spikelet callus bearded, base truncate, inserted. Spikelet callus hairs 0.5–2 mm long.

Glumes. Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma. Lower glume ovate, 1 length of spikelet, indurate, much thinner above, 2-keeled, keeled all along, keeled laterally, 9–11 -veined. Lower glume lateral veins obscure. Lower glume surface flat, rugose. Lower glume apex acute. Upper glume ovate, coriaceous, 1-keeled, winged on keel, winged near apex, 7–9 -veined. Upper glume lateral veins obscure. Upper glume margins ciliate.

Florets. Basal sterile florets 1, male, with palea. Lemma of lower sterile floret oblong, 4.5–5 mm long, membranous, 3 -veined, ciliate on margins, fringed above. Palea of lower sterile floret 4.5–5.4 mm long, pilose, adorned on flanks. Fertile lemma oblong, 3.5–4 mm long, membranous, without keel, 3 -veined, 0–3 -veined. Lemma lateral veins obscure. Lemma margins ciliolate, hairy above. Lemma apex dentate, 2 -fid, awned, 1 -awned. Principal lemma awn from a sinus, geniculate, 14–16 mm long overall, with twisted column. Column of lemma awn 6–7 mm long, glabrous. Palea 3–3.5 mm long.

Flower and Fruit. Lodicules 2, 0.5 mm long. Anthers 3, 2 mm long.

Distribution (TDWG). Continent. Tropical Asia.

Country /Province /State. Indian Subcontinent. India.

TDWG4. Kerala.

Ischaemum nativitatis Jansen ex S.A. Renvoize. *Kew Bull.*, 40(2): 447 (1985).

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

TYPE from Christmas Island. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Christmas Is.: Ridley 6 (K holo).

Illustrations (Books): Flora of Australia Oceanic Islands Poaceae 50(1993) & 49(1994) (50:509 Fig.93 (1993)).

Derivation (Clifford & Bostock 2007): L. Pertaining to the Christian Festival of the Nativity. Endemic to Christmas Island, Indian Ocean.

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

Habit, Vegetative Morphology. Perennial. Culms erect, 40–60 cm long. Culm-nodes glabrous. Ligule an eciliate membrane. Leaf-blades 6–10 cm long, 4–5 mm wide. Leaf-blade surface glabrous. Leaf-blade apex acuminate.

Inflorescence. Inflorescence composed of racemes. Racemes 2, paired, appressed back to back, 4–5 cm long. Rhachis fragile at the nodes, angular, ciliate on margins. Rhachis hairs yellow. Rhachis internodes oblong,

flat and forming a U or V shape with the pedicel in rear view. Rhachis internode tip transverse, cupuliform. Spikelets in pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, oblong, ciliate, with yellow hairs.

Sterile Spikelets. Companion sterile spikelets well-developed, male, elliptic, laterally compressed, 3–4 mm long, shorter than fertile, separately deciduous. Companion sterile spikelet glumes chartaceous, keeled, awned, one glume awned, with 2–4 mm long awn. Companion sterile spikelet lemmas 2, enclosed by glumes, 1-awned, with 6–8 mm long awn.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets oblong, dorsally compressed, 4–5 mm long, falling entire, deciduous with accessory branch structures. Spikelet callus pubescent, base truncate, inserted.

Glumes. Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma. Lower glume oblong, 1 length of spikelet, coriaceous, 2-keeled, keeled above, keeled laterally, winged on keel, winged above. Lower glume surface flat. Lower glume apex dentate, 2 -fid. Upper glume ovate, 1 length of spikelet, coriaceous, 1-keeled. Upper glume apex acuminate, awned, 1 -awned, awn 6–8 mm long.

Florets. Basal sterile florets 1, male, with palea. Lemma of lower sterile floret lanceolate, hyaline. Fertile lemma lanceolate, hyaline, without keel. Lemma apex lobed, 2 -fid, awned, 1 -awned. Principal lemma awn from a sinus, geniculate, 14–16 mm long overall, with twisted column. Column of lemma awn glabrous.

Flower and Fruit. Anthers 3.

Distribution (TDWG). Continent. Tropical Asia.

Country /Province /State. Malesia. Christmas I.

Ischaemum pappinisseriense N. Ravi, N. Mohanan & R. Rajesh. *Rheedea*, 8(2): 155 (1998).

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

TYPE from India. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: India, Kerala, Pappinisseri: Ravi 33707 (TBGT holo, K, KFRI, MH).

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

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

Habit, Vegetative Morphology. Annual, caespitose. Culms erect or geniculately ascending, 30–60 cm long, rooting from lower nodes. Culm-internodes smooth. Culm-nodes pubescent. Leaf-sheaths 4–7 cm long, keeled, striately veined, glabrous on surface. Ligule an eciliate membrane, 3–5 mm long. Leaf-blade base cuneate, without a false petiole or with a brief petiole-like connection to sheath. Leaf-blades linear or lanceolate, 4–8 cm long, 3–6 mm wide.

Inflorescence. Inflorescence composed of racemes. Racemes 2, paired, appressed back to back, 4–5 cm long. Rhachis fragile at the nodes, ciliate on margins. Rhachis internodes inflated, 3 mm long. Rhachis internode tip transverse, cupuliform. Spikelets in pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, clavate, 1 mm long, ciliate, hairy on one margin.

Sterile Spikelets. Companion sterile spikelets well-developed, comprising 2 subequal glumes without lemmas, oblong, 2.5–3 mm long, shorter than fertile. Companion sterile spikelet glumes chartaceous, keeled, winged on keels, 9–11 -veined, muticous.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets elliptic or oblong, dorsally compressed, 5 mm long, falling entire, deciduous with accessory branch structures. Spikelet callus oblong, 0.5–0.75 mm long, bearded, base obtuse, inserted. Spikelet callus hairs 1–1.5 mm long.

Glumes. Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma. Lower glume elliptic or oblong, 1 length of spikelet, coriaceous, much thinner above, 2-keeled, keeled all along, keeled laterally, winged on keel, winged broadly, winged above, 13–15 -veined. Lower glume surface muricate, rough on flanks. Lower glume apex emarginate. Upper glume lanceolate, chartaceous, 1-keeled, 5 -veined.

Florets. Basal sterile florets 1, male, with palea. Lemma of lower sterile floret lanceolate or elliptic, 4–4.5 mm long, membranous, 3 -veined, ciliolate on margins, acute. Palea of lower sterile floret 3.5–4 mm long. Fertile lemma oblong, 3–4 mm long, membranous, without keel. Lemma apex lobed, 2 -fid, awned, 1 -awned. Principal lemma awn from a sinus, geniculate, 22.5 mm long overall, with twisted column. Column of lemma awn 7.5 mm long, glabrous. Palea 2.5–3 mm long.

Flower and Fruit. Lodicules 2, 0.5 mm long. Anthers 3, 1.2 mm long. Caryopsis with adherent pericarp, oblong, 2 mm long.

Distribution (TDWG). Continent. Tropical Asia.

Country /Province /State. Indian Subcontinent. India.

TDWG4. Kerala.

Ischaemum philippinense Ohwi. *Acta Phytotax. & Geobot., Kyoto*, xi. 175 (1942).

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

TYPE from Philippines. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Philippine Is., Luzon, Singalong: Augustines & Banzon.

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

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

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

Habit, Vegetative Morphology. Annual. Culms decumbent, 15–20 cm long. Culm-nodes pubescent. Lateral branches ample. Leaf-sheaths 4–5 cm long, glabrous on surface. Ligule an eciliate membrane, 1–1.5 mm long. Leaf-blades 4–5 cm long, 3–4 mm wide. Leaf-blade surface glabrous or pilose, sparsely hairy, hairy abaxially.

Inflorescence. Inflorescence composed of racemes, terminal and axillary. Racemes 2, paired, appressed back to back, 3–4 cm long. Rhachis fragile at the nodes, angular, ciliate on margins. Rhachis internodes cuneate, 2.5–3 mm long, flat and forming a U or V shape with the pedicel in rear view. Rhachis internode tip transverse, cupuliform. Spikelets in pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, cuneate, 1 length of internode, ciliate, hairy on one margin.

Sterile Spikelets. Companion sterile spikelets rudimentary, comprising 2 subequal glumes without lemmas, ovate, 1–1.5 mm long, shorter than fertile, persistent or separately deciduous. Companion sterile spikelet glumes chartaceous, muticous.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets ovate, dorsally compressed, 4 mm long, falling entire, deciduous with accessory branch structures. Spikelet callus 0.3–0.5 mm long, pubescent, base obtuse, inserted.

Glumes. Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma. Lower glume ovate, 1 length of spikelet, coriaceous, much thinner above, 2-keeled, keeled all along, keeled laterally. Lower glume surface flat, rugose, rough below. Lower glume apex obtuse or acute. Upper glume lanceolate, chartaceous, 1-keeled, 3 -veined. Upper glume apex obtuse.

Florets. Basal sterile florets 1, male, with palea. Lemma of lower sterile floret lanceolate, 1 length of spikelet, membranous, 2 -veined, acuminate. Palea of lower sterile floret 0.75 length of lemma. Fertile lemma oblong, membranous, without keel. Lemma apex lobed, 2 -fid, incised 0.33 of lemma length, awned, 1 -awned. Principal lemma awn from a sinus, geniculate, 15–20 mm long overall, with twisted column. Column of lemma awn glabrous. Palea 1 length of lemma.

Distribution (TDWG). Continent. Tropical Asia.

Country /Province /State. Malesia. Philippines.

Ischaemum polystachyum J. & C. Presl. *Rel. Haenk.* i. 828 (1830).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), D.Sharp, D. & B.K.Simon, *AusGrass* (2002), S-L Chen et al, *Flora of China* 22 (Poaceae) (2006), J.F.Veldkamp, Poaceae ms (*Flora Malesiana*) (as *I. digitatum*), N.L.Bor, Grasses of Burma, Ceylon, India and Pakistan (1960) (as *I. duthiei*, *I. hirtum*, *I. nilagiricum*, *I. lacei*, *I. rivale*), W.D.Clayton & N.Snow, Key to Pacific Grasses (2010).

TYPE from Mariana Islands. **Basionym or Replaced Name:** *Ischaemum tallanum* Rendle, *Journ. Bot.* 31: 359. (1893). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Mariana Islands:, *Haenke s.n.* (IT: US-91463 (fragm.)).

Recent Synonyms: *Ischaemum purpurascens* Stapf, Prain, *Fl. Trop. Afr.* 9: 32 (1917). *Ischaemum rivale* Hack. in DC. *Monog. Phan.* 6: 228. (1889).

Ischaemum duthiei Stapf ex Bor, *Kew Bull.* 1950, 188 (1950).

Ischaemum lacei Stapf ex Bor, *Kew Bull.* 1950, 187 (1950).

Ischaemum hirtum Hack, in DC. *Monog. Phan.* 6 228. (1889).

Ischaemum nilagiricum Hack, *Oesterr. Bot. Zeitschr.* 1901, 150. (1901).

Illustrations (Books): L.K.A. Chippindall, *Grasses and Pastures of South Africa* (1955) (488, Fig.398, as *I. arcuatum*), J.Bosser, *Graminees des Paturage et des Cultures a Madagascar* (1969) (195, Fig 68 as *I. purpurascens*), H.B.Gilliland, *Grasses of Malaya* (1971) (Pl. 21), E.E.Henty, *A Manual of the Grasses of New Guinea* (1969) (122, Pl. 46), K.M.Matthew, *Flora Palni Hills* (1996) (as *I. nilagiricum*).

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

Derivation (Clifford & Bostock 2007): G. polys, many; stachys, ear of corn. Plants with many branched culms or inflorescences.

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

Habit, Vegetative Morphology. Perennial. Rhizomes elongated. Culms decumbent or prostrate, 30–150 cm long, without nodal roots or rooting from lower nodes. Culm-nodes pubescent. Ligule an eciliate membrane, 2.5 mm long. Leaf-blades 5–25 cm long, 3–20 mm wide. Leaf-blade surface glabrous or pubescent.

Inflorescence. Inflorescence composed of racemes. Racemes 2–5(–8), paired or digitate, unilateral, 3–15 cm long. Rhachis fragile at the nodes, angular, ciliate on margins. Rhachis internodes cuneate, flat and forming a U or V shape with the pedicel in rear view or flat and forming a U or V shape with the pedicel in rear view or with a basal circular pore between internode and pedicel. Rhachis internode tip transverse, cupuliform. Spikelets in pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, cuneate, 1 length of internode, ciliate.

Sterile Spikelets. Companion sterile spikelets well-developed, containing empty lemmas or male, elliptic, laterally compressed, 4–7 mm long, as long as fertile, separately deciduous. Companion sterile spikelet glumes chartaceous, keeled, 7–9 -veined, muticous. Companion sterile spikelet lemmas 2, enclosed by glumes, 1-awned.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets lanceolate or oblong, dorsally compressed, 4–7 mm long, falling entire, deciduous with accessory branch structures. Spikelet callus oblong, 1–1.5 mm long, bearded, base obtuse, inserted.

Glumes. Glumes dissimilar, reaching apex of florets, firmer than fertile lemma. Lower glume oblong, 1 length of spikelet, chartaceous, much thinner above, 2-keeled, keeled above, keeled laterally, wingless or winged on keel, winged above, 5–9 -veined. Lower glume surface convex, glabrous or pilose or villous. Lower glume apex entire or dentate, 2 -fid. Upper glume lanceolate, 1 length of spikelet, chartaceous, 1-keeled, keeled above, 3–5 -veined. Upper glume apex acuminate.

Florets. Basal sterile florets 1, male, with palea. Lemma of lower sterile floret lanceolate, 1 length of spikelet, membranous, 3–5 -veined, acute. Fertile lemma oblong, 4–6 mm long, membranous, without keel, 3 -veined, 0–3 -veined. Lemma margins ciliate. Lemma apex lobed, 2 -fid, incised 0.5 of lemma length, awned, 1 -awned. Principal lemma awn from a sinus, geniculate, 5–20 mm long overall, with twisted column. Column of lemma awn glabrous. Palea 1 length of lemma.

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

Country /Province /State. West tropical Africa, West-central tropical Africa, Northeast tropical Africa, East tropical Africa, South tropical Africa, Southern Africa, Western Indian ocean. Guinea, Mali. DRC. Ethiopia (inc. Eritrea). Mauritius, Madagascar. **China.** China South Central, China Southeast. **Indian Subcontinent, Indo-China, Malesia, Papuasia.** India, Sri Lanka. Myanmar, Thailand. Borneo, Malaya, Moluccas, Philippines. New Guinea. **Australia.** Queensland. **Southwestern Pacific, Northwestern Pacific.** New Caledonia, Vanuatu. Caroline Is, Marianas.

TDWG4. Guangdong, Guizhou, Yunnan. Assam, Meghalaya. Bihar, Gujarat, Kerala. Madhya Pradesh, Orissa, Tamilnadu, Uttah Pradesh, West Bengal. North.

Ischaemum pubescens Merrill. *Philipp. Journ. Sc., Bot.* ix. 264. (1914).

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

TYPE from Philippines. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Philippine Is., Damaran: Bur. Sci. 21639.

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

Derivation (Clifford & Bostock 2007): *L. pubesco*, become hairy. Plant whole or in part hairy.

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

Habit, Vegetative Morphology. Perennial. Culms erect or geniculately ascending, 70–100 cm long. Culm-internodes distally pruinose. Culm-nodes bearded. Leaf-sheaths loose, glabrous on surface or pilose. Leaf-sheath auricles erect, 2–3 mm long. Ligule an eciliate membrane, 2–3 mm long, brown. Leaf-blades 10–18 cm long, 6–12 mm wide. Leaf-blade surface pilose, hairy on both sides. Leaf-blade margins scabrous. Leaf-blade apex acuminate.

Inflorescence. Inflorescence composed of racemes. Racemes 2, paired, appressed back to back, 6–10 cm long. Rhachis fragile at the nodes, angular, ciliate on margins. Rhachis internodes oblong, 4 mm long, flat and forming a U or V shape with the pedicel in rear view. Rhachis internode tip transverse, cupuliform. Spikelets in pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, oblong, 3 mm long, ciliate.

Sterile Spikelets. Companion sterile spikelets well-developed, male, elliptic, laterally compressed, 6 mm long, as long as fertile, separately deciduous. Companion sterile spikelet glumes chartaceous, keeled, winged on keels, smooth, pilose, muticous. Companion sterile spikelet lemmas 2, enclosed by glumes.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets oblong, dorsally compressed, 6 mm long, 1.8 mm wide, falling entire, deciduous with accessory branch structures. Spikelet callus pilose, base truncate, inserted.

Glumes. Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma. Lower glume oblong, 1 length of spikelet, coriaceous, much thinner above, yellow or purple, 2-keeled, keeled above, keeled laterally, winged on keel, winged above. Lower glume surface convex, rugose (obscurely), rough below, glabrous or pilose. Upper glume ovate, 1 length of spikelet, coriaceous, 1-keeled. Upper glume apex acuminate, muticous.

Florets. Basal sterile florets 1, male, with palea. Lemma of lower sterile floret lanceolate, hyaline, 3 -veined. Fertile lemma lanceolate, hyaline, without keel, 3 -veined, 0-3 -veined. Lemma apex lobed, 2 -fid, incised 0.5 of lemma length, awned, 1 -awned. Principal lemma awn from a sinus, geniculate, 8-13 mm long overall, with twisted column. Column of lemma awn glabrous.

Flower and Fruit. Anthers 3.

Distribution (TDWG). Continent. Tropical Asia.

Country /Province /State. Malesia, Papuaia. Philippines. New Guinea West Papua (Irian Jaya). New Guinea.

Ischaemum pushpangadanii N. Ravi, N. Mohanan & M.S. Kiranraj. *Rheedea*, 10(1): 49 (2000).

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

TYPE from India. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: India, Kerala, Kailandy Taluk: Ravi 41460 (TBGT holo, CAL, KFRI, MH).

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

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

Habit, Vegetative Morphology. Annual, caespitose. Culms erect or geniculately ascending, 50-100 cm long, 1-2 mm diam., with prop roots. Culm-nodes pubescent. Leaf-sheaths 3-5 cm long, keeled, striately veined. Ligule an eciliate membrane, 2-7 mm long, pilose on abaxial surface. Leaf-blade base cordate or sagittate, with a false petiole, petiole 1-1.5 cm long. Leaf-blades lanceolate or oblong, 7-15 cm long, 10-20 mm wide, indurate. Leaf-blade surface scaberulous, rough abaxially. Leaf-blade margins scaberulous. Leaf-blade apex acute or acuminate.

Inflorescence. Inflorescence composed of racemes, subtended by an inflated leaf-sheath, with 1-3 peduncles per sheath. Racemes 2, paired, 3-5 cm long. Rhachis fragile at the nodes, villous on margins. Rhachis internodes clavate, 3.5-4 mm long. Rhachis internode tip transverse, cupuliform. Spikelets in pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, clavate, 3-5 mm long, 0.5-0.7 length of fertile spikelet, glabrous or ciliate.

Sterile Spikelets. Basal sterile spikelets well-developed, 2-4 in number, paired, sessile and pedicelled, oblong, equalling fertile. Basal sterile spikelet glumes glabrous, lemmas awned.

Companion sterile spikelets well-developed, male, lanceolate or elliptic, laterally compressed, 4.5-5.5 mm long, shorter than fertile, separately deciduous. Companion sterile spikelet glumes chartaceous, keeled, glabrous or villous. Companion sterile spikelet lemmas 2, enclosed by glumes, 3-4.5 mm long, entire, muticous.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets lanceolate, dorsally compressed, 6-7 mm long, falling entire, deciduous with accessory branch structures. Spikelet callus square, 1 mm long, pilose, base truncate, inserted. Spikelet callus hairs 1-2 mm long.

Glumes. Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma. Lower glume subulate or lanceolate, 1 length of spikelet, coriaceous, much thinner above, 2-keeled, keeled all along, keeled laterally. Lower glume surface convex or flat, asperulous, rough above, villous, hairy below. Lower glume hairs 1-2.5 mm long. Lower glume apex acute. Upper glume lanceolate, coriaceous, much thinner above, 1-keeled, 5 -veined. Upper glume primary vein scaberulous. Upper glume margins ciliate.

Florets. Basal sterile florets 1, male, with palea. Lemma of lower sterile floret lanceolate, 4.5-5.5 mm long, hyaline, 3 -veined, scaberulous, rough above. Palea of lower sterile floret 4.5-5.5 mm long. Fertile lemma oblong, 3.5-4 mm long, hyaline, without keel, 3 -veined, 0-3 -veined. Lemma margins ciliate, hairy above. Lemma apex lobed, 2 -fid, incised 0.33 of lemma length, awned, 1 -awned. Principal lemma awn from a sinus, geniculate, 13-15 mm long overall, with twisted column. Column of lemma awn 6-7 mm long, glabrous. Palea 1 length of lemma.

Flower and Fruit. Lodicules 2, 0.75 mm long. Anthers 3, 1.75-2.5 mm long. Caryopsis with adherent pericarp, ellipsoid, 2-2.5 mm long.

Distribution (TDWG). Continent. Tropical Asia.

Country /Province /State. Indian Subcontinent. India.

TDWG4. Kerala.

Ischaemum quilonense N. Ravi & T. Shaju. *Rheedea*, 8(2): 152 (1998).

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

TYPE from India. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: India, Kerala, Kollam: Ravi 24098 (TBGT holo, K, KFRI, MH).

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

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

Habit, Vegetative Morphology. Perennial, caespitose. Culms decumbent, 40–80 cm long, rooting from lower nodes. Culm-internodes smooth. Culm-nodes glabrous. Leaves cauline. Leaf-sheaths 6–12 cm long, glabrous on surface. Ligule an eciliate membrane, 5 mm long. Leaf-blade base cuneate, without a false petiole or with a false petiole, petiole 1–3.5 cm long. Leaf-blades linear or lanceolate, 10–20 cm long, 5–10 mm wide. Leaf-blade apex acute.

Inflorescence. Inflorescence composed of racemes. Racemes 2, paired, appressed back to back, 5–10 cm long. Rhachis fragile at the nodes, angular. Rhachis internodes columnar, flat and forming a U or V shape with the pedicel in rear view. Rhachis internode tip transverse, cupuliform. Spikelets in pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, columnar, angular, 1.5–2 mm long, bearing a few hairs or ciliate, hairy on one margin.

Sterile Spikelets. Companion sterile spikelets well-developed, male with a few bisexual, elliptic or oblong, 4.5–6 mm long, shorter than fertile, separately deciduous. Companion sterile spikelet glumes chartaceous, without keels, winged on keels, 11–13 -veined, muticous. Companion sterile spikelet lemmas 2, enclosed by glumes, 4–5 mm long, muticous or 1-awned, with 0–4 mm long awn.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets oblong or ovate, dorsally compressed, 5–7 mm long, falling entire, deciduous with accessory branch structures. Spikelet callus square, 0.75 mm long, glabrous or pubescent, base truncate, inserted.

Glumes. Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma. Lower glume oblong, 1 length of spikelet, coriaceous, much thinner above, 2-keeled, keeled all along, keeled laterally, winged on keel, winged narrowly, 11–13 -veined. Lower glume surface convex, muricate, rough on flanks. Lower glume apex emarginate or truncate. Upper glume elliptic, 5–6 mm long, coriaceous, much thinner above, 1-keeled, keeled above, winged on keel, winged near apex, 3–5 -veined. Upper glume primary vein scaberulous. Upper glume surface asperulous.

Florets. Basal sterile florets 1, male, with palea. Lemma of lower sterile floret lanceolate, 5–5.5 mm long, membranous, scaberulous. Fertile lemma elliptic, 4.5–5 mm long, membranous, without keel, 3–5 -veined, 0–3 -veined or more than 3-veined. Lemma apex lobed, 2 -fid, muticous or awned, 1 -awned. Principal lemma awn from a sinus, geniculate, 5–10 mm long overall, with a straight or slightly twisted column. Column of lemma awn 3–5 mm long, glabrous.

Flower and Fruit. Lodicules 2, 1 mm long. Anthers 3, 2.5–3 mm long. Caryopsis with adherent pericarp, ellipsoid or oblong, 3 mm long.

Distribution (TDWG). Continent. Tropical Asia.

Country /Province /State. Indian Subcontinent. India.

TDWG4. Kerala.

Ischaemum raizadae Hemadri & Billore. *Indian Forester*, xcvi. 318 (1970).

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

TYPE from India. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: India, Sadrya Ghat: Billore 115450a (K iso).

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

Derivation (Clifford & Bostock 2007): in honor of Mukat Behari Raizada (1907-) Indian botanist.

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

Habit, Vegetative Morphology. Annual, culms solitary or caespitose. Culms erect or geniculately ascending, 15–40 cm long. Culm-internodes distally glabrous. Culm-nodes glabrous or pubescent. Leaf-sheaths 4–6 cm long, pilose, with tubercle-based hairs, outer margin glabrous. Ligule an eciliate membrane, 1.5–2 mm long. Leaf-blades linear or lanceolate, 4.5–9 cm long, 6–11 mm wide. Leaf-blade surface pilose, sparsely hairy, hairy on both sides, with tubercle-based hairs. Leaf-blade apex acuminate.

Inflorescence. Inflorescence composed of racemes. Peduncle 2–11 cm long. Racemes 2, paired, appressed back to back, 2–4 cm long. Rhachis fragile at the nodes, angular, ciliate on margins. Rhachis internodes linear, 2 mm long, flat and forming a U or V shape with the pedicel in rear view. Rhachis internode tip transverse, cupuliform. Spikelets in pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, linear, 2 mm long, 0.4–0.5 length of fertile spikelet, ciliate.

Sterile Spikelets. Companion sterile spikelets well-developed, male, lanceolate, 4–5 mm long, as long as fertile, separately deciduous. Companion sterile spikelet glumes chartaceous, keeled, pilose, awned, several-awned (lower glume 2-awned), with 4–6 mm long awn. Companion sterile spikelet lemmas muticous.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets lanceolate, dorsally compressed, 4–5 mm long, falling entire, deciduous with accessory branch structures. Spikelet callus oblong, 1 mm long, pubescent, base truncate, inserted.

Glumes. Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma. Lower glume oblong, 1 length of spikelet, coriaceous, 2-keeled, keeled all along, keeled laterally, 4 -veined. Lower glume primary vein scabrous. Lower glume surface convex, laterally waisted, with marginal tufts of hair (2 tufts). Lower glume apex awned, awn 18–20 mm long. Upper glume lanceolate, coriaceous, 1-keeled. Upper glume surface pubescent, hairy in the middle, with clavate hairs, with a dorsal tuft of hair. Upper glume awned, 1 -awned, awn 40–45 mm long.

Florets. Basal sterile florets 1, male, with palea. Lemma of lower sterile floret lanceolate, 3–3.6 mm long, membranous, 1 -veined, without lateral veins. Palea of lower sterile floret 0.5 length of lemma. Fertile lemma oblong, 3–3.5 mm long, membranous, without keel. Lemma apex lobed, 2 -fid, incised 0.5 of lemma length, awned, 1 -awned. Principal lemma awn from a sinus, geniculate, 35–50 mm long overall, with twisted column. Column of lemma awn 6–8 mm long, glabrous. Palea absent or minute.

Flower and Fruit. Anthers 3, 1 mm long.

Distribution (TDWG). Continent. Tropical Asia.

Country /Province /State. Indian Subcontinent. India.

TDWG4. Maharashtra.

Ischaemum rangacharianum C. E. C. Fischer. *Kew Bull.* 1933, 352. (1933).

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

TYPE from India. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: India, Malabar, Shoranur: Ranga Achariya (K holo).

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

Derivation (Clifford & Bostock 2007): L. -anum, indicating connection. In honor of Kadami Ranga Achariyar (1868–1934) Indian botanist.

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

Habit, Vegetative Morphology. Annual. Culms erect or geniculately ascending, 20–80 cm long. Culm-nodes glabrous. Leaf-sheaths keeled, glabrous on surface or pilose, with tubercle-based hairs. Ligule an eciliate membrane, 2–5 mm long, acute. Leaf-blade base broadly rounded or cordate, without a false petiole or with a false petiole. Leaf-blades lanceolate or elliptic, 1–12 cm long, 4–12 mm wide. Leaf-blade margins undulate. Leaf-blade apex acuminate.

Inflorescence. Inflorescence composed of racemes. Racemes 2, paired, appressed back to back, 2–6 cm long. Rhachis fragile at the nodes, angular, ciliate on margins. Rhachis internodes oblong, 3–4 mm long. Rhachis internode tip transverse, cupuliform. Spikelets in pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, oblong, 1–2 mm long, 0.33 length of internode, ciliate.

Sterile Spikelets. Companion sterile spikelets well-developed, male, lanceolate, laterally compressed, 4–5 mm long, shorter than fertile, separately deciduous. Companion sterile spikelet glumes chartaceous, keeled, winged on keels, 11–13 -veined, smooth or muricate, villous. Companion sterile spikelet lemmas 2, enclosed by glumes, muticous.

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

Glumes. Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma. Lower glume lanceolate or oblong, 1 length of spikelet, coriaceous, much thinner above, 2-keeled, keeled all along, keeled laterally, wingless, 9–11 -veined. Lower glume primary vein scabrous. Lower glume lateral veins obscure. Lower glume

surface flat, muricate, rough on flanks, glabrous or pubescent, hairy above. Upper glume lanceolate or elliptic, chartaceous, 1-keeled, 3 -veined. Upper glume lateral veins obscure. Upper glume surface tuberculate.

Florets. Basal sterile florets 1, male, with palea. Lemma of lower sterile floret lanceolate or oblong, 4.5–5 mm long, membranous, 3–5 -veined. Fertile lemma oblong, 3–4 mm long, membranous, without keel, 3 -veined, 0–3 -veined. Lemma apex lobed, 2 -fid, awned, 1 -awned. Principal lemma awn from a sinus, geniculate, 12–18 mm long overall, with twisted column. Column of lemma awn 6–8 mm long, glabrous.

Flower and Fruit. Anthers 3, 1.5–2 mm long.

Distribution (TDWG). Continent. Tropical Asia.

Country /Province /State. Indian Subcontinent. India.

TDWG4. Kerala. Maharashtra, Tamilnadu.

Ischaemum raui P.V. Sreekumar, V.J. Nair & N.C. Nair. P.V. Sreekumar & V.J. Nair, *Fl. Kerala - Grasses*: 459, 157 (1991).

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

TYPE from India. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: India, Kerala, Muguroad: Sreekumar 71747 (CAL holo, K, MH).

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

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

Habit, Vegetative Morphology. Annual, caespitose. Culms decumbent, 10–30 cm long. Lateral branches ample. Leaf-sheaths 1–4 cm long, mostly shorter than adjacent culm internode, keeled, striately veined, glabrous on surface. Ligule an eciliate membrane, 0.5–1 mm long. Leaf-blades lanceolate or ovate, 1–3 cm long, 4–6 mm wide. Leaf-blade surface glabrous. Leaf-blade apex acuminate.

Inflorescence. Inflorescence composed of racemes. Racemes 1 or 2, single or paired, 1–3 cm long. Rhachis fragile at the nodes, angular, villous on margins. Rhachis internodes clavate, 2.5–3 mm long. Rhachis internode tip transverse, cupuliform. Spikelets in pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, oblong, 0.5–1 mm long, villous.

Sterile Spikelets. Companion sterile spikelets well-developed, male with a few bisexual, lanceolate, laterally compressed, 3.5–4 mm long, as long as fertile, separately deciduous. Companion sterile spikelet glumes chartaceous, keeled, wingless, villous. Companion sterile spikelet lemmas 2, enclosed by glumes.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets ovate, dorsally compressed, 3.5–4 mm long, falling entire, deciduous with accessory branch structures. Spikelet callus bearded, base truncate, inserted.

Glumes. Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma. Lower glume ovate, 1 length of spikelet, coriaceous, much thinner above, 2-keeled, keeled all along, keeled laterally, 9–11 -veined. Lower glume lateral veins obscure. Lower glume surface flat, villous, inner surface scabrous. Lower glume apex acute. Upper glume ovate, coriaceous, 1-keeled, keeled above, winged on keel, winged near apex. Upper glume surface villous. Upper glume margins ciliate.

Florets. Basal sterile florets 1, male, with palea. Lemma of lower sterile floret lanceolate or ovate, 3.5–4 mm long, membranous, 3–5 -veined, obscurely veined, ciliate on margins, fringed above. Palea of lower sterile floret 3.5–4 mm long. Fertile lemma oblong, 3–3.5 mm long, membranous, without keel, 3 -veined, 0–3 -veined. Lemma lateral veins obscure. Lemma margins ciliolate, hairy above. Lemma apex dentate, 2 -fid, awned, 1 -awned. Principal lemma awn from a sinus, geniculate, 10–12 mm long overall, with twisted column. Column of lemma awn 6–7 mm long, glabrous. Palea 3–3.5 mm long.

Flower and Fruit. Lodicules 2, 0.6 mm long. Anthers 3, 1.5–2 mm long.

Distribution (TDWG). Continent. Tropical Asia.

Country /Province /State. Indian Subcontinent. India.

TDWG4. Kerala.

Ischaemum ritchiei Stapf ex Bor. *Kew Bull.* 1951, 449 (1952).

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

TYPE from India. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: India, Kanara: Ritchie (K holo).

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

Derivation (Clifford & Bostock 2007): in honor of David Ritchie (1809–1866) physician and plant collector in India.

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

Habit, Vegetative Morphology. Annual. Culms geniculately ascending or decumbent, 40–80 cm long, rooting from lower nodes. Ligule an eciliate membrane, 8 mm long, lacerate. Leaf-blade base sagittate, with a false petiole, petiole 4–8 cm long. Leaf-blades linear or elliptic, 10–20 cm long, 10–20 mm wide, flaccid. Leaf-blade margins smooth or scaberulous. Leaf-blade apex acuminate.

Inflorescence. Inflorescence composed of racemes. Racemes 2, paired, 3–4 cm long. Rhachis fragile at the nodes, semiterete, ciliate on margins. Rhachis internodes inflated, 6 mm long. Rhachis internode tip transverse, cupuliform. Spikelets in pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, oblong, 0.5 mm long, 0.1 length of fertile spikelet.

Sterile Spikelets. Basal sterile spikelets well-developed, 6 in number (3 pairs), sessile and pedicelled, male, 8 mm long. Basal sterile spikelet glumes rugose, glabrous, lemmas awnless.

Companion sterile spikelets well-developed, male, lanceolate, laterally compressed, 6 mm long, as long as fertile, separately deciduous. Companion sterile spikelet glumes chartaceous, keeled. Companion sterile spikelet lemmas 2, enclosed by glumes, entire, muticous.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets lanceolate, dorsally compressed, 6 mm long, falling entire, deciduous with accessory branch structures. Spikelet callus square, 1 mm long, pilose, base truncate, inserted.

Glumes. Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma. Lower glume oblong, 1 length of spikelet, coriaceous, 2-keeled, keeled all along, keeled laterally. Lower glume surface muricate or rugose, rough on flanks, pilose, hairy below. Lower glume apex acute. Upper glume lanceolate, coriaceous, much thinner above, 1-keeled, 3 -veined. Upper glume surface scabrous.

Florets. Basal sterile florets 1, male, with palea. Lemma of lower sterile floret lanceolate or oblong, hyaline, 3 -veined. Fertile lemma oblong, 4.5 mm long, hyaline, without keel, 3 -veined, 0–3 -veined. Lemma apex lobed, 2 -fid, incised 0.5 of lemma length, awned, 1 -awned. Principal lemma awn from a sinus, geniculate, 9–10 mm long overall, with twisted column. Column of lemma awn glabrous. Palea 1 length of lemma.

Flower and Fruit. Anthers 3, 3 mm long.

Distribution (TDWG). Continent. Tropical Asia.

Country /Province /State. Indian Subcontinent. India.

TDWG4. Karnataka. Maharashtra.

Ischaemum roseotomentosum Phipps. *Kirkia*, iii. 30 (1963).

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

TYPE from Zimbabwe. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Zimbabwe, Nyamandhlovu: Vaughan-Evans 27 (SRGH holo, BM, BR, EA, K, LISC, LMA, PRE).

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

Derivation (Clifford & Bostock 2007): *L. rosea*, pink; tomentosa, tomentose. Indumentum rose-pink when fresh.

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

Habit, Vegetative Morphology. Perennial, caespitose. Butt sheaths pubescent. Culms erect, 70–130 cm long, 6–12 -noded. Culm-nodes pubescent. Leaf-sheaths pilose, with tubercle-based hairs. Ligule an eciliate membrane, 0.5 mm long. Leaf-blades 4–15 cm long, 5–8 mm wide. Leaf-blade apex attenuate, filiform.

Inflorescence. Inflorescence composed of racemes. Racemes 1, single, 5–7 cm long. Rhachis fragile at the nodes, subterete, ciliate on margins. Rhachis hairs white or red or purple. Rhachis internodes cuneate, 6 mm long. Rhachis internode tip oblique, cupuliform. Spikelets in pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, cuneate, terete, 6 mm long, ciliate.

Sterile Spikelets. Companion sterile spikelets rudimentary or well-developed, comprising 2 subequal glumes without lemmas, elliptic, 2–3.5 mm long, shorter than fertile, separately deciduous. Companion sterile spikelet glumes chartaceous, keeled, winged on keels (above), villous, dentate, 3 -fid, muticous.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets oblong, dorsally compressed, 8–10 mm long, falling entire, deciduous with accessory branch structures. Spikelet callus square, pubescent, base obtuse, inserted.

Glumes. Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma. Lower glume oblong, 1 length of spikelet, coriaceous, 2-keeled, keeled laterally, winged on keel, winged broadly, winged near apex. Lower glume primary vein ciliate. Lower glume surface convex, villous, hairy below. Lower glume apex dentate, 3 -fid. Upper glume lanceolate, coriaceous, 1-keeled. Upper glume primary vein ciliate. Upper glume surface puberulous. Upper glume margins ciliate. Upper glume apex emarginate.

Florets. Basal sterile florets 1, barren, with palea. Lemma of lower sterile floret elliptic, 4 mm long, 0.5 length of spikelet, hyaline, 2 -veined, pilose. Palea of lower sterile floret 0.25 length of lemma. Fertile lemma

oblong, 3–3.5 mm long, membranous, without keel. Lemma margins ciliate, hairy above. Lemma apex lobed, 2-fid, incised 0.25 of lemma length, awned, 1-awned. Principal lemma awn from a sinus, geniculate, 20–30 mm long overall, with twisted column. Column of lemma awn glabrous. Palea lanceolate, 0.33 length of lemma, 0-veined, without keels.

Flower and Fruit. Anthers 3.

Distribution (TDWG), Continent. Africa.

Country /Province /State. South tropical Africa. Zimbabwe.

Ischaemum rugosum Salisb. *Ic. Stirp. Rar.* 1. t. 1. (1791).

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

TYPE from India. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: India: Orissa, ad margines agrorum oryzaceorum, *J.G. Koenig s.n.* (HT: BM).

Illustrations (Books): H.Jacques-Felix, *Les Graminees d'Afrique tropicale* (1962) (272, Fig. 206), J.Bosser, *Graminees des Paturage et des Cultures a Madagascar* (1969) (195, Fig. 68), T.Koyama, *Grasses of Japan and its neighbouring regions* (1987) (464, Fig. 182), C-C Hsu, *Flora of Taiwan*, Vol 5 (1978) (718 as var. *segetum*), C-C Hsu, *Taiwan Grasses* (1975) (as var. *segetum*), K.M.Matthew, Further Illustrations on the *Flora of Tamilnadu Carnatic* (1988) (Pl. 792 & Pl. 793), T.A.Cope, *Flora of Pakistan* 143: *Poaceae* (1982) (309, Fig. 35), H.J.Noltie, *The Grasses of Bhutan* (2000) (795, Fig. 56), H.B.Gilliland, *Grasses of Malaya* (1971) (Pl. 19), H.Duistermaat, *Field Guide to the Grasses of Singapore* (2005) (87, Fig. 83), D.Sharp & B.K.Simon, *AusGrass*. Grasses of Australia. CD-Rom Version 1.0. (2002), M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 25 *Poaceae*, part 2 (2003) (650), W.Burger, *Flora Costaricensis* 15, Gramineae: *Fieldiana Botany New Series* 4 (1980) (282, Fig. 103), E.Judziewicz, *Flora of the Guianas*, 187. *Poaceae* (1990) (295, Fig. 51), S-L Chen et al, *Flora of China*, Illustrations, *Poaceae* (2007) (Fig. 859), E.Hafliger & E.Schultz, *Grass Weeds*, CIBA-GEIGY (1:66(1980)).

Illustrations (Journals): *Ruizia* (13:435 Fig 58h (1993)).

Images: D.Sharp & B.K.Simon, *AusGrass*. Grasses of Australia. CD-Rom Version 1.0. (2002); H.B.Gilliland et al., *Flora of Malaya Vol. 3 Grasses* (1971);

Derivation (Clifford & Bostock 2007): *L. ruga*, wrinkle; -osa, abundance. Usually with sculptured glumes.

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

Habit, Vegetative Morphology. Annual. Culms decumbent, 10–100 cm long. Ligule an eciliate membrane. Leaf-blades 5–30 cm long, 3–15 mm wide.

Inflorescence. Inflorescence composed of racemes, terminal and axillary. Racemes 2, paired, appressed back to back, 3–12 cm long. Rhachis fragile at the nodes, angular, ciliate on margins. Rhachis internodes cuneate, flat and forming a U or V shape with the pedicel in rear view. Rhachis internode tip transverse, cupuliform. Spikelets in pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, cuneate, ciliate.

Sterile Spikelets. Companion sterile spikelets well-developed or rudimentary, containing empty lemmas or male, dorsally compressed, 2–6 mm long, shorter than fertile or as long as fertile, persistent or separately deciduous. Companion sterile spikelet glumes chartaceous, muticous. Companion sterile spikelet lemmas 2, enclosed by glumes, muticous.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets ovate, dorsally compressed, 4–6 mm long, falling entire, deciduous with accessory branch structures. Spikelet callus base obtuse, inserted.

Glumes. Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma. Lower glume ovate, 1 length of spikelet, coriaceous, much thinner above, 2-keeled, keeled all along, keeled laterally. Lower glume surface convex, rugose, rough below. Upper glume lanceolate, chartaceous, 1-keeled.

Florets. Basal sterile florets 1, male, with palea. Lemma of lower sterile floret lanceolate, 1 length of spikelet, membranous. Fertile lemma oblong, membranous, without keel. Lemma apex lobed, 2-fid, awned, 1-awned. Principal lemma awn from a sinus, geniculate, 15–20 mm long overall, with twisted column. Column of lemma awn glabrous. Palea 1 length of lemma.

Flower and Fruit. *N* = 9 (1 ref TROPICOS), or 10 (1 ref TROPICOS), or 20 (2 refs TROPICOS).

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

Country /Province /State. West tropical Africa, East tropical Africa, Western Indian ocean. Burkina, Ghana, Guinea-Bissau, Liberia, Senegal, Sierre Leone. Kenya, Tanzania. Aldabra, Madagascar, Seychelles. **China, Eastern Asia.** China South Central, Hainan, China Southeast. Nansei-Shoto, Taiwan. **Indian Subcontinent, Indo-China, Malesia.** Bangladesh, Eastern Himalaya, India, Nepal, Pakistan, Sri Lanka. Andaman Is, Myanmar, Thailand, Vietnam. Java, Lesser Sunda Is, Malaya, Singapore, Philippines, Sumatra. **Australia.** Northern Territory, Queensland. **Southwestern Pacific.** Fiji (*). Caroline Is (*), Marianas (*). **Mexico.** Southwest Mexico, Southeast Mexico. **Mesoamerica, Caribbean, Northern South America, Western South America, Brazil.** Costa Rica, Nicaragua, Panama. Cuba, Jamaica, Trinidad-Tobago. French Guiana, Guyana, Surinam, Venezuela. Colombia, Ecuador, Peru. Brazil West Central, Brazil Northeast, Brazil North, Brazil Southeast.

TDWG4. Guangdong, Guangxi. Guizhou, Sichuan, Yunnan. Bhutan, Sikkim. Assam, Tripura. Andhra Pradesh, Bihar, Kerala, Karnataka. Madhya Pradesh, Maharashtra, Orissa, Rajasthan, Tamilnadu, Uttah Pradesh, West Bengal. Darwin & Gulf. North, Central. Colima, Jalisco, Michoacan, Nayarit. Chiapas, Yucatan.

Ischaemum santapau Bor. *Journ. Bombay Nat. Hist. Soc.* xlix. 167 (1950).

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

TYPE from India. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: India, Karjat: Santapau 9665 (K holotype, BLATT).

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

Derivation (Clifford & Bostock 2007): in honor of Hermenegild Santapau (1903–1970) Spanish-born Indian cleric and botanist.

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

Habit, Vegetative Morphology. Annual, caespitose. Culms geniculately ascending, 100–200 cm long, 1–2 mm diam., with prop roots. Culm-internodes distally glabrous. Lateral branches ample. Ligule an eciliate membrane, 2–3 mm long. Leaf-blade base broadly rounded or cordate. Leaf-blades 5–10 mm wide. Leaf-blade surface scabrous, rough on both sides, glabrous. Leaf-blade apex acute.

Inflorescence. Inflorescence composed of racemes, terminal and axillary. Racemes 2, paired, appressed back to back, 5–6 cm long. Rhachis fragile at the nodes, angular, ciliate on margins. Rhachis internodes linear, 2.8–4 mm long, flat and forming a U or V shape with the pedicel in rear view. Rhachis internode tip transverse, cupuliform. Spikelets in pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, linear, 1–1.5 mm long, 0.25 length of fertile spikelet, ciliate, with grey hairs.

Sterile Spikelets. Companion sterile spikelets represented by single glumes or rudimentary, comprising 2 subequal glumes without lemmas, lanceolate, 1–2 mm long, shorter than fertile, separately deciduous. Companion sterile spikelet glumes chartaceous, keeled, winged on keels, muticous.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets oblong, dorsally compressed, 4.5 mm long, 1.75 mm wide, falling entire, deciduous with accessory branch structures. Spikelet callus oblong, 0.5 mm long, base truncate, inserted.

Glumes. Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma. Lower glume oblong, 1 length of spikelet, membranous or coriaceous, much thinner above, 2-keeled, keeled all along, keeled laterally, 10–11 -veined. Lower glume surface convex, rugose, rough generally or on flanks. Lower glume apex obtuse. Upper glume lanceolate, chartaceous or coriaceous, 1-keeled, keeled above. Upper glume surface scabrous. Upper glume apex acute, mucronate.

Florets. Basal sterile florets 1, male, with palea. Lemma of lower sterile floret lanceolate, 3.75–4.25 mm long, membranous, acute. Palea of lower sterile floret 0.75 length of lemma. Fertile lemma oblong, 3.5 mm long, membranous, without keel. Lemma apex lobed, 2 -fid, incised 0.5 of lemma length, awned, 1 -awned. Principal lemma awn from a sinus, geniculate, 15 mm long overall, with twisted column. Column of lemma awn 6 mm long, glabrous. Palea 2 mm long.

Flower and Fruit. Anthers 3, 1.5–2.5 mm long.

Distribution (TDWG). Continent. Tropical Asia.

Country /Province /State. Indian Subcontinent. India.

TDWG4. Maharashtra.

Ischaemum semisagittatum Roxb. *Fl. Ind.* i. 320. (1820).

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

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

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

Derivation (Clifford & Bostock 2007): L. semi-, half; sagittatum, arrow-like. Leaf-blades narrow-cordate and separated from their sheaths by a pseudopetiole.

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

Habit, Vegetative Morphology. Annual. Culms decumbent, 30–60 cm long. Culm-nodes glabrous. Ligule an eciliate membrane, 3 mm long. Leaf-blade base cordate or sagittate, without a false petiole or with a false petiole, petiole 0–2.5 cm long. Leaf-blades lanceolate, 5–7.5 cm long, 10–16 mm wide. Leaf-blade surface glabrous or pubescent, sparsely hairy. Leaf-blade apex acuminate.

Inflorescence. Inflorescence composed of racemes. Racemes 2, paired, appressed back to back, 2.5–6.3 cm long. Rhachis fragile at the nodes, angular, ciliate on margins. Rhachis internodes inflated, 3 mm long. Rhachis internode tip transverse, cupuliform. Spikelets in pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, oblong, 0.5–1 mm long, 0.25–0.33 length of internode, glabrous.

Sterile Spikelets. Companion sterile spikelets well-developed, male, lanceolate, laterally compressed, 3–5 mm long, shorter than fertile, separately deciduous. Companion sterile spikelet glumes chartaceous, keeled, smooth or rugose. Companion sterile spikelet lemmas 2, enclosed by glumes, muticous.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets oblong, dorsally compressed, 4–6 mm long, falling entire, deciduous with accessory branch structures. Spikelet callus pilose, base truncate, inserted.

Glumes. Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma. Lower glume ovate, 1 length of spikelet, coriaceous, much thinner above, 2-keeled, keeled all along, keeled laterally, 3–5 -veined. Lower glume surface smooth or rugose. Upper glume lanceolate, coriaceous, 1-keeled. Upper glume apex obtuse.

Florets. Basal sterile florets 1, male, with palea. Lemma of lower sterile floret ovate, membranous, 1–3 -veined, without lateral veins or distinctly veined, acuminate. Fertile lemma oblong, 3.5–5.5 mm long, membranous, without keel. Lemma apex lobed, 2 -fid, incised 0.5 of lemma length, awned, 1 -awned. Principal lemma awn from a sinus, geniculate, 13–17 mm long overall, with twisted column. Column of lemma awn glabrous.

Flower and Fruit. Anthers 3.

Distribution (TDWG). Continent. Tropical Asia.

Country /Province /State. Indian Subcontinent. India.

TDWG4. Andhra Pradesh, Daman, Goa, Karnataka. Maharashtra.

Ischaemum setaceum Honda. *Bot. Mag., Tokyo*, viii. 54. (1924).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, S-L Chen et al, *Flora of China* 22 (Poaceae) (2006), T.Koyama, *Grasses of Japan and its neighboring regions* (1987), W.D.Clayton & N.Snow, *Key to Pacific Grasses* (2010).

TYPE from Taiwan. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Taiwan, Kotosho: Sasaki 7–1911.

Illustrations (Books): C-C Hsu, *Flora of Taiwan*, Vol 5 (1978) (720), C-C Hsu, *Taiwan Grasses* (1975).

Derivation (Clifford & Bostock 2007): L. seta, bristle; -acea, indicating resemblance.

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

Habit, Vegetative Morphology. Perennial. Culms prostrate, slender, 15–25 cm long, 2–6 mm diam., rooting from lower nodes. Culm-internodes distally glabrous. Leaves mostly basal. Leaf-sheaths loose, glabrous on surface. Ligule an eciliate membrane, 1 mm long, truncate. Leaf-blades linear or lanceolate, 3–5 cm long, 3–4 mm wide. Leaf-blade surface glabrous. Leaf-blade apex acute or acuminate.

Inflorescence. Inflorescence composed of racemes. Racemes 2, paired, appressed back to back, 2–5 cm long. Rhachis fragile at the nodes, angular, ciliate on margins. Rhachis internodes columnar, flat and forming a U or V shape with the pedicel in rear view. Rhachis internode tip transverse, cupuliform. Spikelets in pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, columnar, ciliate.

Sterile Spikelets. Companion sterile spikelets well-developed, male, ovate, 4 mm long, as long as fertile, separately deciduous. Companion sterile spikelet glumes chartaceous, keeled, muticous. Companion sterile spikelet lemmas 2, enclosed by glumes, 1-awned, with 10–12 mm long awn.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret

male or barren, the upper fertile. Spikelets linear or lanceolate, dorsally compressed, 4 mm long, falling entire, deciduous with accessory branch structures. Spikelet callus glabrous, base truncate, inserted.

Glumes. Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma. Lower glume ovate, 1 length of spikelet, coriaceous, much thinner above, 2-keeled, keeled above, keeled laterally, winged on keel, winged broadly, winged above, 2–8 -veined. Lower glume primary vein scabrous. Lower glume surface flat. Lower glume apex dentate, 2 -fid. Upper glume lanceolate, 1 length of spikelet, coriaceous, 1-keeled, keeled above. Upper glume primary vein ciliate. Upper glume margins ciliate. Upper glume apex emarginate or obtuse, mucicous or awned, awn 1–2 mm long.

Florets. Basal sterile florets 1, male, with palea. Lemma of lower sterile floret oblong, membranous, ciliate on margins, obtuse. Fertile lemma oblong, 2.5 mm long, hyaline, without keel, 0–3 -veined. Lemma margins ciliate. Lemma apex lobed, 2 -fid, awned, 1 -awned. Principal lemma awn from a sinus, geniculate, 10–12 mm long overall, with twisted column. Palea 1 length of lemma.

Flower and Fruit. Anthers 3.

Distribution (TDWG). Continent. Temperate Asia.

Country /Province /State. China, Eastern Asia. Taiwan. Caroline Is.

Ischaemum tadulingamii N.C. Nair & P.V. Sreekumar. *Blumea*, 30(2): 385 (1985).

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

TYPE from India. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: India, Kerala, Eravikulam Nat. Park: Sreekumar 71865 (CAL holo, K, MH).

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

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

Habit, Vegetative Morphology. Annual or perennial, caespitose. Culms erect, 10–30 cm long. Culm-nodes glabrous. Lateral branches ample. Leaf-sheaths 2–8 cm long, subequal to internodes, keeled, striately veined, hirsute, with tubercle-based hairs. Ligule an eciliate membrane, 2–3 mm long, acute. Leaf-blades linear or lanceolate, 2–10 cm long, 4–6 mm wide. Leaf-blade surface hirsute, with tubercle-based hairs. Leaf-blade apex acuminate.

Inflorescence. Inflorescence composed of racemes. Racemes 2–3, paired or digitate, 2–6 cm long. Rhachis fragile at the nodes, angular, villous on margins. Rhachis internodes clavate, 3.5–4 mm long. Rhachis internode tip transverse, cupuliform. Spikelets in pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, oblong, 3–4 mm long, ciliate, with 0.5–2 mm long hairs.

Sterile Spikelets. Companion sterile spikelets well-developed, containing empty lemmas, lanceolate or ovate, laterally compressed, 4–6 mm long, shorter than fertile, separately deciduous. Companion sterile spikelet glumes chartaceous, keeled, winged on keels (1 keel), 9–11 -veined. Companion sterile spikelet lemmas 2, enclosed by glumes.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets lanceolate or ovate, dorsally compressed, 6–7 mm long, falling entire, deciduous with accessory branch structures. Spikelet callus bearded, base truncate, inserted. Spikelet callus hairs 1–2 mm long.

Glumes. Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma. Lower glume lanceolate or ovate, 1 length of spikelet, coriaceous, much thinner above, 2-keeled, keeled all along, keeled laterally, 11–13 -veined. Lower glume lateral veins distinct. Lower glume surface flat, inner surface scabrous. Lower glume apex acuminate. Upper glume ovate, coriaceous, without keels, keel-less throughout, winged on keel, winged near apex, 3–5 -veined. Upper glume surface puberulous. Upper glume margins ciliate.

Florets. Basal sterile florets 1, barren, with palea. Lemma of lower sterile floret lanceolate, 4.5–5 mm long, membranous, 3 -veined, ciliate on margins, fringed above. Fertile lemma oblong, 4–4.5 mm long, membranous, without keel, 3 -veined, 0–3 -veined. Lemma lateral veins obscure. Lemma margins ciliolate, hairy above. Lemma apex dentate, 2 -fid, awned, 1 -awned. Principal lemma awn from a sinus, geniculate, 10–12 mm long overall, with twisted column. Column of lemma awn 5–6 mm long, glabrous.

Flower and Fruit. Lodicules 2, 0.6–0.75 mm long, veined. Anthers 3, 1.5–2 mm long. Caryopsis with adherent pericarp, obovoid, 2 mm long.

Distribution (TDWG). Continent. Tropical Asia.

Country /Province /State. Indian Subcontinent. India.

TDWG4. Kerala.

Ischaemum tenuifolium A. Camus. *Bull. Mus. Hist. Nat. Paris*, xxv. 284. (1919).

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

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

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

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

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

Habit, Vegetative Morphology. Perennial. Culms 80–100 cm long. Culm-internodes distally glabrous. Leaf-sheaths glabrous on surface. Ligule an eciliate membrane. Leaf-blades involute, 14–16 cm long, 1.5–2 mm wide, pruinose. Leaf-blade midrib widened. Leaf-blade surface pilose, sparsely hairy. Leaf-blade apex acuminate.

Inflorescence. Inflorescence composed of racemes. Peduncle pubescent above. Racemes 3, digitate, 5–6 cm long. Rhachis fragile at the nodes, flattened, ciliate on margins. Rhachis internodes oblong, 4 mm long, flat and forming a U or V shape with the pedicel in rear view. Rhachis internode tip transverse, cupuliform. Spikelets in pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, clavate, 3 mm long, ciliate, with 1.75 mm long hairs.

Sterile Spikelets. Companion sterile spikelets well-developed, male, lanceolate, laterally compressed, 3.5 mm long, shorter than fertile, separately deciduous. Companion sterile spikelet glumes chartaceous, keeled, ciliolate on margins.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets lanceolate, dorsally compressed, 4–5 mm long, falling entire, deciduous with accessory branch structures. Spikelet callus square, bearded, base truncate, inserted. Spikelet callus hairs 1.5 mm long.

Glumes. Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma. Lower glume lanceolate, 1 length of spikelet, chartaceous, 2-keeled, keeled all along, keeled laterally. Lower glume primary vein ciliate. Lower glume surface concave. Upper glume lanceolate, 1 length of spikelet, chartaceous, 1-keeled. Upper glume awned, 1 -awned, awn 9 mm long.

Florets. Basal sterile florets 1, male, with palea. Lemma of lower sterile floret oblong, 4 mm long, membranous, acute. Fertile lemma oblong, 4 mm long, membranous, without keel. Lemma apex lobed, 2 -fid, incised 0.5 of lemma length, awned, 1 -awned. Principal lemma awn from a sinus, geniculate, 17–20 mm long overall, with twisted column. Column of lemma awn glabrous.

Flower and Fruit. Anthers 3.

Distribution (TDWG). Continent. Tropical Asia.

Country /Province /State. Indo-China. Laos, Vietnam.

Ischaemum thomsonianum Stapf ex C. E. C. Fischer. *Gamble, Fl. Madras*, 1722 (1934).

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

TYPE from India. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: India, Mysore: Thomson (K iso).

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

Derivation (Clifford & Bostock 2007): *L. -anum*, indicating connection. In honor of Thomas Thomson (1817–1878) Scots-born physician in Bengal Army, later Superintendent, Calcutta Botanic Garden.

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

Habit, Vegetative Morphology. Annual. Culms decumbent, 20–100 cm long, rooting from lower nodes. Culm-nodes bearded. Leaf-sheaths keeled. Ligule a ciliolate membrane. Leaf-blade base simple or broadly rounded. Leaf-blades lanceolate, 2–15 cm long, 4–10 mm wide. Leaf-blade surface pilose, sparsely hairy or moderately hairy or densely hairy. Leaf-blade apex acuminate.

Inflorescence. Inflorescence composed of racemes. Racemes 2, paired or digitate, appressed back to back, 3–10 cm long. Rhachis fragile at the nodes, angular, ciliate on margins. Rhachis internodes oblong, 3–4 mm long, flat and forming a U or V shape with the pedicel in rear view. Rhachis internode tip transverse, cupuliform. Spikelets in pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, oblong, 3–3.5 mm long, 1 length of internode, ciliate.

Sterile Spikelets. Companion sterile spikelets well-developed, male, lanceolate or oblong, laterally compressed, 5–6 mm long, as long as fertile, separately deciduous. Companion sterile spikelet glumes chartaceous, keeled, winged on keels, 11–15 -veined, awned, one glume awned. Companion sterile spikelet lemmas 2, enclosed by glumes, 1-awned.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets lanceolate or elliptic, dorsally compressed, 5–6 mm long, falling

entire, deciduous with accessory branch structures. Spikelet callus cuneate, 1–2 mm long, bearded, base truncate, inserted.

Glumes. Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma. Lower glume lanceolate or ovate, 1 length of spikelet, coriaceous, much thinner above, 2-keeled, keeled above, keeled laterally, winged on keel, winged narrowly, winged near apex, 11–15 -veined. Lower glume surface flat, impressed above. Lower glume apex dentate, 2 -fid. Upper glume lanceolate or ovate, chartaceous, 1-keeled, winged on keel, winged near apex, 5 -veined. Upper glume margins ciliolate. Upper glume apex dentate, 2 -fid, awned, 1 -awned, awn 1–2 mm long.

Florets. Basal sterile florets 1, male, with palea. Lemma of lower sterile floret ovate, 4–5 mm long, membranous, 3 -veined, ciliolate on margins, fringed above, acute or acuminate. Fertile lemma oblong, 4–4.5 mm long, membranous, without keel, 3 -veined, 0–3 -veined. Lemma apex lobed, 2 -fid, awned, 1 -awned. Principal lemma awn from a sinus, geniculate, 10–15 mm long overall, with twisted column. Column of lemma awn 4–5 mm long, glabrous.

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

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

Country /Province /State. China. China South Central. **Indian Subcontinent, Indo-China.** India. Myanmar.

TDWG4. Yunnan. Kerala, Karnataka, Tamilnadu.

Ischaemum timorense Kunth. *Rev. Gram.* i. 369. t. 98 (1830).

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

TYPE from Indonesia. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Indonesia, Timor: Desfontaines (FI holo).

Illustrations (Books): H.B.Gilliland, *Grasses of Malaya* (1971) (256, Fig. 56), H.Duistermaat, *Field Guide to the Grasses of Singapore* (2005) (87, Fig. 84), E.Judziewicz, *Flora of the Guianas*, 187. *Poaceae* (1990) (295, Fig. 51), E.Hafliger & E.Schultz, *Grass Weeds*, CIBA-GEIGY (1:67(1980)).

Illustrations (Journals): *Ruizia* (13:435 Fig 58f-g (1993)).

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

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

Habit, Vegetative Morphology. Annual. Culms rambling, 15–60 cm long, 1 mm diam., rooting from lower nodes. Ligule a ciliolate membrane, 0.5–2 mm long. Leaf-blades lanceolate, 2–15 cm long, 4–10 mm wide.

Inflorescence. Inflorescence composed of racemes. Racemes 2, paired, 2.5–7.5 cm long. Rhachis fragile at the nodes, angular, ciliate on margins. Rhachis hairs 0.8–1.5 mm long. Rhachis internodes linear, 3 mm long, flat and forming a U or V shape with the pedicel in rear view or with a basal circular pore between internode and pedicel. Rhachis internode tip transverse, cupuliform. Spikelets in pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, linear, 3.5 mm long, ciliate.

Sterile Spikelets. Companion sterile spikelets well-developed, containing empty lemmas or male, lanceolate, 3–5 mm long, as long as fertile, separately deciduous. Companion sterile spikelet glumes chartaceous, muticous. Companion sterile spikelet lemmas 2, enclosed by glumes, 1-awned, with 6–16 mm long awn.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets ovate, dorsally compressed, 2.5–3 mm long, falling entire, deciduous with accessory branch structures. Spikelet callus square, 0.5 mm long, pilose, base obtuse, inserted.

Glumes. Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma. Lower glume ovate, 1 length of spikelet, coriaceous, much thinner above, 2-keeled, keeled above, keeled laterally, wingless, 5–9 -veined. Lower glume surface convex. Lower glume apex attenuate. Upper glume lanceolate, coriaceous, much thinner above, 1-keeled, keeled above, wingless, 3–5 -veined. Upper glume apex attenuate.

Florets. Basal sterile florets 1, male, with palea. Lemma of lower sterile floret lanceolate, 2.5–3 mm long, 1 length of spikelet, membranous, 1–3 -veined. Fertile lemma ovate, membranous, without keel, 3 -veined, 0–3 -veined. Lemma margins ciliolate. Lemma apex lobed, 2 -fid, incised 0.5 of lemma length, awned, 1 -awned. Principal lemma awn from a sinus, geniculate, 6–16 mm long overall, with twisted column. Column of lemma awn glabrous. Palea 1 length of lemma.

Flower and Fruit. Anthers 3, 2 mm long.

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

Country /Province /State. West-central tropical Africa. Cameroon. **China, Eastern Asia.** China Southeast. Taiwan. **Indian Subcontinent, Indo-China, Malesia.** India, Sri Lanka. Andaman Is, Cambodia, Laos, Myanmar, Thailand, Vietnam. Borneo, Java, Lesser Sunda Is, Malaya, Singapore, Moluccas, Sulawesi, Sumatra. **Southwestern Pacific, Northwestern Pacific.** Fiji (*). Caroline Is (*). Hawaii (*). **Mesoamerica, Caribbean, Northern South America, Western South America, Brazil.** Costa Rica, Nicaragua, Panama. French Guiana, Guyana, Surinam. Ecuador, Peru. Brazil North.

TDWG4. Guangdong, Meghalaya, Tripura. Bihar, Kerala, Karnataka. Maharashtra, Tamilnadu.

Ischaemum travancorense Stapf ex C. E. C. Fischer. *Kew Bull.* 1933, 353. (1933).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, N.L.Bor, *Grasses of Burma, Ceylon, India and Pakistan* (1960).

TYPE from India. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: India, Alleppy: Lawson 130 (K holo).

Illustrations (Books): No illustration found (BKS).

Derivation (Clifford & Bostock 2007): L. -ensis, denoting origin. From Travancore, India.

Classification. Subfamily Panicoideae. Tribe: Andropogoneae. Subtribe ISCHAEMINAE.

Habit, Vegetative Morphology. Perennial. Culms decumbent or rambling, 30–200 cm long, rooting from lower nodes. Culm-nodes glabrous. Leaf-sheaths keeled. Ligule an eciliate membrane, 3–8 mm long, acute. Leaf-blade base broadly rounded or cordate, with a brief petiole-like connection to sheath, petiole pubescent. Leaf-blades lanceolate or elliptic, 5–30 cm long, 5–15 mm wide. Leaf-blade apex acuminate.

Inflorescence. Inflorescence composed of racemes. Racemes 2, paired, appressed back to back, 8–15 cm long. Rhachis fragile at the nodes, angular, glabrous on margins. Rhachis internodes oblong, 4–5 mm long. Rhachis internode tip transverse, cupuliform. Spikelets in pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, oblong, 2–3 mm long, 0.5 length of internode, bearing a few hairs, hairy on margins.

Sterile Spikelets. Companion sterile spikelets well-developed, male, oblong or ovate, laterally compressed, 5–6 mm long, shorter than fertile, separately deciduous. Companion sterile spikelet glumes coriaceous, keeled, winged on keels, 13–15 -veined, scaberulous (on keel). Companion sterile spikelet lemmas 2, enclosed by glumes, muticous.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets lanceolate or oblong, dorsally compressed, 6–8 mm long, falling entire, deciduous with accessory branch structures. Spikelet callus glabrous, base truncate, inserted.

Glumes. Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma. Lower glume oblong or ovate, 1 length of spikelet, coriaceous, much thinner above, 2-keeled, keeled all along, keeled laterally, winged on keel, winged narrowly, winged near apex, 13–15 -veined. Lower glume surface flat, rugose. Upper glume lanceolate or oblong, chartaceous, 1-keeled, winged on keel, winged near apex, 5–7 -veined. Upper glume surface pubescent, hairy above. Upper glume margins ciliolate.

Florets. Basal sterile florets 1, male, with palea. Lemma of lower sterile floret lanceolate or oblong, 5–6 mm long, membranous, 3 -veined. Fertile lemma oblong, 5–5.5 mm long, membranous, without keel. Lemma apex lobed, 2 -fid, muticous or mucronate. Palea surface papillose.

Flower and Fruit. Anthers 3, 2–3 mm long.

Distribution (TDWG). Continent. Tropical Asia.

Country /Province /State. Indian Subcontinent. India.

TDWG4. Kerala.

Ischaemum triticeum R. Br. *Prod.* 205. (1810).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), D.Sharp, D. & B.K.Simon, *AusGrass* (2002), J.F.Veldkamp, *Poaceae ms (Flora Malesiana)*.

TYPE from Australia. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Australia: Coll?.

Illustrations (Books): S.W.L.Jacobs, R.D.B.Whalley & D.J.B.Wheeler., *Grasses of New South Wales*, 4th edn (2008) (286), D.Sharp & B.K.Simon, *AusGrass*. Grasses of Australia. CD-Rom Version 1.0. (2002).

Images: D.Sharp & B.K.Simon, *AusGrass*. Grasses of Australia. CD-Rom Version 1.0. (2002);.

Derivation (Clifford & Bostock 2007): resembling *Triticum* with respect to the inflorescence.

Classification. Subfamily Panicoideae. Tribe: Andropogoneae. Subtribe ISCHAEMINAE.

Habit, Vegetative Morphology. Perennial. Culms rambling, 100–200 cm long, rooting from lower nodes. Culm-internodes 3–10 cm long. Culm-nodes glabrous. Lateral branches ample. Leaf-sheaths loose, longer than adjacent culm internode, hirsute, with tubercle-based hairs. Ligule an eciliate membrane, 1 mm long. Leaf-blade base cordate. Leaf-blades linear or lanceolate, 8–15 cm long, 6–12 mm wide. Leaf-blade midrib prominent beneath. Leaf-blade margins scabrous. Leaf-blade apex acuminate.

Inflorescence. Inflorescence composed of racemes. Racemes 2–3, paired or digitate, appressed back to back, 5–10 cm long. Rhachis fragile at the nodes, angular, ciliate on margins. Rhachis internodes oblong, flat and forming a U or V shape with the pedicel in rear view. Rhachis internode tip transverse, cupuliform. Spikelets in pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, oblong, 0.8–1 length of internode, ciliate.

Sterile Spikelets. Companion sterile spikelets well-developed, male, oblong, laterally compressed, 6–10 mm long, as long as fertile, separately deciduous. Companion sterile spikelet glumes chartaceous, keeled, winged on keels. Companion sterile spikelet lemmas 2, enclosed by glumes, 1-awned.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets oblong, dorsally compressed, 6–10 mm long, falling entire, deciduous with accessory branch structures. Spikelet callus base truncate, inserted.

Glumes. Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma, shiny. Lower glume oblong, 1 length of spikelet, coriaceous, 2-keeled, keeled all along, keeled laterally, winged on keel, winged broadly, winged above. Lower glume surface flat. Lower glume margins ciliolate. Lower glume apex obtuse. Upper glume lanceolate, coriaceous, 1-keeled, winged on keel, 7–9 -veined. Upper glume primary vein ciliolate. Upper glume apex acute.

Florets. Basal sterile florets 1, male, with palea. Lemma of lower sterile floret lanceolate, membranous, 7 -veined, ciliolate on margins. Fertile lemma oblong, membranous, without keel, 5 -veined, more than 3-veined. Lemma apex dentate, 2 -fid, awned, 1 -awned. Principal lemma awn from a sinus, straight or geniculate, 8–12 mm long overall, with twisted column. Column of lemma awn glabrous.

Flower and Fruit. Anthers 3, 4 mm long.

Distribution (TDWG), Continent. Australasia.

Country /Province /State. Australia. Queensland, New South Wales.

TDWG4. North, Central, South East. Coast.

Ischaemum tropicum B.K. Simon. *Austrobaileya*, 3(1): 88 (1989).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), D.Sharp, D. & B.K.Simon, *AusGrass* (2002).

TYPE from Australia. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *S.T. Blake 17475*, 26 Apr 1947, Australia: Northern Territory, Katherine, 150 m (BRI; IT: CANB, DNA, K, L, MEL, NSW).

Illustrations (Books): D.Sharp & B.K.Simon, *AusGrass*. Grasses of Australia. CD-Rom Version 1.0. (2002).

Derivation (Clifford & Bostock 2007): Gk. tropikos, regions in which the sun is overhead twice a year. From tropical regions.

Classification. Subfamily Panicoideae. Tribe: Andropogoneae. Subtribe ISCHAEMINAE.

Habit, Vegetative Morphology. Perennial, caespitose. Rhizomes short. Culms erect, 80–120 cm long. Culm-nodes pubescent. Lateral branches lacking. Ligule a fringe of hairs, 2 mm long. Leaf-blades 8–20 cm long, 2–4 mm wide. Leaf-blade surface glabrous.

Inflorescence. Inflorescence composed of racemes. Racemes 2–3, paired or digitate, 4–6 cm long, bearing 8–14 fertile spikelets on each. Rhachis fragile at the nodes, angular, ciliate on margins. Rhachis internodes oblong, 4.5 mm long, flat and forming a U or V shape with the pedicel in rear view. Rhachis internode tip transverse, cupuliform. Spikelets in pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, oblong, 4 mm long, 0.75–0.8 length of fertile spikelet, ciliate.

Sterile Spikelets. Companion sterile spikelets represented by single glumes or rudimentary or well-developed, comprising 2 subequal glumes without lemmas or containing empty lemmas, elliptic, 2–7 mm long, shorter than fertile or as long as fertile or longer than fertile, separately deciduous. Companion sterile spikelet glumes coriaceous, keeled, 11 -veined, glabrous, mucous. Companion sterile spikelet lemmas 1-awned.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets elliptic, dorsally compressed, 5–5.5 mm long, 1.5–2 mm wide, falling entire, deciduous with accessory branch structures. Spikelet callus oblong, base truncate, inserted.

Glumes. Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma. Lower glume elliptic, 1 length of spikelet, chartaceous, 2-keeled, keeled above, keeled laterally, winged on keel, winged narrowly, winged above, 10 -veined. Lower glume surface convex, glabrous. Lower glume apex dentate, 2 -fid. Upper glume lanceolate, coriaceous, 1-keeled, 4 -veined. Upper glume surface glabrous. Upper glume apex acuminate, awned, 1 -awned, awn 2 mm long.

Florets. Basal sterile florets 1, male, with palea. Lemma of lower sterile floret lanceolate, 6 mm long, membranous, acute. Fertile lemma oblong, 5 mm long, membranous, without keel. Lemma apex lobed, 2 -fid, incised 0.33 of lemma length, awned, 1 -awned. Principal lemma awn from a sinus, geniculate, 12–16 mm long overall, with twisted column. Column of lemma awn glabrous. Palea 5 mm long.

Flower and Fruit. Anthers 3, 2.5 mm long.

Distribution (TDWG). Continent. Australasia.

Country /Province /State. Australia. Northern Territory, Queensland.

TDWG4. Darwin & Gulf. North.

Ischaemum tumidum Stapf ex Bor. *Kew Bull.* 450 (1952).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), N.L.Bor, *Grasses of Burma, Ceylon, India and Pakistan* (1960).

TYPE from India. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: India, Concan: Stocks (K holo).

Illustrations (Books): No illustration found (BKS).

Derivation (Clifford & Bostock 2007): L. swollen. Spikelets inflated.

Classification. Subfamily Panicoideae. Tribe: Andropogoneae. Subtribe ISCHAEMINAE.

Habit, Vegetative Morphology. Annual. Culms decumbent, 10–30 cm long. Culm-nodes glabrous or pubescent. Leaf-sheaths outer margin glabrous or hairy. Ligule a ciliolate membrane, 1.5 mm long. Leaf-blade base broadly rounded or cordate. Leaf-blades oblong or ovate, 2–5 cm long, 7–13 mm wide. Leaf-blade margins scabrous. Leaf-blade apex acute or acuminate.

Inflorescence. Inflorescence composed of racemes. Racemes 2, paired, 2–3 cm long. Rhachis fragile at the nodes, semiterete, glabrous on surface or pubescent on surface. Rhachis internodes inflated, 8.5 mm long. Rhachis internode tip transverse, cupuliform. Spikelets in pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, oblong, 1 mm long, 0.15 length of fertile spikelet, villous.

Sterile Spikelets. Companion sterile spikelets well-developed, male, oblong, laterally compressed, 4 mm long, shorter than fertile, separately deciduous. Companion sterile spikelet glumes chartaceous, keeled. Companion sterile spikelet lemmas 2, enclosed by glumes, entire, muticous.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets oblong, dorsally compressed, 6 mm long, falling entire, deciduous with accessory branch structures. Spikelet callus square, 1 mm long, pilose, base truncate, inserted.

Glumes. Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma. Lower glume oblong, 1 length of spikelet, coriaceous, 2-keeled, keeled all along, keeled laterally, winged on keel, winged narrowly. Lower glume primary vein ciliolate. Lower glume surface muricate, rough on flanks, glabrous or pilose. Lower glume hairs white. Lower glume apex acute. Upper glume lanceolate, coriaceous, much thinner above, 1-keeled, 3 -veined. Upper glume surface pilose.

Florets. Basal sterile florets 1, male, with palea. Lemma of lower sterile floret lanceolate, 4 mm long, hyaline, 3 -veined. Fertile lemma oblong, 4 mm long, hyaline, without keel, 3 -veined, 0–3 -veined. Lemma apex lobed, 2 -fid, incised 0.5 of lemma length, awned, 1 -awned. Principal lemma awn from a sinus, geniculate, 14 mm long overall, with twisted column. Column of lemma awn 7 mm long, glabrous. Palea 1 length of lemma.

Flower and Fruit. Anthers 3, 2.5–3 mm long.

Distribution (TDWG). Continent. Tropical Asia.

Country /Province /State. Indian Subcontinent. India.

TDWG4. Kerala. Maharashtra.

Ischaemum veldkampii Lasut. *Reinwardtia* 12: 257 (2006).

Illustrations (Journals): *Reinwardtia* (12 (3): 258, Fig.1 (2006)).

Classification. Subfamily Panicoideae. Tribe: Andropogoneae. Subtribe ISCHAEMINAE.

Distribution (TDWG). Continent. Tropical Asia.

Country /Province /State. Malesia. Sulawesi.

Ischaemum vembanadense Patil & D Cruz. *J. Bombay Nat. Hist Soc.*, 70(2): 324 (1974).

Accepted by: W.D. Clayton & K. Harman, *GrassBase* (2008) and online, U. Quattrocchi, *CRC World Dictionary of Grasses* (2006).

TYPE from India. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: India, Kerala, Allepy backwaters: Patil I-919.

Illustrations (Books): No illustration found (BKS).

Classification. Subfamily Panicoideae. Tribe: Andropogoneae. Subtribe ISCHAEMINAE.

Habit, Vegetative Morphology. Perennial, caespitose. Culms prostrate, 150–160 cm long. Culm-internodes smooth, distally pruinose. Culm-nodes swollen, glabrous. Lateral branches ample. Leaf-sheaths loose, outer margin hairy. Ligule an eciliate membrane, 5–10 mm long. Leaf-blade base with a false petiole. Leaf-blades lanceolate, 7–15 cm long, 10–15 mm wide. Leaf-blade apex acuminate.

Inflorescence. Inflorescence composed of racemes. Racemes 2, paired, appressed back to back, 4–7 cm long. Rhachis fragile at the nodes, angular, smooth on surface. Rhachis internodes oblong, flat and forming a U or V shape with the pedicel in rear view. Rhachis internode tip transverse, cupuliform. Spikelets in pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, oblong, 2 mm long.

Sterile Spikelets. Companion sterile spikelets well-developed, male, lanceolate, laterally compressed, 4–7 mm long, shorter than fertile, separately deciduous. Companion sterile spikelet glumes chartaceous, keeled, tuberculate on margins. Companion sterile spikelet lemmas 2, enclosed by glumes, 4.5 mm long.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets oblong, dorsally compressed, 6.5–7 mm long, falling entire, deciduous with accessory branch structures. Spikelet callus base truncate, inserted.

Glumes. Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma. Lower glume oblong, 1 length of spikelet, coriaceous, much thinner above, 2-keeled, keeled all along, keeled laterally, wingless. Lower glume surface flat, rugose. Lower glume apex acute. Upper glume ovate, 1 length of spikelet, coriaceous, 1-keeled. Upper glume margins ciliate.

Florets. Basal sterile florets 1, male, with palea. Lemma of lower sterile floret lanceolate, 6 mm long, hyaline, 3 -veined, ciliate on margins. Palea of lower sterile floret 5 mm long. Fertile lemma oblong, 5 mm long, membranous, without keel. Lemma margins ciliate. Lemma apex lobed, 2 -fid, muticous or awned, 1 -awned. Principal lemma awn from a sinus, curved. Palea 4–5 mm long.

Flower and Fruit. Anthers 3, 2 mm long.

Distribution (TDWG). Continent. Tropical Asia.

Country /Province /State. Indian Subcontinent. India.

TDWG4. Kerala.

Ischaemum wayanadense Ravi, Mohanan & Shaju. *Journal of the Bombay Natural History Society* 70(2): 324, 1973 (1974).

Accepted by: U. Quattrocchi, *CRC World Dictionary of Grasses* (2006).

TYPE from India. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: Kerala, Thelekampara: Ravi 33779.

Illustrations (Books): No illustration found (BKS).

Classification. Subfamily Panicoideae. Tribe: Andropogoneae. Subtribe ISCHAEMINAE.

Habit, Vegetative Morphology. Annual.

Distribution (TDWG). Continent. Tropical Asia.

Country /Province /State. Indian Subcontinent. India.

Kerala.

Ischaemum yadavii Harshala Gad & Janarth. *Kew Bull.* 62: 499 (2007).

TYPE from India. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: Goa: Surla, lateritic rocky plateau, 15°40'03.0"N, 74°10'28.0"E, ca. 825 m, 2 Oct 2005, *Harshala Gad & M.K. Janarthanam* 240, HT: CAL; IT: BSI, K, MH

Illustrations (Books): No illustration found (BKS).

Classification. Subfamily Panicoideae. Tribe: Andropogoneae. Subtribe ISCHAEMINAE.

Habit, Vegetative Morphology. Annual, caespitose. Culms erect, 20–45 cm long. Culm-nodes constricted, brown, glabrous or pubescent. Leaves cauline. Leaf-sheaths 5 cm long, keeled, glabrous on surface or pilose,

with tubercle-based hairs. Ligule an eciliate membrane, 0.5 mm long, pilose on abaxial surface, obtuse or acute. Leaf-blades 4–8.5 cm long, 3–5 mm wide. Leaf-blade surface pilose, sparsely hairy, hairy on both sides. Leaf-blade apex acuminate.

Inflorescence. Inflorescence composed of racemes. Peduncle 6.5 cm long. Racemes 2, paired, appressed back to back, 3–3.5 cm long. Rhachis fragile at the nodes, angular, ciliate on margins. Rhachis internodes clavate, 3.5 mm long, flat and forming a U or V shape with the pedicel in rear view. Rhachis internode tip transverse, notched. Spikelets in pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, oblong, 1.5 mm long, ciliate, hairy on one margin.

Sterile Spikelets. Companion sterile spikelets well-developed, male, lanceolate, 4 mm long, shorter than fertile. Companion sterile spikelet glumes coriaceous, 4 mm long, keeled, winged on keels, 9 -veined, muticous. Companion sterile spikelet lemmas 2, enclosed by glumes, muticous.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets ovate, dorsally compressed, 5 mm long, falling entire, deciduous with accessory branch structures. Spikelet callus oblong, base truncate, inserted.

Glumes. Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma. Lower glume ovate, 1 length of spikelet, coriaceous, much thinner above, 2-keeled, keeled all along, keeled laterally, winged on keel, winged narrowly, winged near apex, 10–11 -veined. Lower glume surface convex, rugose, rough on flanks. Lower glume apex acute. Upper glume ovate, 1 length of spikelet, coriaceous, 1-keeled, winged on keel, winged near apex, 3–5 -veined. Upper glume apex acute.

Florets. Basal sterile florets 1, male, with palea. Lemma of lower sterile floret elliptic, 4.5 mm long, hyaline, winged on keel, 3 -veined, acute. Palea of lower sterile floret 4 mm long. Fertile lemma oblong, 4 mm long, hyaline, without keel, winged on margins, 3 -veined, 0–3 -veined. Lemma margins ciliate. Lemma apex lobed, 2 -fid, awned, 1 -awned. Principal lemma awn from a sinus, geniculate, 15–25 mm long overall, with twisted column. Column of lemma awn 11 mm long, glabrous. Palea lanceolate, 3 mm long, hyaline.

Flower and Fruit. Lodicules 2, 1 mm long. Anthers 3, 1.5 mm long, yellow.

Distribution (TDWG). Continent. Tropical Asia.

Country /Province /State. Indian Subcontinent. India.

Goa.

Iseilema anthephoroides Hack. *DC. Monog. Phan.* vi. 683. (1889).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), N.L.Bor, *Grasses of Burma, Ceylon, India and Pakistan* (1960).

TYPE from India. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: India: Wallich 8767A (K iso) ; India, Deccan: Wight 2335 (K iso).

Illustrations (Books): K.M.Matthew, *Illustrations on the Flora of Tamilnadu Carnatic* (1982) (Pl.886 & 887).

Derivation (Clifford & Bostock 2007): Gk *oides*, resembling. Similar to *Anthephora*.

Classification. Subfamily Panicoideae. Tribe: Andropogoneae. Subtribe ANDROPOGONINAE.

Habit, Vegetative Morphology. Annual, caespitose. Culms erect or geniculately ascending, 20–100 cm long. Leaf-sheaths keeled. Ligule a ciliolate membrane. Leaf-blades 2.5–8 cm long, 3–5 mm wide. Leaf-blade margins tuberculate-ciliate, hairy at base. Leaf-blade apex obtuse.

Inflorescence. Synflorescence compound, linear.

Inflorescence composed of racemes, terminal and axillary, deciduous as a whole, subtended by a spatheole, enclosed. Spatheole elliptic, 0.75–1.2 cm long, herbaceous, without tubercles. Racemes 1, single, oblong, 0.4–0.8 cm long, bearing few fertile spikelets, bearing 1 fertile spikelets on each. Rhachis internodes linear, 0.5–0.8 mm long. Raceme-bases brief (truncate), pilose. Spikelets in threes. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 2 in the cluster. Pedicels present, filiform, 3–3.5 mm long.

Sterile Spikelets. Basal sterile spikelets well-developed, 4 in number, forming an involucre about the fertile, with both pairs arising at about the same level, pedicelled, deciduous with the fertile. Basal sterile spikelet pedicels 0.5–1 mm long. Basal sterile spikelets barren, elliptic, 6.5–7 mm long, equalling fertile. Basal sterile spikelet glumes herbaceous, glabrous or pilose.

Companion sterile spikelets represented by barren pedicels.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets lanceolate, dorsally compressed, 6–6.5 mm long, falling entire, deciduous with accessory branch structures.

Glumes. Glumes dissimilar, firmer than fertile lemma. Lower glume lanceolate, 1 length of spikelet, chartaceous, without keels, keel-less except near apex. Lower glume apex dentate, 2-fid, caudate. Upper glume lanceolate, 1 length of spikelet, chartaceous, 3-veined. Upper glume apex acuminate.

Florets. Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret subulate, hyaline, 2-veined. Fertile lemma linear, membranous, 1-veined, 0-3-veined, one-veined. Lemma apex entire, awned, 1-awned. Principal lemma awn geniculate, 12-14 mm long overall, with twisted column. Column of lemma awn glabrous. Palea absent or minute.

Flower and Fruit. Anthers 3, 2.5-2.75 mm long.

Distribution (TDWG). Continent. Tropical Asia.

Country /Province /State. Indian Subcontinent. India.

TDWG4. Kerala, Karnataka, Maharashtra, Tamilnadu.

Iseilema argutum (Nees ex Steud.) Anderss. *Nov. Act. Soc. Sc. Upsal. Ser. III. ii. 252.* (1856).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, N.L.Bor, *Grasses of Burma, Ceylon, India and Pakistan* (1960).

TYPE from India. **Basionym or Replaced Name:** *Anthistiria arguta* Nees ex Steud., *Syn. Pl. Gram.* 401 (1854). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: India: Wallich 8769 (K iso).

Illustrations (Books): No illustration found (BKS).

Derivation (Clifford & Bostock 2007): *L. arguo*, sharp or penetrating but originally meaning the exposure of a flaw in an argument. Lower glume two-toothed.

Classification. Subfamily Panicoideae. Tribe: Andropogoneae. Subtribe ANDROPOGONINAE.

Habit, Vegetative Morphology. Annual. Basal innovations flabellate. Culms erect, 10-30 cm long. Culm-nodes bearded. Ligule an eciliate membrane, 0.5 mm long. Leaf-blades 2-6 cm long, 2-3 mm wide. Leaf-blade apex obtuse.

Inflorescence. Synflorescence compound, scanty, 3-15 cm long.

Inflorescence composed of racemes, terminal and axillary, deciduous as a whole, subtended by a spatheole, enclosed. Spatheole lanceolate, 1-1.2 cm long, herbaceous, tuberculate (on midnerve & margin). Racemes 1, single, oblong, bearing few fertile spikelets, bearing 1 fertile spikelets on each. Rhachis internodes filiform, 1 mm long (below fertile spikelet). Raceme-bases brief (truncate), hirsute. Spikelets in threes (basal paired). Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 2 in the cluster. Pedicels present, filiform, 3 mm long.

Sterile Spikelets. Basal sterile spikelets well-developed, 4 in number, forming an involucre about the fertile, with both pairs arising at about the same level, pedicelled, deciduous with the fertile. Basal sterile spikelet pedicels oblong, 0.5-1 mm long. Basal sterile spikelets male, elliptic, 5 mm long, smaller than fertile. Basal sterile spikelet glumes herbaceous.

Companion sterile spikelets well-developed, comprising 2 subequal glumes without lemmas, linear, 2 mm long, shorter than fertile, separately deciduous. Companion sterile spikelet glumes chartaceous, glabrous, muticous.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets lanceolate, dorsally compressed, rostrate, 6 mm long, falling entire, deciduous with accessory branch structures. Spikelet callus bearded. Spikelet callus hairs 3 mm long.

Glumes. Glumes dissimilar, firmer than fertile lemma, shiny. Lower glume elliptic, 1 length of spikelet, coriaceous, without keels, keel-less except near apex. Lower glume apex obtuse. Upper glume lanceolate, 1 length of spikelet, coriaceous.

Florets. Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret hyaline. Fertile florets female. Fertile lemma linear, membranous, 1-veined, 0-3-veined, one-veined. Lemma apex entire, awned, 1-awned. Principal lemma awn geniculate, 18-20 mm long overall, with twisted column. Column of lemma awn glabrous. Palea absent or minute.

Distribution (TDWG). Continent. Tropical Asia.

Country /Province /State. Indo-China, Malesia. Myanmar. Java.

Iseilema calvum C. E. Hubbard. *Hook. Ic. Pl. iii. t. 3286* (1935).

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, Hughenden: *Hubbard & Winders 7173* (K holotype).

Illustrations (Books): C.A.Gardner, *Flora of Western Australia*, Vol 1, Part 1, *Gramineae* (1952) (349, Pl 102), D.Sharp & B.K.Simon, *AusGrass*. Grasses of Australia. CD-Rom Version 1.0. (2002).

Illustrations (Journals): *Hooker's Icones Plantarum* (t.3286 (1935)).

Derivation (Clifford & Bostock 2007): *L. bald.* Racemes glabrous.

Classification. Subfamily Panicoideae. Tribe: Andropogoneae. Subtribe **ANDROPOGONINAE**.

Habit, Vegetative Morphology. Annual, caespitose. Culms erect or geniculately ascending, 15–40 cm long, 4–6 -noded. Lateral branches ample. Leaf-sheaths keeled. Ligule a ciliolate membrane, 1 mm long. Leaf-blades conduplicate, 10–25 cm long, 3–6 mm wide, glaucous. Leaf-blade margins scabrous. Leaf-blade apex acute.

Inflorescence. Synflorescence compound, linear, 4–25 cm long.

Inflorescence composed of racemes, terminal and axillary, deciduous as a whole, subtended by a spatheole, enclosed. Spatheole elliptic, 1.2–1.7 cm long, chartaceous, without tubercles. Peduncle 0.3–0.6 cm long, scaberulous above. Racemes 1, single, oblong, 0.7–0.9 cm long, bearing few fertile spikelets, bearing 1 fertile spikelets on each. Rhachis glabrous on surface. Rhachis internodes linear, 0.5 mm long. Raceme-bases brief (truncate), glabrous. Spikelets in threes (basal paired). Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 2 in the cluster. Pedicels present, filiform, 3.5–4 mm long, scaberulous.

Sterile Spikelets. Basal sterile spikelets well-developed, 4 in number, forming an involucre about the fertile, with both pairs arising at about the same level, pedicelled, deciduous with the fertile. Basal sterile spikelet pedicels oblong, 0.8–1 mm long. Basal sterile spikelets male, oblong, 5.5–6.5 mm long, equalling fertile. Basal sterile spikelet glumes cartilaginous, glabrous.

Companion sterile spikelets well-developed, male, lanceolate or elliptic, 3–5 mm long, shorter than fertile, separately deciduous. Companion sterile spikelet glumes membranous, 11–13 -veined, scaberulous, glabrous, muticous. Companion sterile spikelet lemmas 2, enclosed by glumes.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets lanceolate, dorsally compressed, acuminate, 6–7 mm long, falling entire, deciduous with accessory branch structures.

Glumes. Glumes dissimilar, firmer than fertile lemma. Lower glume elliptic, 1 length of spikelet, coriaceous, without keels, keel-less except near apex, 8–12 -veined. Lower glume surface convex. Lower glume apex truncate. Upper glume lanceolate, 1 length of spikelet, coriaceous, 3 -veined. Upper glume apex acuminate.

Florets. Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret lanceolate, 5.5–6 mm long, membranous, 3 -veined. Fertile florets female. Fertile lemma linear, 3–5 mm long, membranous, 1 -veined, 0–3 -veined, one-veined. Lemma apex entire, awned, 1 -awned. Principal lemma awn geniculate, 15–22 mm long overall, with twisted column. Column of lemma awn 5–10 mm long, glabrous. Palea absent or minute.

Flower and Fruit. Anthers 3, 1.5 mm long. Caryopsis oblong or obovoid, 3 mm long.

Distribution (TDWG). Continent. Australasia.

Country /Province /State. Australia. Northern Territory, Queensland.

TDWG4. Victoria R & Barkly Tableland. North, Inland.

Isilema ciliatum C. E. Hubbard. *Hook. Ic. Pl. iii. sub t. 3286*, p. 6. (1935).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), D.Sharp, D. & B.K.Simon, *AusGrass* (2002).

TYPE from Australia. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: Australia, Hughenden: *Domin* .

Illustrations (Books): D.Sharp & B.K.Simon, *AusGrass*. Grasses of Australia. CD-Rom Version 1.0. (2002).

Derivation (Clifford & Bostock 2007): *L. cilium*, eyelid; -ata, possessing. Plant hairy overall or in part.

Classification. Subfamily Panicoideae. Tribe: Andropogoneae. Subtribe **ANDROPOGONINAE**.

Habit, Vegetative Morphology. Annual. Culms erect, 15–35 cm long. Leaf-sheaths keeled. Ligule a ciliolate membrane. Leaf-blades conduplicate, 6–12 cm long, 2–3 mm wide. Leaf-blade apex acute.

Inflorescence. Synflorescence compound, paniculate, 7 cm long.

Inflorescence composed of racemes, terminal and axillary, deciduous as a whole, subtended by a spatheole, enclosed. Spatheole elliptic, 1.2–1.5 cm long, herbaceous, tuberculate (on midnerve). Peduncle 0.2–0.3 cm long, tuberculate above. Racemes 1, single, oblong, 0.7–0.8 cm long, bearing few fertile spikelets, bearing 1 fertile spikelets on each. Rhachis pilose on surface. Rhachis hairs 2 mm long. Rhachis internodes linear, 1 mm long. Raceme-bases brief (truncate), pilose, with 2 mm long hairs. Spikelets in threes (basal paired). Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 2 in the cluster. Pedicels present, filiform, 3.5 mm long, glabrous or ciliate.

Sterile Spikelets. Basal sterile spikelets well-developed, 4 in number, forming an involucre about the fertile, with both pairs arising at about the same level, pedicelled, deciduous with the fertile. Basal sterile spikelet pedicels oblong, 1.5 mm long. Basal sterile spikelets male, oblong, 5–5.5 mm long, smaller than fertile. Basal sterile spikelet glumes cartilaginous, scaberulous, ciliate on margins.

Companion sterile spikelets well-developed, male, elliptic, 3–3.5 mm long, shorter than fertile, separately deciduous. Companion sterile spikelet glumes membranous, 7–9 -veined, tuberculate (on keels), glabrous, acute, muticous. Companion sterile spikelet lemmas 2, enclosed by glumes.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets lanceolate, dorsally compressed, acuminate, 7 mm long, falling entire, deciduous with accessory branch structures.

Glumes. Glumes dissimilar, firmer than fertile lemma. Lower glume elliptic, 1 length of spikelet, coriaceous, without keels, keel-less except near apex, 6 -veined. Lower glume primary vein tuberculate. Lower glume surface convex, glabrous. Lower glume apex emarginate. Upper glume lanceolate, 1 length of spikelet, coriaceous, 3 -veined. Upper glume surface glabrous. Upper glume apex acute.

Florets. Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret oblong, 4 mm long, hyaline, 0 -veined, without midvein, without lateral veins, emarginate. Fertile florets female. Fertile lemma linear, 2 mm long, membranous, 1 -veined, 0–3 -veined, one-veined. Lemma apex dentate, 2 -fid, awned, 1 -awned. Principal lemma awn from a sinus, geniculate, 18–22 mm long overall, with twisted column. Column of lemma awn 10–12 mm long, glabrous. Palea absent or minute.

Flower and Fruit. Anthers 3, 2 mm long.

Distribution (TDWG). Continent. Australasia.

Country /Province /State. Australia. Western Australia, Northern Territory, Queensland.

TDWG4. Kimberley. Darwin & Gulf, Victoria R & Barkly Tableland. Central, Inland.

Iseilema convexum C. E. Hubbard. *Hook. Ic. Pl.* iii. sub t. 3286, p. 8. (1935).

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, Darling Downs, Bybera: *White 9741*.

Illustrations (Books): D.Sharp & B.K.Simon, *AusGrass*. Grasses of Australia. CD-Rom Version 1.0. (2002).

Derivation (Clifford & Bostock 2007): *L. convex*. Glumes and/or lemmas markedly convex.

Classification. Subfamily Panicoideae. Tribe: Andropogoneae. Subtribe ANDROPOGONINAE.

Habit, Vegetative Morphology. Annual, caespitose, clumped loosely. Culms erect or geniculately ascending, 30–70 cm long, 2–3 -noded. Lateral branches lacking or sparse. Leaf-sheaths keeled. Ligule a ciliate membrane, 0.5 mm long. Leaf-blades conduplicate, 9–18 cm long, 3–5.5 mm wide. Leaf-blade surface scaberulous, rough adaxially. Leaf-blade margins scabrous. Leaf-blade apex acute.

Inflorescence. Synflorescence compound, linear, 25–35 cm long.

Inflorescence composed of racemes, terminal and axillary, deciduous as a whole, subtended by a spatheole, enclosed. Spatheole elliptic, 1–1.6 cm long, chartaceous, without tubercles. Peduncle 0.4–0.5 cm long, smooth or scaberulous above. Racemes 1, single, oblong, 0.6–0.8 cm long, bearing few fertile spikelets, bearing 1 fertile spikelets on each. Rhachis internodes linear, 0.8 mm long. Raceme-bases brief (truncate), pilose, with 2–2.5 mm long hairs. Spikelets in threes (basal paired). Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 2 in the cluster. Pedicels present, filiform, 2.5–3 mm long, puberulous.

Sterile Spikelets. Basal sterile spikelets well-developed, 4 in number, forming an involucre about the fertile, with both pairs arising at about the same level, pedicelled, deciduous with the fertile. Basal sterile spikelet pedicels oblong, 1–1.5 mm long. Basal sterile spikelets barren or male, oblong, 4–5 mm long, smaller than fertile. Basal sterile spikelet glumes cartilaginous, pubescent.

Companion sterile spikelets well-developed, containing empty lemmas or male, lanceolate or elliptic, 3–4 mm long, shorter than fertile, separately deciduous. Companion sterile spikelet glumes membranous, 9 -veined, pubescent, acute, muticous. Companion sterile spikelet lemmas 2, enclosed by glumes.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets lanceolate, dorsally compressed, acuminate, 5.5–6.5 mm long, falling entire, deciduous with accessory branch structures.

Glumes. Glumes dissimilar, firmer than fertile lemma. Lower glume elliptic, 1 length of spikelet, coriaceous, without keels, keel-less except near apex, 8–9 -veined. Lower glume surface flat or concave,

pubescent, hairy generally. Lower glume apex emarginate. Upper glume lanceolate, 1 length of spikelet, coriaceous, 3 -veined. Upper glume surface pubescent, hairy below. Upper glume apex acuminate.

Florets. Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret elliptic, 2.5–3 mm long, hyaline, 0 -veined, without midvein, without lateral veins, lobed, 2 -fid. Fertile florets female. Fertile lemma linear, 3 mm long, membranous, 1 -veined, 0–3 -veined, one-veined. Lemma apex lobed, 2 -fid, incised 0.33 of lemma length, awned, 1 -awned. Principal lemma awn from a sinus, geniculate, 16–20 mm long overall, with twisted column. Column of lemma awn 8–10 mm long, glabrous. Palea absent or minute.

Flower and Fruit. Anthers 3, 1.5 mm long. Caryopsis obovoid, 2.5 mm long.

Distribution (TDWG). Continent. Australasia.

Country /Province /State. Australia. Northern Territory, Queensland.

TDWG4. Victoria R & Barkly Tableland. Inland.

Iseilema dolichotrichum C. E. Hubbard. *Hook. Ic. Pl.* iii. t. 3285 (1935).

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, Duchess: *Hubbard 7347* (K holo).

Illustrations (Books): D.Sharp & B.K.Simon, *AusGrass*. Grasses of Australia. CD-Rom Version 1.0. (2002).

Illustrations (Journals): *Hooker's Icones Plantarum* (t.3285 (1935)).

Images: D.Sharp & B.K.Simon, *AusGrass*. Grasses of Australia. CD-Rom Version 1.0. (2002);

Derivation (Clifford & Bostock 2007): Gk. *dolichos*, narrow; *thrix*, hair. The raceme bases bear numerous long hairs.

Classification. Subfamily Panicoideae. Tribe: Andropogoneae. Subtribe **ANDROPOGONINAE**.

Habit, Vegetative Morphology. Annual, caespitose, clumped loosely. Culms erect or geniculately ascending, 6–8 cm long, 1–2 -noded. Culm-internodes distally glabrous. Culm-nodes glabrous or pubescent. Leaf-sheaths glandular (on keel), keeled. Ligule an eciliate membrane, 1 mm long. Leaf-blades conduplicate, 2–4 cm long, 1–2.5 mm wide, stiff, glaucous. Leaf-blade margins glandular, scaberulous. Leaf-blade apex acute.

Inflorescence. Synflorescence compound, paniculate, 3–4.5 cm long.

Inflorescence composed of racemes, terminal and axillary, deciduous as a whole, subtended by a spatheole, enclosed. Spatheole lanceolate or elliptic, 1–1.2 cm long, herbaceous, green, tuberculate (on midnerve). Peduncle 0.1–0.2 cm long, tuberculate above. Racemes 1, single, oblong, 0.7–0.8 cm long, bearing few fertile spikelets, bearing 1 fertile spikelets on each. Rhachis pilose on surface. Rhachis internodes linear, 2 mm long. Raceme-bases brief (truncate), hirsute, with 4–5 mm long hairs. Spikelets in threes (basal paired). Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 2 in the cluster. Pedicels present, filiform, 2.5–3 mm long, scabrous.

Sterile Spikelets. Basal sterile spikelets well-developed, 4 in number, forming an involucre about the fertile, with both pairs arising at about the same level, pedicelled, deciduous with the fertile. Basal sterile spikelet pedicels linear, 2–3 mm long. Basal sterile spikelets barren or male, oblong, 3–3.6 mm long, smaller than fertile. Basal sterile spikelet glumes chartaceous, smooth or scaberulous, scabrous on margins.

Companion sterile spikelets well-developed, comprising 2 subequal glumes without lemmas or containing empty lemmas or male, lanceolate, 2.3–3 mm long, shorter than fertile, separately deciduous. Companion sterile spikelet glumes chartaceous, 7 -veined, glabrous, muticous. Companion sterile spikelet lemmas 2, enclosed by glumes.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets lanceolate, dorsally compressed, acuminate, 4–5.5 mm long, falling entire, deciduous with accessory branch structures.

Glumes. Glumes dissimilar, firmer than fertile lemma. Lower glume elliptic, 1 length of spikelet, coriaceous, without keels, keel-less except near apex, 10 -veined. Lower glume apex truncate. Upper glume lanceolate, 1 length of spikelet, coriaceous, 3 -veined.

Florets. Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret oblong, 3 mm long, hyaline, 0 -veined, without midvein, without lateral veins, obtuse. Fertile florets female. Fertile lemma oblong, 3 mm long, membranous, 1 -veined, 0–3 -veined, one-veined. Lemma apex dentate, 2 -fid, awned, 1 -awned. Principal lemma awn from a sinus, geniculate, 15–20 mm long overall, with twisted column. Column of lemma awn glabrous. Palea absent or minute.

Flower and Fruit. Caryopsis obovoid, 1 mm long.

Distribution (TDWG). Continent. Australasia.

Country /Province /State. Australia. Western Australia, Northern Territory, Queensland.

TDWG4. Kimberley, Ereman. Central Australia. Inland.

Iseilema eremaeum S. T. Blake. *Proc. Roy. Soc. Queensl.* 49: 83 (1938).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), D.Sharp, D. & B.K.Simon, *AusGrass* (2002).

TYPE from Australia. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: IT: *S.T. Blake 12213*, 19 Jul 1936, Australia: Queensland: Gregory South Dist. (US-2959128).

Illustrations (Books): J.P.Jessop, G.R.M. Dashorst & F.M.James, *Grasses of South Australia* (2006) (526, Fig 448), C.A.Gardner, *Flora of Western Australia*, Vol 1, Part 1, *Gramineae* (1952) (349, Pl 102), J.R.Wheeler et al, *Flora of the Kimberley Region* (1992) (1184, Fig. 335), D.Sharp & B.K.Simon, *AusGrass*. Grasses of Australia. CD-Rom Version 1.0. (2002).

Derivation (Clifford & Bostock 2007): Gk. eremos, desert; -eum, belonging to. Desert species.

Classification Subfamily Panicoideae. Tribe: Andropogoneae. Subtribe **ANDROPOGONINAE**.

Habit, Vegetative Morphology. Annual, caespitose. Culms erect or geniculately ascending, 5–20 cm long, 1-noded. Leaf-sheaths longer than adjacent culm internode, eglandular, keeled. Ligule a ciliolate membrane, 0.7–0.9 mm long. Leaf-blades linear or lanceolate, conduplicate, 2–6 cm long, 1–4 mm wide, light green. Leaf-blade margins scaberulous. Leaf-blade apex acute.

Inflorescence. Synflorescence compound, paniculate, 2–10 cm long.

Inflorescence composed of racemes, terminal and axillary, deciduous as a whole, subtended by a spatheole, enclosed. Spatheole lanceolate, 0.6–1 cm long, membranous, without tubercles or tuberculate (on keel). Peduncle 0.1–0.2 cm long, tuberculate above. Racemes 1, single, oblong, 0.7–0.8 cm long, bearing few fertile spikelets, bearing 1 fertile spikelets on each. Rhachis pilose on surface. Rhachis hairs 2.5–3 mm long. Rhachis internodes linear, 0.5–1 mm long. Raceme-bases brief (truncate), hirsute, with 4–5 mm long hairs. Spikelets in threes (basal paired). Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 2 in the cluster. Pedicels present, filiform, 2.5–3 mm long, ciliate.

Sterile Spikelets. Basal sterile spikelets well-developed, 4 in number, forming an involucre about the fertile, with both pairs arising at about the same level, pedicelled, deciduous with the fertile. Basal sterile spikelet pedicels linear, 1.5 mm long. Basal sterile spikelets male, elliptic, 3–4 mm long, smaller than fertile. Basal sterile spikelet glumes coriaceous, smooth or scaberulous, smooth on margins or tuberculate on margins.

Companion sterile spikelets well-developed, male, lanceolate, 2–3 mm long, shorter than fertile, separately deciduous. Companion sterile spikelet glumes membranous, 7–9 -veined, smooth or tuberculate (on keels), glabrous, acute, mucous. Companion sterile spikelet lemmas 2, enclosed by glumes.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets lanceolate, dorsally compressed, acuminate, 5–5.5 mm long, falling entire, deciduous with accessory branch structures.

Glumes. Glumes dissimilar, firmer than fertile lemma. Lower glume elliptic, 1 length of spikelet, coriaceous, without keels, keel-less except near apex, 8 -veined. Lower glume surface pubescent, hairy above. Lower glume apex emarginate. Upper glume lanceolate, 1 length of spikelet, coriaceous, 3 -veined.

Florets. Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret ovate, 2.9–3.3 mm long, hyaline, 0 -veined, without midvein, without lateral veins, obtuse. Fertile florets female. Fertile lemma linear, 3.5 mm long, membranous, 1 -veined, 0–3 -veined, one-veined. Lemma apex entire, awned, 1 -awned. Principal lemma awn geniculate, 13–16 mm long overall, with twisted column. Column of lemma awn glabrous. Palea absent or minute.

Flower and Fruit. Caryopsis ellipsoid, 2.5 mm long.

Distribution (TDWG). Continent. Australasia.

Country /Province /State. **Australia.** Western Australia, Northern Territory, South Australia, Queensland.

TDWG4. Kimberley, Ereman. Central Australia. NW & Lake Eyre, Southern. Inland.

Iseilema fragile S. T. Blake. *Proc. Roy. Soc. Queensl.* xlix. 85 (1938).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), D.Sharp, D. & B.K.Simon, *AusGrass* (2002).

TYPE from Australia. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: IT: *S.T. Blake 11545*, 19 May 1936, Australia: Queensland: Burke District (AD, K, L, NSW, NT, PERTH, US-2959127).

Illustrations (Books): D.Sharp & B.K.Simon, *AusGrass*. Grasses of Australia. CD-Rom Version 1.0. (2002), C.A.Gardner, *Flora of Western Australia*, Vol 1, Part 1, *Gramineae* (1952) (as var. *fragile*), J.R.Wheeler et al, *Flora of the Kimberley Region* (1992).

Images: D.Sharp & B.K.Simon, *AusGrass*. Grasses of Australia. CD-Rom Version 1.0. (2002);

Classification. Subfamily Panicoideae. Tribe: Andropogoneae. Subtribe **ANDROPOGONINAE**.

Habit, Vegetative Morphology. Annual, caespitose. Culms erect or geniculately ascending, 10–20 cm long. Lateral branches ample. Leaf-sheaths keeled, antrorsely scabrous. Ligule an eciliate membrane or a ciliolate membrane, 0.75 mm long. Leaf-blades conduplicate, 3–7 cm long, 2–4 mm wide. Leaf-blade surface scaberulous, rough on both sides. Leaf-blade apex acute.

Inflorescence. Synflorescence compound, paniculate, 1–3 cm long, with simple branching (1 raceme per spatheole).

Inflorescence composed of racemes, terminal and axillary, deciduous as a whole, subtended by a spatheole, enclosed. Spatheole linear, 0.8–1.2 cm long, coriaceous, without tubercles. Peduncle 0.1 cm long, smooth, glabrous, disarticulating, disarticulating below uppermost sheaths. Racemes 1, single, linear, 0.8 cm long, bearing few fertile spikelets, bearing 1 fertile spikelets on each. Rhachis glabrous on surface. Rhachis internodes linear, 1 mm long. Spikelets in threes (basal paired). Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 2 in the cluster. Pedicels present, filiform, 3–3.5 mm long, puberulous.

Sterile Spikelets. Basal sterile spikelets represented by a single scale (vestige of pedicel & spikelet), 4 in number, forming an involucre about the fertile, with both pairs arising at about the same level, subsessile, deciduous with the fertile, 0.1 mm long, smaller than fertile.

Companion sterile spikelets well-developed, comprising 2 unequal glumes without lemmas or comprising 2 subequal glumes without lemmas or containing empty lemmas or male (1 developed, 1 reduced), lanceolate, 0–4.2 mm long, shorter than fertile, separately deciduous. Companion sterile spikelet glumes membranous, 4–6 -veined, glabrous, muticous. Companion sterile spikelet lemmas 2, enclosed by glumes.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets lanceolate, dorsally compressed, acuminate, 7 mm long, falling entire, deciduous with accessory branch structures.

Glumes. Glumes dissimilar, firmer than fertile lemma. Lower glume elliptic, 1 length of spikelet, cartilaginous, without keels, keel-less except near apex, 8 -veined. Lower glume apex emarginate. Upper glume lanceolate, 1 length of spikelet, coriaceous, 3 -veined.

Florets. Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret lanceolate, 4–4.2 mm long, hyaline, obtuse. Fertile florets female. Fertile lemma linear, 5 mm long, membranous, 1 -veined, 0–3 -veined, one-veined. Lemma apex dentate, 2 -fid, awned, 1 -awned. Principal lemma awn from a sinus, geniculate, 16–18 mm long overall, with twisted column. Column of lemma awn glabrous. Palea absent or minute.

Flower and Fruit. Caryopsis oblong, 3.75 mm long.

Distribution (TDWG). Continent. Australasia.

Country /Province /State. Australia. Western Australia, Northern Territory, Queensland.

TDWG4. Kimberley. Darwin & Gulf, Victoria R & Barkly Tableland. North, Inland.

Iseilema holei Haines. *Bot. Bihar & Orissa*, Pt. 5, 1055 (1924).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, N.L.Bor, Grasses of Burma, Ceylon, India and Pakistan (1960).

TYPE from India. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: India, Palamau: Coll? (K iso).

Illustrations (Books): No illustration found (BKS).

Classification. Subfamily Panicoideae. Tribe: Andropogoneae. Subtribe **ANDROPOGONINAE**.

Habit, Vegetative Morphology. Annual, caespitose. Culms 60–100 cm long. Culm-nodes glabrous or bearded. Leaf-sheaths 3.5–8.5 cm long, glabrous on surface. Ligule an eciliate membrane, 0.75–1 mm long. Leaf-blades 20–60 cm long, 3–5 mm wide. Leaf-blade surface glabrous. Leaf-blade apex acute or acuminate.

Inflorescence. Synflorescence compound, fasciculate.

Inflorescence composed of racemes, terminal and axillary, deciduous as a whole, subtended by a spatheole, enclosed. Spatheole linear, 0.5–1 cm long, herbaceous, tuberculate (on midnerve). Racemes 1, single, oblong, bearing few fertile spikelets, bearing 1 fertile spikelets on each. Rhachis internodes linear, 0.8–1 mm long. Raceme-bases brief (truncate). Spikelets in threes (basal paired). Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 2 in the cluster. Pedicels present, filiform, 2–2.5 mm long, ciliate.

Sterile Spikelets. Basal sterile spikelets well-developed, 4 in number, forming an involucre about the fertile, with both pairs arising at about the same level, pedicelled, deciduous with the fertile. Basal sterile spikelet pedicels linear, 0.5–0.8 mm long. Basal sterile spikelets male, lanceolate or oblong, 4.2–4.5 mm long, equalling fertile. Basal sterile spikelet glumes herbaceous, ciliate on margins.

Companion sterile spikelets well-developed, male, lanceolate, 2–3 mm long, shorter than fertile, separately deciduous. Companion sterile spikelet glumes chartaceous, glabrous, muticous. Companion sterile spikelet lemmas 2, enclosed by glumes.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets linear or lanceolate, dorsally compressed, 4.5–5 mm long, falling entire, deciduous with accessory branch structures. Spikelet callus pilose.

Glumes. Glumes dissimilar, firmer than fertile lemma. Lower glume lanceolate, 1 length of spikelet, cartilaginous, without keels, keel-less except near apex, 4 -veined. Lower glume primary vein scabrous. Lower glume apex dentate, 2 -fid. Upper glume lanceolate, 1 length of spikelet, cartilaginous.

Florets. Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret hyaline. Fertile florets female. Fertile lemma linear, membranous, 1 -veined, 0–3 -veined, one-veined. Lemma apex entire, awned, 1 -awned. Principal lemma awn geniculate, 17–18 mm long overall, with twisted column. Column of lemma awn glabrous. Palea absent or minute.

Flower and Fruit. Anthers 3, 2–2.5 mm long.

N = 8 (1 ref TROPICOS).

Distribution (TDWG). Continent. Tropical Asia.

Country /Province /State. Indian Subcontinent. India.

TDWG4. Bihar.

Iseilema holmesii S. T. Blake. *Univ. Queensl. Papers, Dept. Biol.*, ii. No. 3, 59 (1944).

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, Kunmunya Mission: *Holmes* (BRI holo, MEL).

Illustrations (Books): C.E.Hubbard, *Grasses* (1968) (& as *I. filipes*), C.A.Gardner, *Flora of Western Australia*, Vol 1, Part 1, *Gramineae* (1952) (349, Pl 102), J.R.Wheeler et al, *Flora of the Kimberley Region* (1992) (1184, Fig. 335), D.Sharp & B.K.Simon, *AusGrass*. Grasses of Australia. CD-Rom Version 1.0. (2002).

Derivation (Clifford & Bostock 2007): In honor of G. E. Holmes (fl.1940–1944) Australian cleric and plant collector.

Classification. Subfamily Panicoideae. Tribe: Andropogoneae. Subtribe ANDROPOGONINAE.

Habit, Vegetative Morphology. Annual. Culms erect, slender, 20–40 cm long, 1–2 -noded. Culm-nodes glabrous. Leaf-sheaths keeled, glabrous on surface. Ligule a ciliate membrane, 0.6–0.8 mm long. Leaf-blades flat or conduplicate, 6–13 cm long, 4–5 mm wide. Leaf-blade surface scaberulous, rough on both sides. Leaf-blade margins tuberculate-ciliate. Leaf-blade apex acute.

Inflorescence. Synflorescence compound, scanty, 2–10 cm long.

Inflorescence composed of racemes, terminal and axillary, deciduous as a whole, subtended by a spatheole, enclosed. Spatheole lanceolate or elliptic, 1.2–1.5 cm long, herbaceous, tuberculate (on midnerve). Peduncle 0.3–0.7 cm long, scaberulous above. Racemes 1, single, oblong, 0.7–0.8 cm long, bearing few fertile spikelets, bearing 1 fertile spikelets on each. Rhachis internodes filiform, 1.7–1.9 mm long (below fertile spikelet). Raceme-bases brief (truncate), pilose, with 0.5 mm long hairs. Spikelets in threes (basal paired). Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 2 in the cluster. Pedicels present, filiform, 1.9–2 mm long, pubescent.

Sterile Spikelets. Basal sterile spikelets well-developed, 4 in number, forming an involucre about the fertile, with both pairs arising at about the same level, pedicelled, deciduous with the fertile. Basal sterile spikelet pedicels oblong, 0.4–0.7 mm long. Basal sterile spikelets barren or male, elliptic or oblong, 4.5–5 mm long, larger than fertile. Basal sterile spikelet glumes herbaceous, scabrous on margins or ciliate on margins.

Companion sterile spikelets well-developed, containing empty lemmas, lanceolate, 3.2–3.3 mm long, shorter than fertile, separately deciduous. Companion sterile spikelet glumes chartaceous, 7 -veined, scaberulous or tuberculate, glabrous, muticous. Companion sterile spikelet lemmas 2, enclosed by glumes.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets lanceolate, dorsally compressed, 4 mm long, falling entire, deciduous with accessory branch structures. Spikelet callus pilose. Spikelet callus hairs 1.2 mm long.

Glumes. Glumes dissimilar, firmer than fertile lemma. Lower glume elliptic, 1 length of spikelet, coriaceous, without keels, keel-less except near apex. Lower glume primary vein scaberulous. Lower glume surface asperulous, rough above. Lower glume apex truncate. Upper glume lanceolate, 1 length of spikelet, coriaceous, 3 -veined.

Florets. Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret hyaline. Fertile florets female. Fertile lemma linear, 3 mm long, membranous, 1 -veined, 0–3 -veined, one-veined. Lemma apex entire, awned, 1 -awned. Principal lemma awn geniculate, 22–24 mm long overall, with twisted column. Column of lemma awn glabrous. Palea absent or minute.

Flower and Fruit. Anthers 3, 3 mm long.

Distribution (TDWG). Continent. Australasia.

Country /Province /State. Australia. Western Australia.

TDWG4. Kimberley.

Iseilema hubbardii Uppuluri. *Journ. Bombay Nat. Hist. Soc.* lxx. 665 (1969).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online.

TYPE from India. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: India, Ujjain: Murty IAU3 (K holo).

Illustrations (Books): No illustration found (BKS).

Derivation (Clifford & Bostock 2007): in honor of Charles Edward Hubbard (1900–1980) English agrostologist.

Classification. Subfamily Panicoideae. Tribe: Andropogoneae. Subtribe ANDROPOGONINAE.

Habit, Vegetative Morphology. Annual. Culms prostrate, 25–40 cm long, rooting from lower nodes. Ligule a ciliolate membrane. Leaf-blades 2.5–4 cm long, 3–5 mm wide.

Inflorescence. Synflorescence compound, linear.

Inflorescence composed of racemes, terminal and axillary, deciduous as a whole, subtended by a spatheole, enclosed. Spatheole elliptic, herbaceous. Racemes 1, single, oblong, bearing few fertile spikelets, bearing 1 fertile spikelets on each. Rhachis internodes linear. Raceme-bases brief (truncate). Spikelets in threes. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 2 in the cluster. Pedicels present, filiform, 3–4 mm long.

Sterile Spikelets. Basal sterile spikelets well-developed, 4 in number, forming an involucre about the fertile, with both pairs arising at about the same level, pedicelled, deciduous with the fertile. Basal sterile spikelet pedicels oblong, 1.25–1.5 mm long. Basal sterile spikelets male, lanceolate or oblong, 7–9 mm long, equalling fertile. Basal sterile spikelet glumes herbaceous, acuminate.

Companion sterile spikelets rudimentary, ovate, 0.5 mm long.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets lanceolate, dorsally compressed, 7–8 mm long, falling entire, deciduous with accessory branch structures. Spikelet callus oblong, 1 mm long, pilose, hairy above.

Glumes. Glumes dissimilar, firmer than fertile lemma. Lower glume lanceolate or oblong, 1 length of spikelet, chartaceous, without keels, keel-less except near apex, 7 -veined. Lower glume surface pubescent, hairy in the middle. Lower glume margins ciliate. Lower glume apex dentate, 2 -fid, caudate. Upper glume lanceolate, 1 length of spikelet, chartaceous, 3 -veined. Upper glume apex acuminate.

Florets. Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret subulate, 4 mm long, hyaline, 2 -veined. Fertile lemma linear, 4 mm long, membranous, 1 -veined, 0–3 -veined, one-veined. Lemma apex entire, awned, 1 -awned. Principal lemma awn geniculate, 18 mm long overall, with twisted column. Column of lemma awn 9 mm long, glabrous. Palea absent or minute.

Flower and Fruit. Anthers 3, 3 mm long. Caryopsis with adherent pericarp, ellipsoid, dorsally compressed. Embryo 0.75 length of caryopsis.

Distribution (TDWG). Continent. Tropical Asia.

Country /Province /State. Indian Subcontinent. India.

TDWG4. Madhya Pradesh.

Iseilema laxum Hack. *DC. Monog. Phan.* vi. 682 (1889).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), N.L.Bor, *Grasses of Burma, Ceylon, India and Pakistan* (1960).

TYPE from India. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: India, Tschanda: Duthie (K isosyn) ; India, Patna: Wallich 8767B (K isosyn) ; India, Patna: Wallich 8767C (K isosyn) ; India, Deccan: Wight 1711a (K isosyn).

Recent Synonyms: *Iseilema jainianum* Umamaheswari & P.Daniel, *J. Bombay Nat. Hist. Soc.* 98(3): 425 (2001).

Illustrations (Books): K.M.Matthew, *Further Illustrations on the Flora of Tamilnadu Carnatic* (1988) (pl.794 & pl.795).

Derivation (Clifford & Bostock 2007): L. loose. Inflorescence much branched either as a single panicle or from branching of the culms.

Classification. Subfamily Panicoideae. Tribe: Andropogoneae. Subtribe **ANDROPOGONINAE**.

Habit, Vegetative Morphology. Perennial, mat forming or caespitose. Culms geniculately ascending, 20–60 cm long. Culm-nodes glabrous. Ligule a ciliate membrane. Leaf-blades 2–15 cm long, 2–4 mm wide, glaucous. Leaf-blade apex obtuse or abruptly acute.

Inflorescence. Synflorescence compound, linear, 3–20 cm long.

Inflorescence composed of racemes, terminal and axillary, deciduous as a whole, subtended by a spatheole, enclosed. Spatheole lanceolate, 1–1.5 cm long, herbaceous, without tubercles, glabrous. Racemes 1, single, oblong, bearing few fertile spikelets, bearing 1 fertile spikelets on each. Raceme-bases brief (truncate). Spikelets in threes (basal paired). Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 2 in the cluster. Pedicels present, filiform.

Sterile Spikelets. Basal sterile spikelets well-developed, 4 in number, forming an involucre about the fertile, with both pairs arising at about the same level, pedicelled, deciduous with the fertile, male, lanceolate, 3–6 mm long, smaller than fertile or equalling fertile or larger than fertile. Basal sterile spikelet glumes herbaceous, ciliate on margins.

Companion sterile spikelets well-developed, male, lanceolate, 2.5–6 mm long, shorter than fertile or as long as fertile or longer than fertile, separately deciduous. Companion sterile spikelet glumes cartilaginous, glabrous, muticous. Companion sterile spikelet lemmas 2, enclosed by glumes.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets elliptic, dorsally compressed, 4–5 mm long, falling entire, deciduous with accessory branch structures. Spikelet callus bearded.

Glumes. Glumes dissimilar, firmer than fertile lemma. Lower glume elliptic, 1 length of spikelet, cartilaginous, without keels, keel-less except near apex. Lower glume apex dentate, 2 -fid. Upper glume lanceolate, 1 length of spikelet, coriaceous, 3 -veined. Upper glume apex acuminate.

Florets. Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret hyaline. Fertile lemma linear, membranous, 1 -veined, 0–3 -veined, one-veined. Lemma apex entire, awned, 1 -awned. Principal lemma awn geniculate, 8–13 mm long overall, with twisted column. Column of lemma awn glabrous. Palea absent or minute.

Distribution (TDWG). Continent. Tropical Asia.

Country /Province /State. Indian Subcontinent, Indo-China. India, Sri Lanka. Myanmar.

Iseilema macratherum Domin. *Biblioth. Bot.* 1 v. 283 (1915).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), D.Sharp, D. & B.K.Simon, *AusGrass* (2002).

TYPE from Australia. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Australia, Chillagoe: *Domin* .

Illustrations (Books): C.A.Gardner, *Flora of Western Australia*, Vol 1, Part 1, *Gramineae* (1952) (349, Pl 102), J.R.Wheeler et al, *Flora of the Kimberley Region* (1992) (1184, Fig. 335), D.Sharp & B.K.Simon, *AusGrass*. Grasses of Australia. CD-Rom Version 1.0. (2002), K.Domin, *Bibliotheca Botanica* 85 (1915) (Pl. 12, Pl.13).

Derivation (Clifford & Bostock 2007): Gk. makros, large; antheros, blooming. Panicle large.

Classification. Subfamily Panicoideae. Tribe: Andropogoneae. Subtribe **ANDROPOGONINAE**.

Habit, Vegetative Morphology. Annual, caespitose. Culms erect or geniculately ascending, 25–70 cm long. Leaf-sheaths keeled. Ligule a ciliolate membrane. Leaf-blades flat or conduplicate, 10–25 cm long, 2–6 mm wide.

Inflorescence. Synflorescence compound, linear, 5–20 cm long.

Inflorescence composed of racemes, terminal and axillary, deciduous as a whole, subtended by a spatheole, enclosed. Spatheole lanceolate or elliptic, 1–1.6 cm long, herbaceous, without tubercles. Peduncle 0.2–0.35 cm long, disarticulating, disarticulating below uppermost sheaths (raceme eventually disarticulating). Racemes 1, single, oblong, 0.8–1 cm long, bearing few fertile spikelets, bearing 1 fertile spikelets on each. Rhachis internodes linear, 1–3 mm long. Raceme-bases brief (truncate). Spikelets in threes. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 2 in the cluster. Pedicels present, filiform, 3.5–4 mm long, pubescent.

Sterile Spikelets. Basal sterile spikelets well-developed, 4 in number, forming an involucre about the fertile, with both pairs arising at about the same level, pedicelled, deciduous with the fertile. Basal sterile spikelet pedicels 1.5–2 mm long. Basal sterile spikelets barren or male, elliptic or oblong, 4–4.5 mm long, smaller than fertile. Basal sterile spikelet glumes membranous, scaberulous.

Companion sterile spikelets well-developed, male, lanceolate, 3–5 mm long, shorter than fertile, separately deciduous. Companion sterile spikelet glumes cartilaginous, 5–7 -veined, glabrous, muticous.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets lanceolate, dorsally compressed, 6–7 mm long, falling entire, deciduous with accessory branch structures.

Glumes. Glumes dissimilar, firmer than fertile lemma. Lower glume lanceolate, 1 length of spikelet, coriaceous, without keels, keel-less except near apex, 6–9 -veined. Lower glume apex entire, truncate. Upper glume lanceolate, 1 length of spikelet, coriaceous, 3 -veined. Upper glume apex acuminate.

Florets. Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret oblong, 3 mm long, hyaline, 0 -veined. Fertile lemma linear, 5 mm long, membranous, 1 -veined, 0–3 -veined, one-veined. Lemma apex entire, awned, 1 -awned. Principal lemma awn geniculate, 20–30 mm long overall, with twisted column. Column of lemma awn 8–15 mm long, glabrous. Palea absent or minute.

Flower and Fruit. Caryopsis with adherent pericarp, oblong, 2.5 mm long.

Distribution (TDWG). Continent. Australasia.

Country /Province /State. Australia. Western Australia, Northern Territory, South Australia, Queensland.

TDWG4. Kimberley, Eremean. Darwin & Gulf, Victoria R & Barkly Tableland, Central Australia. NW & Lake Eyre. North, Central, Inland.

Iseilema maculatum Jansen. *Reinwardtia*, ii. 302 (1953).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online.

TYPE from Indonesia. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Indonesia, Lesser Sunda Is., Elbert: Sunda Exped. 4685 (L holo).

Illustrations (Books): No illustration found (BKS).

Derivation (Clifford & Bostock 2007): *L. macula*, spot; -atum, possessing. Glumes with purple spots.

Classification. Subfamily Panicoideae. Tribe: Andropogoneae. Subtribe ANDROPOGONINAE.

Habit, Vegetative Morphology. Annual. Basal innovations flabellate. Culms erect, 25–40 cm long. Culm-internodes distally glabrous. Leaf-sheaths keeled. Ligule a ciliolate membrane, 1 mm long, ciliate from base of abaxial surface, obtuse. Leaf-blades conduplicate, 1.5 mm wide, flaccid. Leaf-blade surface glabrous, hairless except near base.

Inflorescence. Synflorescence compound, scanty, 8–20 cm long.

Inflorescence composed of racemes, terminal and axillary, deciduous as a whole, subtended by a spatheole, enclosed. Spatheole lanceolate, 1–1.5 cm long, herbaceous, without tubercles, glabrous. Peduncle 1 cm long, pilose above (at tip). Racemes 1, single, oblong, bearing few fertile spikelets, bearing 1 fertile spikelets on each. Raceme-bases brief (truncate). Spikelets in threes (basal paired). Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 2 in the cluster. Pedicels present, filiform, 2.5–3 mm long, ciliate.

Sterile Spikelets. Basal sterile spikelets well-developed, 4 in number, forming an involucre about the fertile, with both pairs arising at about the same level, pedicelled, deciduous with the fertile, male, elliptic, 4 mm long, equalling fertile. Basal sterile spikelet glumes herbaceous.

Companion sterile spikelets well-developed, male, lanceolate, 4.5 mm long, longer than fertile, separately deciduous. Companion sterile spikelet glumes cartilaginous, glabrous, ciliolate on margins, muticous. Companion sterile spikelet lemmas 2, enclosed by glumes.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets lanceolate, dorsally compressed, 4 mm long, falling entire, deciduous with accessory branch structures.

Glumes. Glumes dissimilar, firmer than fertile lemma, shiny. Lower glume lanceolate, 1 length of spikelet, cartilaginous, without keels, keel-less except near apex. Lower glume surface convex. Lower glume apex dentate, 2 -fid. Upper glume lanceolate, 1 length of spikelet, coriaceous, 3 -veined. Upper glume apex acuminate.

Florets. Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret hyaline. Fertile lemma linear, 2 mm long, hyaline, 1 -veined, 0–3 -veined, one-veined. Lemma apex lobed, 2 -fid, awned, 1 -awned. Principal lemma awn geniculate, 10–20 mm long overall, with twisted column. Column of lemma awn glabrous. Palea absent or minute.

Flower and Fruit. Anthers 3, 2 mm long, purple.

Distribution (TDWG). Continent. Tropical Asia.

Country /Province /State. Malesia. Lesser Sunda Is.

Iseilema membranaceum (Lindl.) Domin. *Biblioth. Bot.* 85: 280 (1915).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), D.Sharp, D. & B.K.Simon, *AusGrass* (2002).

TYPE from Australia. **Basionym or Replaced Name:** *Anthistiria membranacea* Lindl., *Trop. Austr.* 88 (1848). T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: Australia, Narran R.: Coll?.

Illustrations (Books): J.P.Jessop, G.R.M. Dashorst & F.M.James, *Grasses of South Australia* (2006) (527, Fig 449), S.W.L.Jacobs, R.D.B.Whalley & D.J.B.Wheeler., *Grasses of New South Wales*, 4th edn (2008) (286), T.D.Stanley & E.Ross, *Flora of South East Queensland, Gramineae* (1989) (267, Fig. 40), D.Sharp & B.K.Simon, *AusGrass*. Grasses of Australia. CD-Rom Version 1.0. (2002), K.Domin, *Bibliotheca Botanica* 85 (1915) (Pl.12, Pl.13 as *Lactinostachys*).

Images: D.Sharp & B.K.Simon, *AusGrass*. Grasses of Australia. CD-Rom Version 1.0. (2002);.

Derivation (Clifford & Bostock 2007): L. membrana, membrane; -acea, resembling. Inflorescence bracts or glumes papery.

Classification. Subfamily Panicoideae. Tribe: Andropogoneae. Subtribe ANDROPOGONINAE.

Habit, Vegetative Morphology. Annual, caespitose. Culms erect or geniculately ascending, 5–40(–90) cm long. Leaf-sheaths keeled. Ligule a ciliolate membrane. Leaf-blades flat or conduplicate, 2–20 cm long, 2–5 mm wide.

Inflorescence. Synflorescence compound, linear, 10–18 cm long.

Inflorescence composed of racemes, terminal and axillary, deciduous as a whole, subtended by a spatheole, enclosed. Spatheole elliptic, 0.8–1.2 cm long, herbaceous, without tubercles. Racemes 1, single, oblong, 0.5–0.7 cm long, bearing few fertile spikelets, bearing 1 fertile spikelets on each. Rhachis hairs mainly at internode tip, 1–2 mm long. Rhachis internodes linear, 0.5–1 mm long. Raceme-bases brief (truncate), glabrous or pilose, with 2 mm long hairs. Spikelets in threes. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 2 in the cluster. Pedicels present, filiform, 2.5–3 mm long, scabrous, glabrous.

Sterile Spikelets. Basal sterile spikelets well-developed, 4 in number, forming an involucre about the fertile, with both pairs arising at about the same level, pedicelled, deciduous with the fertile. Basal sterile spikelet pedicels 1.5–2 mm long. Basal sterile spikelets barren or male, oblong, 3–4 mm long, smaller than fertile. Basal sterile spikelet glumes coriaceous, scaberulous.

Companion sterile spikelets well-developed, containing empty lemmas or male, elliptic or ovate, 2–3.5 mm long, shorter than fertile, separately deciduous. Companion sterile spikelet glumes cartilaginous, 7–9 -veined, scaberulous, glabrous, muticous.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets lanceolate, dorsally compressed, 5–6 mm long, falling entire, deciduous with accessory branch structures.

Glumes. Glumes dissimilar, firmer than fertile lemma. Lower glume lanceolate, 1 length of spikelet, coriaceous, without keels, keel-less except near apex, 8 -veined. Lower glume surface asperulous. Lower glume apex entire or dentate, 2 -fid, truncate. Upper glume lanceolate, 1 length of spikelet, coriaceous, 3 -veined. Upper glume apex acuminate.

Florets. Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret oblong, 2–3 mm long, hyaline, 0 -veined, without midvein, without lateral veins. Fertile florets female. Fertile lemma linear, 2.5–3.5 mm long, membranous, 1 -veined, 0–3 -veined, one-veined. Lemma apex entire, muticous or awned, 1 -awned. Principal lemma awn straight or geniculate, 0–15 mm long overall, without a column or with twisted column. Column of lemma awn glabrous. Palea absent or minute.

Flower and Fruit. $2n = 18$ (1 ref TROPICOS).

Distribution (TDWG). Continent. Australasia.

Country /Province /State. **Australia.** Western Australia, Northern Territory, South Australia, Queensland, New South Wales.

TDWG4. Kimberley, Eremean. Darwin & Gulf, Victoria R & Barkly Tableland, Central Australia. NW & Lake Eyre, Southern. North, Central, South East, Inland. Tablelands, Western Slopes, Western Plains.

Iseilema minutiflorum Jansen. *Acta Bot. Neerl.* ii. 382 (1953).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online.

TYPE from Indonesia. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: Indonesia, Lesser Sunda Is., Sumba Is.: Monod de Froideville 2012 (BO holo).

Illustrations (Books): No illustration found (BKS).

Derivation (Clifford & Bostock 2007): L. minutus, very small; flos, flower. Spikelets or florets very small.

Classification. Subfamily Panicoideae. Tribe: Andropogoneae. Subtribe ANDROPOGONINAE.

Habit, Vegetative Morphology. Annual. Culms erect, 20–30 cm long. Leaf-sheaths keeled. Ligule a fringe of hairs. Leaf-blades flat or conduplicate, 6–12 cm long, 2–2.5 mm wide. Leaf-blade surface glabrous. Leaf-blade margins tuberculate-ciliate, hairy at base. Leaf-blade apex acute.

Inflorescence. Synflorescence compound, scanty, 15–20 cm long.

Inflorescence composed of racemes, terminal and axillary, deciduous as a whole, subtended by a spatheole, enclosed. Spatheole lanceolate, 0.6–0.8 cm long, herbaceous, tuberculate (on midnerve). Racemes 1, single, oblong, bearing few fertile spikelets, bearing 1 fertile spikelets on each. Rhachis internodes linear. Raceme-bases brief (truncate), hirsute, with 2 mm long hairs. Spikelets in threes (basal paired). Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 2 in the cluster. Pedicels present, filiform, 2.5 mm long, scabrous, ciliate, hairy above.

Sterile Spikelets. Basal sterile spikelets well-developed, 4 in number, forming an involucre about the fertile, with both pairs arising at about the same level, pedicelled, deciduous with the fertile. Basal sterile spikelet pedicels oblong, 0.5 mm long. Basal sterile spikelets barren, linear or oblong, 4 mm long, equalling fertile. Basal sterile spikelet glumes herbaceous, ciliate on margins.

Companion sterile spikelets well-developed, containing empty lemmas, lanceolate, 2.7 mm long, shorter than fertile, separately deciduous. Companion sterile spikelet glumes chartaceous, 5 -veined, glabrous, muticous. Companion sterile spikelet lemmas 2, enclosed by glumes.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets lanceolate, dorsally compressed, 3.5 mm long, falling entire, deciduous with accessory branch structures.

Glumes. Glumes dissimilar, firmer than fertile lemma. Lower glume elliptic, 1 length of spikelet, coriaceous, without keels, keel-less except near apex. Lower glume surface tuberculate. Lower glume apex obtuse. Upper glume lanceolate, 1 length of spikelet, coriaceous.

Florets. Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret hyaline. Fertile florets female. Fertile lemma linear, membranous, 1 -veined, 0–3 -veined, one-veined. Lemma apex entire, awned, 1 -awned. Principal lemma awn geniculate, 10 mm long overall, with twisted column. Column of lemma awn 4 mm long, glabrous. Palea absent or minute.

Distribution (TDWG). Continent. Tropical Asia.

Country /Province /State. Malesia. Lesser Sunda Is.

Iseilema prostratum (L.) Anderss. *Nov. Act. Soc. Sc. Upsal. Ser. III. ii. 251* (1856).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), N.L.Bor, *Grasses of Burma, Ceylon, India and Pakistan* (1960).

TYPE from India. **Basionym or Replaced Name:** *Andropogon prostratus* L., *Mant. 2: 304* (1771). T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: India: Herb. Linn. 1211.8 (LINN lecto).

Illustrations (Books): No illustration found (BKS).

Derivation (Clifford & Bostock 2007): L. prosterno, throw to the ground. Culms creeping or wiry so as to fall on the ground.

Classification. Subfamily Panicoideae. Tribe: Andropogoneae. Subtribe ANDROPOGONINAE.

Habit, Vegetative Morphology. Perennial, mat forming or caespitose. Culms geniculately ascending, 10–60 cm long. Culm-nodes bearded. Ligule a ciliate membrane. Leaf-blades 3–20 cm long, 2–4 mm wide. Leaf-blade apex abruptly acute or acute or acuminate.

Inflorescence. Synflorescence compound, linear, 5–30 cm long.

Inflorescence composed of racemes, terminal and axillary, deciduous as a whole, subtended by a spatheole, enclosed. Spatheole lanceolate, 0.7–1.2 cm long, herbaceous, tuberculate (on midnerve). Racemes 1, single, oblong, bearing few fertile spikelets, bearing 1 fertile spikelets on each. Rhachis internodes linear. Raceme-bases brief (truncate). Spikelets in threes (basal paired). Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 2 in the cluster. Pedicels present, filiform.

Sterile Spikelets. Basal sterile spikelets well-developed, 4 in number, forming an involucre about the fertile, with both pairs arising at about the same level, pedicelled, deciduous with the fertile, male, 3–4 mm long, equalling fertile or larger than fertile. Basal sterile spikelet glumes herbaceous, ciliate on margins.

Companion sterile spikelets well-developed, male, lanceolate, 2.5–4.5 mm long, as long as fertile or longer than fertile, separately deciduous. Companion sterile spikelet glumes cartilaginous, glabrous, muticous. Companion sterile spikelet lemmas 2, enclosed by glumes.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret

male or barren, the upper fertile. Spikelets elliptic, dorsally compressed, 2.5–3 mm long, falling entire, deciduous with accessory branch structures.

Glumes. Glumes dissimilar, firmer than fertile lemma. Lower glume elliptic, 1 length of spikelet, cartilaginous, without keels, keel-less except near apex. Lower glume apex dentate, 2 -fid. Upper glume lanceolate, 1 length of spikelet, coriaceous, 3 -veined. Upper glume apex acuminate.

Florets. Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret hyaline. Fertile lemma linear, membranous, 1 -veined, 0–3 -veined, one-veined. Lemma apex entire, awned, 1 -awned. Principal lemma awn geniculate, 5–12 mm long overall, with twisted column. Column of lemma awn glabrous. Palea absent or minute.

Flower and Fruit. *N* = 20 (1 ref TROPICOS).

Distribution (TDWG). Continent. Tropical Asia.

Country /Province /State. Indian Subcontinent, Indo-China. India, Pakistan, Sri Lanka. Myanmar, Thailand.

Iseilema schmidii A.Camus. *Journ. Agric. Trop. & Bot. Appliq.* ii. 201 (1955).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online.

TYPE from Indochina. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Indochina, Cambodia, Sisophon: Schmid 2467.

Illustrations (Books): No illustration found (BKS).

Derivation (Clifford & Bostock 2007): In honor of Ludwig Bernhard Ehregott Schmid (1788–1859) German-born Indian missionary and plant collector.

Classification. Subfamily Panicoideae. Tribe: Andropogoneae. Subtribe **ANDROPOGONINAE**.

Habit, Vegetative Morphology. Perennial. Culms erect, 40–80 cm long. Culm-internodes distally glabrous. Culm-nodes pubescent. Leaf-sheaths keeled. Ligule an eciliate membrane. Leaf-blades 9–10 cm long, 1–3 mm wide, stiff. Leaf-blade surface scaberulous. Leaf-blade apex acuminate.

Inflorescence. Synflorescence compound, linear, 25 cm long.

Inflorescence composed of racemes, terminal and axillary, deciduous as a whole, subtended by a spatheole, enclosed. Spatheole lanceolate or elliptic, herbaceous, purple, tuberculate (on midnerve). Racemes 1, single, oblong, 1.2 cm long, bearing few fertile spikelets, bearing 1 fertile spikelets on each. Rhachis internodes linear, 1 mm long. Spikelets in threes (basal paired). Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 2 in the cluster. Pedicels present, filiform, 2 mm long, ciliate, hairy above.

Sterile Spikelets. Basal sterile spikelets well-developed, 4 in number, paired, forming an involucre about the fertile, with both pairs arising at about the same level, pedicelled, deciduous with the fertile. Basal sterile spikelet pedicels linear, 0.6–0.8 mm long. Basal sterile spikelets male, elliptic or oblong, 5.5 mm long, smaller than fertile. Basal sterile spikelet glumes herbaceous, tuberculate on margins and ciliate on margins.

Companion sterile spikelets well-developed, male, lanceolate or elliptic, 4 mm long, shorter than fertile, separately deciduous. Companion sterile spikelet glumes chartaceous, 7 -veined, tuberculate on margins, muticous. Companion sterile spikelet lemmas 2, enclosed by glumes.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets lanceolate, dorsally compressed, acuminate, 6.5 mm long, falling entire, deciduous with accessory branch structures.

Glumes. Glumes dissimilar, firmer than fertile lemma, shiny. Lower glume elliptic, 1 length of spikelet, coriaceous, pallid, without keels, keel-less except near apex. Lower glume primary vein smooth. Lower glume apex dentate, 2 -fid. Upper glume lanceolate, 1 length of spikelet, coriaceous. Upper glume apex acuminate.

Florets. Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret hyaline. Fertile lemma linear, membranous, 1 -veined, 0–3 -veined, one-veined. Lemma apex entire, awned, 1 -awned. Principal lemma awn geniculate, 11–12 mm long overall, with twisted column. Column of lemma awn glabrous. Palea absent or minute.

Distribution (TDWG). Continent. Tropical Asia.

Country /Province /State. Indo-China. Cambodia.

Iseilema siamense C. E. Hubbard. *Kew Bull.* 1927, 80. (1927).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

TYPE from Thailand. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Thailand, Menam Oasak: Kerr 7980 (K holo).

Illustrations (Books): No illustration found (BKS).

Derivation (Clifford & Bostock 2007): L. -ense, denoting origin. From Siam, now Thailand.

Classification. Subfamily Panicoideae. Tribe: Andropogoneae. Subtribe **ANDROPOGONINAE**.

Habit, Vegetative Morphology. Annual. Culms rambling, 15–18 cm long. Culm-nodes glabrous. Leaf-sheaths keeled, glabrous on surface. Ligule an eciliate membrane. Leaf-blades spreading or reflexed, 2–4 cm long, 4–5 mm wide, glaucous. Leaf-blade surface glabrous. Leaf-blade margins tuberculate-ciliate. Leaf-blade apex acute.

Inflorescence. Synflorescence compound, linear, 6–9 cm long.

Inflorescence composed of racemes, terminal and axillary, deciduous as a whole, subtended by a spatheole, enclosed. Spatheole lanceolate or ovate, 1.5–1.8 cm long, herbaceous, tuberculate (on midnerve), glabrous. Peduncle 0.8–1.2 cm long. Racemes 1, single, oblong, bearing few fertile spikelets, bearing 1 fertile spikelets on each. Rhachis internodes linear. Raceme-bases brief (truncate). Spikelets in threes (basal paired). Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 2 in the cluster. Pedicels present, filiform, 4–6 mm long, scaberulous, ciliate.

Sterile Spikelets. Basal sterile spikelets well-developed, 4 in number, forming an involucre about the fertile, with both pairs arising at about the same level, pedicelled, deciduous with the fertile. Basal sterile spikelet pedicels oblong, 1.5–2 mm long. Basal sterile spikelets barren, lanceolate or oblong, 6–7 mm long, smaller than fertile. Basal sterile spikelet glumes herbaceous, glabrous, scabrous on margins.

Companion sterile spikelets well-developed, male, linear or lanceolate, 5–6 mm long, shorter than fertile, separately deciduous. Companion sterile spikelet glumes chartaceous, tuberculate (on keels), glabrous, muticous. Companion sterile spikelet lemmas 2, enclosed by glumes.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets lanceolate, dorsally compressed, 9 mm long, falling entire, deciduous with accessory branch structures. Spikelet callus pilose. Spikelet callus hairs 2.5 mm long.

Glumes. Glumes dissimilar, firmer than fertile lemma. Lower glume elliptic, 1 length of spikelet, cartilaginous, without keels, keel-less except near apex, 12 -veined. Lower glume primary vein scaberulous. Lower glume surface asperulous, rough above. Lower glume apex acuminate. Upper glume lanceolate, 1 length of spikelet, cartilaginous, 3–5 -veined.

Florets. Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret hyaline. Fertile florets female. Fertile lemma linear, 3 mm long, membranous, 1 -veined, 0–3 -veined, one-veined. Lemma apex entire, awned, 1 -awned. Principal lemma awn geniculate, 20–25 mm long overall, with twisted column. Column of lemma awn glabrous. Palea absent or minute.

Flower and Fruit. Anthers 3, 1.5 mm long. Caryopsis with adherent pericarp, obovoid, 3–3.5 mm long.

Distribution (TDWG). Continent. Tropical Asia.

Country /Province /State. Indo-China. Cambodia, Thailand.

Iseilema thorelii A. Camus. *Bull. Mus. Hist. Nat. Paris*, xxiv. 450. (1918).

Accepted by: W.D. Clayton & K. Harman, *GrassBase* (2008) and online, U. Quattrocchi, *CRC World Dictionary of Grasses* (2006).

TYPE from Indochina. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: Indochina, Laos, Mekong to Bassao: Thorel.

Illustrations (Books): No illustration found (BKS).

Derivation (Clifford & Bostock 2007): in honor of Clovis Thorel (1833–1911) French botanist.

Classification. Subfamily Panicoideae. Tribe: Andropogoneae. Subtribe **ANDROPOGONINAE**.

Habit, Vegetative Morphology. Perennial. Culms erect, 90–130 cm long. Culm-nodes bearded. Leaf-sheaths keeled, glabrous on surface. Ligule an eciliate membrane. Leaf-blades 20–30 cm long, 2.5–5 mm wide. Leaf-blade midrib keeled beneath. Leaf-blade surface scaberulous, rough abaxially. Leaf-blade margins scaberulous. Leaf-blade apex acute or acuminate.

Inflorescence. Synflorescence compound, linear, 18–30 cm long.

Inflorescence composed of racemes, terminal and axillary, deciduous as a whole, subtended by a spatheole, enclosed. Spatheole lanceolate, 0.8–1 cm long, herbaceous, tuberculate (on midnerve). Peduncle 0.2 cm long, pilose above. Racemes 1, single, oblong, 0.6 cm long, bearing few fertile spikelets, bearing 1 fertile spikelets on each. Rhachis internodes linear, 1 mm long. Raceme-bases brief (truncate). Spikelets in threes (basal paired). Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 2 in the cluster. Pedicels present, filiform, 1 mm long.

Sterile Spikelets. Basal sterile spikelets well-developed, 4 in number, forming an involucre about the fertile, with both pairs arising at about the same level, pedicelled, deciduous with the fertile. Basal sterile spikelet pedicels linear, 0.5–1 mm long. Basal sterile spikelets male, oblong, 4.5–5 mm long, equalling fertile. Basal sterile spikelet glumes herbaceous, tuberculate on margins.

Companion sterile spikelets well-developed, male, linear or oblong, 4 mm long, shorter than fertile, separately deciduous. Companion sterile spikelet glumes chartaceous, tuberculate, glabrous, muticous. Companion sterile spikelet lemmas 2, enclosed by glumes.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets linear or oblong, dorsally compressed, 5 mm long, falling entire, deciduous with accessory branch structures.

Glumes. Glumes dissimilar, firmer than fertile lemma. Lower glume elliptic, 1 length of spikelet, coriaceous, without keels, keel-less except near apex. Lower glume primary vein scabrous. Lower glume apex truncate. Upper glume lanceolate, 1 length of spikelet, coriaceous.

Florets. Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret hyaline. Fertile florets female. Fertile lemma linear, membranous, 1 -veined, 0–3 -veined, one-veined. Lemma apex entire, awned, 1 -awned. Principal lemma awn geniculate, 8–10 mm long overall, with twisted column. Column of lemma awn glabrous. Palea absent or minute.

Distribution (TDWG). **Continent.** Tropical Asia.

Country /Province /State. Indo-China. Thailand.

Iseilema trichopus (Benth.) C. E. Hubbard. *Hook. Ic. Pl. iii. sub t. 3286*, p. 7 (1935).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), D.Sharp, D. & B.K.Simon, *AusGrass* (2002).

TYPE from Australia. **Basionym or Replaced Name:** *Anthistiria membranacea* var. *trichopus* Benth., *Fl. Austral. 7*: 544 (1878). T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: Australia, Hooker's Creek: *Mueller* (K holo).

Illustrations (Books): No illustration found (BKS).

Derivation (Clifford & Bostock 2007): Gk. thrix, hair; pous, foot. Racemes bearded at the base.

Classification. Subfamily Panicoideae. Tribe: Andropogoneae. Subtribe ANDROPOGONINAE.

Habit, Vegetative Morphology. Annual. Culms erect, 10–25 cm long, 1–2 -noded. Culm-internodes glandular (below nodes). Lateral branches sparse. Leaf-sheaths glandular (on keel), keeled. Ligule a ciliolate membrane, 1 mm long. Leaf-blades conduplicate, 6–12 cm long, 3–5.5 mm wide. Leaf-blade surface scaberulous, rough adaxially. Leaf-blade margins scabrous. Leaf-blade apex acute.

Inflorescence. Synflorescence compound, linear, 8–12 cm long.

Inflorescence composed of racemes, terminal and axillary, deciduous as a whole, subtended by a spatheole, enclosed. Spatheole elliptic, 1.2–1.5 cm long, chartaceous, tuberculate (on midnerve). Peduncle 0.3 cm long, tuberculate above. Racemes 1, single, oblong, 0.9–1 cm long, bearing few fertile spikelets, bearing 1 fertile spikelets on each. Rhachis pilose on surface. Rhachis hairs 3 mm long. Rhachis internodes linear, 1 mm long. Raceme-bases brief (truncate), hirsute, with 4.5 mm long hairs. Spikelets in threes (basal paired). Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 2 in the cluster. Pedicels present, filiform, 3–3.5 mm long, puberulous.

Sterile Spikelets. Basal sterile spikelets well-developed, 4 in number, forming an involucre about the fertile, with both pairs arising at about the same level, pedicelled, deciduous with the fertile. Basal sterile spikelet pedicels linear, 2 mm long. Basal sterile spikelets male, elliptic, 5–6 mm long, smaller than fertile. Basal sterile spikelet glumes cartilaginous, tuberculate (on keels), pubescent, smooth on margins.

Companion sterile spikelets well-developed, comprising 2 unequal glumes without lemmas, lanceolate, 3–4 mm long, shorter than fertile, separately deciduous. Companion sterile spikelet glumes membranous, 9 -veined, pubescent, acute, muticous.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets lanceolate, dorsally compressed, acuminate, 7 mm long, falling entire, deciduous with accessory branch structures.

Glumes. Glumes dissimilar, firmer than fertile lemma. Lower glume elliptic, 1 length of spikelet, coriaceous, without keels, keel-less except near apex, 8 -veined. Lower glume surface flat, pubescent, hairy generally. Lower glume apex emarginate. Upper glume lanceolate, 1 length of spikelet, coriaceous, 3 -veined. Upper glume surface pubescent, hairy below. Upper glume apex acute.

Florets. Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret elliptic, 3 mm long, hyaline, 0 -veined, without midvein, without lateral veins. Fertile florets female. Fertile lemma linear, 4 mm long, membranous, 1 -veined, 0–3 -veined, one-veined. Lemma apex lobed, 2 -fid, incised 0.15 of lemma length, awned, 1 -awned. Principal lemma awn from a sinus, geniculate, 15–18 mm long overall, with twisted column. Column of lemma awn 6 mm long, glabrous. Palea absent or minute.

Flower and Fruit. Anthers 3, 1.5 mm long. Caryopsis ellipsoid, 3–3.5 mm long.

Distribution (TDWG). Continent. Australasia.

Country /Province /State. Australia. Western Australia, Northern Territory.

TDWG4. Kimberley. Victoria R & Barkly Tableland.

Iseilema vaginiflorum Domin. *Biblioth. Bot.* 85: 281 (1915).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), D.Sharp, D. & B.K.Simon, *AusGrass* (2002).

TYPE from Australia. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: Australia, Hughenden: *Domin*.

Illustrations (Books): J.P.Jessop, G.R.M. Dashorst & F.M.James, *Grasses of South Australia* (2006) (528, Fig 450), C.A.Gardner, *Flora of Western Australia*, Vol 1, Part 1, *Gramineae* (1952) (347, Pl 101), J.R.Wheeler et al, *Flora of the Kimberley Region* (1992) (1184, Fig 335), S.W.L.Jacobs, R.D.B.Whalley & D.J.B.Wheeler., *Grasses of New South Wales*, 4th edn (2008) (287), J.C.Tothill, & J.B.Hacker. *The grasses of southern Queensland* (1983) (286), D.Sharp & B.K.Simon, *AusGrass*. Grasses of Australia. CD-Rom Version 1.0. (2002), K.Domin, *Bibliotheca Botanica* 85 (1915) (Pl.12, Pl.13).

Images: D.Sharp & B.K.Simon, *AusGrass*. Grasses of Australia. CD-Rom Version 1.0. (2002);.

Derivation (Clifford & Bostock 2007): *L. vagina*, sheath; flos, flower. The inflorescence hardly exceeds the ensheathing upper leaf.

Classification. Subfamily Panicoideae. Tribe: Andropogoneae. Subtribe ANDROPOGONINAE.

Habit, Vegetative Morphology. Annual, caespitose. Culms erect or geniculate ascending, 45–75 cm long. Leaf-sheaths keeled. Ligule a ciliolate membrane, 0.5–1 mm long. Leaf-blades flat or conduplicate, 10–20 cm long, 2.5–6 mm wide.

Inflorescence. Synflorescence compound, linear, 10–22 cm long, with principal spatheoles embracing a compact fascicle of racemes, each subtended by a subsidiary bract.

Inflorescence composed of racemes, terminal and axillary, deciduous as a whole, subtended by a spatheole, enclosed. Spatheole lanceolate, 0.9–1.2 cm long, coriaceous, without tubercles. Peduncle 1–2 cm long, disarticulating, disarticulating below uppermost sheaths (raceme eventually disarticulating). Racemes 1, single, oblong, 0.7–0.8 cm long, bearing few fertile spikelets, bearing 1 fertile spikelets on each. Rhachis hairs mainly at internode tip, 1–2 mm long. Rhachis internodes linear, 1 mm long. Raceme-bases brief (truncate), glabrous or pilose, with 1–1.5 mm long hairs. Spikelets in threes. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 2 in the cluster. Pedicels present, filiform, 2.5–3 mm long, glabrous or pubescent.

Sterile Spikelets. Basal sterile spikelets represented by a single scale or rudimentary, 4 in number, forming an involucre about the fertile, with both pairs arising at about the same level, pedicelled, deciduous with the fertile. Basal sterile spikelet pedicels 1–1.5 mm long. Basal sterile spikelets oblong, 2–4 mm long, smaller than fertile. Basal sterile spikelet glumes membranous, smooth or scaberulous.

Companion sterile spikelets well-developed, containing empty lemmas or male, lanceolate or oblong, 3–5 mm long, shorter than fertile, separately deciduous. Companion sterile spikelet glumes cartilaginous, 5–7 -veined, glabrous, muticous.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets lanceolate, dorsally compressed, 6.5–7 mm long, falling entire, deciduous with accessory branch structures.

Glumes. Glumes dissimilar, firmer than fertile lemma. Lower glume lanceolate, 1 length of spikelet, coriaceous, without keels, keel-less except near apex, 8–10 -veined. Lower glume apex dentate, 2 -fid. Upper glume lanceolate, 1 length of spikelet, coriaceous, 3 -veined. Upper glume apex acuminate.

Florets. Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret oblong, 3.5–4 mm long, hyaline, 0 -veined, without midvein, without lateral veins. Fertile florets female. Fertile lemma linear, 4–5.5 mm long, membranous, 1 -veined, 0–3 -veined, one-veined. Lemma apex entire, awned, 1 -awned. Principal lemma awn geniculate, 15–23 mm long overall, with twisted column. Column of lemma awn 6–9 mm long, glabrous. Palea absent or minute.

Flower and Fruit. Anthers 3, 1–2 mm long. Caryopsis with adherent pericarp, 2.5–3 mm long.

$2n = 18$ (1 ref TROPICOS).

Distribution (TDWG). Continent. Australasia.

Country /Province /State. Australia. Western Australia, Northern Territory, South Australia, Queensland, New South Wales.

TDWG4. Kimberley, Ereman. Darwin & Gulf, Victoria R & Barkly Tableland, Central Australia. NW & Lake Eyre. North, Central, South East, Inland. Western Plains.

Iseilema venkateswarlui Satyavathi. *Journ. Bombay Nat. Hist. Soc.* lxx. 666 (1969).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online.

TYPE from India. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: India, Guntur: Satyavathi IAG4 (K holo).

Illustrations (Books): No illustration found (BKS).

Classification. Subfamily Panicoideae. Tribe: Andropogoneae. Subtribe ANDROPOGONINAE.

Habit, Vegetative Morphology. Annual. Culms prostrate, 30–40 cm long, rooting from lower nodes. Ligule a ciliolate membrane. Leaf-blades 2.5–4 cm long, 3–5 mm wide.

Inflorescence. Synflorescence compound, linear.

Inflorescence composed of racemes, terminal and axillary, deciduous as a whole, subtended by a spatheole, enclosed. Spatheole elliptic, herbaceous. Racemes 1, single, oblong, bearing few fertile spikelets, bearing 1 fertile spikelets on each. Rhachis internodes linear. Raceme-bases brief (truncate). Spikelets in threes. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 2 in the cluster. Pedicels present, filiform, 4–4.5 mm long.

Sterile Spikelets. Basal sterile spikelets well-developed, 4 in number, forming an involucre about the fertile, with both pairs arising at about the same level, pedicelled, deciduous with the fertile. Basal sterile spikelet pedicels oblong, 1.25 mm long. Basal sterile spikelets male, oblong, 6.5–7.5 mm long, larger than fertile. Basal sterile spikelet glumes herbaceous, acute.

Companion sterile spikelets well-developed, lanceolate, 5.5 mm long.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets elliptic, dorsally compressed, 5.5 mm long, falling entire, deciduous with accessory branch structures.

Glumes. Glumes dissimilar, firmer than fertile lemma. Lower glume lanceolate or oblong, 1 length of spikelet, chartaceous, without keels, keel-less except near apex, 7 -veined. Lower glume surface pubescent, hairy in the middle. Lower glume margins ciliate. Lower glume apex dentate, 2 -fid, caudate. Upper glume lanceolate, 1 length of spikelet, chartaceous, 3 -veined. Upper glume apex acuminate.

Florets. Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret subulate, 3 mm long, hyaline, 2 -veined. Fertile lemma linear, 4 mm long, membranous, 1 -veined, 0–3 -veined, one-veined. Lemma apex entire, awned, 1 -awned. Principal lemma awn geniculate, 18 mm long overall, with twisted column. Column of lemma awn 9 mm long, glabrous. Palea absent or minute.

Flower and Fruit. Anthers 3, 3 mm long.

Distribution (TDWG). Continent. Tropical Asia.

Country /Province /State. Indian Subcontinent. India.

TDWG4. Andhra Pradesh.

Iseilema windersii C. E. Hubbard. *Hook. Ic. Pl.* iii. t. 3284 (1935).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), D.Sharp, D. & B.K.Simon, *AusGrass* (2002).

TYPE from Australia. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: Australia, Bundoran: *Hubbard & Winders 7286* (K holo).

Illustrations (Books): D.Sharp & B.K.Simon, *AusGrass*. Grasses of Australia. CD-Rom Version 1.0. (2002).

Illustrations (Journals): *Hooker's Icones Plantarum* (t.3284 (1935)).

Derivation (Clifford & Bostock 2007): in honor of Winders (fl. 1931) who collected in northern Queensland, Australia.

Classification. Subfamily Panicoideae. Tribe: Andropogoneae. Subtribe ANDROPOGONINAE.

Habit, Vegetative Morphology. Annual, culms solitary or caespitose. Culms erect, 20–40 cm long, 1–2 -noded. Lateral branches lacking or sparse. Leaf-sheaths keeled, smooth. Ligule a ciliolate membrane, 1–1.5 mm long. Leaf-blades conduplicate, 8–16 cm long, 3–6 mm wide, glaucous. Leaf-blade surface smooth or scaberulous, rough adaxially. Leaf-blade margins scaberulous. Leaf-blade apex acute.

Inflorescence. Synflorescence compound, linear, 6–18 cm long.

Inflorescence composed of racemes, terminal and axillary, deciduous as a whole, subtended by a spatheole, enclosed. Spatheole lanceolate or elliptic, 1–2 cm long, membranous, brown, tuberculate (on midnerve). Peduncle 0.4–0.5 cm long, pubescent above. Racemes 1, single, oblong, 0.8–1 cm long, bearing few fertile spikelets, bearing 1 fertile spikelets on each. Rhachis glabrous on surface. Rhachis internodes linear, 0.8 mm long. Raceme-bases brief (truncate), pilose, with 2–3 mm long hairs. Spikelets in threes (basal paired). Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 2 in the cluster. Pedicels present, filiform, 3–3.5 mm long, pubescent.

Sterile Spikelets. Basal sterile spikelets well-developed, 4 in number, forming an involucre about the fertile, with both pairs arising at about the same level, pedicelled, deciduous with the fertile. Basal sterile spikelet pedicels oblong, 1.5–2 mm long. Basal sterile spikelets male, 3–4 mm long, smaller than fertile. Basal sterile spikelet glumes cartilaginous, pubescent, smooth on margins or scabrous on margins.

Companion sterile spikelets well-developed, male, elliptic, 4–5 mm long, shorter than fertile, separately deciduous. Companion sterile spikelet glumes membranous, 7–11 -veined, puberulous, acute, mucous. Companion sterile spikelet lemmas 2, enclosed by glumes.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets lanceolate, dorsally compressed, acuminate, 7–8 mm long, falling entire, deciduous with accessory branch structures.

Glumes. Glumes dissimilar, firmer than fertile lemma. Lower glume elliptic, 1 length of spikelet, coriaceous, without keels, keel-less except near apex, 8–10 -veined. Lower glume surface flat. Lower glume margins ciliolate. Lower glume apex emarginate or truncate. Upper glume lanceolate, 1 length of spikelet, coriaceous, 3 -veined. Upper glume primary vein ciliolate.

Florets. Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret oblong, 3–4 mm long, hyaline, 1 -veined, without lateral veins. Fertile florets female. Fertile lemma linear, 4–5 mm long, membranous, 1 -veined, 0–3 -veined, one-veined. Lemma apex lobed, 2 -fid, with filiform lobes, incised 0.25 of lemma length, awned, 1 -awned. Principal lemma awn from a sinus, geniculate, 18–33 mm long overall, with twisted column. Column of lemma awn glabrous. Palea absent or minute.

Flower and Fruit. Anthers 3, 1.5–2.2 mm long. Caryopsis oblong or obovoid, 2.5–3.5 mm long.

Distribution (TDWG). Continent. Australasia.

Country /Province /State. Australia. Northern Territory, Queensland.

TDWG4. Darwin & Gulf, Victoria R & Barkly Tableland, Central Australia. North, Inland.

Ixophorus unisetus (Presl) Schlecht. *Linnaea*, i. 421 (1862).

Accepted by: R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), W.D.Clayton & N.Snow, *Key to Pacific Grasses* (2010).

TYPE from Mexico. **Basionym or Replaced Name:** *Urochloa uniseta* J. Presl, *Reliq. Haenk.* 1(4–5): 319 (1830)

. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *Haenke s.n.*, Mexico (PR; IT: MO-2756865, US (fragm.))

Illustrations (Books): M.E.Barkworth et al, *Flora of North America north of Mexico Vol 25 Poaceae*, part 2 (2003) (538), R.McVaugh, *Flora Nova-Galliciana Vol.14 Gramineae* (1983), A.S.Hitchcock, *Manual of the Grasses of the West Indies* (1936) (353, Fig. 324), W.Burger, *Flora Costaricensis* 15, Gramineae: *Fieldiana Botany New Series* 4 (1980) (286, Fig 104), E.Judziewicz, *Flora of the Guianas*, 187. *Poaceae* (1990) (302, Fig 52).

Derivation (Clifford & Bostock 2007): L. unus, one; seta, bristle. Spikelet subtended by a single bristle.

Classification. Subfamily Panicoideae. Tribe: Paniceae. Subtribe SETARIINAE.

Habit, Vegetative Morphology. Perennial, caespitose. Basal innovations flabellate. Culms 50–140 cm long. Ligule an eciliate membrane, 1–2.5 mm long. Leaf-blades 25–75 cm long, 10–25 mm wide.

Inflorescence. Inflorescence composed of racemes. Racemes numerous, borne along a central axis, unilateral, 2–8 cm long. Central inflorescence axis 10–25 cm long. Rhachis angular, terminating in a barren extension, extension bristle-like. Spikelet packing abaxial, regular, 2 -rowed. Spikelets subtended by an involucre. Fertile spikelets sessile, 1 in the cluster. Involucre composed of bristles, 5–10 mm long. Involucral bristles persistent, few, 1 per spikelet, flexible, viscid.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets ovate, dorsally compressed, 3.5–4.7 mm long, falling entire.

Glumes. Glumes dissimilar, reaching apex of florets, thinner than fertile lemma. Lower glume ovate, 0.7–1.5 mm long, 0.2–0.3 length of spikelet, herbaceous, without keels, 3 -veined. Lower glume apex acute. Upper glume ovate, 3.5–4.7 mm long, 1.75 length of adjacent fertile lemma, herbaceous, without keels, 9–11 -veined. Upper glume apex acute.

Florets. Basal sterile florets 1, male, with palea. Lemma of lower sterile floret similar to upper glume, ovate, 1 length of spikelet, cartilaginous, 5 -veined, acute. Palea of lower sterile floret becoming indurate on flanks at maturity (and orbicular), winged on keels. Fertile lemma elliptic, 2–3 mm long, indurate, without keel. Lemma surface papillose. Lemma margins involute. Lemma apex apiculate. Palea indurate.

Distribution (TDWG). Continent. North America, South America.

Country /Province /State. Hawaii (*). **Mexico.** Central Mexico, Northeast Mexico, Gulf (Mexico), Northwest Mexico, Southwest Mexico, Southeast Mexico. **Mesoamerica, Caribbean, Northern South America, Western South America, Brazil.** Belize, Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua. Cuba (*). Surinam, Venezuela. Bolivia, Colombia. Brazil North, Brazil Southeast.

TDWG4. Mexico State, Morelos, Puebla. Aguascalientes, Guanajuato, San Luis Potosi, Tamaulipas. Veracruz. Sinaloa. Colima, Guerrero, Jalisco, Michoacan, Nayarit, Oaxaca. Chiapas.