

Trichantheium Zuloaga & Morrone

Carolina Delfini

Instituto de Botânica Darwinion; cdelfini@gmail.com

Fernando Omar Zuloaga

Instituto de Botânica Darwinion; fzuloaga@darwin.edu.ar

This treatment is composed of the following taxa: *Trichantheium*, *Trichantheium auricomum*, *Trichantheium caaguazuense*, *Trichantheium cyanescens*, *Trichantheium distichophyllum*, *Trichantheium granuliferum*, *Trichantheium machrisiana*, *Trichantheium micranthum*, *Trichantheium nervosum*, *Trichantheium noterophyllum*, *Trichantheium nutabundum*, *Trichantheium orinocanum*, *Trichantheium parvifolium*, *Trichantheium polycomum*, *Trichantheium pseudisachne*, *Trichantheium pyrularium*, *Trichantheium rivale*, *Trichantheium schwackeanum*, *Trichantheium wettsteinii*.

HOW TO CITE

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DESCRIPTION

Annual or perennial herbs. Culms decumbent and rooting at the lower nodes, to erect or cespitose; internodes hollow; ligules membranous, shortly lacinate or ciliate at apex; blades filiform to lanceolate, flat or inrolled. Inflorescence a terminal open panicle, first-order branches alternate and divergent, sometimes subopposite, sometimes also with axillary panicles; spikelets solitary on long pedicels. Spikelets dorsally compressed, 2-flowered, disarticulating below the glumes; lower glume 1/2 as long to equally as long as the spikelet, (1–)3-nerved, stipe conspicuous or not between the lower and upper glume; glumes subequal, upper glume 3–5-nerved, lower lemma 5-nerved; lower palea reduced or as long as lower lemma, hyaline; lower flower staminate or absent; upper antherium indurate, muticous, usually pale, covered with bicellular microhairs and simple papillae evenly distributed, occasionally with long smooth macrohairs; upper lemma 5-nerved, upper palea 2-nerved; lodicules 2; stamens 3; stigmas 2, plumose. Caryopsis with a punctiform to elliptic hilum; embryo less than 1/2 the length of the caryopsis. Chromosome number: $x=9$.

Life Form

Herb

Substrate

Aquatic, Terrestrial

DISTRIBUTION

Native, Not endemic to Brazil

Phytogeographic Domains

Amazon Rainforest, Caatinga, Central Brazilian Savanna, Atlantic Rainforest, Pampa, Pantanal

Vegetation Types

Anthropic area, Caatinga (stricto sensu), Amazonian Campinarana, High Altitude Grassland, Flooded Field (Várzea), Grassland, Highland Rocky Field, Carrasco Vegetation, Cerrado (lato sensu), Riverine Forest and/or Gallery Forest, Inundated Forest (Igapó), Ombrophylous Forest (Tropical Rain Forest), Coastal Forest (Restinga), Amazonian Savanna, Aquatic vegetation

Geographic Distribution

Confirmed occurrences

North (Acre, Amazonas, Amapá, Pará, Rondônia, Roraima, Tocantins)
 Northeast (Alagoas, Bahia, Ceará, Maranhão, Paraíba, Pernambuco, Piauí, Rio Grande do Norte, Sergipe)
 Central-west (Distrito Federal, Goiás, Mato Grosso do Sul, Mato Grosso)
 Southeast (Espírito Santo, Minas Gerais, Rio de Janeiro, São Paulo)
 South (Paraná, Rio Grande do Sul, Santa Catarina)

IDENTIFICATION KEY

Key to the species of *Trichantheium* Zuloaga & Morrone occurring in Brazil:

- 1. Blades basally narrow to rounded or subcordate to cordate and amplexicaul; robust perennials, 0.70–200 cm tall *T. nervosum*
- 1'. Blades not cordate and amplexicaul (cordate in *T. parvifolium*, *T. pyrularium*, and *T. rivale*, all delicate annuals 5–25 cm tall) 2
- 2(1'). Spikelets narrowly ellipsoid, lower and upper glume separated by a short to long stipe ... 3
- 2'. Spikelets ellipsoid to obovoid and globose; lower and upper glume without a prominent stipe 4
- 3(2). Spikelets falling with branches of the panicle at maturity *T. pyrularium*
- 3'. Spikelets falling without branches of the panicle at maturity *T. rivale*
- 4(2'). Lower palea absent or present but reduced; lower flower absent; annuals 5
- 4'. Lower palea and lower flower present, the palea as long as the upper antherium; annuals or perennials 6
- 5(4). Blades linear, 0.1–0.2 cm wide; spikelets obovoid *T. polycomum*
- 5'. Blades lanceolate, 0.2–1 cm wide; spikelets ellipsoid *T. machrisianum*
- 6(4'). Annuals; culms decumbent, geniculate, branching and rooting at the lower nodes 7
- 6'. Perennials; culms usually erect 9
- 7(6). Spikelets set obliquely on the pedicels *T. nutabundum*
- 7'. Spikelets not set obliquely on the pedicels 8
- 8(7'). Blades linear to lanceolate, base subcordate to cordate *T. parvifolium*
- 8'. Blades linear to linear-lanceolate, base rounded or attenuate *T. micranthum*
- 9(6'). Blades conspicuously reflexed *T. wettsteinii*
- 9'. Blades ascendent, not reflexed 10
- 10(9'). Blades ovate-lanceolate to lanceolate, subcordate to cordate at the base; spikelets glabrous, occasionally pilose 11
- 10'. Blades linear to linear-lanceolate, rounded or narrowed basally; spikelets pilose or glabrous 14
- 11(10). Spikelets 1–1.1 mm long; blades glaucous; plants 14–30 cm tall *T. granuliferum*
- 11'. Spikelets 1.2–3 mm long; blades not glaucous; plants 20–100 cm tall 12
- 12(11'). Spikelets 2.7–3 mm long; inflorescences 25–30 cm long *T. caaguazuense*
- 12'. Spikelets 1.2–2.3 mm long; inflorescences 5–18 cm long 13
- 13(12'). Culms geniculate to decumbent, rooting and branching at the lower nodes; spikelets 1.8–2.3 mm long *T. schwackeanum*
- 13'. Culms erect; spikelets 1.2–1.8 (–2) mm long *T. cyanescens*
- 14(10'). Culms freely branching at the distal nodes 15
- 14'. Culms not branching at the distal nodes 17

- 15(14)**. Leaves evenly distributed along the culms; spikelets 1.1-1.3 mm long; plants with long, conspicuous rhizomes *T. auricomum*
- 15'**. Leaves mostly basal; spikelets 1.4–2.2 mm long; plants with short, inconspicuous rhizomes 16
- 16(15')**. Spikelets ellipsoid, 1.8–2.2 mm long; lower glume 3/4 the length of the spikelet, lower palea glabrous; pseudoligule absent; central Brazil *T. distichophyllum*
- 16'**. Spikelets obovoid, 1.4–1.7 mm long; lower glume 1/2 the length of the spikelet, lower palea with ciliate margins; pseudoligule present; Amazonian Brazil, Colombia, and Venezuela *T. orinocanum*
- 17(14')**. Spikelets glabrous, occasionally pilose, 0.9–1.2 mm long; South America *T. micranthum*
- 17'**. Spikelets pilose, or hirsute, occasionally glabrous, (1.2-)1.4–2 mm long 18
- 18(17')**. Plants 10–18 cm tall; blades mostly basal, 1–4 cm long; panicles up to 4.5 cm long *T. noterophilum*
- 18'**. Plants 25–80 cm tall; blades evenly distributed along the culms, 4–20 cm long; panicles up to 14 cm long *T. pseudisachne*

REFERENCE

- Zuloaga F.O., Morrone O., Davidse G., Filgueiras T.S., Peterson P.M., Soreng R.J., & Judziewicz E. J.** 2003. Catalogue of New World grasses (Poaceae): III. Subfamilies Panicoideae, Aristidoideae, Arundinoideae, and Danthonioideae. *Contr. U.S. Natl. Herb.* 46: 1–662.
- Zuloaga F.O., Morrone O. & Scataglieni M.A.** 2011. Monograph of *Trichantheium* (Poaceae, Paniceae). *Syst. Bot. Monographs* 94(2): 01-98.

Trichanthecium auricomum (Nees ex Trin.) Zuloaga

Has as synonym

basionym *Panicum auricomum* Nees ex Trin.

DESCRIPTION

Root: cycle perennial; **plant** rhizomatose. **Stem:** culm erect; **branching** in the node upper/non branched on the base; **node** non geniculate; **internode** cylindrical. **Leaf:** sheath amplexicaul absent; **pseudoligule** present; **auricle** present; **blade** involute; **blade position** ascending; **base of the blade** narrowed; **blade glaucous** absent. **Inflorescence:** form of the spikelet ellipsoid; **indumentum of the spikelet** hispid; **insertion of the spikelet in the pedicel** horizontally; **pale lower** subequal to the antherium upper; **size of the glume lower in relation to spikelet** subequal to the size of the spikelet/3 / 4 of the size of the spikelet. **Flower:** flower lower male.

ADDITIONAL DESCRIPTION

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COMMENTS

Distribution: Brazil (Amazonas and Minas Gerais), in open areas in white sand savannas on humid soils (Zuloaga *et al.* 2011). *Trichanthecium auricomum*, a species of white sand savannas, resembles *T. distichophyllum* in its branching culms, linear leaves, and spikelets with a staminate lower flower; however, that species differs in its small ligules, absence of auricles, and spikelets 1.8–2.2 mm long.

Life Form

Herb

Substrate

Terrestrial

DISTRIBUTION

Native, Is endemic from Brazil

Phytogeographic Domains

Amazon Rainforest, Central Brazilian Savanna

Vegetation Types

Flooded Field (Várzea), Grassland, Amazonian Savanna

Geographic Distribution

Confirmed occurrences


North (Amazonas)

Southeast (Minas Gerais)

HERBARIUM MATERIAL

C.F.P. Martius, 3725, US,  (US00148158), Amazonas, **Typus**

B.W. Albuquerque, 1233, K (K001101867), Amazonas

B.W.P. Albuquerque, 1233, NY,  (NY01166467), Amazonas

REFERENCE

Zuloaga F.O., Morrone O & Scataglini M.A. 2011. Monograph of *Trichantheium* (Poaceae, Paniceae). *Syst. Bot. Monographs* 94(2): 01-98.

Trichantheium caaguazuense (Henrard) Zuloaga & Morrone

Has as synonym

basionym *Panicum caaguazuense* Henrard

DESCRIPTION

Root: cycle perennial; **plant** rhizomatose. **Stem:** culm decumbent; **branching** in the node lower; **node** non geniculate; **internode** cylindrical. **Leaf:** sheath amplexicaul absent; **pseudoligule** absent; **auricule** absent; **blade** flat; **blade position** ascending; **base of the blade** subcordate; **blade glaucous** absent. **Inflorescence:** **form of the spikelet** ellipsoid; **indumentum of the spikelet** glabrate; **insertion of the spikelet in the pedicel** horizontally; **pale lower** subequal to the antherium upper; **size of the glume lower in relation to spikelet** 3 / 4 of the size of the spikelet. **Flower:** flower lower male.

ADDITIONAL DESCRIPTION

Rhizomatous perennials. Culms decumbent and rooting at the lower nodes, becoming erect, up to 1 m tall; internodes 1.5–7.5 cm long, terete, pale, glabrous; nodes glabrous; sheaths 2.5–6 cm long, shorter than internodes, striate, glabrous, pale, margins membranous; ligules 0.1–0.2 mm long, membranous, lacinate distally, pseudoligule absent, auricles absent; blades 5–11 cm long, 0.4–0.7 cm wide, lanceolate, flat, base subcordate, apex acuminate, glabrous, midnerve not prominent. Inflorescence terminal, exerted, peduncle 15–29 cm long, terete, glabrous; panicle 25–30 cm long, 15–25 cm wide, lax, diffuse; main axis glabrous, smooth, pulvini glabrous; first-order branches alternate to subopposite; pedicel 1–3.5 cm long, scabrous. Spikelets 2.7–3 mm long, 0.8–1.3 mm wide, ellipsoid, glabrous, glumes and lower lemma with prominent nerves; lower glume 2.3–2.7 mm long, 3/4 as long as the spikelet, acute, 3(–5)-nerved; upper glume 2.5–2.8 mm long, 5(–7)-nerved; lower lemma 2.4–2.7 mm long, 5-nerved; lower palea 1.9–2.1 mm long, 0.4–0.5 mm wide, lanceolate, membranous, glabrous, brown, margins denticulate; lower flower staminate, anthers 1.2 mm long; upper antherium 1.8–2.1 mm long, 0.6–0.9 mm wide, ovoid to narrowly ovoid, pale, indurate; anthers ca. 1.3 mm long; lodicules ca. 0.2 mm long. Caryopsis not seen.

COMMENTS

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Life Form

Herb

Substrate

Aquatic, Terrestrial

DISTRIBUTION

Native, Not endemic to Brazil

Phytogeographic Domains

Central Brazilian Savanna, Pantanal

Vegetation Types

Flooded Field (Várzea), Aquatic vegetation




Geographic Distribution

Confirmed occurrences

Central-west (Distrito Federal, Mato Grosso do Sul)

Southeast (Minas Gerais)

HERBARIUM MATERIAL

G.C. Oliveira, 105, HUCP, 25157,  (HUCP00025157), Minas Gerais
G.M. Araújo, 2196, HUFU, 18998,  (HUFU00031701), Minas Gerais
G.C. Oliveira, 392, HUFU, 42087,  (HUFU00031965), Minas Gerais

REFERENCE

Zuloaga F.O., Morrone O. & Scatagliani M.A. 2011. Monograph of *Trichantheium* (Poaceae, Paniceae). *Syst. Bot. Monographs* 94(2): 01–98.

Trichanthecium cyanescens (Nees ex Trin.) Zuloaga & Morrone

Has as synonym

basionym *Panicum cyanescens* Nees ex Trin.

heterotypic *Panicum carannasense* Mez

heterotypic *Panicum rectissimum* Mez

heterotypic *Panicum savannarum* Soderstr.

heterotypic *Panicum vinnulum* Swallen

DESCRIPTION

Root: cycle perennial; **plant** caespitose/rhizome short. **Stem:** culm erect; **branching** in the node upper; **node** non geniculate; **internode** cylindrical. **Leaf:** sheath amplexicaul absent; **pseudoligule** present or absent; **auricule** absent; **blade** flat; **blade position** ascending; **base of the blade** subcordate/rounded; **blade glaucous** absent. **Inflorescence:** **form of the spikelet** ellipsoid/obovoid; **indumentum of the spikelet** glabrate; **insertion of the spikelet in the pedicel** horizontally; **pale lower** subequal to the antherium upper; **size of the glume lower in relation to spikelet** 3 / 4 of the size of the spikelet / 1 / 2 of the size of the spikelet. **Flower:** flower lower male.

ADDITIONAL DESCRIPTION

Cespitose perennials with short rhizomes. Culms 30–85 cm tall, erect, branching at the upper nodes; internodes terete, glabrous, often glaucous; sheaths shorter than internodes, more or less glaucous, hirsute to papillose-pilose toward the apex or glabrous, margins ciliate; ligules 0.1–0.5 mm long, membranous, truncate, pseudoligule present or absent, auricles absent; blades 3–14 cm long, 0.3–1.5 cm wide, lanceolate, flat, base rounded to slightly subcordate, apex acute, ascendent, glabrous to entirely papillose-pilose or with long appressed hairs, margins scabrous. Inflorescence terminal, exserted, peduncle up to 10 cm long, terete, glabrous; panicle 7–18 cm long, 8–14 cm wide, lax; main axis wavy, scabrous, first-order branches alternate, axis of branches scabrous; pedicels 2–8 mm long. Spikelets 1.2–1.8 (–2) mm long, 0.9–1.2 mm wide, obovoid to ellipsoid, glabrous, occasionally pilose, greenish or tinged with purple, glumes and lower lemma with prominent nerves; lower glume 0.6–1.6 mm long, 1/2–4/5 as long as the spikelet, ovate, acute, 3-nerved; upper glume slightly shorter than the spikelet, covering or not the apex of the upper antherium, obtuse, 5-nerved; lower lemma as long as spikelet, ovate, 3–5-nerved; lower palea elliptic, prominent, as long as lower lemma; lower flower staminate, anthers 1.2 mm long; upper antherium 0.9–1.5 mm long, 0.7–0.9 mm wide, ovoid, plano-convex, acute, smooth, shiny, indurate, anthers 1.3 mm long; lodicules ca. 0.2 mm long. Caryopsis 0.6–0.8 mm long, 0.4–0.6 mm wide, ellipsoid, hilum punctiform; embryo 1/3 the length of the caryopsis.

COMMENTS

Distribution: Cuba, Trinidad and Tobago, southern Mexico, Belize, Honduras, Nicaragua, and from Colombia and Venezuela to Bolivia and Paraguay; frequent in open savannas in humid habitats; 500–1500 meters (Zuloaga *et al.* 2011).

Trichanthecium cyanescens exhibits great variation; its stature varies from small to large, the inflorescences are lax to more or less contracted, and the spikelets range from 1.1 to 1.8 mm long. *Trichanthecium cyanescens* is usually characterized by the presence of glabrous spikelets, but sparsely pilose spikelets, with hairs on the upper glume and lower lemma.

Life Form

Herb

Substrate

Aquatic, Terrestrial

DISTRIBUTION

Native, Not endemic to Brazil

Phytogeographic Domains

Amazon Rainforest, Caatinga, Central Brazilian Savanna, Atlantic Rainforest, Pantanal



Vegetation Types

Anthropic area, Amazonian Campinarana, High Altitude Grassland, Flooded Field (Várzea), Grassland, Highland Rocky Field, Riverine Forest and/or Gallery Forest, Coastal Forest (Restinga), Amazonian Savanna, Aquatic vegetation

Geographic DistributionConfirmed occurrences

North (Amazonas, Amapá, Pará, Rondônia, Roraima, Tocantins)
Northeast (Bahia, Pernambuco, Rio Grande do Norte, Sergipe)
Central-west (Distrito Federal, Goiás, Mato Grosso do Sul, Mato Grosso)
Southeast (Espírito Santo, Minas Gerais, Rio de Janeiro, São Paulo)
South (Paraná, Rio Grande do Sul, Santa Catarina)

HERBARIUM MATERIAL

A.R.S. Prates, 275, ALCB, 85684 (ALCB019275), Bahia
P.L. Viana et al., 5714, BHCB, 201096,  (BHCB201096), Pará
H.M. Longhi Wagner, 9458, CEN, 56726,  (CEN00056726), Paraná

REFERENCE

Zuloaga F.O., Morrone O. & Scataglini M.A. 2011. Monograph of *Trichantheium* (Poaceae, Paniceae). *Syst. Bot. Monographs* 94(2): 01–98.

Trichantheium distichophyllum (Spreng.) Zuloaga & Morrone

Has as synonym

heterotypic *Panicum setifolium* Nees

heterotypic *Panicum subulatum* Spreng.

DESCRIPTION

Root: cycle perennial; **plant** caespitose/rhizome short. **Stem:** culm erect/inclinate; **branching** in the node upper; **node** non geniculate; **internode** cylindrical. **Leaf:** sheath amplexicaul absent; **pseudoligule** absent; **auricle** present; **blade** involute; **blade position** ascending; **base of the blade** narrowed; **blade glaucous** absent. **Inflorescence:** form of the spikelet ellipsoid; **indumentum of the spikelet** glabrate/hirsute; **insertion of the spikelet in the pedicel** horizontally; **pale lower** subequal to the antherium upper; **size of the glume lower in relation to spikelet** 3 / 4 of the size of the spikelet. **Flower:** flower lower male.

ADDITIONAL DESCRIPTION

Cespitose perennials with short rhizomes. Culms 25–90 cm tall, erect or leaning, many-noded, freely branching at the upper nodes; internodes terete, pale, smooth, glabrous; nodes brown, compressed, glabrous; sheaths striate, glabrous, margins membranous and one side with short to long whitish hairs, collar brown; ligules 0.2–0.4 mm long, membranous, short-laciniate at apex, truncate, pseudoligule absent, auricles conspicuous or reduced, glabrous; blades 3–9 cm long, 0.1–0.3 cm wide, linear, base narrow, apex long-attenuate, glabrous, margins involute, ciliate toward the base or completely glabrous, adaxially scaberulous, occasionally sparsely pilose. Inflorescence terminal and axillary, exserted, peduncle 5–14 cm long, terete, glabrous; panicle 2.5–11 cm long, 3–6 cm wide, lax, diffuse; main axis wavy, glabrous; pulvini purple, glabrous to shortly pilose; first-order branches alternate, axis of the branches smooth or scaberulous, glabrous; pedicels 2–6 mm long, flexuous and claviform at apex, glabrous. Spikelets 1.8–2 (–2.2) mm long, 0.9–1 mm wide, solitary, ellipsoid, glabrous to hirsute, green or tinged with purple, upper glume and lower lemma subequal, the upper glume occasionally not covering the apex of the upper antherium; lower glume 1.4–1.8 mm long, 3/4 the length of the spikelet, acute, 3-nerved; upper glume acute to obtuse, 5-nerved, the nerves prominent; lower lemma glumiform, acute to obtuse, 5-nerved; lower palea 1.5–1.7 mm long, 0.7–0.8 mm wide, as long as the lower lemma, elliptic, hyaline, glabrous; lower flower staminate, anthers 1.2–1.4 mm long; upper antherium 1.4–1.9 mm long, 0.7–0.9 mm wide, ellipsoid, whitish, smooth and shiny, indurate, anthers ca. 1.3 mm long; lodicules ca. 0.2 mm long, conduplicate. Caryopsis not seen.

COMMENTS

Distribution: Brazil (Bahia, Espírito Santo, Minas Gerais, Rio de Janeiro and São Paulo); common in grasslands on sandy or rocky soils, usually in wet areas near the edges of streams; 1000–1600 meters (Zuloaga *et al.* 2011).

Trichantheium distichophyllum is characterized by culms that branch profusely at the middle and distal nodes, linear to subulate blades, and reduced ligules. The spikelets are less than 2 mm long and usually glabrous, but hirsute spikelets were noted in several collections, *e.g.*, Pohl 3570, Burman 783, Sellow 1260, and Markgraf 3462. This species exhibits considerable variation in size of plants, presence and density of vestiture in vegetative and spikelet structures, as well as in the presence or absence of conspicuous auricles on leaves. *Trichantheium distichophyllum* is morphologically similar to *T. auricomum*; see that species.

Life Form

Herb

Substrate

Terrestrial

DISTRIBUTION

Native, Is endemic from Brazil

Phytogeographic Domains

Central Brazilian Savanna, Atlantic Rainforest

Vegetation Types

Grassland, Cerrado (lato sensu), Riverine Forest and/or Gallery Forest


Geographic DistributionConfirmed occurrences


Northeast (Bahia)

Southeast (Espírito Santo, Minas Gerais, Rio de Janeiro, São Paulo)

HERBARIUM MATERIAL

F. Sellow, 269, B (B 10 0366240), B (B 10 0366241), B (B 10 0366242), **Typus**

F.O. Zuloaga et al., 8994, ESA, 52686,  (ESA052686), Bahia

A.A. Conceição, 1282, HUEFS, 94544,  (HUEFS0094544), Bahia

REFERENCE

Zuloaga F.O., Morrone O. & Scataglini M.A. 2011. Monograph of *Trichantheium* (Poaceae, Paniceae). *Syst. Bot. Monographs* 94(2): 01–98.

Trichantheum granuliferum (Kunth) Zuloaga & Morrone

Has as synonym

basionym *Panicum granuliferum* Kunth

DESCRIPTION

Root: cycle perennial; **plant** rhizome short. **Stem:** culm decumbent; **branching** in the node lower; **node** geniculate; **internode** cylindrical. **Leaf:** sheath amplexicaul absent; **pseudoligule** absent; **auricule** absent; **blade** flat; **blade position** ascending; **base of the blade** subcordate; **blade glaucous** present. **Inflorescence:** **form of the spikelet** ellipsoid/globose; **indumentum of the spikelet** glabrate; **insertion of the spikelet in the pedicel** horizontally; **pale lower** subequal to the antherium upper; **size of the glume lower in relation to spikelet** 3 / 4 of the size of the spikelet/1 / 2 of the size of the spikelet. **Flower:** flower lower male.

ADDITIONAL DESCRIPTION

Perennials with short rhizomes. Culms 14–30 cm tall, decumbent, geniculate, rooting and branching at the lower nodes, distally erect, many-noded; internodes terete, glabrous; nodes dark, densely pilose with long whitish hairs to glabrous; sheaths densely hispid to glabrous, greenish or glaucous, margins ciliate; ligules 0.3–0.6 mm long, membranous, arcuate, pseudoligule absent, auricles absent; blades 1.7–5 cm long, 0.3–0.8 (–1) cm wide, lanceolate, flat, glaucous, base subcordate, apex acuminate, densely hispid with long whitish hairs or pilose only toward the base of the adaxial surface to glabrous, margins cartilaginous, scabrous, long-ciliate near the base of blade. Inflorescence terminal, exserted, peduncle 8–17 cm long, terete, glabrous; panicle 3.5–8 cm long, 3–6 cm wide, lax, diffuse; main axis wavy, glabrous; pulvini dark, pilose or glabrous, first-order branches alternate, distant, flexuous, spikelets on long, glabrous; pedicels 2–8 mm long. Spikelets 1–1.1 mm long, 0.5–0.6 mm wide, ellipsoid, globose, greenish, glabrous, occasionally hispid; lower glume 0.5–0.7 mm long, ovate, 1/2 or more the length of the spikelet, acute, 1–3-nerved; upper glume slightly shorter than the spikelet, covering or not the apex of the upper antherium, obtuse to acute, 3–5-nerved; lower lemma as long as the spikelet, acute, 3–5-nerved; lower palea elliptic, hyaline, membranous, glabrous; lower flower staminate; upper antherium 1 mm long, 0.5 mm, ellipsoid, indurate, acute, whitish to olivaceous, smooth, anthers 0.7–0.8 mm long; lodicules 0.2 mm long. Caryopsis 0.7–0.8 mm long, 0.4–0.5 mm wide, broadly ellipsoid, dark, hilum punctiform; embryo 1/3 the length of the caryopsis.

COMMENTS

Distribution: Colombia, Venezuela, Guyana, French Guiana, and northern Brazil; in open savannas, usually on sandy, seasonally inundated soils; 0–750 meters (Zuloaga *et al.* 2011).

Trichantheum granuliferum is characterized by its decumbent and geniculate culms, glaucous blades, and usually glabrous spikelets. The lower glume length varies from 1/2 to 3/4 the length of the spikelet.

Life Form

Herb

Substrate

Aquatic, Terrestrial

DISTRIBUTION

Native, Not endemic to Brazil

Phytogeographic Domains

Amazon Rainforest

Vegetation Types

Amazonian Campinarana, Grassland

Geographic Distribution

Confirmed occurrences


North (Amazonas, Pará)


Central-west (Mato Grosso)

South (Santa Catarina)

HERBARIUM MATERIAL

F.W.H.A. von Humboldt, s.n., B (B 10 0249051), **Typus**

L.B. Smith, 13841, NY,  (NY00652145), Santa Catarina

K. Kubitzki, 79-127, NY,  (NY01166555), Amazonas

REFERENCE

Zuloaga F.O., Morrone O. & Scatagliani M.A. 2011. Monograph of *Trichantheium* (Poaceae, Paniceae). *Syst. Bot. Monographs* 94(2): 01–98.

Trichantheium machrisiana (Swallen) Zuloaga & Morrone

Has as synonym

basionym *Panicum machrisiana* Swallen

DESCRIPTION

Root: cycle annual; **plant** caespitose. **Stem:** culm erect/decumbent; **branching** in the node lower/in the node upper; **node** non geniculate; **internode** flattened. **Leaf:** sheath amplexicaul absent; **pseudoligule** absent; **auricule** present; **blade** flat; **blade position** ascending; **base of the blade** rounded; **blade glaucous** absent. **Inflorescence:** **form of the spikelet** ellipsoid; **indumentum of the spikelet** hispid; **insertion of the spikelet in the pedicel** horizontally; **pale lower** reduced; **size of the glume lower in relation to spikelet** 1 / 2 of the size of the spikelet. **Flower:** **flower lower** absent.

ADDITIONAL DESCRIPTION

Annuals. Culms 8–20 cm tall, decumbent to erect, branching at lower and upper nodes; internodes glabrous, compressed; nodes brown, with long whitish hairs; sheaths striate, shorter than internodes, greenish to pale, with sparse tuberculate hairs to glabrescent; ligules 0.7–0.9 mm long, membranous, hyaline, arcuate, pseudoligule absent, auricles membranous, prominent, glabrous; blades 0.8–1.6 cm long, 0.2–0.4 cm wide, lanceolate, flat, base rounded, apex acuminate, glabrous, nerves anastomosed, margins glabrous. Inflorescence terminal and axillary, exserted, peduncle ca. 1.5–2.5 cm long, terete, glabrous; panicle 2–4 cm long, 1–2.5 cm wide, lax, diffuse; main axis wavy, glabrous, pulvini glabrous, first-order branches alternate, axis of branches smooth, glabrous; pedicels 2–5 mm long, greenish or purple, smooth, glabrous. Spikelets 1.3–1.4 mm long, 0.5 mm wide, ellipsoid, greenish, hispid, with rigid tuberculate hairs, upper glume and lower lemma subequal; lower glume ca. 1/2 the length of the spikelet or longer, nerveless, hyaline, narrow, apex acute; upper glume and lower lemma hyaline, 5-nerved, the nerves not prominent; lower palea lanceolate, hyaline, small; lower flower absent; upper antherium 1.5 mm long, 0.7 mm wide, ellipsoid, smooth, shiny, whitish, anthers 1–1.2 mm long; lodicules ca. 0.2 mm long. Caryopsis not seen.

COMMENTS

Distribution: Brazil (Goiás, Minas Gerais); campos rupestres; 1100–1200 meters (Zuloaga *et al.* 2011).

Trichantheium machrisianum is characterized by the presence of terminal and axillary inflorescences, lanceolate blades, and hispid spikelets. It is similar to other annual species from northern South America that lack a lower flower and lower palea or have a reduced lower palea. *Trichantheium arctum*, *T. pyrularium*, and *T. rivale* differ by having a narrowly ellipsoid spikelet with a differentiated internode between the lower and upper glume. *Trichantheium yavitaense* differs in its basally subcordate blades, up to 0.7 cm wide. There is variation in the lower glume size of *T. machrisianum*, from 1/2 to 3/4 the length of the spikelet (the latter in Irwin *et al.* 27637). Commonly the spikelets are curved at maturity.

Life Form

Herb

Substrate

Terrestrial

DISTRIBUTION

Native, Is endemic from Brazil

Phytogeographic Domains

Central Brazilian Savanna

Vegetation Types


Highland Rocky Field, Cerrado (lato sensu)


Geographic DistributionConfirmed occurrences

Central-west (Goiás)

Southeast (Minas Gerais)

HERBARIUM MATERIAL

H.S. Irwin, 27637, NY,  (NY00863476), Minas Gerais

E.Y. Dawson, 14679, US, 2207234,  (US00132958), Goiás, **Typus**

REFERENCE

Zuloaga F.O., Morrone O. & Scataglini M.A. 2011. Monograph of *Trichantheium* (Poaceae, Paniceae). *Syst. Bot. Monographs* 94(2): 01–98.

Trichantheium micranthum (Kunth) Zuloaga & Morrone

Has as synonym

basionym *Panicum micranthum* Kunth

heterotypic *Panicum blackii* Swallen

heterotypic *Panicum kuhlmanni* Swallen

DESCRIPTION

Root: cycle unknown; **plant** caespitose. **Stem:** culm erect; **branching** in the node lower; **node** geniculate; **internode** flattened. **Leaf:** sheath amplexicaul absent; **pseudoligule** absent; **auricle** absent; **blade** flat/involute; **blade position** ascending; **base of the blade** rounded; **blade glaucous** absent. **Inflorescence:** form of the spikelet globose; **indumentum of the spikelet** glabrate; **insertion of the spikelet in the pedicel** horizontally; **pale lower** subequal to the antherium upper; **size of the glume lower in relation to spikelet** subequal to the size of the spikelet/1 / 2 of the size of the spikelet. **Flower:** flower lower male.

ADDITIONAL DESCRIPTION

Cespitose plants of unknown duration. Culms 12–40 cm tall, geniculate to erect, branching at lower nodes; internodes terete, glabrous; nodes dark, compressed, glabrous; sheaths glabrous to short-ciliate distally, margins membranous, pilose to glabrous; ligules ca. 0.4 mm long, membranous, truncate, pseudoligule absent, auricles absent; blades 2–10 cm long, 0.1–0.3 cm wide, linear, flat or with the margins involute, base rounded, apex acuminate, greenish, pilose on both surfaces with long appressed hairs or only adaxially to glabrous, margins ciliate. Inflorescence terminal, exerted, peduncles 7–10 cm long, terete, glabrous; panicle 2–8 cm long, 2–5 cm wide, lax, diffuse; main axis smooth, glabrous, wavy, pulvini long pilose; first-order branches alternate, axis of branches smooth, glabrous; pedicels 2–6 mm long, glabrous. Spikelets 0.9–1.2 mm long, 0.6–0.7 mm wide, globose or broadly ellipsoid, glabrous, occasionally pilose or sparsely pilose toward the apex; lower glume 0.4–1 mm long, obtuse, 3-nerved; upper glume shorter than the lower lemma, not covering the apex of the upper antherium, obtuse, 5-nerved; lower lemma glumiform, 5-nerved; lower palea elliptic, as long as the lower lemma, hyaline, glabrous; lower flower staminate, anthers 0.6–0.8 mm long; upper antherium 0.8–1 mm long, 0.5 mm wide, ellipsoid, whitish, dark at maturity, indurate, anthers 0.8 mm long; lodicules 0.2 mm long. Caryopsis not seen.

COMMENTS

Distribution: Colombia, Venezuela, the Guianas, and northern Brazil; in open savannas, in sandy and rocky soils; 0–1200 meters (Zuloaga *et al.* 2011).

Trichantheium micranthum is caespitose, and its linear leaves are mostly basal. The globose and usually glabrous spikelets have the lower palea and lower flower developed. Sparsely pilose spikelets are rarely present, *e.g.*, in *Black 55-18802*.

Life Form

Herb

Substrate

Aquatic, Terrestrial

DISTRIBUTION

Native, Not endemic to Brazil

Phytogeographic Domains

Amazon Rainforest, Central Brazilian Savanna

Vegetation Types

Amazonian Campinarana, Cerrado (lato sensu), Amazonian Savanna, Aquatic vegetation

Geographic DistributionConfirmed occurrences

North (Acre, Amazonas, Pará, Rondônia, Roraima)

Southeast (Minas Gerais)

HERBARIUM MATERIAL

L . Coradín, 535, CEN, 2977 (CEN00002977), Roraima

J.M. Pires, 14354, IAN, 143987 (IAN143987), Roraima

I.A. Rodrigues, 542, IAN, 156685 (IAN156685), Roraima

REFERENCE

Zuloaga F.O., Morrone O. & Scataglini M.A. 2011. Monograph of *Trichantheium* (Poaceae, Paniceae). *Syst. Bot. Monographs* 94(2): 01–98.

Trichantheium nervosum (Lam.) Zuloaga & Morrone

Has as synonym

basionym *Panicum nervosum* Lam.

DESCRIPTION

Root: cycle perennial; **plant** caespitose. **Stem:** culm erect; **branching** non branched on the base; **node** non geniculate; **internode** cylindrical. **Leaf:** sheath amplexicaul present; **pseudoligule** absent; **auricule** absent; **blade** flat; **blade position** ascending; **base of the blade** cordate; **blade glaucous** absent. **Inflorescence:** **form of the spikelet** obovoid; **indumentum of the spikelet** glabrate; **insertion of the spikelet in the pedicel** horizontally; **pale lower** subequal to the antherium upper; **size of the glume lower in relation to spikelet** 3 / 4 of the size of the spikelet/1 / 2 of the size of the spikelet. **Flower:** flower lower male.

ADDITIONAL DESCRIPTION

Cespitose perennials. Culms 0.40–2 m tall, erect, unbranched; internodes terete, basally solid, shiny, glabrous; nodes dark, glabrous; sheaths overlapping, longer than internodes, shiny, rigid, greenish or glaucous, glabrous or occasionally papillose-pilose especially distally, one margin ciliate, the other glabrous, collar papillose-pilose to glabrous; ligules ca. 0.3 mm long, membranous, arcuate, dark brown, pseudopetiole a ring of long hairs, auricles absent; blades 10–18 cm long, 0.8–1.6 cm wide, lanceolate, flat, ascendent, base strongly cordate and amplexicaul, apex acuminate, adaxially densely pilose with long and thin whitish hairs, abaxially pilose toward the base or entirely glabrous, margins ciliate proximally or entirely glabrous. Inflorescence terminal, exerted, peduncle up to 20 cm long, terete, glabrous; panicle 6–18 cm long, 5–19 cm wide, ovate, lax; main axis wavy, smooth, glabrous, pulvini dark, shortly pilose, first-order branches alternate or opposite, ascendent or divergent, axis of the branches; pedicels 3–10 mm long, smooth, glabrous. Spikelets 1.1–1.7 mm long, 0.7–0.8 mm wide, obovoid, biconvex, glabrous, occasionally with short, sparse hairs, greenish to purplish, glumes and lower lemma with prominent nerves; lower glume 0.8–1.4 mm long, 1/2 to 3/4 the length of the spikelet, ovate, acute, 3 (–5)-nerved; upper glume slightly shorter than the spikelet, not covering the apex of the upper antherium ovate, obtuse, 5(–7)-nerved; lower lemma as long as the spikelet, ovate, 3–5-nerved; lower palea 1–1.4 mm long, 0.5–0.7 mm wide, elliptic, as long as the lower lemma, hyaline, glabrous; lower flower staminate, anthers 0.8–1 mm long; upper antherium 0.9–1.4 mm long, 0.7 mm wide, ovoid, acute, plano-convex, smooth, shiny, indurate, anthers 0.7–1 mm long; lodicules 0.2 mm long. Caryopsis not seen.

COMMENTS

Distribution: Trinidad and Tobago, Colombia, Venezuela, the Guianas, and Brazil; frequent in open savannas; 0–1400 meters (Zuloaga *et al.* 2011).

Trichantheium nervosum is a robust species with erect, unbranched culms, conspicuous overlapping sheaths, and basally cordate and amplexicaul leaves. *Trichantheium cyanescens* and *T. tepuiantum* are similar. The former differs in its smaller stature and basally rounded to subcordate leaves; the latter has basally rounded leaves, spikelets 1.8–2.4 mm long, and macrohairs on the upper antherium.

Life Form

Herb

Substrate

Aquatic, Terrestrial

DISTRIBUTION

Native, Not endemic to Brazil

Phytogeographic Domains

Amazon Rainforest, Caatinga, Central Brazilian Savanna, Atlantic Rainforest, Pantanal

Vegetation Types

Amazonian Campinarana, Grassland, Cerrado (lato sensu), Coastal Forest (Restinga), Amazonian Savanna, Aquatic vegetation

Geographic DistributionConfirmed occurrences

North (Amazonas, Amapá, Pará, Rondônia, Roraima)

Northeast (Bahia, Ceará)

Central-west (Mato Grosso do Sul, Mato Grosso)

Southeast (Espírito Santo, Rio de Janeiro)

HERBARIUM MATERIAL

J.F.M. Valls, 11657, CEN, 12028 (CEN00012028), Amapá

R.F.A. Veiga, 123, CEN, 37075 (CEN00037065), Amazonas

Pires, JM, 6176, IAN, 91584 (IAN091584), Pará

REFERENCE

Zuloaga F.O., Morrone O. & Scataglini M.A. 2011. Monograph of *Trichantheium* (Poaceae, Paniceae). *Syst. Bot. Monographs* 94(2): 01–98.

Trichantheium noterophyllum (Renvoiza) Zuloaga

Has as synonym

basionym *Panicum noterophilum* Renvoize

DESCRIPTION

Root: cycle perennial; **plant** rhizome short. **Stem:** culm erect; **branching** in the node lower; **node** non geniculate; **internode** flattened. **Leaf:** sheath amplexicaul absent; **pseudoligule** absent; **auricule** absent; **blade** flat; **blade position** ascending; **base of the blade** cordate; **blade glaucous** absent. **Inflorescence:** **form of the spikelet** ellipsoid; **indumentum of the spikelet** pilose; **insertion of the spikelet in the pedicel** horizontally; **pale lower** subequal to the antherium upper; **size of the glume lower in relation to spikelet** 3 / 4 of the size of the spikelet. **Flower:** flower lower male.

ADDITIONAL DESCRIPTION

Perennials with short rhizomes. Culms 10–18 cm tall, erect, branching at the lower nodes, leaves mostly basal; internodes 1–2 cm long, terete, hollow, glabrous; nodes pale brown, compressed, glabrous; sheaths 1–3 cm long, usually longer than the internodes, striate, margins short-ciliate distally, otherwise glabrous; ligules ca. 0.2 mm long, membranous, truncate, pseudoligule absent, auricles absent; blades 1–4 cm long, 0.2–0.4 cm wide, linear-lanceolate, flat, base rounded, apex acuminate, margins short-ciliate proximally, otherwise glabrous. Inflorescence terminal, exserted, peduncle 5–9 cm long, terete, glabrous; panicle 1.5–4.5 cm long, 1–3 cm wide, lax, open; main axis flexuous, smooth, glabrous, pulvini glabrous; first-order branches alternate, axis of branches flexuous, smooth, glabrous; pedicels 2–4 mm long, claviform, glabrous. Spikelets 1.5–1.6 mm long, 0.7–0.8 mm wide, broadly ellipsoid, pale or tinged with purple, shortly and sparsely pilose over the glumes and lower lemma, upper glume and lower lemma subequal or the upper glume shorter, not covering the apex of the upper antherium; lower glume 1.1–1.3 mm long, 3/4 the length of the spikelet, obtuse, membranous, 3-nerved; upper glume membranous, 5-nerved; lower lemma glumiform, 5-nerved; lower palea 1.1–1.3 mm long, 0.5–0.6 mm wide, elliptic, hyaline, glabrous; lower flower staminate, anthers 0.8–1 mm long; upper antherium 1–1.2 mm long, 0.5–0.6 mm wide, ellipsoid, pale, shiny, smooth, anthers 0.7–1 mm long; lodicules 0.2 mm long. Caryopsis not seen.

COMMENTS

Trichantheium noterophilum is only known from the type collection gathered on rocky sandy soils in Bahia (Zuloaga *et al.* 2011). The small, cespitose plants, have pilose spikelets. The species is similar to *T. cyanescens*, which differs in its larger stature (30–85 cm tall), leaves 3–14 cm long, 0.3–1.5 cm wide, and panicles 7–18 cm long with usually glabrous spikelets.

Life Form

Herb

Substrate

Terrestrial

DISTRIBUTION

Native, Is endemic from Brazil

Vegetation Types

Flooded Field (Várzea), Highland Rocky Field


Geographic Distribution

Confirmed occurrences

Northeast (Bahia)

HERBARIUM MATERIAL

R.M. Harley, 15935, K,  (K000003588), Bahia

R.M. Harley, 15935, CEPEC, 10001,  (CEPEC00010001), Bahia, **Typus**

E. Melo, 1695, K (K001101863), Bahia

REFERENCE

Zuloaga F.O., Morrone O. & Scatagliani M.A. 2011. Monograph of *Trichantheium* (Poaceae, Paniceae). *Syst. Bot. Monographs* 94(2): 01–98.

Trichantheium nutabundum (Zuloaga & Morrone) Zuloaga & Morrone

Has as synonym

basionym *Panicum nutabundum* Zuloaga & Morrone

DESCRIPTION

Root: cycle annual; **plant** caespitose. **Stem:** culm decumbent; **branching** in the node lower; **node** non geniculate; **internode** cylindrical. **Leaf:** sheath amplexicaul absent; **pseudoligule** absent; **auricule** absent; **blade** flat; **blade position** ascending; **base of the blade** attenuate; **blade glaucous** absent. **Inflorescence:** **form of the spikelet** ellipsoid; **indumentum of the spikelet** glabrate; **insertion of the spikelet in the pedicel** obliquely; **pale lower** subequal to the antherium upper; **size of the glume lower in relation to spikelet** subequal to the size of the spikelet. **Flower:** flower lower male.

ADDITIONAL DESCRIPTION

Annuals. Culms profusely branching at the lower nodes, decumbent and rooting at the lower nodes, erect portion of culms 10–20 cm tall, many-noded; internodes 0.7–2 cm long, terete, glabrous, smooth, pale or purplish; nodes brownish, sparsely pilose; sheaths shorter than internodes, papillose-pilose, margins ciliate, collar pilose or glabrous; ligules ca. 0.4 mm long, membranous, brownish, glabrous, pseudoligule absent, auricles absent; blades 1–2.5 cm long, 0.2–0.4 cm wide, lanceolate, flat, ascendent, base attenuate, apex acute, hirsute, occasionally the distal blades glabrous, margins smooth, papillose-pilose toward base. Inflorescence terminal, partially included to exerted, peduncles up to 10 cm long, terete, glabrous, greenish or tinged with purplish; panicle (1–) 1.5–2.5 cm long, (0.5–) 1–2 cm wide, lax, diffuse; main axis flexuous, glabrous, pulvini glabrous; first-order branches alternate, axis of branches flexuous, glabrous; pedicels 2–5 mm long, filiform, glabrous. Spikelets 1.8–2 mm long, 1 mm wide, obliquely inserted on pedicels, ellipsoid, glabrous, obtuse to subacute, greenish to purplish, upper glume and lower lemma as long as the spikelet, 5-nerved; lower glume 0.8–1 mm long, 1/2 the length of the spikelet or shorter, not embracing the upper glume at its base, 1–3-nerved; lower palea 1.2–1.6 mm long, 0.3–0.5 mm wide, lanceolate, hyaline, glabrous; lower flower staminate, anthers 0.8–1.2 mm long or absent; upper antherium 1.5–1.6 mm long, 0.8 mm wide, ellipsoid, indurate, pale, shortly stipitate; anthers 0.8–1 mm long, purplish; lodicules 0.2 mm long, conduplicate, truncate. Caryopsis not seen.

COMMENTS

Distribution: Brazil (Pará); in low campos (Zuloaga *et al.* 2011).

Trichantheium nutabundum is clearly distinguished by its spikelets obliquely set on the pedicels. The habit resembles that of *T. parvifolium* and *T. cyanescens*. *Trichantheium parvifolium* has globose spikelets 1–1.8 mm long, not obliquely set on the pedicels; the lower glume is 3/4–4/5 the length of the spikelet, and the upper antherium is not stipitate. *Trichantheium cyanescens* is a larger perennial, 30–85 cm tall, with blades up to 14 cm long and panicles up to 18 cm long; the globose spikelets not obliquely set on the pedicels, the upper glume is 3/4–4/5 the length of the spikelet, and the upper antherium is not stipitate.

Life Form

Herb

Substrate

Terrestrial

DISTRIBUTION

Native, Is endemic from Brazil

Phytogeographic Domains

Amazon Rainforest, Central Brazilian Savanna

Vegetation Types

Cerrado (lato sensu), Amazonian Savanna

Geographic Distribution

Confirmed occurrences

North (Pará)

HERBARIUM MATERIAL

J.M. Pires et al., 6153, MO, 100751725, Pará, **Typus**

REFERENCE

Zuloaga F.O., Morrone O. & Scataglini M.A. 2011. Monograph of *Trichantheium* (Poaceae, Paniceae). *Syst. Bot. Monographs* 94(2): 01–98.

Trichantheium orinocanum (Luces) Zuloaga & Morrone

Has as synonym

basionym *Panicum orinocanum* Luces

DESCRIPTION

Root: cycle perennial; **plant** caespitose/rhizome short. **Stem:** culm erect; **branching** in the node upper/non branched on the base; **node** non geniculate; **internode** cylindrical. **Leaf:** sheath amplexicaul absent; **pseudoligule** present; **auricule** absent; **blade** involute; **blade position** ascending; **base of the blade** narrowed; **blade glaucous** absent. **Inflorescence:** **form of the spikelet** ovoid; **indumentum of the spikelet** glabrate/hirsute; **insertion of the spikelet in the pedicel** horizontally; **pale lower** subequal to the antherium upper; **size of the glume lower in relation to spikelet** subequal to the size of the spikelet. **Flower:** flower lower male.

ADDITIONAL DESCRIPTION

Cespitose perennials with short rhizomes. Culms 20–70 cm tall, unbranched or branching at the distal nodes, erect, densely grouped, with pilose cataphylls, leaves mostly basal; internodes terete, glabrous; nodes glabrous; sheaths striate, glabrous, margins membranous, short-pilose distally; ligules ca. 0.3 mm long, membranous, brownish, pseudoligule a ring of whitish hairs, auricles absent; blades 3–4 cm long, 0.1–0.2 cm wide, linear, base narrowed, apex attenuate, glabrous, margins involute. Inflorescence terminal, exserted, peduncles 13–24 cm long, terete, glabrous; panicle 2–5 cm long, 2–5 cm wide, lax, diffuse; main axis wavy, smooth, glabrous, pulvini brown, glabrous; first-order branches alternate, axis of branches flexuous, glabrous; pedicels 2–6 mm long, flexuous, glabrous. Spikelets 1.4–1.7 mm long, 0.6–0.8 mm wide, obovoid, glabrous to hirsute, upper glume and lower lemma subequal of the upper glume slightly shorter, with prominent nerves; lower glume 0.9–1 mm long, 1/2 or slightly more the length of the spikelet, acute, glabrous, 3-nerved; upper glume 5–7 nerved, not covering the apex of the upper antherium; lower lemma glumiform, 5–7 nerved; lower palea 1.2 mm long, 0.6 mm wide, elliptic, hyaline, short-ciliate at the upper margins; lower flower staminate, anthers 0.9 mm long; upper antherium 1.3–1.4 mm long, 0.6 mm wide, ellipsoid, whitish, smooth and shiny, anthers 0.9–1.1 mm long; lodicules 0.2 mm long. Caryopsis not seen.

COMMENTS

Distribution: Brazil, Colombia, and Venezuela; in savannas on rocky and sandy soils in areas exposed to seasonal fires; 80–200 meters (Zuloaga *et al.* 2011).

Trichantheium orinocanum comprises caespitose perennials with short rhizomes; the blades are mostly basal, linear, and narrowed basally. This species is similar to *T. micranthum*, an annual 12–40 cm tall, with leaves 2–10 cm long and spikelets 1.4–1.7 mm long.

Life Form

Herb

Substrate

Terrestrial

DISTRIBUTION

Native, Not endemic to Brazil

Phytogeographic Domains

Amazon Rainforest


Vegetation Types

Amazonian Campinarana, Amazonian Savanna


Geographic DistributionConfirmed occurrences

North (Amazonas)

HERBARIUM MATERIAL

L. Williams, 13090, K,  (K000309308), **Typus**

N.A. Rosa, 1561, NY,  (NY01166617), Amazonas

W.A. Rodrigues, 10551, NY,  (NY01166619), Amazonas

REFERENCE

Zuloaga F.O., Morrone O. & Scataglini M.A. 2011. Monograph of *Trichantheium* (Poaceae, Paniceae). *Syst. Bot. Monographs* 94(2): 01–98.

Trichantheium parvifolium (Lam.) Zuloaga & Morrone

Has as synonym

basionym *Panicum parvifolium* Lam.

heterotypic *Panicum brasiliense* Spreng.

heterotypic *Panicum egleri* Swallen

heterotypic *Panicum kaietukense* Tutin

DESCRIPTION

Root: cycle annual; **plant** caespitose. **Stem:** culm decumbent; **branching** in the node lower; **node** non geniculate; **internode** cylindrical. **Leaf:** sheath amplexicaul absent; **pseudoligule** present; **auricule** absent; **blade** flat; **blade position** ascending/reflexed; **base of the blade** cordate/subcordate; **blade glaucous** absent. **Inflorescence:** **form of the spikelet** globose; **indumentum of the spikelet** glabrate; **insertion of the spikelet in the pedicel** horizontally; **pale lower** subequal to the antherium upper; **size of the glume lower in relation to spikelet** 3 / 4 of the size of the spikelet. **Flower:** flower lower male.

ADDITIONAL DESCRIPTION

Annuals. Culms decumbent, rooting and branching at the lower nodes, leaning on other herbs, erect portion 6–40 cm tall, many-noded, branching at the lower and middle nodes; internodes 1–5 cm long, terete, glabrous, pale or purple; nodes sparsely pilose to glabrous, compressed, brown; sheaths 0.4–1.6 cm long, striate, shorter than internodes, margins membranous, pubescent distally, otherwise glabrous, collar pubescent to glabrous; ligules 0.1–0.3 mm long, membranous, arcuate, truncate, pseudoligule a ring of hairs, auricles absent; blades 0.7–3.3 (–4) cm long, 0.2–0.7 cm wide, ovate-lanceolate, pseudopetiole short and glabrous, flat, ascendent or reflexed, base subcordate to cordate, apex acute, glabrous or with long whitish, appressed hairs on both surfaces, margins proximally with tuberculate, caducous hairs. Inflorescence terminal, exerted or partially included in the upper leaves, peduncle 5–12 cm long, terete, glabrous; panicles 1–6 (–7.5) cm long, 0.7–5 (–7) cm wide, lax, open; main axis wavy, glabrous, smooth; pulvini glabrous; first-order branches alternate or opposite, ascendent or partially reflexed; pedicels 1–5 mm long, flexuous, glabrous, smooth; axillary panicles similar to the terminal one. Spikelets 1–1.8 mm long, 0.6–0.9 mm wide, globose, glabrous, glaucous, upper glume and lower lemma subequal, obtuse to acute, with prominent nerves; lower glume 0.8–1.1 mm long, ovate, 3/4 the length of the spikelet, obtuse, 3-nerved; upper glume covering or not the upper antherium, 3–5-nerved; lower lemma glumiform, 3–5-nerved; lower palea 0.9–1.3 mm long, 0.3 mm wide, ovate-lanceolate, glabrous, hyaline, brown; lower flower staminate, anthers 0.9 mm long; upper antherium 1.1–1.3 mm long, 0.5–0.7 mm wide, broadly ellipsoid to ovoid, indurate, whitish, smooth and shiny, with bicellular microhairs and occasionally with macrohairs toward the apex; anthers 0.8 mm long; lodicules ca. 0.2 mm long, conduplicate. Caryopsis 0.8 mm long, 0.6 mm wide, broadly ellipsoid, pale, hilum punctiform; embryo 1/4 the length of the caryopsis.

COMMENTS

Distribution: Mexico, Belize, and the Caribbean to Paraguay, Bolivia, and Argentina, introduced in Africa; margins of lagoons or lowlands near streams and rivers (Zuloaga *et al.* 2011).

Trichantheium parvifolium is characterized by its branching, leaning culms, ovate-lanceolate blades with a subcordate to cordate base and glabrous spikelets. It is similar to *T. schwackeanum*, which has blades 4–8 cm long, 0.3–1.5 cm wide, inflorescences up to 15 cm long, and spikelets (1.6–) 1.8–2.3 mm long. *Trichantheium cyanescens* differs by its lanceolate and basally rounded blades.

Life Form

Herb

Substrate

Terrestrial

DISTRIBUTION

Native, Not endemic to Brazil

Phytogeographic Domains

Amazon Rainforest, Caatinga, Central Brazilian Savanna, Atlantic Rainforest, Pampa, Pantanal

Vegetation Types

Anthropic area, Amazonian Campinarana, High Altitude Grassland, Grassland, Cerrado (lato sensu), Riverine Forest and/or Gallery Forest, Ombrophyllous Forest (Tropical Rain Forest), Coastal Forest (Restinga), Amazonian Savanna, Aquatic vegetation

Geographic Distribution

Confirmed occurrences

North (Acre, Amazonas, Amapá, Pará, Rondônia, Roraima, Tocantins)

Northeast (Alagoas, Bahia, Ceará, Maranhão, Paraíba, Pernambuco, Piauí, Rio Grande do Norte, Sergipe)

Central-west (Distrito Federal, Goiás, Mato Grosso do Sul, Mato Grosso)

Southeast (Espírito Santo, Minas Gerais, Rio de Janeiro, São Paulo)

South (Paraná, Rio Grande do Sul, Santa Catarina)

HERBARIUM MATERIAL

J.C. von Hoffmannsegg, s.n., B (B 10 0249075), **Typus**

J.F.M. Valls, 2624, CEN, 4001 (CEN00004001), Rio Grande do Sul

L. Coradín, 8607, CEN, 28316 (CEN00028316), Bahia

REFERENCE

Zuloaga F.O., Morrone O. & Scataglini M.A. 2011. Monograph of *Trichantheium* (Poaceae, Paniceae). *Syst. Bot. Monographs* 94(2): 01–98.

Trichantheium polycomum (Trin.) Zuloaga & Morrone

Has as synonym

basionym *Panicum polycomum* Trin.

heterotypic *Panicum froesii* Swallen

heterotypic *Panicum obovatum* Döll

heterotypic *Panicum siccanum* Trin.

DESCRIPTION

Root: cycle annual; **plant** caespitose. **Stem:** culm erect/decumbent; **branching** in the node lower; **node** geniculate; **internode** cylindrical. **Leaf:** sheath amplexicaul absent; **pseudoligule** absent; **auricle** absent; **blade** flat; **blade position** ascending; **base of the blade** attenuate; **blade glaucous** absent. **Inflorescence:** **form of the spikelet** obovoid; **indumentum of the spikelet** glabrate/hirsute; **insertion of the spikelet in the pedicel** horizontally; **pale lower** absent/reduced; **size of the glume lower in relation to spikelet** subequal to the size of the spikelet. **Flower:** **flower lower** absent.

ADDITIONAL DESCRIPTION

Annuals. Culms erect to geniculate, decumbent, rooting and branching at the lower nodes, the erect portion 3–15 (–30) cm tall, profusely branched at the distal nodes; internodes 1–2.2 cm long, terete, glabrous, shorter at the base; nodes purple, pilose with long whitish hairs; sheaths shorter than internodes, membranous, hirsute, with tuberculate hairs to glabrous, margins ciliate, collar glabrous; ligules 0.1–0.3 mm long, straight or arcuate, membranous, pseudoligule absent, auricles absent; blades 0.7–2.5 cm long, 0.1–0.2 cm wide, linear, thin, flat or with involute margins, base attenuate, apex acuminate, hirsute with tuberculate hairs on both surfaces or only adaxially, margins ciliate with caducous hairs. Inflorescence terminal, exserted, peduncle 2–10 cm long, terete, glabrous; panicle 1.2–2.5 (–10) cm long, 1–2 (–8) cm wide, lax; main axis terete, glabrous; pulvini glabrous, first-order branches alternate, axis of the branches smooth, glabrous; pedicels 3–12 mm long, flexuous, glabrous. Spikelets 0.9–1.5 mm long, 0.3–0.6 mm wide, obovoid, dense to sparsely hirsute to glabrous; lower glume 0.5 mm long, occasionally up to 1 mm long, 1(3–) nerved, acute; upper glume and lower lemma subequal, (3–)5-nerved, acute; lower palea hyaline, glabrous and reduced to absent; lower flower absent; upper antherium 0.9–1 mm long, 0.5 mm wide, ellipsoid, whitish, smooth, shiny, indurate, with simple papillae and bicellular microhairs, anthers 0.6–0.8 mm long; lodicules ca. 0.2 mm long. Caryopsis 0.6 mm long, 0.4 mm wide, brown; hilum punctiform, embryo 1/3 or less the length of the caryopsis.

COMMENTS

Distribution: Colombia, Venezuela, Guyana, Suriname, French Guiana, and Brazil; in savannas on sandy soils; 100–1400 meters (Zuloaga *et al.* 2001).

Trichantheium polycomum has obovoid spikelets borne in short exserted inflorescences, thin leaves, and culms that branch profusely at the distal nodes. There is a complete gradation in the abundance of pubescence in specimens of this species from glabrous to densely hirsute; the types of *P. obovatum* and *P. siccanum* fall within this variation, and the names are here included as synonyms of *T. polycomum*.

Life Form

Herb

Substrate

Terrestrial

DISTRIBUTION

Native, Not endemic to Brazil

Phytogeographic Domains

Amazon Rainforest, Caatinga, Atlantic Rainforest

Vegetation Types

Anthropic area, Caatinga (stricto sensu), Amazonian Campinarana, Flooded Field (Várzea), Inundated Forest (Igapó), Amazonian Savanna

Geographic DistributionConfirmed occurrences

North (Amazonas, Amapá, Pará, Rondônia, Roraima, Tocantins)

Northeast (Bahia, Pernambuco, Sergipe)

Central-west (Mato Grosso)

HERBARIUM MATERIAL

G.P. Silva, 9034, CEN, 59274 (CEN00059274), Pará

V.C. Souza, 15344, ESA, 044605 (ESA044695), Mato Grosso

R. Spruce, 2341, B (B 10 0248960), **Typus**

REFERENCE

Zuloaga F.O., Morrone O. & Scatagliani M.A. 2011. Monograph of *Trichantheium* (Poaceae, Paniceae). *Syst. Bot. Monographs* 94(2): 01–98.

Trichantheium pseudisachne (Mez) Zuloaga & Morrone

Has as synonym

basionym *Panicum pseudisachne* Mez

DESCRIPTION

Root: cycle perennial; **plant** rhizomatose. **Stem:** culm erect; **branching** in the node lower; **node** non geniculate; **internode** cylindrical. **Leaf:** sheath amplexicaul absent; **pseudoligule** present; **auricule** absent; **blade** flat; **blade position** ascending; **base of the blade** rounded; **blade glaucous** absent. **Inflorescence:** **form of the spikelet** ellipsoid; **indumentum of the spikelet** hirsute; **insertion of the spikelet in the pedicel** horizontally; **pale lower** subequal to the antherium upper; **size of the glume lower in relation to spikelet** subequal to the size of the spikelet. **Flower:** **flower lower** male.

ADDITIONAL DESCRIPTION

Rhizomatous perennials. Culms 30–80 cm tall, erect, cataphylls glabrous; internodes terete, glabrous, pale to purplish; nodes compressed, dark, glabrous or with retrorse, short hairs; sheaths striate, glabrous or hirsute with tuberculate hairs, one margin ciliate, the other glabrous; ligules 0.3–0.4 mm long, membranous, short-laciniate distally, pseudoligule a ring of long hairs, auricles absent; blades 4–9 cm long, 0.2–0.8 cm wide, linear-lanceolate, flat at least in the middle portion, base rounded, apex attenuate, dense to sparsely hirsute on both surfaces with appressed whitish hairs to glabrous, margins ciliate toward the base. Inflorescence terminal, exserted, peduncle 15–20 cm long, terete, smooth, glabrous; panicle 4–13 cm long, 2–15 cm wide, lax, diffuse; main axis wavy, smooth, glabrous, pulvini purple, glabrous, first-order branches alternate to subopposite, green to purple, glabrous; pedicels 4–10 mm long, smooth, glabrous. Spikelets 1.4–1.7 (–2) mm long, 0.7–1 mm wide, ellipsoid, hirsute, with tuberculate hairs, occasionally glabrous, purple, upper glume and lower lemma subequal, 5-nerved, acute; lower glume 1–1.5 mm long, 4/5 the length of the spikelet, ovate, acute, 3-nerved, shortly pilose on the outer surface; lower palea 1.6 mm long, 0.8 mm wide, elliptic, hyaline, as long as the lower lemma, glabrous; lower flower staminate, anthers 1.2 mm long; upper antherium 1.3–1.6 mm long, 0.9 mm wide, ellipsoid, whitish, smooth, shiny; anthers ca. 1 mm long; lodicules ca. 0.2 mm long, conduplicate. Caryopsis not seen.

COMMENTS

Distribution: Brazil; in cerrado on white sand and in campos ruprestres on granitic outcrops; 850–1900 meters (Zuloaga *et al.* 2011).

Trichantheium pseudisachne has conspicuous rhizomes and ellipsoid, hirsute spikelets, which separate it from the similar *T. cyanescens*. *Trichantheium wettsteinii* is a taller species with larger blades and inflorescences, and glabrous spikelets 1.9–2.6 mm long. *Trichantheium pseudisachne* exhibits wide variation in leaf shape, from filiform to lanceolate.

Life Form

Herb

Substrate

Terrestrial

DISTRIBUTION

Native, Is endemic from Brazil

Phytogeographic Domains

Amazon Rainforest, Central Brazilian Savanna

Vegetation Types

Grassland, Highland Rocky Field, Cerrado (lato sensu), Amazonian Savanna

Geographic Distribution

Confirmed occurrences

North (Amazonas)

Northeast (Bahia, Maranhão)

Central-west (Distrito Federal, Goiás, Mato Grosso do Sul)

Southeast (Minas Gerais, Rio de Janeiro, São Paulo)

South (Paraná)

HERBARIUM MATERIAL

A.F.M. Glaziou, 13330, B (B 10 0248945), **Typus**

P.T. Sano, CFCR 14675, ESA, 22859 (ESA022859), Bahia

A. Janssen, 72, CEN, 5148 (CEN00005148), Amazonas

REFERENCE

Zuloaga F.O., Morrone O. & Scataglini M.A. 2011. Monograph of *Trichantheium* (Poaceae, Paniceae). *Syst. Bot. Monographs* 94(2): 01–98.

Trichantheium pyrularium (Hitchc. & Chase) Zuloaga & Morrone

Has as synonym

basionym *Panicum pyrularium* Hitchc. & Chase

heterotypic *Panicum quetameense* Mez

DESCRIPTION

Root: cycle annual; **plant** caespitose. **Stem:** culm decumbent; **branching** in the node lower/non branched in the node upper; **node** non geniculate; **internode** cylindrical. **Leaf:** sheath amplexicaul present; **pseudoligule** absent; **auricle** absent; **blade** flat; **blade position** ascending; **base of the blade** cordate/subcordate; **blade glaucous** absent. **Inflorescence:** form of the spikelet obovoid; **indumentum of the spikelet** glabrate/pilose; **insertion of the spikelet in the pedicel** horizontally; **pale lower** absent; **size of the glume lower in relation to spikelet** 1/2 of the size of the spikelet. **Flower:** flower lower absent.

ADDITIONAL DESCRIPTION

Annuals. Culms 5–30 cm tall, decumbent, rooting and branching at the lower nodes, distally erect, unbranched; internodes terete, glabrous; nodes sparsely pilose to glabrous; sheaths shorter than internodes, sparsely papillose-pilose to glabrous, margins ciliate proximally; ligules 0.3–0.6 mm long, membranous, hyaline, pseudoligule absent, auricles absent; blades 1–4 cm long, 0.2–0.9 cm wide, elliptic to lanceolate-elliptic, flat, base cordate and slightly amplexicaul to subcordate, apex acuminate, dense to sparsely pilose in both surfaces to glabrous. Inflorescence terminal and axillary, long- to short-exserted, peduncle 2–12 cm long, terete, glabrous; panicle 2–10 cm long, 2–8 cm wide, diffuse to contracted; main axis smooth, glabrous, pulvini glabrous; first-order branches falling together with the spikelets at maturity, axis of branches glabrous, smooth, spikelets distant on the branches; pedicels 3–15 mm long, smooth, glabrous; axillary inflorescences few-flowered, similar to the terminal one. Spikelets 1.2–1.8 mm long, 0.5 mm wide, long-obovoid, pyriform, green, pilose, covered with short, rigid hairs to glabrous; upper glume and lower lemma subequal; lower glume 0.7–1.4 mm long, narrowly lanceolate, 1-nerved, separated from the upper glume by a conspicuous stipe ca. 0.3 mm long; upper glume as long as the spikelet, ovate, 3(–5)-nerved; lower lemma ovate, glumiform, 3(–5)-nerved; lower palea absent to occasionally present, reduced; lower flower absent; upper antherium 1–1.3 mm long, 0.5 mm wide, ellipsoid, smooth, shiny, indurate, acute; anthers ca. 0.6 mm long; lodicules ca. 0.2 mm long, conduplicate. Caryopsis 1 mm long, 0.5 mm wide, ellipsoid, with dark spots, hilum oblong; embryo 1/3 or less the length of the caryopsis.

COMMENTS

Distribution: Panama, Colombia, Venezuela, French Guiana, Guyana, Suriname, Bolivia, and Brazil; margins of streams and rivers, also in sandy soils; 100–1600 meters (Zuloaga *et al.* 2011).

Trichantheium pyrularium is characterized by its pyriform spikelets, which fall together with first-order branches of the inflorescence at maturity; there is a conspicuous internode present between the lower and upper glume. The plants including spikelets, vary from conspicuously pilose to glabrous.

Life Form

Herb

Substrate

Aquatic, Terrestrial

DISTRIBUTION

Native, Not endemic to Brazil

Phytogeographic Domains

Amazon Rainforest, Central Brazilian Savanna

Vegetation Types

Amazonian Campinarana, Cerrado (lato sensu), Amazonian Savanna, Aquatic vegetation

Geographic DistributionConfirmed occurrences

North (Amazonas, Amapá, Pará, Rondônia)

Central-west (Mato Grosso)

HERBARIUM MATERIAL

N.M.S. Costa, 2253, CEN, 58498 (CEN00058498), Amapá

G.T. Prance, 14592, K,  (K001101996), Amazonas

J.R. Swallen, 4935, K,  (K001101997), Pará

REFERENCE

Zuloaga F.O., Morrone O. & Scataglini M.A. 2011. Monograph of *Trichantheium* (Poaceae, Paniceae). *Syst. Bot. Monographs* 94(2): 01–98.

Trichantheium rivale (Swallen) Zuloaga & Morrone

Has as synonym

basionym *Panicum rivale* Swallen

heterotypic *Panicum goeldii* Swallen

DESCRIPTION

Root: cycle annual; **plant** caespitose. **Stem:** culm decumbent; **branching** in the node lower; **node** non geniculate; **internode** cylindrical. **Leaf:** sheath amplexicaul absent; pseudoligule absent; auricle present; blade flat; blade position ascending; base of the blade cordate/rounded; blade glaucous absent. **Inflorescence:** form of the spikelet ellipsoid; indumentum of the spikelet glabrate/hirsute; insertion of the spikelet in the pedicel horizontally; pale lower absent; size of the glume lower in relation to spikelet 1 / 2 of the size of the spikelet. **Flower:** flower lower absent.

ADDITIONAL DESCRIPTION

Annuals. Culms 5–25 cm tall, decumbent, rooting and branching at the lower nodes, distally erect; internodes glabrous; nodes dark, compresses, pilose or glabrous; sheaths striate, shorter than internodes, covered with tuberculate hairs to glabrous, one margin ciliate, the other glabrous, or both margins glabrous; ligules ca. 1 mm long, membranous, arcuate, pseudoligule absent, auricles present, membranous; blades 1.6–4 cm long, 0.2–0.6 cm wide, lanceolate, flat, green, base rounded to cordate, apex acute, papillose-pilose on both surfaces to glabrous, margins ciliate proximally, otherwise glabrous. Inflorescence terminal, exserted, peduncles 2–8 cm long, terete, glabrous; panicle 2–10 cm long, 2–10 cm wide, lax, diffuse; main axis smooth, glabrous, flexuous, pulvini glabrous; first-order branches alternate, often reflexed, lower branches up to 6 cm long, axis of branches triquetrous, scaberulous; pedicels 3–12 mm long, glabrous. Spikelets 1.1–1.6 mm long, 0.5–0.6 mm wide, narrowly ellipsoid, green or tinged with purple, sparsely to densely hirsute or glabrous; lower glume 0.7–0.8 mm long, ca. 1/2 the length of the spikelet, ovate, membranous, 1(–3)-nerved, with nerves anastomosed toward the apex, separated from the upper glume by a short internode; upper glume obtuse, 5-nerved, membranous, occasionally not covering the apex of the upper antherium; lower lemma acute, glumiform, 5-nerved; lower palea absent, occasionally present, 0.7 mm long, reduced, hyaline; lower flower absent; upper antherium 1.1 mm long, 0.6 mm wide, ellipsoid, acute, whitish, smooth and shiny, indurate, anthers 0.7–0.9 mm long; lodicules 0.2 mm long, conduplicate. Caryopsis 0.8–1 mm long, 0.5 mm wide, ovoid to ellipsoid, dark and with black spots, hilum punctiform; embryo less than 1/3 the length of the caryopsis.

COMMENTS

Distribution: Venezuela, Guyana, Suriname, French Guiana, and northern Brazil; near waterfalls or at edge of streams and rivers on sandy soils (Zuloaga *et al.* 2011).

Trichantheium rivale is characterized by having inflorescences with divergent and reflexed first-order branches, by the absence of a lower palea (but occasionally developed). The small plants, up to 25 cm tall, have flat, lanceolate blades. Although the spikelets are pyriform, the internode between the lower and upper glume is less developed than in *T. pyrularium*, in which branches of the inflorescence fall with the spikelets.

Life Form

Herb

Substrate

Aquatic, Terrestrial

DISTRIBUTION

Native, Not endemic to Brazil

Phytogeographic Domains



Amazon Rainforest

Vegetation Types

Flooded Field (Várzea), Riverine Forest and/or Gallery Forest

Geographic DistributionConfirmed occurrences

North (Amapá, Pará)

HERBARIUM MATERIALB. Maguire, 24732, K,  (K000309241), **Typus**E. Goeldi, 222, US, 1039731,  (US00147856), Pará, **Typus**B. Maguire, 24732, RB, 64543,  (RB00621435), **Typus****REFERENCE**

Zuloaga F.O., Morrone O. & Scataglini M.A. 2011. Monograph of *Trichantheium* (Poaceae, Paniceae). *Syst. Bot. Monographs* 94(2): 01–98.

Trichantheium schwackeanum (Mez) Zuloaga & Morrone

Has as synonym

basionym *Panicum schwackeanum* Mez

heterotypic *Panicum emergens* Döll

heterotypic *Panicum helobium* Mez ex Henrard

DESCRIPTION

Root: cycle perennial; **plant** rhizome short. **Stem:** culm decumbent; **branching** in the node lower/in the node upper; **node** geniculate; **internode** cylindrical. **Leaf:** sheath amplexicaul absent; **pseudoligule** present or absent; **auricle** absent; **blade** flat; **blade position** ascending; **base of the blade** cordate/subcordate; **blade glaucous** present. **Inflorescence:** form of the spikelet ellipsoid/obovoid; **indumentum of the spikelet** glabrate; **insertion of the spikelet in the pedicel** horizontally; **pale lower** subequal to the antherium upper; **size of the glume lower in relation to spikelet** subequal to the size of the spikelet/3 / 4 of the size of the spikelet. **Flower:** flower lower male.

ADDITIONAL DESCRIPTION

Perennials with short rhizomes. Culms 0.20–0.60 m tall, geniculate to decumbent, rooting and branching at the lower nodes, distally erect, leaning, culms branching at the middle and distal nodes; internodes 2–15 cm long, terete, glabrous, pale or pink; nodes glabrous, compressed, brown to purple; sheaths 1–5 cm long, striate, shorter than internodes, margins membranous, ciliate or glabrous, green or pink; ligules 0.2–0.5 mm long, membranous, arcuate, pseudoligule present or absent, auricles absent; blades 4–8 cm long, 0.3–1.5 cm wide, ovate-lanceolate to lanceolate, flat, base subcordate to cordate, shortly pseudopetiolate, apex acute, glaucous, glabrous to sparsely pilose on both surfaces, occasionally with dense vestiture, margins scaberulous, proximally ciliate or not, midnerve prominent. Inflorescence exerted to partially included among the upper leaves, peduncle up to 15 cm long, terete, glabrous; panicle 5–15 cm long, 2–12 cm wide, lax, diffuse; main axis glabrous, wavy, triquetrous, pulvini pilose or glabrous, dark to purple, first-order branches alternate, axis of branches smooth, glabrous, green to purple; pedicels 3–10 mm long, glabrous, smooth, flexuous; axillary panicles similar to the terminal one. Spikelets 1.8–2.3 mm long, 0.8–1.3 mm wide, broadly ellipsoid to obovoid, green or tinged with pink, glumes and lower lemma membranous, scaberulous or glabrous, with prominent nerves; lower glume 1.2–1.6 mm long, ovate, 3/4–4/5 the length of the spikelet, 3(–5)-nerved, glabrous, acute to obtuse; upper glume 1.6–1.9 mm long, ovate, 5-nerved, obtuse to acute; lower lemma 1.8–2 mm long, glumiform, 5-nerved; lower palea 1.5–1.8 mm long, 0.5–0.9 mm wide, ovate-lanceolate to elliptic, membranous, brown, glabrous; lower flower staminate, anthers 1.2–1.5 mm long; upper antherium 1.6–1.9 mm long, 0.8–1 mm wide, ellipsoid, indurate, pale, brown at maturity, smooth and shiny, anthers 1.3–1.6 mm long; lodicules ca. 0.3 mm long, conduplicate. Caryopsis 1–1.1 mm long, 0.7–0.9 mm wide, broadly ellipsoid, pale, hilum elliptic; embryo ca. 1/4 the length of the caryopsis.

COMMENTS

Distribution: Costa Rica, Colombia, Venezuela, the Guyanas, Brazil, Paraguay, Uruguay, and Argentina; margins of ponds and marshes, in inundated soils; 0–2,000 meters (Zuloaga *et al.* 2011).

Trichantheium schwackeanum is characterized by its decumbent culms, rooting and branching at the lower nodes, lanceolate to ovate-lanceolate blades with the base subcordate to cordate, and broadly ellipsoid to obovoid, glabrous spikelets.

Life Form

Herb

Substrate

Aquatic, Terrestrial

DISTRIBUTION

Native, Not endemic to Brazil

Phytogeographic Domains

Amazon Rainforest, Caatinga, Central Brazilian Savanna, Atlantic Rainforest, Pampa, Pantanal

Vegetation Types

Anthropic area, Grassland, Cerrado (lato sensu), Riverine Forest and/or Gallery Forest, Aquatic vegetation

Geographic DistributionConfirmed occurrences

North (Amazonas, Amapá, Pará, Roraima)

Northeast (Bahia)

Central-west (Distrito Federal, Goiás, Mato Grosso do Sul)

Southeast (Espírito Santo, Minas Gerais, Rio de Janeiro, São Paulo)

South (Paraná, Rio Grande do Sul, Santa Catarina)

HERBARIUM MATERIAL

W. Schwacke, 8447, B (B 10 0366253), **Typus**

A. Costa Allem, 1923, CEN, 2123 (CEN00002123), Rio Grande do Sul

J.F.M. Valls, 268, CEN, 3627 (CEN00003627), Rio Grande do Sul

REFERENCE

Zuloaga F.O., Morrone O. & Scataglini M.A. 2011. Monograph of *Trichantheium* (Poaceae, Paniceae). *Syst. Bot. Monographs* 94(2): 01–98.

Trichantheium wettsteinii (Hack.) Zuloaga & Morrone

Has as synonym

basionym *Panicum wettsteinii* Hack.

DESCRIPTION

Root: cycle perennial; **plant** caespitose/rhizomatose. **Stem:** culm erect/decumbent; **branching** in the node median; **node** non geniculate; **internode** cylindrical. **Leaf:** sheath amplexicaul absent; **pseudoligule** present or absent; **auricule** present; **blade** flat/involute; **blade position** reflexed; **base of the blade** attenuate; **blade glaucous** absent. **Inflorescence:** **form of the spikelet** ellipsoid; **indumentum of the spikelet** glabrate; **insertion of the spikelet in the pedicel** horizontally; **pale lower** subequal to the antherium upper; **size of the glume lower in relation to spikelet** 3 / 4 of the size of the spikelet. **Flower:** flower lower male.

ADDITIONAL DESCRIPTION

Cespitose, strongly rhizomatous perennial. Culms 60–110 cm tall, erect to decumbent, branching at the middle nodes, many-noded; internodes terete, glabrous; nodes compressed, brown, glabrous to occasionally pilose; sheaths striate, glabrous, occasionally hirsute, margins membranous, with one margin ciliate, collar brown to purple, pilose; ligules 0.2–0.4 mm long, membranous, short-laciniate at the apex, pseudoligule a long rim of hairs or absent, auricles membranous, shortly pilose; blades 5–9 cm long, 0.2–0.5 cm wide, linear, conspicuously reflexed, the lower ones falling, base attenuate, apex long-attenuate, glabrous to hirsute, more so toward the distal portion, flat to involute. Inflorescence terminal, long-exserted, peduncle 10–20 cm long, terete, glabrous, smooth; panicle 6–10 cm long, 4–9 cm wide, lax, open; main axis wavy, smooth, glabrous, pulvini purple, glabrous to short-pilose; first-order branches alternate, axis of branches flexuous, smooth, glabrous; pedicels 4–12 mm long, smooth, glabrous. Spikelets 2–2.6 mm long, 0.9–1 mm wide, ellipsoid, green, glabrous, upper glume and lower lemma subequal; lower glume 1.3–1.9 mm long, 3/4 the length of the spikelet, ovate, 3-nerved, the nerves anastomosed toward the apex; upper glume acute to obtuse, covering or not the apex of the upper antherium, 5-nerved; lower lemma glumiform, 5-nerved; lower palea 1.7–2 mm long, 0.6 mm wide, elliptic, hyaline, glabrous; lower flower staminate, anthers 1.4–1.6 mm long; upper antherium 2 mm long, 1 mm wide, ellipsoid, whitish, indurate, smooth and shiny, anthers ca. 1.8 mm.; lodicules 0.2 mm long. Caryopsis 1 mm long, 0.7 mm wide, obovoid, whitish; hilum punctiform, embryo less than 1/2 the length of the caryopsis.

COMMENTS

Distribution: Brazil; frequent in open areas on sandy soils; 600–2000 meters (Zuloaga *et al.* 2011).

Trichantheium wettsteinii is characterized by its linear, conspicuously reflexed blades, the lower ones deciduous, and glabrous spikelets 2–2.6 mm long. It is similar to *T. pseudisachne*; see that species.

Life Form

Herb

Substrate

Terrestrial

DISTRIBUTION

Native, Is endemic from Brazil

Phytogeographic Domains

Caatinga, Central Brazilian Savanna, Atlantic Rainforest

Vegetation Types

Grassland, Highland Rocky Field, Carrasco Vegetation, Cerrado (lato sensu)

Geographic DistributionConfirmed occurrences

Northeast (Bahia)



Central-west (Distrito Federal, Goiás)

Southeast (Espírito Santo, Minas Gerais, Rio de Janeiro, São Paulo)

South (Paraná)

HERBARIUM MATERIAL

H.M. Longhi-Wagner, 9604, CEN, 56669 (CEN00056669), Minas Gerais

R.M. Harley, 22558, CEPEC, 30952,  (CEPEC00030952), BahiaG. Hatschbach, 49507, CEPEC, 43542,  (CEPEC00043542), Bahia**REFERENCE**

Zuloaga F.O., Morrone O. & Scatagliani M.A. 2011. Monograph of *Trichantheium* (Poaceae, Paniceae). *Syst. Bot. Monographs* 94(2): 01–98.