
A New Species of *Eleocharis* R. Brown (Cyperaceae) from Southern Brazil

Rafael Trevisan

Programa de Pós-Graduação em Botânica, Universidade Federal do Rio Grande do Sul,
Av. Bento Gonçalves, 9500, Porto Alegre, Rio Grande do Sul, 91501-970, Brazil.
rftrevisan@yahoo.com.br

Ilsi Iob Boldrini

Departamento de Botânica, Universidade Federal do Rio Grande do Sul, Av. Bento Gonçalves,
9500, Porto Alegre, Rio Grande do Sul, 91501-970, Brazil.
ilsi.boldrini@ufrgs.br

ABSTRACT. *Eleocharis laeviglumis* is a new species from the Brazilian flora. This species belongs to *Eleocharis* subg. *Limnochloa* (P. Beauvois ex T. Lestiboudois) Torrey and is very similar to *Eleocharis elongata* Chapman. The new species differs from all species of *Eleocharis* R. Brown by culms terete, not septate; lower scale fertile; upper scales cartilaginous, smooth, without prominent veins, with submarginal band vinaceous to brown, hyaline margin conspicuous and abruptly differentiated from the rest of scale; slender bristles; achenes trigonous, reticulate, and without a short neck on the apex. Morphological description, illustration, data on habitat, and comparison with the similar species are presented.

RESUMO. *Eleocharis laeviglumis* é uma nova espécie descrita para a flora brasileira. Esta espécie pertence a *Eleocharis* subg. *Limnochloa* (P. Beauvois ex T. Lestiboudois) Torrey e é muito semelhante a *Eleocharis elongata* Chapman. A nova espécie diferencia-se das outras espécies do gênero *Eleocharis* pelos colmos cilíndricos, não septados; gluma inferior fértil; glumas superiores cartilaginosas, lisas, de nervuras inconspícuas, com uma faixa submarginal vinácea a castanha, margem hialina desenvolvida e nitidamente delimitada do restante da gluma; cerdas hipóginas tenues; aquênios trígonos, reticulados, e sem colo no ápice. Apresenta-se a descrição morfológica, ilustração, dados sobre o habitat, e uma comparação com a espécie similar.

Key words: Brazil, Cyperaceae, *Eleocharis*, *Limnochloa*.

Eleocharis is a worldwide genus that includes ca. 200 species (González-Elizondo & Tena-Flores, 2000) with a remarkable richness in tropical and subtropical America (Goetghebeur, 1998). Distinctive features,

such as unbranched aerial culms, leaves reduced to tubular sheaths, inflorescence constituted of one spikelet on the apex of culms without involucre bracts, and style-base enlarged and persistent on the achene, are uniformly found in this genus.

Almost all species of *Eleocharis* are restricted to wetlands, often in muddy soils that are temporarily wet or inundated.

There are some taxonomic treatments of *Eleocharis*, such as Svenson (1929, 1932, 1934, 1937, 1939), Barros (1947, 1960), González-Elizondo (1994), González-Elizondo and Reznicek (1998), and Smith et al. (2005), based on a regional or a worldwide review of the species.

The supraspecific classifications of *Eleocharis* (Svenson, 1939; Kukkonen, 1990; González-Elizondo & Peterson, 1997) are based on morphological data. A study using DNA sequences (Roalson & Friar, 2000) verified that some groups proposed in recent classifications are probably monophyletic.

***Eleocharis laeviglumis* Trevisan & Boldrini, sp. nov.** TYPE: Brazil. Rio Grande do Sul: mun. Santa Vitória do Palmar, BR 471, 32°45'00.1"S, 52°38'51.4"W, 26 Nov. 2004, I. Boldrini, E. N. Garcia & R. Trevisan 1311 (holotype, ICN; isotype, K, MO). Figure 1.

Eleocharis laeviglumis Trevisan & Boldrini ab omnibus speciebus generis culmis teretibus, non septatis, squama inferna fertili, squamis superis cartilagineis, laevibus, nervis inconspicuis, fasciis submarginalibus vinaceis vel brunneis, marginibus hialinis conspicuis distincte a parte inferna squamis, setis hypogynis tenuibus, acheniis trigonis, reticulatis sin collis in apicibus differt.

Perennial, erect from creeping and ligneous rootstock, often with elongate rhizomes 1.5–2.5 mm wide, with internodes 1.2–2.2(–3) cm long, scales 5–

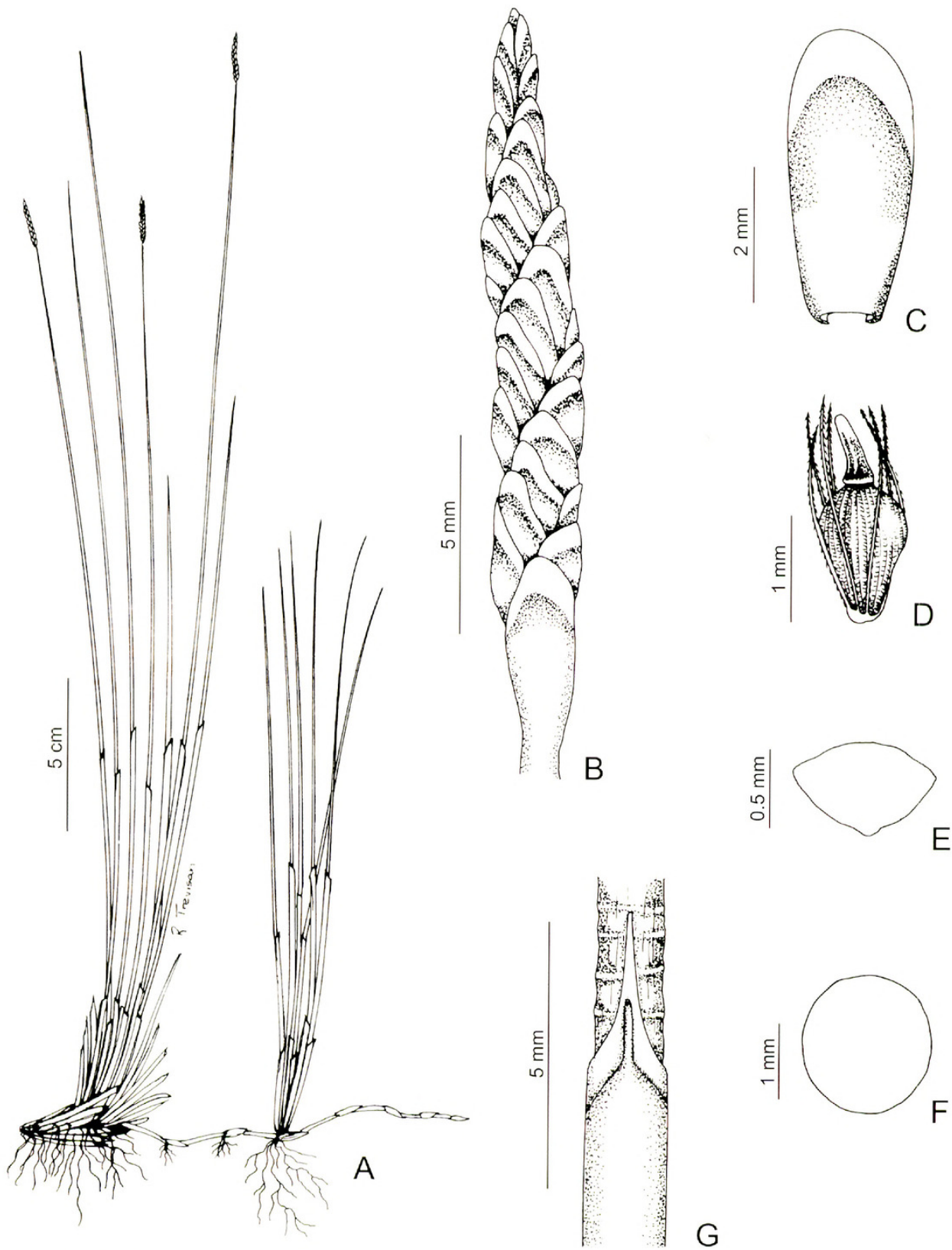


Figure 1. *Eleocharis laeviglumis* Trevisan & Boldrini. —A. Habit. —B. Spikelet. —C. Upper scale, dorsal view. —D. Achene. —E. Achene, cross section. —F. Culm, cross section. —G. Sheath, dorsal view of the apex. B, C, and F drawn from *R. Trevisan & I. Boldrini* 32 (ICN); D and E from *R. Trevisan et al.* 324 (ICN); and A and G from *R. Trevisan et al.* 329 (ICN).

6 mm long; culms 30–65 × 0.1–0.3 cm, terete, non-septate, generally nodulate, internally spongy; sheaths 7–15 cm long, apex oblique acuminate. Spikelets 10–23 × 2.2–3.5 mm, lanceoloid to cylindric, as wide as

their culms, 20- to 50-flowered, not proliferous, stramineous to yellowish brown; lower scale fertile, coriaceous, ovate, apex obtuse, green, with conspicuous hyaline margin; upper scales 3.5–4(–5) × 2–

2.3 mm, cartilaginous, strongly imbricate, elliptic to obovate, apex obtuse, spirulate, appressed, not keeled, stramineous to yellowish brown, inconspicuous nerved, smooth, with submarginal band vinaceous to brown, hyaline margin conspicuous and abruptly differentiated from the rest of scale; *bristles* 6 or 7, white to yellowish white, slender, somewhat denticulate, equaling or exceeding the achene including the style-base; *stamens* 3, anthers 1.3–1.5 mm long; *style* trifid. *Achenes* 1.2–1.5 × 0.8–1 mm, trigonous, obovoid to obpyriform, reticulate with 8 to 10 rows of coarse transversely linear cells on the adaxial face, light green to stramineous; *style-base* 0.6–0.8 mm long, not confluent but separated from the achene by a small constriction, pyramidally elongate, usually curvate, green to brownish green.

Etymology. The epithet refers to the smooth scales. This character is not common in *Eleocharis* subg. *Limnochloa*.

Habitat and distribution. The species is very common in permanently flooded environments in coastland regions in Rio Grande do Sul and Santa Catarina, Brazil. The plants generally have culms partially submerged, forming clonal masses. Developed rootstocks are not present in young individuals. This structure was observed only in old plants.

According to the supraspecific classification proposed by González-Elizondo and Peterson (1997), *Eleocharis laevigulumis* belongs to *Eleocharis* subg. *Limnochloa* (P. Beauvois ex T. Lestiboudois) Torrey sect. *Limnochloa* (P. Beauvois ex T. Lestiboudois) Benth & Hooker f. The new species is included in this subgenus on the basis of the following features: lower scale is fertile and appears to be a continuation of the fertile culm; upper spikelet scales are indurate, are not keeled, and have a distinct hyaline margin; ornamentation on the achenes appears as polygonal cells.

Eleocharis elongata Chapman is very similar to the new species, but differs by slender (0.4–1.5 mm) and flaccid culms, striate and loosely imbricate upper scales, achene apex constricted to short neck, and style-base 0.2–0.5 mm long.

Paratypes. BRAZIL. **Rio Grande do Sul:** Osório, estrada do Mar, 29°54'20"S, 50°14'44"W, 28 Jan. 2004, R. Trevisan, H. M. Longhi-Wagner & S. Hefler 318 (ICN); Osório, estrada do Mar, km 20, 29°51'35"S, 50°04'57"W, 28 Jan. 2004, R. Trevisan, H. M. Longhi-Wagner & S. Hefler 324 (ICN); Viamão, Itapuã, Apr. 1984, M. Sobral 2949 (ICN); Xangri-lá, estrada do Mar, km 22, 16 Oct. 2003, R. Trevisan & I. Boldrini 32 (ICN); Xangri-lá, estrada do Mar, km 26, 29°48'44"S, 50°03'42"W, 28 Jan. 2004, R. Trevisan, H. M. Longhi-Wagner & S. Hefler 329 (ICN). **Santa Catarina:**

Palhoça, Massiambú, 20 Dec. 1952, R. Reitz 5011 (HBR, PACA).

Acknowledgments. The authors are grateful to curators of the herbaria for loans of specimens. The first author thanks the National Council for Scientific and Technological Development (CNPq) for scholarship support.

Literature Cited

- Barros, M. 1947. Cyperaceae. Pp. 1–243 in H. Descole, Genera et Species Plantarum Argentinae, Tomo 4, parte 1.
- . 1960. Las Ciperáceas del Estado de Santa Catalina. Sellowia 12: 181–448.
- Goetghebeur, P. 1998. Cyperaceae. Pp. 141–190 in K. Kubitzki, H. Huber, P. J. Rudall, P. S. Stevens & T. Stützel (editors), The Families and Genera of Vascular Plants, IV: Flowering Plants—Monocotyledons. Springer-Verlag, Berlin.
- González-Elizondo, M. S. 1994. *Eleocharis* R. Br. (Cyperaceae). Pp. 458–464 in G. Davidse, M. Souza & A. O. Chater (editors), Flora Mesoamericana, Vol. 6. Alismataceae a Cyperaceae. Universidad Nacional Autónoma de México, México, D.F.; Missouri Botanical Garden, St. Louis; The Natural History Museum, London.
- & P. M. Peterson. 1997. A classification of and key to the supraspecific taxa in *Eleocharis* (Cyperaceae). Taxon 46: 433–449.
- & A. A. Reznicek. 1998. *Eleocharis* R. Br. Pp. 548–561 in P. E. Berry, B. K. Holst & K. Yatskievych (editors), Flora of the Venezuelan Guayana, Vol. 4. Caesalpiniaceae–Ericaceae. Missouri Botanical Garden Press, St. Louis.
- & J. A. Tena-Flores. 2000. *Eleocharis* (Cyperaceae) in the New World. Pp. 637–643 in K. L. Wilson & D. A. Morrison (editors), Monocots: Systematics and Evolution. CSIRO Publishing, Melbourne.
- Kukkonen, I. 1990. On the genus *Eleocharis* (Cyperaceae) in Flora Iranica area, with revised infrageneric classification and nomenclature. Ann. Bot. Fenn. 27: 109–117.
- Roalson, E. H. & E. A. Friar. 2000. Infrageneric classification of *Eleocharis* (Cyperaceae) revisited: Evidence from the Internal Transcribed Spacer (ITS) region of nuclear ribosomal DNA. Syst. Bot. 25: 323–336.
- Smith, S. G., J. J. Bruhl, M. S. González-Elizondo & F. J. Menapace. 2002. *Eleocharis* R. Brown in P. W. Ball, A. A. Reznicek & D. F. Murray, Flora of North America North of Mexico, Vol. 23. Magnoliophyta: Commelinidae: Cyperaceae. Oxford University Press, New York. Available at: <http://www.efloras.org/florataxon.aspx?flora_id=1&taxon_id=111420>. Accessed 8 July 2005.
- Svenson, H. K. 1929. Monographic Studies in the Genus *Eleocharis* I. Rhodora 31: 121–135, 152–163, 167–191, 199–219, 224–242.
- . 1932. Monographic Studies in the Genus *Eleocharis* II. Rhodora 34: 193–203, 215–227.
- . 1934. Monographic Studies in the Genus *Eleocharis* III. Rhodora 36: 377–389.
- . 1937. Monographic Studies in the Genus *Eleocharis* IV. Rhodora 39: 210–231, 236–273.
- . 1939. Monographic Studies in the Genus *Eleocharis* V. Rhodora 41: 1–19, 43–77, 90–110.



Boldrini, Ilsi Iob. and Trevisan, Rafael. 2006. "A new species of Eleocharis R. Brown (Cyperaceae) from southern Brazil." *Novon a journal of botanical nomenclature from the Missouri Botanical Garden* 16, 155–157.

View This Item Online: <https://www.biodiversitylibrary.org/item/41804>

Permalink: <https://www.biodiversitylibrary.org/partpdf/37292>

Holding Institution

Missouri Botanical Garden, Peter H. Raven Library

Sponsored by

Missouri Botanical Garden

Copyright & Reuse

Copyright Status: In copyright. Digitized with the permission of the rights holder.

License: <http://creativecommons.org/licenses/by-nc-sa/3.0/>

Rights: <https://biodiversitylibrary.org/permissions>

This document was created from content at the **Biodiversity Heritage Library**, the world's largest open access digital library for biodiversity literature and archives. Visit BHL at <https://www.biodiversitylibrary.org>.