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New records in the genus *Carex* L. (Cyperaceae) for Brazil and Rio Grande do Sul

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RESUMO – (Novos registros em *Carex* L. (Cyperaceae) para o Brasil). *Carex brongniartii* Kunth está sendo citada pela primeira vez para o Brasil e *C. seticulmis* Boeck., para o Rio Grande do Sul. São fornecidos dados morfológicos para a identificação das duas espécies, incluindo breves descrições e ilustrações, além de dados de distribuição e habitat.
Palavras-chave: Cyperaceae, *Carex*, novos registros, Rio Grande do Sul, Brasil

ABSTRACT – **(**New records in *Carex* L. (Cyperaceae) for Brazil). *Carex brongniartii* Kunth is a new record for Brazil and *C. seticulmis* Boeck. for the state of Rio Grande do Sul, Brazil. Morphological data for the identification of the two species, including short descriptions and illustrations are provided, as well as data on habitat and distribution.
Key words: Cyperaceae, *Carex*, new records, Rio Grande do Sul, Brazil

Introduction

Carex L. is the genus of Cyperaceae with the largest number of species, about 2000 according to Goetghebeur (1998). Although its main centres of diversity are in North America and East Africa (Starr *et al.* 1999), it is well represented in South America, with about 200 species (Wheeler 2002), especially in highlands.

There are still no estimates published for Brazil; however, 18 species were listed by Guaglianone *et al.* (2008) for the Southern Region. Preliminary data for Rio Grande do Sul indicate the occurrence of 17 species, included in the subgenera *Carex*, *Primocarex* Kuk., and *Vignea* (P. Beauv. Lestib ex. f.) Peterm.

This paper presents two new records of species of *Carex*, one for Brazil and one for the state of Rio Grande do Sul; it also provides means for their identification and data on their distribution and habitat.

Material and methods

This work is based on revision of literature, field collections (specimens deposited in the ICN herbarium) and revision of the following herbaria: BLA, SH, ICN, MPUC, PACA, SMDB and PEL (Holmgren & Holmgren 1998).

Results and discussion

Carex includes herbaceous, rhizomatous and perennial species, monoecious, rarely dioecious, with spikelets grouped in a spike. The presence of an adaxial ligule, uncommon in the genera of Cyperaceae, is an important recognition characteristic, as well as the presence of the perigynium, a membranous envelope covering the achene.

One of the new submitted records, *Carex brongniartii*, is included in *Carex* subg. *Vignea*, while *C. seticulmis* is included in the subgenus *Primocarex*. In addition, the subgenus *Carex* is also represented in Rio Grande do Sul.

The species of *Primocarex* have three stigmas and only one bisexual spike at the apex of the scape. The species of the other two subgenera present two stigmas, with bisexual and androgynous spikes (several pistillate spikelets at the base and a few staminate at the apex) in *Vignea*, and unisexual spikes (one or several staminate apical spikes preceded by 4-5(-8) pistillate spikes) in species of the subgenus *Carex*.

The subgenus *Vignea* is represented by seven species in Rio Grande do Sul, usually found in disturbed areas, wet grasslands and swamps. The subgenus *Primocarex* is represented by two species in Rio Grande do Sul, occurring both in the interior and at the edges of woodlands.

1. ***Carex brongniartii*** Kunth, Enum. Pl. 2: 380. 1837. Tipo: Chile, Província de Valdívia, *Hokenacker s.n*. (holotype P, foto!).
   Fig.1-4

Rhizomatous, 42-110 cm high. Scape erect. Leaf sheaths with the ventral part more delicate than the remainder, and conspicuously hyaline, contraligule acute. Leaf blades 16-60 cm x 3-4 mm, linear, the apex acute. Lower involucral bract setaceous, 1-5(-8) cm x 0.5-1 mm. Spikes 1.5-7 cm x 6-10 mm, ovate, 5-8 per scape, sessile, bisexual, with 3 staminate apical spikelets and ca. 30 pistillate basal spikelets. Glumes awned, awn 1-1.5 mm, keel green. Perigynium 4-4.5 x 2-3 mm, with conspicuous nerves at the base of the two faces, neck bidentate.

Distribution and habitat: widely distributed in Southern South America, cited by Guaglianone *et al.* (2008) for Argentina, Chile and Uruguay. The present work is its first citation for Brazil. Seldom found in Rio Grande do Sul, occurring in the Pampa Biome, in swamps and wet areas of the Southeast and Southwest of the state and in "restingas" (areas with sandy, acidic, and nutrient-poor soils) in the South coast.

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Material examined: **BRAZIL. Rio Grande do Sul:** Bagé para Serrilhada, 8/XII/1990, *H. Longhi-Wagner et al. 2403* (ICN); Pelotas, praia do Laranjal, 19/I/2005, *G.H. Silveira & S.M. Hefler 108* (ICN); Piratini, 16/XI/2003, *S.M. Hefler 175* (ICN); Quaraí, BR 293, 7/I/1991, *H. Longhi-Wagner et al. 2176* (ICN); Rio Grande, BR 471 25/IX/2004, *I. Boldrini & R. Trevisan 1258* (ICN); Santana do Livramento, 15/X/1971, *J.C. Lindeman et al. s.n.* (ICN 8575), 15/XI/2005, *R. Trevisan 538* (ICN).

Carex brongniartii is characterized mainly by the ventral part of the leaf sheath being more delicate than the remainder, conspicuously hyaline, continued in the apex by a contraligule acute (Fig. 2), and by the lower involucral bract setaceous, usually not exceeding the length of the inflorescence. Other important features for the recognition of this species are the presence of nerves at the base of the perigynium, on both faces (Fig. 4).

Carex sororia Kunth, another species of the subgenus *Vignea* in Rio Grande do Sul, has the shape of the inflorescence and the perigynium similar to *C. brongniartii*. It differs from the latter by the leaf sheath being of equal consistency throughout, without a hyaline ventral part, by the obtuse contraligule and also by the foliaceous lower involucral bract, (5-)7-14 cm long and 1-5 mm wide, two to six times longer than the inflorescence. In addition, *C. sororia* presents nerves only in one face of the perigynium, being one of the most common species of *Carex* in Rio Grande do Sul, occurring in disturbed habitats.

2. ***Carex seticulmis*** Boeck., Vidensk. Meddel.: 156. 1869. Type: Brazil, Paraná, Serra da Piedade, *Hatschbach 2451* (holotype S!)
Fig. 5-7

Figures 1-4. *Carex brongniartii* Kunth (*Silveira* & *Hefler 108*): 1. Habit. 2. Leaf sheath with the ventral part hyaline and contraligule acute. 3. Inflorescence. 4. Perigynium. Figures 5-7. *Carex seticulmis* Boeck. (*Silveira* & *Lerina 717*): 5. Habit. 6. Inflorescence. 7. Perigynium.

Rhizomatous, 30-51 cm high. Scape delicate. Leaf sheaths with uniform consistency throughout, contraligule absent. Leaf blades 35-45 cm x 7-10 mm, lanceolate, attenuated to the base, at apex obtuse. Lower involucral bract 3.5-4.5 cm x 4-5 mm. Spikes 2-2.3 cm x 4-5 mm, ovate, one per scape, sessile, bisexual, with 4-8 apical staminate spikelets, and 6-10 pistillate basal spikelets. Glumes awned, awn 0.5 mm, keel stramineous. Perigynium 5-6 x 2-2.5 mm, without nerves throughout its length, neck bidentate.

Distribution and habitat: Brazil, cited by Kükenthal (1909) for Minas Gerais, Paraná, Rio de Janeiro and Santa Catarina. In Guaglianone *et al.* (2008) it is cited only for the State of Paraná. The present work is its first record for Rio Grande do Sul. In this State it was rarely found in the Atlantic Forest Biome, in areas of Atlantic Rainforest still preserved in the Northern coastland, in shadowy and humid places. These areas represent the southernmost limit of distribution of this species, and are also considered the southern limit of the Atlantic Forest.

Material examined: **BRAZIL. Rio Grande do Sul**: Dom Pedro de Alcântara, 2/XII/2008, *G.H. Silveira & R. Lerina 717* (ICN); Maquiné, Reserva Biológica da Serra Geral, 28/I/2005, *R. Schmidt 924* (SH).

Carex seticulmis is easily identifiable, even in the field, by the leaf blades lanceolate, attenuated to the base, with obtuse apex, and by the involucral bracts that conceal and fully involve the lone spike in the apex of the scape (Fig. 5, 6). It is the only species of this genus in Rio Grande do Sul with these characteristics.

Carex sellowiana differentiates itself by the linear leaf blades, with acute apex, and by the exposed spike, not concealed by the involucral bracts. It is evenly distributed across Rio Grande do Sul, in different types of forest formations.

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