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CAREX EXILIS DEWEY (CYPERACEAE) NEW TO ALABAMA

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ABSTRACT

Carex exilis Dewey is reported new to Alabama from Mobile and Baldwin counties. Its habitat in Alabama is discussed, and related to *Carex exilis* habitats in adjacent southern Mississippi.

KEY WORDS: *Carex exilis*, Cyperaceae, Alabama, seepage herb bogs

Carex exilis Dewey (section *Stellulatae*) is primarily a north temperate boreal sedge, occurring in fens and bogs from Delaware and Maryland north along the Atlantic coast to Newfoundland, and inland from New York to Minnesota, Michigan, and northwestern Ontario (Reznicek & Ball 1980; Bryson, *et al.* 1988). All of the previous records south of Delaware are disjunct occurrences on the coastal plain of North Carolina (Moore County), and six southern Mississippi counties (Greene, George, Harrison, Jackson, Pearl River, and Stone) (Bryson, *et al.* 1980; Reznicek & Ball 1980). Our recent discovery of *C. exilis* from Mobile County, Alabama is therefore not unexpected, since it is known from three adjacent Mississippi counties. Our Baldwin County collection was somewhat less predictable since the extensive alluvial plain associated with the rivers entering Mobile Bay may represent a significant phytogeographic barrier for seepage adapted species. The collection data for our Alabama specimens are as follows:

Carex exilis Dewey (Cyperaceae). UNITED STATES. Alabama: Baldwin Co.: Hillside streamhead seepage herb bog on S side of US 90, 2.2 mi W of

Seminole, ca. 0.5 air mi SW of Seminole Church, ca. 3.9 mi W of Perdido River and Florida state line; EH, SWQ, SEQ, NWQ, Sec. 18, T6S, R6E, Elsanor 7.5′ Quad., 30° 31′ 31″ N, 87° 30′ 30″ W. Elev. 50-65 ft., 28 March 1991, *Orzell & Bridges 16192* (TEX, MICH), 8 April 1991, *Orzell & Bridges 16287* (TEX, VDB, MICH). Mobile Co.: Hillside seepage shrub-herb bog on S side of Beverly-Jefferies Rd (Co Rd 96), 7.1 mi W of int. US 45 in Citronelle, 1.3 mi W of Ramey Rd and 1.6 mi E of Escatawpa River bridge; NWQ, SWQ, NEQ, NEQ, Sec. 2, T1N, R4W, Citronelle West 7.5′ Quad., 31° 04′ 49″ N, 88° 21′ 04″ W. Elev. 160-180 ft., 8 April 1991, *Orzell & Bridges 16275* (TEX, VDB, MICH).

This exceptionally distinct member of section *Stellulatae* is easily recognized by its large, terminal inflorescences and densely tufted involute leaves (Reznicek & Ball 1980). Our Alabama specimens fall well within the range of morphological variation noted for the species in Reznicek & Ball (1980). The culms of the Alabama plants tend to be at the larger end of the range for the species, generally from 40-60 cm tall. The infructescences range from 10-25 mm long, averaging 18 mm long. The typical infructescence is staminate for the lower 60% of its length and pistillate for the upper 40%, although a continuous range of variation from this mean to completely dioecious staminate and pistillate infructescences are present within a single population. The perigynia are generally 3-4 mm long and 1.5 mm wide, with beak and nerving characters typical for the species as described by Reznicek & Ball (1980).

At both of the Alabama sites *Carex exilis* is restricted to acidic, sapric, organic muck, which is constantly saturated by copious, oligotrophic, telluric groundwater. *Carex exilis* is restricted to the muckiest soils of these bogs, on spongy peaty substrates, frequently occurring at or near permanent seep spring runs within the hillside seepage-bogs. In these microhabitats it is often the dominant species, a situation also noted by Bryson, *et al.* (1988) for *C. exilis* in adjacent southern Mississippi. The microhabitat for *C. exilis* at the Alabama sites is nearly identical to that described for Mississippi by Bryson, *et. al.* (1988). The major difference is that both of the Alabama sites are from slightly sloping hillside seepage bogs whereas the majority of the Mississippi sites are from nearly level deep mucky peat, quaking, streamhead seepage bogs (Bryson, *et al.* 1988; Orzell & Bridges, personal observation). Although the topo-edaphic-hydrologic conditions for quaking streamhead bogs occur in southern Alabama, the vast majority of these quaking bogs are overgrown with semi-evergreen broadleaf shrubs and trees, due to long term fire suppression (Orzell & Bridges, personal observation). In contrast, many of the same habitats (quaking bogs) in adjacent southern Mississippi are being maintained through prescribed burning.

Taxa strongly associated with *Carex exilis* at both Alabama sites include *Rhynchospora stenophylla* Chapm., *R. macra* (Clarke) Small, *Xyris chapmanii* Bridges & Orzell, *X. scabrifolia* Harper, and *Lachnocaulon digynum* Körn.

Other associates which occur at both sites include *Chaptalia tomentosa* Vent., *Eriocaulon texense* Körn., *Helenium brevifolium* (Nutt.) A. Gray, *Pinguicula primuliflora*, *Sarracenia leucophylla* Raf., *S. purpurea* L., and *Utricularia subulata* L. At the Mobile County site other associates include *Bidens mitis* (Michx.) Sherff, *Juncus trigonocarpus* Steud., *Utricularia juncea* Vahl, and *Zigadenus glaberrimus* Michx. *Lindera subcoriacea* B.E. Wofford, although not closely associated with *C. exilis*, also occurs at the Mobile County site (Bridges & Orzell 1989), and was noted by Bryson, *et al.* (1988) at fourteen of the sixteen *Carex exilis* sites in Mississippi. At the Baldwin County site other taxa which occur with *C. exilis* include *Aristida virgata* Trin., *Arnoglossum sulcatum* (Fern)., *Centella asiatica* (L.) Urban, *Drosera tracyi* Macfar., *Eriocaulon compressum* Lam., *Ilex coriacea* (Pursh) Chapm., *Magnolia virginiana* L., *Pleea tenuifolia* Michx., *Pogonia ophioglossoides* (L.) Ker., *Rhynchospora latifolia* (Ell.) Thomas, *Smilax laurifolia* L., and *Syngonanthus flavidulus* (Michx.) Ruhl. The apparently greater diversity of associated taxa at the Baldwin County site is likely due to the increased flowering resulting from a growing season burn in 1990.

Our observations at both Alabama sites and several sites in southern Mississippi suggest some differences in taxa associated with *Carex exilis*, from those noted by Bryson, *et al.* (1988) in Mississippi. *Carex turgescens* Torr., a fidel associate of *C. exilis* in Mississippi (Bryson, *et al.* 1988, Orzell & Bridges, personal observation) was not closely associated with *C. exilis* at the Alabama sites, despite the fact that it occurs at the Alabama sites. In contrast, we found *Rhynchospora stenophylla, R. macra, Xyris chapmanii, X. scabrifolia*, and less frequently *Lachnocaulon digynum* to be the most constant closely associated species at sites we surveyed in both states. With the exception of *R. stenophylla* and *X. chapmanii*, all are listed as taxa which may occur among populations of *Carex exilis* by Bryson, *et al.* (1988). *Xyris chapmanii* is not listed by Bryson, *et al.* (1988) since it was recently described as a new species (Bridges & Orzell 1990).

The discovery of *Carex exilis* from southern Alabama, although not totally unexpected, further emphasizes the need for systematic field work in specialized and restricted habitats in the Gulf Coastal Plain. Despite the fact that nearly 1,900 taxa have been documented from Mobile and Baldwin counties in Alabama (Lelong 1988a, 1988b), and the recent reports of many noteworthy and new taxa from these counties (Kral 1973, 1976, 1981; Lelong 1988a, 1988b) these counties, and others in adjacent states, still have the potential to produce phytogeographically significant records (Bridges & Orzell 1989).

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