

## Vascular Plants of Williamson County

### *Carex muehlenbergii* var. *muehlenbergii* – MUHLENBERG SEDGE [Cyperaceae]

*Carex muehlenbergii* var. *muehlenbergii* Schkuhr, MUHLENBERG SEDGE. Perennial herb, rhizomatous (other authors “without conspicuous rhizomes”), fibrous-rooted, many-stemmed at base, small tussocklike, ascending, in range to 45 cm tall; monoecious; shoots with to 5 photosynthetic leaves, lower leaves transitional from rhizome scales, all leaves basal (even “cauline” leaves attached at shoot base), glabrous and never glaucous, not detectably scabrous to the touch; rhizomes creeping, concealed by fibers (decomposed scales, cataphylls), frequently 2-forked forming an emergent shoot having a vertical rhizome segment for each shoot, creeping rhizome shallow, compressed side-to-side, to 5 × 3 mm in  $\times$ -section, whitish, internodes to 1.5 mm long, solid, the scales mostly < 8 mm long, acuminate at tip, having many red-purple parallel veins aging black, scales on vertical rhizomes often longer and internodes very short; adventitious roots arising mostly from nodes on vertical rhizome segments and splitting bases of leaf sheaths. **Stems (culms):** 3-sided base-to-inflorescence, glabrous, on lower plant (hidden by leaf sheaths) whitish, 1 mm diameter, low-ridged, above leaf sheaths convex 3-sided, tough, having minute scabrous teeth on angles approaching top. **Leaves:** alternate tristichous, simple with sheath; sheath (basal leaves) closed, increasing upward to 120 mm long, cylindrical with a membranous panel on 1 side, the top low-convex; ligule low-domed at base of blade < 1 mm, curving ligule somewhat fleshy to 0.25 mm tall; blade linear long-tapered to tip flat to  $\pm$  folded upward from midrib, in range < 40–270 × 2–3.5 mm, minutely papillate at base changed to scabrous teeth above midblade to fine tip (3-sided with scabrous teeth), parallel-veined with midrib sunken on upper surface and raised on lower surface and other veins slightly sunken on upper surface, upper surface minutely papillate (high resolution required), lower surface midrib scabrous above midblade. **Inflorescence:** spikes of unisexual flowers, racemelike, terminal and compact, (2–)4–8(–10) per panicle, panicle to 25 × 10 mm, spikes helically alternate along 3-sided axis, lateral spikes divergent, at maturity with 3–13 pistillate florets (helically alternate florets, 2/5 phyllotaxis) mostly spreading and an erect cluster of several staminate florets at the top (androgynous), the terminal spike larger often with 15+ pistillate florets (3/8 phyllotaxis, 2/5 phyllotaxis for a small spike) and an erect cluster of 10+ staminate florets at the top, florets overlapping, bracteate, glabrous; bract at basal node subtending the lowest lateral spike (proximal bract) attached to 2 sides of axis (open), ascending, blade flared triangular and green at base with long awnlike tip, in range 10–18(–35) mm long, lower portion keeled, scabrous on margins and lower midvein; bract subtending succession lateral spikes decreasing in length and each with wide membranous margins and a central midstripe and successively shorter awn, upper bracts < 5 mm long and the upper ones often appearing with membranous lobes (auriclelike) and bracketing a short green awn; principal axis of panicle 3-sided, with solid internodes; lateral spike lacking prophyll; bractlet of staminate floret with 1-veined green midstripe and membranous margins, acute-ovate somewhat folded or with awnlike point at tip, 2.5–3 × 1–1.5 mm (flattened), persistent at top of spike; bractlet of pistillate floret broadly ovate often with awn tip above wide membranous margins, 3.5–4 × 2–3 mm, with green midstripe often 3-veined, awn never below midbractlet; pistillate flower enclosed in sac with narrow opening at top (perigynium), perigynium at anthesis ovate flattened front-to-back, ca. 1.5 mm long, in range aging with body nearly rounded, at anthesis lower

portion to midpoint roundish, upper portion with medial canal triangular (neck or “beak”) 0.7–0.9 mm long, colorless ovary with adjacent light yellow-green stripes, having scabrous teeth from tip downward to level of ovary. **Staminate flower:** = stamens; **perianth** absent; **stamens** 3, free, exerted from top of bractlet; filaments 2.5–3 mm long, translucent; anthers basifixed, dithecal, in range 1.5–1.7 mm long, pale yellow with papillate colorless tips, longitudinally dehiscent; pollen pale yellow; **pistil** absent. **Pistillate flower:** short-stalked ca. 0.2 mm; **perianth** absent; **stamens** absent; **pistil** 1; ovary superior, biconvex roundish compressed front-to-back, ca. 0.4 mm across, translucent, 1-chambered with 1 ovule; style 2-branched, lower portion  $\pm$  0.35 mm long, the stigmatic branches to 1.6 mm long, translucent aging reddish. **Fruit:** achene, short-stalked within perigynium; achene in range broadly ovate circular-biconvex,  $\pm$  2–2.2  $\times$  2  $\times$  0.7 mm, pale green aging pale brown; perigynium nearly circular in outline and approximately plano-convex + gaping neck (“beak”), to 3.5–4  $\times$  < 2.2–2.5 mm including neck ca. 0.9 mm long, “wing” around chamber narrow, initially green, veinless, and cupped to flat (upper) face, fruit body without defined chamber, in range upper (flattish) face typically 9-veined and lower (domed) face mostly 11–15-veined, sometimes veins on upper face not clearly defined; exerted style branches often broken.

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