CAREX BRYSONII AND CAREX GODREYI, NEW SPECIES OF CAREX SECTION GRISEAE (CYPERACEAE) FROM THE SOUTHEASTERN UNITED STATES

Robert F. C. Nacci
Department of Biological Sciences
Northern Kentucky University
Highland Heights, Kentucky 41099-0400

The sedges constituting Carex section Griseae (L. H. Bailey) Kükenthal belong to subgenus Carex and possess glabrous leaf and bract blades, long-sheathing lower bracts, staminate terminal spikes, and glabrous perigynia with numerous (usually 40 or more) impressed nerves. Section Griseae [including sect. Oligocarpae (Carey) Mackenzie] contains 18 taxa, all endemic to eastern North America. The group is most diverse in the southeastern United States, the region inhabited by three of the section's four recently described species (Bryson et al. 1987; Kral et al. 1987; Bridges & Orzell 1989; Nacci 1989). The Southeast continues to yield new species of sect. Griseae; here I describe two new species from this area. Recognition of these taxa as new species results from ongoing research on the systematics of Carex sect. Griseae and exploration of localities and habitats in the Southeast with previously poorly known sedge floras.


Herba perennis, dense caespitosa. Rhizomata brevia, 0.2–1.0 mm longa inter surculos vel ramos rhizomaturn, internodus 0.2–1.0 mm longis, 2.4–2.7 mm crassis. Bases surculorum stramineae vel cinnamomeae. Culmi fertiles 26–63 cm alti, 0.5–0.8 mm lati in medio, sparsim antrorse scaberuli vel laeves. Folia 3–5, linearinae 3.3–24 cm longae, 2.4–5.3 (–5.8) mm latae, laminae (3.4–) 3.7–5.3 (–5.8) mm latae, glaucescentes, paginis abaxialibus laevibus vel papillatis; vaginae scabreae 8.7–56 cm altae; pseudoculmi 4.1–19 cm alti. Inflorescentiae 6.4–54 cm longae; spicae separatae vel 2–4 superae imbricatae; spicae infimae remotae. Spicae (3–) 4–5 (–6), erectae; spicae terminalis (1.2–) 1.8–4.6 cm longa, 1.4–2.6 mm lata, omnino mascula, in pedunculo erecto 6.6–29 (–42) mm longo portata, spicas superas laterales vir vel multo superans; spicae breves (0.9–) 2.8 mm longae, 3.8–4.7 mm lata, omnino feminicae vel raro androgyna, in pedunculo erecto (0.9–) 2.3–13.2 cm longo portata; spicas laterales 0.6–2.6 cm longae, 3.8–6.8 mm latae, omnino feminicae vel raro androgynae, in pedunculis erectis 0.3–4.9 cm longis portatae; flores feminici spicarum lateralium (2–) 3–8 spirales imbricati, internodio inter flores infimos (2.6–) 4.5–7.3 (–9.3) mm longo. Squamae feminae (3.5–) 4.1–6.1 mm longae, 1.3–2.0 mm latae, aristatae; corpus (2.0–) 2.5–3.2 (–3.8) mm longum, late ovatum vel ovatum, integrimarginatum; arista (0.1–) 1.2–3.6 mm
longa. Perignyia (3.7–) 4.0–4.7 (–5.1) mm longa, 1.5–1.7 (–1.8) mm lata, (2.5–) 2.5–3.1 po longiora quam latiora; ascendentia, obtuse trigona, nervata, glabra, elliptoida vel anguste elliptoida vel obovoida vel anguste obovoidea, in basim angustam subacutam gradatim contracta, in rostrum laevo plus minusve excavatum integrum (0.5–) 0.6–1.0 longum abrupte contracta; nervi 49–59 impressi. Achenia (2.5–) 2.7–3.5 mm longa, 1.4–1.6 mm lata, late obovoidea-elliptoida vel obovoidea-elliptoida, in stipitem 0.3–0.5 (–0.6) mm longum abrupte contracta, arcte inclusa perignyis; corpus 2.1–2.7 mm longum.

Perennial herb, dense caespitose. Rhizomes short, 0.2–1.0 mm long between shoots or branches of the rhizomes, with internodes 0.2–1.0 mm long, 2.4–2.7 mm thick, covered with cataphylls 2–3.5 mm long. Shoot bases not surrounded by bases of old leaves, stramineous to cinnamon. Fertile culms 26–63 cm tall, 0.5–0.8 mm wide at mid-height, trigonous, erect to spreading, elongating slightly in fruit, sparsely antrorsely scaberulous-angled or smooth. Cataphylls scabrous, stramineous to cinnamon, multistcostate. Leaves 3–5, arising in basal 0.01–0.2 (–0.6) cm wide at margins, tendrillous, margins antrorsely scaberulous or smooth, adaxial surface smooth or sparsely antrorsely scaberulous on main veins, abaxial surface smooth or papillate, papillae especially on leaves produced during previous season; leaf sheaths 2.1–10.4 cm long, tight, scabrous, glaucescent with bases stramineous to cinnamon; adaxial face of sheaths with hyaline and glabrous or apically sparsely scabrous band, hyaline band with apex slightly concave to slightly convex; ligules 1.2–4.7 mm long, laciniate with apex obtuse. Vegetative shoots 8.7–56 cm tall, 0.65–1.2 times as tall as culms; leaves 3–6, similar to those of fertile culms except blades 1.0–46 cm long; pseudoculms 4.1–19 cm tall, 1.9–3.2 mm wide, 0.28–0.39 of vegetative shoot height. Inflorescences 6.4–54 cm long, 0.22–0.86 of culm height, with spikes separate or upper 2–4 spikes overlapping; the uppermost lateral spikes 1.3–3.4 cm distant; the lowest spikes separate, (2.2–) 6.6–26 cm distant; lowest bract blade 5.6–22.9 cm long, sheath 0.6–7.4 cm long, adaxial face of sheath with glabrous and hyaline band usually occupying full length of sheath, hyaline band with apex slightly convex and elongated 0.3–2.3 mm above sheath apex, sheath scabrous abaxially, ligule 0.7–3.4 mm long; bract blade of uppermost lateral spike (0.7–) 2.0–6.3 (–8.2) cm long and overlapping but not exceeding terminal spike, sheath 1.3–2.6 mm long and glabrous or sparsely scabrous abaxially; uppermost bract subterminally spike and scale-like, sheathless, body 3.9–5.0 mm long, awn 0–7.9 mm long. Spikes (3–) 4–5 (–6), simple, single at nodes, erect; terminal spike (1.2–) 1.8–4.6 cm long, the longest (2.5–) 3.0–4.6 cm long, 1.4–2.6 mm wide, entirely staminate, 13–116-flowered, on erect peduncle 6.6–29 (–42) mm long, barely to much exceeding upper lateral spikes; lowest spike 0.9–2.8 cm long, 3.6–4.7 mm wide, entirely pistillate and (2–) 3–6 flowered or rarely androgynous with 4–5 pistillate and 1–3 staminate flowers, the flowers spirally imbricate, the internode between the lowest flowers (2.6–) 4.5–7.3 (–9.3) mm long, on erect peduncle (0.9–) 2.3 13.2 cm long; lateral spikes 0.6–2.6 cm long, 3.8–6.8 mm wide, entirely pistillate and (2–) 4–8-flowered or rarely androgynous with 3–8 pistillate and 1–7 staminate flowers, on erect peduncles 0.3–4.9 cm long. Staminate scales 3.8–4.3 mm long, 1.3–1.6 mm wide, narrowly oblong-obovate to oblong-obovate, obtuse to acute, awnless, center green and 1-nerved, margins hyaline and whitish to pale stramineous. Pistillate scales (3.5–) 4.1–6.1 mm long, 1.3–2.0 mm wide; body (2.0–) 2.5–3.2 (~3.8) mm long, broadly ovate to ovate with midrib prolonged
FIG. 1. Scanning electron micrographs of leaf surfaces and pistillate scale margins of Carex brysonii and C. hitchcockiana. a-b, abaxial surfaces of overwintered leaves: a. C. brysonii (Bryson 4385), b. C. hitchcockiana (Naczi 1945). c-d, adaxial surfaces of overwintered leaves: c. C. brysonii (Bryson 4385), d. C. hitchcockiana (Naczi 1945). e-f, margins of pistillate scale bodies, near apex of body: e. C. brysonii (Naczi 2874), f. C. hitchcockiana (Naczi 1945). Scale: bars in a-d = 0.01 mm; bars in e-f = 0.1 mm.
as antrosely scaberulous awn (0.1–) 1.2–3.6 mm long, center green and 1–3-nerved, margins entire, hyaline, whitish. Anthers 3, 2.9–3.4 mm long. Styles jointed with achene, withering; stigma 3, 2.4–3.3 mm long. Perigynia (3.7–) 4.0–4.7 (–5.1) mm long, 1.5–1.7 (–1.8) mm wide, (2.2–) 2.5–3.1 times as long as wide, ascending, obtusely trigonous with faces flat to slightly convex, with many fine and deeply impressed nerves on each face, the total number of nerves 49–58, glabrous, green to red-brown, fusiform, ellipsoid or narrowly ellipsoid to obvoid or narrowly obvoid, gradually tapered to narrow and subacute base, abruptly contracted to beak; beak (0.5–) 0.6–1.0 mm long, 0.12–0.22 of perigynium length, smooth, slightly excurred, entire. Achenes (2.5–) 2.7–3.5 mm long, 1.4–1.6 mm wide, tightly enveloped by perigynia, broadly obvoid-ellipsoid to obvoid-ellipsoid, obtusely trigonous with faces slightly concave to flat, brown, basally abruptly contracted to stipe, apically abruptly contracted to beak; stipe 0.3–0.5 (–0.6) mm long, straight; body 2.1–2.7 mm long, 0.49–0.60 times as long as perigynium, with widest point 0.9–1.2 mm from body apex; beak 0.2 mm long, bent 30–70° from vertical.

ADDITIONAL SPECIMENS EXAMINED, ALABAMA. LAWRENCE Co.: ca. 19 km (11.6 mi) N of Double Springs, Bankhead National Forest, W side of Bordeau Creek, T83, R38W, Sect. 32, Bryson 11919 (MICH, US, VDB, ctb). Winston Co.: type locality, Bryson 435 (DOV, IBE, MICH, MO, NLU, PH, UNA, VDB, ctb), Nacci 2874 (GH, MICH, NY, UNA, US, VDB, ctb); Bankhead National Forest, SE of Sipsey River Recreation Area, W side of river, T86, R38W, Sect. 10, Bryson 2536 (MICH, ctb); Bankhead National Forest, SE by ca. 1 mi from Sipsey River Recreation Area, T95, R38W, Sect. 9, Bryson 4384 (BRIT/SMU, LSU, MICH, MO, MSC, NLU, PH, TAES, UARK, VDB, VSC, ctb).
Table 1. Morphologic characters distinguishing *Carex brysonii* from *C. hitchcockiana*.

<table>
<thead>
<tr>
<th>Character</th>
<th><em>C. brysonii</em></th>
<th><em>C. hitchcockiana</em></th>
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<tbody>
<tr>
<td>Leaf color</td>
<td>glaucessant</td>
<td>deep green</td>
</tr>
<tr>
<td>Abaxial surface of overwintered leaves</td>
<td>usually papillate</td>
<td>smooth or sparsely scabrous on midrib</td>
</tr>
<tr>
<td>Hyaline band of lowest bract sheath, length relative to sheath</td>
<td>usually as long as sheath</td>
<td>much shorter than sheath</td>
</tr>
<tr>
<td>Bract blade of uppermost lateral spike, length relative to terminal spike</td>
<td>shorter than or equaling terminal spike</td>
<td>usually much exceeding terminal spike</td>
</tr>
<tr>
<td>Longest terminal spike, length (mm)</td>
<td>(25–) 30–46</td>
<td>(3.4–) 14–34 (–42)</td>
</tr>
<tr>
<td>Pistillate scale margins</td>
<td>entire</td>
<td>denticulate</td>
</tr>
<tr>
<td>Perigynium, length (mm)</td>
<td>(3.7–) 4.0–4.7 (–5.1)</td>
<td>(4.5–) 4.6–5.6 (–6.2)</td>
</tr>
<tr>
<td>Perigynium, width (mm)</td>
<td>1.5–1.7 (–1.8)</td>
<td>1.9–2.2 (–2.3)</td>
</tr>
</tbody>
</table>

Morphologically, *C. brysonii* is most similar to *C. hitchcockiana* Dewey. These two are the only taxa in sect. *Grisae* to have scabrous leaf and bract sheaths. In addition, *C. brysonii* and *C. hitchcockiana* share brown shoot bases, relatively wide leaves [the widest leaf blade per plant (3.0–) 3.5–5.3 (–6.5) mm wide], perigynia tightly enveloping the achenes, and perigynia with excurred beaks. Numerous morphologic characters distinguish the two species (Table 1). The abaxial surfaces of the leaf blades of *C. brysonii* are smooth or papillate. Leaves produced during the previous season (overwintered leaves) are most often papillate, whereas leaves produced early in the current season are usually smooth. Thus, only some of the leaves per specimen are papillate, but every specimen I have examined bears at least a few papillate leaves. The papillae, which are minute (barely visible with 10x magnification), densely cover the leaf surface (Fig. 1a). In contrast, the abaxial surfaces of the leaf blades of *C. hitchcockiana* are smooth or sparsely scabrous on the midribs (Fig. 1b). The leaf blades of *C. brysonii* bear a thin covering of wax, both abaxially (Fig. 1a) and adaxially (Fig. 1c). This wax, which may be worn off old leaves, causes the leaves to be glaucessant. *Carex hitchcockiana* lacks this wax covering on both surfaces of its deep green leaves (Figs. 1b, d). In *C. brysonii*, the hyaline band of the lowest bract sheath usually occupies the full length of the sheath and is elongated above the sheath apex only 0.3–2.3 mm (Fig. 2a). *Carex hitchcockiana*, on the other hand, has the hyaline band of the lowest bract sheath confined to the upper portion of the sheath and elongated above the sheath apex 1.0–5.6 (–6.6) mm (Fig. 2a). The bract blade of the uppermost lateral spike overlaps but does not exceed the terminal spike in *C. brysonii*, but usually much exceeds it in *C. hitchcockiana*. In addition, the terminal spikes of *C. brysonii* are longer than those of *C. hitchcockiana*. The pistillate scale bodies of *C. brysonii* have entire margins (Fig. 1c), whereas those of *C. hitchcockiana* are denticulate (Fig. 1f). Furthermore, the perigynia of *C. brysonii* are shorter and narrower than the perigynia of *C. hitchcockiana* (Fig. 2b).

In size and shape, the perigynia of *C. brysonii* are almost identical to those of *C. asynchrona* Naczi. Many other characters differentiate these two species, though. Unlike *C. brysonii*, *C. asynchrona* possesses pale green leaf blades that lack papillae and are relatively narrow [the widest blade per plant only 2.5–4.0 mm wide versus (3.4–) 3.7–5.3 (–5.8) mm wide for *C. brysonii*], smooth leaf and bract sheaths,
relatively short terminal spikes [the longest spike per plant only 17–27 (–35) mm long versus 25–30 to 46 mm], and quite crowded upper spikes [only 0.7–1.5 (–2.2) cm between the uppermost lateral spikes versus 1.5–3.4 cm].

Carex brysonii grows in shaded, moist, sandy loam on slopes above streams in forests dominated by Acer saccharum Marsh., Carpinus caroliniana Walt., Fagus grandifolia Ehrh., Liriodendron tulipifera L., Magnolia macrophylla Michx., Pinus sp., and Tsuga canadensis (L.) Carr. Carex communis L. H. Bailey, C. oligocarpa Willd., and C. picta Steud. associate closely with C. brysonii. I have seen only 6 collections of C. brysonii, despite examining specimens of sect. Griseae from over 60 herbaria. Apparently first collected in 1979 (Bryson 2536) and known only from a short portion of the Sipsey Fork of the Black Warrior River and an immediately confluent portion of Borden Creek. C. brysonii appears to be a narrow endemic to gorges of the upper Sipsey Fork drainage. At least one other vascular plant taxon is endemic to these gorges, Thelypteris pilosa var. alabamensis Crawford (Norquist 1991). The upper Sipsey Fork drainage, in the Cumberland Plateau (Appalachian Plateaus) physiographic province, is also noteworthy for harboring the southernmost populations known of several species of Carex of eastern North American mesic forests: C. careyana Dewey, C. graminifolia Schroet., C. laxiflora Lam. var. laxiflora, and C. pedunculata Willd. (Bryson 1980; Kral 1981; Naczi & Bryson 1990), but not "C. hitchcockiana" as noted by Naczi and Bryson (1990: 51), which is C. brysonii. Occurring farther south than C. hitchcockiana, C. brysonii is disjunct approximately 100 kilometers (60 miles) from the nearest known population of C. hitchcockiana [ALABAMA. Madison Co.: NE of Monte Sano Mt., between Monte Sano State Park and Hwy 72, Bryson 2046 (FLAS, ctb)].

In appreciation for the many ways he has assisted me in my studies of Carex, I name this species for Dr. Charles T. Bryson, avid student of the genus, discoverer of the species, and friend. Charles's insistence that I see C. brysonii in the field induced me to visit what is now the type locality, carefully examine the plant, and consequently comprehend its uniqueness.

Carex godfreyi Naczi, sp. nov.—Type: U.S.A. Florida: Lake Co., Astor Park, 0.2 mi E of route 40 & 445A junction, along N side of route 40, 22 Apr 1991, Naczi 2781 (holotype: MICH!; isotypes: FLAS! FSU! NCU! NY! US! VDB! ctb!). Fig. 3a, b.

Herba perennis, dense vel laxe caespitosa. Rhizomata brevia vel longa, 0.2–38 mm longa inter surculos vel ramos rhizomatum, internodis 0.2–1.4 mm longis, 1.2–2.0 mm crassis. Bases surculorum atrovinsesque usque ad (3.4–) 4.0–7.3 cm. Culmi fertiles 7.0–65 (–85) cm alti, 0.4–0.9 mm lati in medio, laevae. Folia 2–4, laminae 1.4–34 cm longae, 1.1–4.0 (–5.3) mm latae, lamina latissima 2.4–4.0 (–5.3) mm lata, virides, paginis abaxialibus laevibus; vaginas glabrae. Surculi vegetativi 23–63 cm alti; pseudoculmi 3.3–12.9 cm alti. Inflorescentiae 3.8–58 cm longae; spicae 2–4 superae imbricateae; spicae infimae remotae. Spicae (3–) 4–5 (–6) erectae; spica terminalis 0.7–3.7 (–4.6) cm longa, 1.0–2.9 mm lata, omnino mascula, in pedunculo erecto 1.6–22 (–51) mm longo portata, spicas superas laterales vix superans; spica infima 0.5–1.9 cm longa, 4.6–7.0 mm lata, omnino feminina, in pedunculo erecto vel arcuato 2.9–13.3 (–18.1) cm longo portata; spicae laterales 0.7–2.6 cm longae, 4.6–9.2 mm latae, omnino femincae vel raro androgynae, in pedunculis erectis 0.1–4.9 cm longis portatae; flores feminei spicarum laterali...
3–19 spiraller imbricati, internodo inter flores infimos 1.8–3.3 (–6.2) mm longo. Squamae liniarote 1.1–5.3 mm longae, 1.2–2.4 mm latae, aristata, apice obtusa, lata 0.2–3.5
mm longa. Perigynia (4.0–) 4.3–5.0 (–5.6) mm longa, 1.5–1.9 (–2.1) mm lata, 2.4–2.9
(–3.2)plo longiora quam latiora, ascendenta, obtuse trigona, nervata, glabra, ellipsoidae vel anguste ellipsoidae vel obovoidae vel anguste obovoidae, in basim
latum truncatum gradatum contracta, in apicem subcuniculum rectum vel vix
excavatum gradatum contracta, erostrata vel rostro minuto laevi recto integro usque
ad 0.2 mm longo instructa; nervi 52–64 impressi. Achenia (3.0–) 3.1–3.5 (–3.7) mm
longa, 1.5–1.8 mm lata, lato obovoida vel obovoida, in stipticum 0.6–0.8 (–0.9)
m longum abrupte contracta, laxe inclusa perigyniis; corpus 2.0–2.4 (–2.6) mm
longum.
Perennial herb, densely to loosely cespitose. Rhizomes short to long, 0.2–38
mm long between shoots or branches of the rhizomes, with internodes 0.2–12.4
mm long, 1.2–2.0 mm thick, covered with cataphylls 2–15 mm long. Shoot bases
not surrounded by bases of old leaves, dark purple-red to (3.4–) 4.0–7.3 cm high.
Fertile culms 7.8–65 (–85) cm tall, 0.4–0.9 mm wide at mid-height, trigonous, erect
to spreading, clomating in fruit, smooth. Cataphylla glabrous, rcd-brown to pur-
ple-red, multistate. Leaves 2–4, arising in basal 0.01–0.3 of fertile culms, the
longest 0.1–0.6 times as long as fertile culms; blades 1.4–34 cm long, 1.1–4.0
(–5.3) mm wide, the widest 2.4–4.0 (–5.3) mm wide, green, flat to barely plicate, margins
antrorsely scaberulous, adaxial surface smooth or sparsely antrorsely scaberulous
on main veins, abaxial surface smooth; leaf sheaths 3.1–9.2 cm long, loose, gla-
brous, green with bases tinged with purple-red; adaxial face of sheaths with hya-
line and glabrous band, hyaline band with apex slightly concave or truncate;
ligules 1.8–4.2 (–10.9) mm long, lingulate with apex obtuse or inverted V-shaped
with apex acute. Vegetative shoots 23–63 cm tall, 0.6–1.1 times as tall as culms;
leaves 4–7, similar to those of fertile culms except blades 5.7–48.5 cm long; pseudo-
culms 3.3–12.9 cm tall, 1.0–3.8 mm wide, 0.16–0.27 of vegetative shoot height.
Inflorescences 3.8–58 cm long, 0.94–0.94 of culm height, with the upper 2–4
spikes overlapping; the uppermost lateral spikes 0.3–8.5 (–19.5) cm distant; the
lowest spikes separate, 7.8–31 cm distant; lowest bract blade 8.8–34.4 cm long,
sheath 1.1–6.9 cm long, adaxial face of sheath with glabrous and hyaline band
occupying full length of sheath or confined to upper portion of sheath, hyaline
band with apex slightly concave to slightly convex and elongated 0.1–0.6 (–1.1)
mm above sheath apex, sheath glabrous abaxially, ligule 0.9–3.9 (–6.6) mm long;
bract blade of uppermost lateral spike 0.6–7.5 (–12.4) cm long and slightly exceed-
ing terminal spike or rarely much exceeding terminal spike, sheath 1.4–7.1
mm long and glabrous; uppermost bract subtending terminal spike and scalelike, sheath-
less, body 3.4–5.1 mm long, awn 0.0–4.9 mm long. Spikes (3–) 4–5 (–6), simple,
single at nodes, erect; terminal spike 0.7–3.7 (–4.6) cm long, the longest 1.2–3.7
(–4.6) cm long, 1.0–2.9 mm wide, entirely staminate, 11–94-flowered, on erect
peduncle 1.6–22 (–51) mm long, usually barely exceeding upper lateral spikes;
lowest spike 0.5–1.9 cm long, 4.6–7.0 mm wide, entirely pistillate, 3–10-flowered;
the flowers spirally imbricate, the internode between the lowest flowers 1.8–3.3 (–6.2)
mm long, on erect or arched peduncle 2.9–13.3 (–18.1) cm long; lateral spikes 0.7–
2.6 cm long, 4.6–9.2 mm wide, entirely pistillate and 4–19-flowered or rarely andro-
gynous with 3–17 pistillate and 2–16 staminate flowers, on erect peduncles 0.1–4.9
cm long. Stamine scales 3.3–4.8 mm long, 1.1–1.6 mm wide, narrowly oblong to
oblong or oblong-ovate, acute to acuminate, awnless, center green and 1-nerved,
margins hyaline and whitish to stramineous or whitish with red-brown speckles. 

**Fig. 3.** Perigynia and achenes of members of the Carex grisea complex. a, front view of perigynia of (left to right) C. amphibola (Nacci 2557), C. corrugata (Nacci 1035), C. godfreyi (Nacci 2376), and C. grisea (Nacci 1854). b, front view of achenes (retaining portions of perigynium bases) of (left to right) C. amphibola (Nacci 2557), C. corrugata (Nacci 1035), C. godfreyi (Nacci 2376), and C. grisea (Nacci 1854). Scale bars = 1 mm.

Carex godfreyi belongs to a complex of four species, including *C. amphibola* Steud., *C. corrugata* Fern., and *C. grisea* Wahlenb. The characters that define the *C. grisea* complex are purple-red shoot bases (rarely brown in *C. amphibola* and *C. grisea*), loose leaf and bract sheaths, perigynia loosely enveloping the achenes, and perigynia relatively long [(3.6-) 3.9-5.3 (5.6) mm long], and perigynium length/achene body length ratio relatively high [(1.7-) 2.0-2.4 (2.6)]. Carex godfreyi differs from all the other members of the *C. grisea* complex in several ways (Table 2). First, it is the only member of the complex that is loosely caespitose. Second, the purple-red coloration of the leaf sheaths and cataphylls extends higher from the shoot bases in *C. godfreyi* than in the three other species. Third, the leaf blades of *C. godfreyi* are narrower than those of the others. Finally, *C. godfreyi* has the longest achene stipes of any member of the complex (Fig. 3b). Within the *C. grisea* complex, *C. godfreyi* is morphologically most similar to *C. amphibola*. Both species possess relatively narrow perigynia with relatively high length/width ratios (Table 2, Fig. 3a).}

Table 2. Morphologic characters distinguishing Carex godfreyi from the rest of the members of the Carex grisea complex.

<table>
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<tr>
<th>Habit</th>
<th>C. godfreyi</th>
<th>C. amphibia</th>
<th>C. corrugata</th>
<th>C. grisea</th>
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<tr>
<td>purple-red coloration at plant base, height (mm)</td>
<td>(34-) 40-75</td>
<td>(0-) 10-24</td>
<td>(4-) 13-36</td>
<td>(3-) 32</td>
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<tr>
<td>widest leaf per plant, width (mm)</td>
<td>2.4-4.0 (-5.3)</td>
<td>4.4-6.8</td>
<td>3.3-5.6 (-8.0)</td>
<td>4.8-5.0 (-6.8) (-9.1)</td>
</tr>
<tr>
<td>perigynium, width (mm)</td>
<td>1.5-1.9 (-2.1)</td>
<td>1.5-1.9 (-2.2)</td>
<td>1.7-1.6- 2.3 (-2.4)</td>
<td>1.8-2.0-2.6</td>
</tr>
<tr>
<td>perigynium, length/width</td>
<td>2.4-2.9 (-3.2)</td>
<td>2.2-2.5-3.1</td>
<td>1.8-2.3 (-2.5)</td>
<td>1.8-2.4 (-2.6)</td>
</tr>
<tr>
<td>achene stipe, length (mm)</td>
<td>0.6-0.8 (-0.9)</td>
<td>0.3-1.0-0.6</td>
<td>0.3-1.0-0.6</td>
<td>0.2-0.3-0.6 (-0.5)</td>
</tr>
</tbody>
</table>

The populations of C. godfreyi are relatively few and often widely discontinuous, presumably due to the species’ requirement for a specialized habitat. Only two collections are known from North Carolina, one from South Carolina, and a few from Georgia. Carex godfreyi is moderately frequent only in Florida.

The geographic range of C. godfreyi only partially overlaps the collective range of the other members of the C. grisea complex, C. godfreyi occurring farther south. In fact, only C. godfreyi and C. corrugata are sympatric, from southeastern North Carolina to northern Florida. Though C. godfreyi and C. corrugata have been collected within a few kilometers of each other at a few localities (in Jones and New Hanover counties, North Carolina, and Gadsden and Leon counties, Florida), apparently they never have been encountered at the same site. Syntopy of C. godfreyi and C. corrugata is unlikely because of the preference of C. godfreyi for mucks and sandy loams and C. corrugata for clays.

I name this species for Dr. Robert K. Godfrey in recognition of his many botanical contributions and in gratitude for his assistance with my field work, especially for showing me the first plants I saw of this species. Through tireless collecting (including many of the specimens of C. godfreyi), training many students, and publishing numerous works on the vascular plants of the Southeast, Dr. Godfrey has exponentially increased our understanding of the flora of the region, particularly the area inhabited by C. godfreyi.

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LITERATURE CITED


