Carex vizarronensis (Cyperaceae), a New Species of Carex Section Schiedeanae from Central Mexico

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Carex vizarronensis (Cyperaceae), a New Species of Carex section Schiedeanae from Central Mexico

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Abstract—Carex vizarronensis, a new species from Cadereyta de Montes in the Mexican state of Queretaro, is described and illustrated. The new species is distinguished from C. schiedeana by its densely papillose culms, leaves and inflorescence bracts, and, perigynia with a corky stipe.

Keywords—Calcareous soil, endemics, Queretaro, Vizarron, xeric habitat.

Carex L. is the largest genus of vascular plants in North America (McVaugh 1993). Carex is also the largest genus of Cyperaceae in Mexico, and one of the largest genera of Mexican flowering plants, with at least 150 species in the country (Reznicek and Gonzalez-Elizondo, unpubl. data). Recent fieldwork has revealed an additional species in Carex section Schiedeanae KüKenthal, one of the more taxonomically complex sections in the Mexican Carex flora. Carex sect. Schiedeanae can be characterized by inflorescences with usually simple, uniformly androgynous, ± sessile or subsessile spikes at the nodes with sheathless inflorescence bracts usually much longer than the inflorescence, ± perigynium-like inflorescence prophylls, and perigynia with conspicuous raised nerves plus unique pubescence composed of papillae, unicellular, simple hairs, and, in some species, multicellular tubercles. Carex section Schiedeanae contains several taxonomically difficult species complexes, and a complete key to the section is not feasible in this article. However, this new taxon is clearly distinct from other members of the complex, including C. schiedeana Kunze, which is more similar to it morphologically.

Taxonomic Treatment

Carex vizarronensis M. Gómez-Sánchez, A. Cabrera, S. González & Reznicek, sp. nov.—TYPE: MEXICO. Querétaro: Municipio de Cadereyta de Montes, barrancas al NW de Vizarrón, 20°50′01″ N, 99°43′22″ W, 2,026 m, 20 Nov 2009, A. Cabrera & M. Gómez 2264 (holotype: QMEX; isotypes: CIIDIR, MICH, IEB).

Herbae cespitosae, rhiizomatibus brevibus; culmi fertiles ad 95 cm alti. Folia 3–5(–7), laminae 4.5–5.8 cm longae, 0.8–3.3 mm latae. Inflorescentiae 4.3–7.5 cm longae, 0.5–1.5 cm latae, spicae 4–7, supernae 3–4 proximae sessilis, infimae subsessilis; bractaeae infimae laminis 9–24 cm longis. Spicae androgynaeae, supernae 5–15 mm longae, 4.5–6.5 mm latae. Squamae pistillatae coripibus (1.8–)2.5–3.7 mm longis, 0.9–1.8 mm latis, ovatis vel ovato-lanceolatis, acuminate vel inferiora breviiastatae; squamae staminatae 2.4–4.1 mm longae, 0.5–1.4 mm latae, lanceolatae, acutae. Perigynia 2.4–3 mm longa, 1.3–1.6 mm lata, corporibus trigonis, late elliptics vel obovatis, trichomatibus 0.05–0.15 mm longis, teretibus, in rostrum 0.4–0.8 mm longum contracta, ad apicem bidentatus, dentibus 0.2–0.5 mm longis. Achenia 1.5–2 mm longa, 1.1–1.4 mm lata, trigona. Stigmata 3. Anthereae 3, 1.5–2.1 mm longae, filamentis valde exertis, filiformis, flexuosae. Perennial herb, densely cespitose, forming small clumps from short, stout, fibrillose rhizomes; culms to 95 cm tall, erect, usually exceeding the leaves, trigonous, densely papillose, slightly bulbous-thickened basally; bladeless basal sheaths light-brown, promptly rupturing and becoming strongly fibrillose (as well as the leaves of previous years). Leaves 3–5(–7), clustered on the proximal 1/3–1/8 of the culms; blades ± coriaceous, 4.5–58 cm long, (0.6–)0.8(–3) mm wide, flat to revolute, attenuate, becoming channeled and triangular at apex, densely papillose adaxially and abaxially, midrib prominent on the abaxial side, margins and midrib sparsely scabridulose; distal leaf sheaths tight, densely papillose abaxially, pale green to stramineous dorsally, hyaline ventrally or sometimes sparingly red-dotted; concave; ligules to 0.5 mm long, slightly convex to truncate, often reduced to the free portion of 0.3–0.4(–0.5) mm wide, yellowish to dark brown and sometimes sparingly red-dotted, minutely ciliate. Vegetative shoots ca. 7–12 cm tall with ca. 3–4 leaves. Inflorescences 4.3–7.5 cm long, 0.5–1.5 cm wide, linear-oblong, with 4–7 spikes, the distal 3–4 approximate, sessile or subsessile, the proximal most 6–30 mm distant, subsessile; proximal most bracts 9–24 cm long, foliose, green, densely papillose, antrorsely scabridulose at the margins near the base, the distal bracts gradually reduced; terminal spike 5–15 mm long, section lower pistillate 7–10 mm long, 4.5–6.5 mm wide, (9–)15–25-flowered, upper section staminate 2.5–5.5 mm long, 2.5–5.5 mm wide, 15–30-flowered, usually conspicuous, protruding beyond the perigynia; lateral spikes smaller except the most proximal one which is more or less similar to the terminal; inflorescence prophylls ± distended and asymmetrical, and similar color, venation, and pubescence to the perigynia. Pistillate scales (1.8–)2.5–3.7 mm long, 0.9–1.8 mm wide, equal or longer than the perigynia, except sometimes the most proximal spikes, ovate to ovate-lanceolate, glabrous, 1–3-nerved green to reddish brown center, whitish to pale brown sides (sometimes 1–3 additional fine nerves per side) and broad hyaline margins, acute to acuminate; staminate scales 2.4–4.1 mm long, 0.5–1.4 mm wide, lanceolate, ± acute, 1–2-nerved green to...
Fig. 1. *Carex vizarronensis*. A. Habit. B. Inflorescence. C. Inflorescence spike showing pistillate scales. D. Perigynia. E. Achene. F. Detail sections of leaf blade. (From the holotype).
brown center, whitish to pale brown sides, and hyaline margins. Perigynia 2.4–3 mm long, 1.3–1.6 mm wide, ascending to spreading-ascending, trigonous with broadly elliptic sides, adaxial side convex, tapering into a beak, conspicuously 8-10-nerved, abaxial sides flat, 5-7-nerved, two of the nerves stronger and prolonged into the beak, tapering to the base, abruptly contracted into a broad, short, corky stipe 0.4–0.7 mm long, 0.4–0.6 mm wide, often with a constriction between the perigynium body and the stipe; green when immature, later brown to black, thick-coriaceous, not tuberculate, hairs appressed over entire perigynium, mostly retrorse, antrorse on the distal part of the perigynium, a few pointing in other directions, 0.05–0.15 mm long, terete, whitish or a few reddish brown; beak 0.4–0.8 mm long, the apex bidentate with teeth 0.2–0.5 mm long. Anthers 3, 1.5–2.1 mm long, longitudinally dehiscent; filaments exserted when immature, later brown to black, thick-coriaceous, not soft, with a thick and corky stipe that at maturity is hard, not soft then small.

**Perigynium stipe**
Thick, corky Usually absent, if present then small

**Perigynium teeth**

<table>
<thead>
<tr>
<th>Character</th>
<th>Carex vizarronensis</th>
<th>Carex schiedeana</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blade indumentums</td>
<td>Densely papillose</td>
<td>Minute papillose</td>
</tr>
<tr>
<td>Culm indumentums</td>
<td>Densepapillose</td>
<td>Minute papillose</td>
</tr>
<tr>
<td>Perigynium width (mm)</td>
<td>1.3–1.6</td>
<td>&lt;1.3</td>
</tr>
<tr>
<td>Perigynium stipe</td>
<td>Thick, corky</td>
<td>Usually absent, if present then small</td>
</tr>
<tr>
<td>Perigynium stipe width</td>
<td>0.4–0.7 x 0.4–0.6</td>
<td>0.2 x 0.2 x wide (mm)</td>
</tr>
<tr>
<td>Perigynium teeth width</td>
<td>0.2–0.5</td>
<td>0.1–0.3</td>
</tr>
</tbody>
</table>

**Etymology**—The name refers to the town of Vizarro (de Montes), type locality of the species. Vizarro de Montes is located in northwestern Cadereyta de Montes Municipality, Queretaro state, Mexico.

**Phenology**—Flowering occurs from June to October, fruiting from August through December.

**Geographical Distribution and Ecology**—Carex vizarronensis is only known from the type locality in Querétaro, at 2,000–2,100 m (Fig. 2). It grows on slopes and calcareous soil in xeric habitat with scrub associated with Agaritina calophylla (Greene) R. M. King & H. Rob., Aristida diivarticata Humb. & Bonpl. ex Willd., Aristida pura Wooton & Standl., Bouteloua curtipendula (Michx.) Torr., Berberis albiaca Zamudio & Marroq., Ephedra compacta Rose, Jatropha dioica Cerv., Karwinskia humboldtiana (Willd. ex Roem. & Schult.) Zucc., Leucophyllum ambiguum Bonpl., Linum scabrellum Planch., Mannumilla elongata DC., Metcalfla mexicana (Scribn.) Conert, Mimosa aculeaticarpa Ortega, Muhlenbergia palmeri Vasey, Muhlenbergia rigida (Kunth) Kunth, Muhlenbergia tenuifolia (Kunth) Kunth and Turnen diffusa Willd. ex Schlcht.

**Comments**—Carex vizarronensis is clearly a member of section Schiedeanae as characterized previously. Its morphological features (Hermann 1974; Reznicek and González, unpubl. data) appear most similar to C. schiedeana, from which it can be distinguished by its densely papillose culms, leaves and inflorescence bracts and perigynia with a thick and corky stipe that at maturity is hard, not soft and fleshy (Table 1).

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**Literature Cited**
