

median leaf, $\times 4$, from Smelt Pond, Kingston, Massachusetts, August 30, 1908, *Rich & Knowlton*; FIG. 5, stem and upper leaves, $\times 4$, from TYPE.

PLATE 486, involucre $\times 8$. *CHRYSOPSIS MARIANA* (L.) Nutt.: FIG. 1, from Atsion, New Jersey, *Gershoy*, no. 688; FIG. 2, from Savage Neck, Northampton County, Virginia, *Fernald & Long*, no. 5505.

Var. *MACRADENIA*, n. var.: FIG. 3, from the TYPE, southwest of Waverly, Virginia, *Fernald & Long*, no. 6885; FIG. 4, from northwest of Williamsburg, Virginia, *Grimes*, no. 3191.

PLATE 487. *RUDBECKIA HIRTA* L.: FIG. 4, lower surface of leaf, $\times 10$, from Middletown, Rhode Island, July 3, 1909, *E. F. Williams*.

Var. *SERICEA* (T. V. Moore) Fernald: FIG. 3, lower surface of leaf, $\times 10$, from Leeds, North Dakota, July 21, 1896, *Lunell*.

Var. *CORYMBIFERA*, n. var.: FIG. 1, TYPE, $\times \frac{2}{5}$; FIG. 2, lower surface of leaf, $\times 10$, from TYPE.

EXTENSIONS OF RANGE AND A NEW SPECIES IN *CAREX*¹

FREDERICK J. HERMANN

SEVERAL species of *Carex* collected by the writer in Utah and Colorado in 1933 which are apparently new to one or the other of those states may now be put on record as occurring there, and one new species calls for description. The species to be enumerated from Utah, all from the Uinta Mountains in the northeastern corner of the state, are not included in Tidestrom's "Flora of Utah and Nevada" (Contr. U. S. Nat. Herb. 25. 1915) nor are they recorded for the state by Mackenzie in his recent monograph of the North American species of the genus (N. Am. Fl. 18, parts 1-7. 1931-5) with the exception of *C. illota*, *C. atrata* and *C. physocarpa* which will be included here to establish definite locality records for these species. Neither of the two species from Colorado, which were collected on the White River Plateau, are ascribed to that state by Mackenzie.

The Utah reports represent range extensions principally from the north or east, the Colorado from the north and west.

Herbaria in which specimens supporting the records have been deposited are represented as follows: California Academy of Sciences (CA); Carnegie Museum (CM); Gray Herbarium (G); Herbarium of F. J. Hermann (H); University of Michigan (M); Missouri Botanical Garden (Mo); National Herbarium (N); New York Botanical Garden (NY); Philadelphia Academy of Natural Sciences (P); Rocky Mountain Herbarium (R); State College of Washington (W).

¹ Paper from the Department of Botany of the University of Michigan no. 623.

UTAH

CAREX VALLICOLA Dewey. DAGGETT Co.: aspen grove, east slope of Eagle Creek Canyon, 2 miles west of Green Lakes, alt. 7200 ft., July 12, no. 4860 (H).

C. BRUNNESCENS (Pers.) Poir. DUCHESNE Co.: boggy north shore of Third Chain Lake, Krebs Basin, S. E. slope of Mt. Emmons, alt. 11,100 ft., July 21, no. 5183 (CA; CM; G; H; Mo); wet border of pond in spruce grove north of First Chain Lake, Krebs Basin, S. E. slope of Mt. Emmons, alt. 10,600 ft., July 23, no. 5224 (H; NY; R).

C. ILLOTA Bailey. DUCHESNE Co.: abundant on edge of streamlet in moist meadow just above timber line, S. E. slope of Mt. Emmons above Chain Lakes, alt. 11,300 ft., July 18, no. 4954 (CA; G; H; M; Mo; N; P; R; W); boggy north shore of Third Chain Lake, Krebs Basin, S. E. slope of Mt. Emmons, alt. 11,100 ft., July 21, no. 5180 (H; NY).

C. PRATICOLA Rydb. DUCHESNE Co.: crevices among boulders, rocky shore of Fourth Chain Lake, Krebs Basin, S. E. slope of Mt. Emmons, alt. 11,200 ft., July 20, no. 5096 (CA).

C. OBTUSATA Liljebl. DAGGETT Co.: bank of stream tributary to Carter Creek in open aspen grove, alt. 8300 ft., July 11, no. 4788 (CA; G; H; Mo; R).

C. DRUMMONDIANA Dewey. DUCHESNE Co.: grassy, rock moraine bordering cold pond in tundra, S. E. slope of Mt. Emmons above Chain Lakes, alt. 11,340 ft., July 19, no. 4999 (H; Mo).

Reported by Mackenzie only from Alberta and Colorado.

C. MISANDRA R. Br. DUCHESNE Co.: wet, grassy shore of small lake in tundra, S. E. slope of Mt. Emmons above Chain Lakes, alt. 11,350 ft., July 19, no. 5027 (CA; G; H; Mo; R).

A boreal species ranging from Greenland to Quebec and Alaska; farther south known previously only from central Colorado.

C. PODOCARPA R. Br. DUCHESNE Co.: grassy bank of cold pond in tundra, S. E. slope of Mt. Emmons above Chain Lakes, alt. 11,340 ft., July 19, no. 4988 (CA; H).

Wyoming is the southernmost state cited by Mackenzie for this species.

C. NELSONII Mackenzie. DUCHESNE Co.: wet, grassy shore of small lake in tundra, S. E. slope of Mt. Emmons above Chain Lakes, alt. 11,300 ft., July 19, no. 5043 (H; Mo.). SUMMIT Co.: tundra on N. W. ridge of Lamotte Peak, alt. 11,800 ft., August 18, no. 5992 (H).

A western extension; previously known only from Colorado and Wyoming.

C. pelocarpa, sp. nov. (§Atratae). Dense caespitosa e rhizomatibus crassis brevibus; culmi 2.6–4.1 dm. alti, laevigati, acute triangu-

lares, tenues, cernui, folia superantes; folia frondosa 3–6 plerumque basi aggregata, laminis crassis rigidulis, marginibus aliquantulum revolutis, ad apicem attenuatum minute serrulatis, vaginis albidis; spicae 2–5 ovoideae, 7–10 mm. longae, 5–7 mm. latae, sessiles in capitulum terminale confertae, spica terminalis gynaeandra laterales femineae bracteis brevibus una vel duabus; squamae oblongo-lanceolatae, acutae vel acuminatae, laeves, atro-purpureae perigyniis maxime angustiores; perigynia ovata, late ovata vel suborbiculata, 3.5–4.5 mm. longa, 2.5–3 mm. lata, valde complanata, membranacea, nitidissima laevesque, atro-purpurea, basi sessilia abrupte in rostrum bidentem 0.5–1 mm. longum contracta; achaenia triangularia ellipsoidali-ovoidea longe stipitata.

Densely cespitose from short, stout rootstocks; culms 2.6–4.1 dm. high, smooth, sharply triangular, slender and nodding, not at all stiff, two to three times the length of the leaves, more or less purplish-tinged and fibrillose at the base, the dried-up leaves of the previous year conspicuous; leaves with well-developed blades 3–6 to a fertile culm, mostly clustered at the base, the blades 5–24 cm. long, 1.5–4 mm. wide, thick and firm, light green, flat with somewhat revolute margins, channeled or slightly triangular toward the attenuate, strongly minutely serrulate apex, the midrib prominent, minutely serrulate ventrally toward the apex, the sheaths white-hyaline and very membranaceous ventrally, the ligule generally as wide as long but highly variable and often imperfect; spikes (2–5) generally 3, ovoid, 7–10 mm. long, 5–7 mm. wide, very closely-flowered, closely aggregated into a dense terminal head 14–19 mm. long, 13–17 mm. wide, the terminal gynaeandrous, the lateral pistillate; head subtended by an open bract averaging 5 mm. long, a second bract frequently present 10–20 mm. below the head, 25–30 mm. long, not exceeding the head, with short, colored, open sheath; scales oblong-lanceolate, acute to acuminate, the midrib more or less conspicuous, at least toward the tip, smooth, dark reddish-purple, not at all hyaline-margined or rarely slightly so toward the apex, the pistillate scales much narrower than the perigynia and generally shorter or equaling them but those toward the apex of the spike usually somewhat exceeding the perigynia; perigynia ovate to broadly ovate or suborbicular, 3.5–4.5 (averaging 4) mm. long, 2.5–3 (averaging 3) mm. wide, strongly flattened, appressed or ascending, 2-ribbed (the marginal), otherwise nerveless, membranaceous, smooth and not at all ciliate-scabrous, dark reddish-purple and very glossy, the margins sometimes straw-colored, rounded and sessile at the base, very abruptly short-beaked, the beak 0.5–1 mm. long, bidentate, dark purple to black; achenes triangular, elipsoid-ovoid, 1.5–1.75 mm. long, 0.8–0.9 mm. wide, long-stipitate, stramineous, finely granular, apiculate and jointed with the included style; stigmas 3, slender, white.—DUCHESNE Co.: dry, rocky shore of Fourth Chain Lake, Krebs Basin, S. E. slope of Mt. Emmons, alt. 11,200 ft., July 20, 1933, no. 5094 (CA; G; H); barren, rocky, S. E. slope of

Mt. Emmons, alt. 12,300 ft., July 20, 1933, no. 5143 (CA; H; P). SUMMIT Co.: tundra on N. W. ridge of Lamotte Peak, alt. 11,800 ft., August 15, 1933, no. 5983 (CA; NY—TYPE).

C. pelocarpa is apparently endemic in the Uintas where it is locally frequent above timber line. Its large, dark and glistening heads nodding on slender flexuous culms are a striking characteristic in the field. In its smooth perigynia, stipitate achenes and clustered spikes it is related to *C. Helleri* Mackenzie of California and western Nevada. From that species it differs in its flexuous, entirely smooth culms, its shorter, broader and more closely congested heads, shorter spikes (7–10 mm. long, in *C. Helleri* 10–20 mm. long), shorter and broader scales (in *C. Helleri* even the lowermost scales conspicuously exceed the perigynia) which are less firm, not aristate, and with the less conspicuous midrib prominent only toward the tip, in its larger perigynia and in the markedly longer stipe of the achene. The short, aggregated spikes and generally broadly-ovate to suborbicular, strongly flattened perigynia simulate those of *C. nova* Bailey, a species of moister habitats in the Uintas, but from this it is readily set off by its long-stipitate achenes, its glossy, erect or ascending perigynia which are smooth-, not at all ciliate-scabrous-, margined, its much more deeply bidentate perigynium-beaks, its acuminate scales with more or less prominent midrib, its slender culms and nodding inflorescence, and its narrower, ovoid rather than suborbicular heads in which the individual spikes stand out conspicuously. In *C. nova* the sessile spikes are generally so closely congested into the stiffly erect head that the inflorescence superficially resembles a single spike, a semblance which is heightened at maturity by the widely spreading perigynia. *C. albo-nigra* Mackenzie and *C. Nelsonii* Mackenzie, the other sessile-spiked species of § *Atratae* found in the Uinta Mountains, differ from *C. pelocarpa*, among many other characters, in their erect heads and much larger and broader, blunt scales (often covering the perigynia in *C. albo-nigra* and conspicuously hyaline-margined), in their narrower, strongly granular-roughened perigynia and merely substipitate achenes; the former in its stiff, erect and relatively stout culms which are roughened above; the latter in its loosely cespitose habit and sub-inflated perigynia.

Associated plants were few in the arid, rocky habitat of *Carex pelocarpa* at its type station on Lamotte Peak. *Sieversia turbinata* (Rydb.) Greene was the dominant species here; *Gentiana Romanzovii*

Ledeb., *G. monantha* A. Nels., *Salix saximontana* Rydb., *Castilleja occidentalis* Torr., *Kobresia Bellardi* (All.) Degland and *Lychnis Kingii* S. Wats. were occasional in nearby crevices, but the only associates characterizing also the stations for the species on Mt. Emmons were *Senecio Fremontii* T. & G., *Mertensia Bakeri* Greene and *Cystopteris fragilis* (L.) Bernh. On the steep, rocky shore of Fourth Chain Lake *Castilleja rhexifolia* Rydb., *Erigeron acris* L., var. *debilis* Gray, *Cryptogramma acrostichoides* R. Br., and *Carex praticola* Rydb. shared its habitat, while on the higher barren slopes of Mt. Emmons these gave place to *Festuca ovina* L., var. *brachyphylla* (Schult.) Piper, *Erigeron compositus* Pursh and its variety *incertus* A. Nels., *Castilleja viscida* Rydb., *Polemonium viscosum* Nutt., *Chactactis Douglasii* H. & A., var. *alpina* Gray, *Smelowskia calycina* (Stephan.) C. A. Meyer, *Artemisia Michauxiana* Bess. and *Penstemon Uintahensis* Pennell.

C. ATRATA L. DUCHESNE Co.: rocky, alpine meadow at timber line, S. E. slope of Mt. Emmons above Chain Lakes, alt. 11,300 ft., July 18, nos. 4965 (CA; H) and 4965½ (G; H; Mo; R).

C. PHYSOCARPA Presl. DUCHESNE Co.: grassy bank of cold pond in tundra above Chain Lakes, S. E. slope of Mt. Emmons, alt. 11,340 ft., July 19, nos. 5013 (H), 5018 (H; Mo), 5029 (G), 5031 (R), and 5039 (CA; H). SUMMIT Co.: wet, grassy shore of Duck Lake, N. W. slope of Lamotte Peak, alt. 10,200 ft., August 15, no. 5937 (H).

COLORADO

C. JONESII Bailey. GARFIELD Co.: edge of spruce woods in low, moist meadow along trail to "Flat Top" above Trappers' Lake, alt. 10,500 ft., August 2, no. 5589 (CA; H).

Recorded by Mackenzie from Washington, Oregon, California and Wyoming.

C. NEUROPHORA Mackenzie. GARFIELD Co.: wet, open bank of White River ¼ mile north of Trappers' Lake, alt. 9450 ft., July 29, no. 5444 (G; H; Mo).

A northwestern species known to Mackenzie from Washington, Oregon, Idaho, Montana and Wyoming.

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