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A FLORA OF NEVADA. NO. 17.

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CYPERACEAE OF NEVADA

The Genus Carex

by

F. J. HERMANN

December 1, 1940.

Issued by

The Division of Plant Exploration and Introduction,
Bureau of Plant Industry,
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Work Projects Administration of Nevada,
Projects, O. P. 65-2-04-13, W. P. 658;
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CYPERACEAE OF NEVADA

The Genus Carex

By F. J. Hermann

CAREX (Dill.) L. Sedge

Perennial grass-like herbs with rootstocks. Culms mostly trigonous, usually leafy especially at the base. Leaves 3-ranked, the uppermost (bracts) either elongate or rudimentary, subtending the spikes. Plants usually monoecious, rarely dioecious. Spikes one to many, either wholly pistillate, wholly staminate, androgynous (staminate above, pistillate below) or gynaecandrous (pistillate above, staminate below), sessile or peduncled. Flowers solitary in the axils of scales. Perianth none. Staminate flowers of 3 (rarely 2) stamens with filiform filaments. Pistillate flowers of a single pistil, with a style and 2 or 3 stigmas. Achene trigonous or lenticular, completely enclosed in the sac-like perigynium.

KEY TO SPECIES

1. Spike one.
   2. Stigmas 2; achenes lenticular - - - - - - - - - 1. C. capitata.
   2. Stigmas 3; achenes trigonous.
      3. Perigynia stipitate, at least the lower usually reflexed at maturity; pistillate scales deciduous.

4. Plants densely cespitose; staminate flowers few.

2. C. pyrenaica.

4. Plants short-stoloniferous; staminate flowers numerous, conspicuous.

5. Leaf-blades involute, nearly terete, 0.25-1.25 mm. wide- - - - - - - - - - - - - - - - - 3. C. subnigricans.

5. Leaf-blades flat, 1.5-3.5 mm. wide. (See excluded species No. 6.) - - - - - - - - - - - - - - C. nigricans.

3. Perigynia not reflexed at maturity; pistillate scales persistent.

6. Spikes unisexual; plants dioecious.

34. C. pseudoscirpoidea.

6. Spikes androgynous.

7. Perigynia 2.5-3 mm. long, puberulent at the base of the beak - - - - - - - - - - - - - - - - - 31. C. elynoides.

7. Perigynia 5-7 mm. long, glabrous - - 35. C. multicaulis.

1. Spikes more than one.

8. Stigmas 2; achenes lenticular.

9. Lateral spikes short, sessile; terminal spike androgynous or gynaecandrous.

10. Culms arising singly or few together from long-creeping rootstocks.

11. Spikes densely aggregated into a globose or ovoid head, appearing like one spike. (See excluded species No. 7.) - - - - - - - - - - - - - - - - - - - C. vernacula.

11. Spikes, at least the lower, distinct.

12. Perigynia plano-convex, sharp-edged, the beak obliquely cut, bidentulate in age.

13. Plants dioecious or nearly so; culms obtusely trigonous, smooth; leaf-blades involute, at least above - - - - - - - - - - - 4. C. Douglasii.

13. Plants monoecious, the head androgynous; culms sharply trigonous, roughened on the angles above; leaf-blades flat or somewhat channeled.

14. Rootstocks slender, brown; perigynia chestnut-colored, unequally biconvex, the beak one-fifth to one-third the length of the body. 5. C. simulata.

14. Rootstocks stout, black; perigynia blackish in age, plano-convex, the beak one-third to one-half the length of the body. 6. C. praegracilis.

12. Perigynia much flattened, wing-margined at least above, the beak deeply bidentate. (See excluded species No. 8.) - - - - - - - - - - - - C. siccata.

10. Culms cespitose or the rootstocks short-prolonged with short internodes but not long-creeping.

15. Spikes androgynous.

16. Pistillate spikes many-flowered, more than 5 mm. broad; perigynia not subterete.

17. Perigynia abruptly contracted into the beak.

18. Spikes few (generally 10 or fewer); sheaths

not red-dotted ventrally.

19. Beak of perigynium obliquely cleft dorsally, little or not at all bidentate.

7. C. vallicola.

19. Beak of perigynium bidentate, usually conspicuously so.

20. Inflorescence ovoid, the spikes densely capitate; densely cespitose - 8. C. Hoodii.

20. Inflorescence oblong or linear-oblong, not capitate; rootstocks short-creeping.

9. C. occidentalis.

18. Spikes numerous; sheaths more or less red-dotted ventrally - - - - - - - - - - - 10. C. alma.

17. Perigynia tapering into the beak.

21. Perigynia 3.5-4 mm. long, the beak much shorter than the body; scales dark-tinged.

11. C. neurophora.

21. Perigynia 4-6 mm. long, the beak as long as the body; scales not dark-tinged. (See excluded species No. 9.) - - - - - - C. stipata.

16. Pistillate spikes few (mostly 1-3)-flowered, less than 5 mm. broad; perigynia subterete.

12. C. disperma.

15. Spikes gynaecandrous.

22. Perigynia without winged margins, at most thin-edged.

23. Perigynia 2-3.5 mm. long.

24. Perigynia not thin-edged, ascending or appressed, elliptic - - - - - - - - - - - 13. C. canescens.

24. Perigynia thin-edged, spreading, ovoid, broadest below the middle.

25. Beak of perigynium one-fourth to one-third the length of the body, bluntly bidentate.

14. C. interior.

25. Beak of perigynium more than half the length of the body, sharply bidentate.

15. C. angustior.

23. Perigynia 4-4.5 mm. long, narrowly lanceolate, appressed - - - - - - - - - - - - 16. C. Bolanderi.

22. Perigynia with winged margins.

26. Bracts conspicuously exceeding the head.

30. C. athrostachya.

26. Bracts not exceeding the head.

27. Beak of perigynium slender and terete, scarcely margined at the tip, its upper 1-2 mm. little if at all serrulate.

28. Perigynia 2.5-6 mm. long.

29. Scales shorter and narrower than the perigynia, the latter therefore conspicuous in the spikes.

30. Perigynia much flattened, thin and scale-like except where distended by the achene.

31. Perigynia 3.5-5 mm. long, lightly few-nerved at least at the base ventrally.

32. Perigynia strongly margined, ovate, appressed - - - - 17. C. festivella.

32. Perigynia very narrowly margined, lanceolate-ovate, ascending or spreading - - - - - - - 18. C. microptera.

31. Perigynia 4.5-6 mm. long, nerveless ventrally - - - - - 19. C. Haydeniana.

30. Perigynia plano-convex.

33. Perigynia with conspicuous raised nerves ventrally, 3.75-4 mm. long.

20. C. abrupta.

33. Perigynia nerveless ventrally or sometimes obscurely nerved toward the base.

34. Perigynia 2.75-3.5 mm. long, 1-1.5 mm. wide.

35. Culms slender; leaf-blades deep green, 1-2.5 mm. wide; perigynia loosely appressed or spreading.

21. C. teneraeformis.

35. Culms stiff; leaf-blades light-green, 2-3.5 mm. wide; perigynia closely appressed - - - - 22. C. subfusca.

34. Perigynia 3.5-4 mm. long, 2 mm. wide.

23. C. Preslii.

29. Scales about the same length as the perigynia, concealing them above or nearly so.

36. Culms and head stiff; spikes approximate.

37. Beak of perigynium not hyaline at the apex; leaf-blades flat, 2-3 mm. wide; culms 1-6 dm. high, the leaves not clustered toward the base.

24. C. Tracyi.

37. Beak of perigynium hyaline at the apex; leaf-blades more or less involute, 1.5-2 mm. wide; culms 1-3 dm. high, the leaves not clustered toward the base.

38. Perigynia oblong-ovate, conspicuously margined, 4-6 mm. long.

25. C. phaeocephala.

38. Perigynia linear-lanceolate, very narrowly margined, 3.5-4 mm. long.

26. C. leporinella.

36. Culms slender; spikes in a flexuous or moniliform inflorescence. (See excluded species No. 10.) - - - - - C. praticola.

28. Perigynia 6-8 mm. long.

39. Scales about the length and width of the perigynia and largely concealing them.

27. C. petasata.

39. Scales shorter and narrower than the perigynia, the latter therefore conspicuous in the spikes - - - 28. C. specifica.

27. Beak of perigynium flat and margined at the tip, serrulate to the apex.

40. Perigynia plano-convex, subcoriaceous, with narrow margins not crinkled dorsally. (See excluded species No. 1.) - C. multicostata.

40. Perigynia flattened, concave-convex, membranaceous, with wide thin margins conspicuously crinkled dorsally.

29. C. straminiformis.

9. Lateral spikes elongated, peduncled or sessile; terminal spike staminate or, if (rarely) gynaecandrous, the lateral spike peduncled.

41. Lowest bract long-sheathing; perigynia pulverulent or golden yellow at maturity.

42. Mature perigynia whitish-pulverulent, not fleshy or translucent; scales appressed - - - - 36. C. Hassei.

42. Mature perigynia golden yellow to brownish, fleshy, translucent; scales divaricate at maturity.

37. C. aurea.

41. Lowest bract sheathless; perigynia not pulverulent or golden yellow at maturity.

43. Lowest bract definitely shorter than the inflorescence; plants low, strongly stoloniferous, the culms arising one to few together.

44. Dried first-year leaf-blades at base of fertile culms rigid and conspicuous, concealing the culms; lower sheaths not reddish or hispidulous dorsally. 47. C. scopulorum.

44. Dried first-year leaf-blades at base of fertile culms much desiccated, not rigid or conspicuous, not concealing the culms; lower sheaths reddish and hispidulous dorsally. (See excluded species No. 4.) - - - - - - - - - - - - - - - C. gymnoclada.

43. Lowest bract usually equalling or exceeding the inflorescence; plants taller, the culms less stiff, in larger clumps.

45. Perigynia conspicuously nerved or ribbed ventrally, the nerves raised.

46. Perigynia membranaceous, slenderly stipitate, the beak entire; plants cespitose - 48. C. Kelloggii.

46. Perigynia coriaceous, sessile or nearly so, the beak bidentate; plants strongly stoloniferous. 49. C. nebraskensis.

45. Perigynia nerveless ventrally or with obscure, impressed nerves.

47. Perigynia turgid; scales divaricate. (See excluded species No. 13.) - - - - - - - - - - - - C. aperta.

47. Perigynia not turgid; scales appressed. 50. C. aquatilis.

8. Stigmas 3; achenes trigonous.

48. Perigynia pubescent or puberulent.

49. Culms 0.5-2.5 dm. high; leaf-blades 1-2.5 mm. wide; pistillate spikes 3-20-flowered.

50. Perigynia 2.5-3 mm. long, the beak 0.25-0.75 mm. long, shallowly bidentate - - - - - - - - - 32. C. brevipes.

50. Perigynia 3-4.5 mm. long, the beak longer, deeply bidentate - - - - - - - - - - - - - - - 33. C. Rossii.

49. Culms 3.5-10 dm. high; leaf-blades 2-8 mm. wide; pistillate spikes 25-75-flowered.

51. Perigynia sparsely hairy, becoming glabrate, the beak not strongly bidentate - - - - - 40. C. fissuricola.

51. Perigynia densely and permanently soft-hairy, the beak strongly bidentate - - - - - - - - - 41. C. lanuginosa.

48. Perigynia glabrous (occasionally ciliate-serrulate on the margins).

52. Style jointed with the achene, at length withering and deciduous.

53. Lowest bract strongly sheathing.

54. Scales green to pale yellowish-brown.

55. Beak of perigynium entire - - - 38. C. capillaris.

55. Beak of perigynium bidentate - - - 39. C. viridula.

54. Scales dark reddish-brown.

56. Perigynia compressed-triangular or slightly flattened; scales obtuse, the midvein not prominent at the apex. (See excluded species No. 2.) C. ablata.

56. Perigynia strongly flattened; scales sharp-pointed with the midvein prominent to the apex. 40. C. fissuricola.

53. Lowest bract sheathless or very short-sheathing.

57. Terminal spike staminate.

58. Perigynia strongly flattened - - 42. C. podocarpa.

58. Perigynia nearly round in cross section. (See excluded species No. 11.) - - - - - C. Raynoldsii.

57. Terminal spike gynaecandrous.

59. Culms aphyllopodic (i.e. blades of the basal sheaths rudimentary or lacking), the lower sheaths filamentose. (See excluded species No. 12.) - - - - - - - - - - - - - - - - C. Buxbaumii.

59. Culms phyllopodic (i.e. basal sheaths bearing well-developed blades).

60. Perigynia not papillate-roughened.

61. Spikes contiguous, sessile or nearly so, forming a dense head; scales lanceolate, rigid, strongly exceeding the perigynia. 43. C. Helleri.

61. Spikes, at least the lower, more or less peduncled, usually distant; scales wider, shorter than or about equalling the perigynia.

62. Mature perigynia 3.5-4.5 mm. long, wider on either side than the achene; midvein of scales largely obsolete.

44. C. epapillosa.

62. Mature perigynia 3.5 mm. long, narrower on either side than the achene; midvein of scales prominent - - - 45. C. heteroneura.

60. Perigynia papillate-roughened, especially on the upper margins.

63. Upper pistillate scales exceeding the perigynia; lowest peduncle shorter than its spike. (See excluded species No. 3.)

C. chalciolepis.

63. Upper pistillate scales shorter than the perigynia; lowest peduncle 1-2 times the length of its spike - - - - - 46. C. atrata.

52. Style continuous with the achene, indurated and persistent.

64. Perigynia subcoriaceous and firm - - 51. C. atherodes.

64. Perigynia membranaceous.

65. Perigynia ascending; lower sheaths more or less strongly filamentose; rootstocks short-creeping;

leaves sparingly nodulose.

66. Perigynia 6-8 mm. long, contracted into the beak. (See excluded species No. 5.) - - - C. vesicaria.

66. Perigynia 8-10 mm. long, tapering into the beak. (See excluded species No. 14.) - - C. exsiccata.

65. Perigynia spreading at maturity; lower sheaths not filamentose; rootstocks long-creeping; leaves strongly nodulose - - - - - - - - - 52. C. rostrata.

1. CAREX CAPITATA L. Syst. Nat. ed. 10. 1261. 1759.

Rootstocks slightly elongate, the culms cespitose, 1-3.5 dm. high, erect; leaf-blades filiform, about 0.5 mm. wide, rigid; spike orbicular or oblong-orbicular, 4-8 mm. long, androgynous, densely flowered, bractless, with 6-25 ascending perigynia below and a short but conspicuous cone of staminate flowers above; scales ovate-orbicular, obtuse, shorter and narrower than the perigynia; perigynia 2-2.5 mm. long, ovoid, plano-convex, not inflated, nerveless, sessile, abruptly beaked, the beak smooth, slender, terete, hyaline-tipped, less than 1 mm. long.

Sunny slopes in the Arctic-Alpine Zone, Greenland to Alaska, southward very locally on mountain summits in New Hampshire, Alberta, Nevada, California and Mexico; also in Europe.

Nevada: Washoe County.

2. CAREX PYRENAICA Wahl., Sv. Vet.-Acad. Nya Handl. 24: 139. 1803.

Densely cespitose, the culms 3-20 cm. high, wiry, slender; leaf-blades 2-10 cm. long, 0.25-1 mm. wide, involute; spike androgynous, bractless, narrow, 5-20 mm. long, the upper part with a few staminate flowers, the lower with 10-many perigynia; scales ovate, obtuse, shorter than the perigynia; perigynia 3-4 mm. long, scarcely 1 mm. wide, compressed-orbicular in cross-section, nerveless, glabrous, at maturity spreading or deflexed, tapering into a smooth beak 0.5 mm. long with hyaline apex.

Open slopes in the Arctic-Alpine Zone, Mackenzie and Alaska, southward to Colorado, Nevada and California; also in Europe.

Nevada: Washoe County.

3. CAREX SUBNIGRICANS Stacey, Leafl. West. Bot. 2: 167. 1939.

Loosely cespitose, the rootstocks stout, creeping, the culms 5-20 cm. high; leaf-blades 4-10 cm. long, 0.25-1 mm. wide, canaliculate and nearly terete; spike androgynous, bractless, narrowly oblong, 8-12 mm. long, densely many-flowered, the staminate flowers conspicuous; scales oblong or ovate; perigynia 3.5-4 mm. long, 1-1.5 mm. wide, lanceolate or ovoid-lanceolate, little inflated, glabrous, tapering at the apex into a smooth brown beak with hyaline orifice.

Arctic-Alpine Zone, from eastern Tulare County, through Inyo, Mono and Tuolumne Counties, California to Slide Mt. and Mt. Rose, western Nevada.

Nevada: Washoe County.

4. CAREX DOUGLASII Boott in Hook. Fl. Bor. Am. 2: 213. 1839.

Carex Nuttallii Dewey, Am. Journ. Sci. 43: 92. 1842.

Carex Douglasii var. densispicata Dewey, Am. Journ. Sci. II. 24: 48. 1847.

Rootstocks long-creeping, slender but tough, the culms 6-30 cm. high; leaf-blades 1-2.5 mm. wide, flat or channeled at the base; heads dioecious or nearly so; staminate spikes linear-elliptic, 8-15 mm. long, 2.5-4 mm. wide, the scales straw-colored or brownish; pistillate spikes suborbicular to oblong, 15 to 50 mm. long, 10-25 mm. wide, the scales ovate to lanceolate, concealing the perigynia, yellowish-brown; perigynia 3.5-4 mm. long, lanceolate, strongly nerved, tapering into the serrulate beak nearly 2 mm. long.

Open, dry, more or less alkaline habitats, Manitoba to New Mexico, westward to British Columbia and California.

Nevada: Washoe, Humboldt, Storey, Mineral, Douglas, Churchill, Nye, Lander, and Eureka Counties.

5. CAREX SIMULATA Mack., Bull. Torrey Bot. Club 34: 604. 1908.

Rootstocks long-creeping, slender, the culms 3-5 dm. high,

roughened on the angles above; leaf-blades 2-4 mm. wide, flat; head linear-oblong to oblong-obovoid, 12-25 mm. long, the 5-15 spikes densely aggregated, pistillate, staminate or androgynous; bracts shorter than the head; scales concealing the perigynia, cuspidate; perigynia 1.8-2.5 mm. long, 1.5 mm. wide, ascending, broadly ovate, not margined, ventrally nerveless, serrulate above, abruptly contracted into a beak 0.25 mm. long.

Wet habitats, Montana to Washington, southward to New Mexico and California.

Nevada: known from a single collection-marsh, Cave Creek meadows, south Ruby Valley, Elko County (Percy Train 959).

6. CAREX PRAEGRACILIS W. Boott, Bot. Gaz. 9: 87. 1884.

Carex marcida Boott in Hook. Fl. Bor. Am. 2: 212. 1839.

Carex Douglasii var. brunnea Olney in S. Wats. Bot. King's Expl. 363. 1871.

Carex latebrosa Mack., Bull. Torrey Bot. Club 34: 603. 1908.

Carex camporum Mack., Bull. Torrey Bot. Club 37: 244. 1910.

Culms 2-5 dm. high; leaf-blades 1.5-3 mm. wide, flattened or canaliculate; head linear-oblong to oblong-ovoid, 1-5 cm. long, the 5-15 spikes densely aggregated, androgynous; scales ovate-lanceolate, acute to cuspidate, nearly concealing the perigynia; perigynia 3-4 mm. long, 1.5 mm. wide, dark brown

at maturity, dorsally nerved, ventrally nearly nerveless, tapering into a serrulate beak about half the length of the body.

Moist, open habitats, Michigan, Iowa and Kansas to Yukon, British Columbia, California and Mexico; also in South America.

Nevada: Washoe and Lincoln Counties.

7. CAREX VALLICOLA Dewey, Am. Journ. Sci. II. 32: 40. 1861.

Carex vagans Holm, Am. Journ. Sci. IV. 17: 301. 1904.

Carex phaeolepis Holm, Am. Journ. Sci. IV. 17: 302. 1904.

Carex brevisquama Mack., Bull. Torrey Bot. Club 34: 152. 1907.

Rootstocks short-creeping, the culms slender, 2.5-6 dm. high, roughened on the angles; leaf-blades 1 mm. wide; spikes androgynous, closely aggregated into a dense, terminal head 15-20 mm. long; bracts poorly developed; scales broadly ovate, acuminate or cuspidate, much shorter than the mature perigynia; perigynia 3.5 mm. long, 2 mm. wide, plano-convex, light green, the body ovate, smooth and polished, nerveless, abruptly narrowed into a short minutely serrulate, bidentate beak about 1 mm. long.

Dry slopes in the Transition Zone, South Dakota to eastern Oregon and Nevada.

Nevada: Elko and Clark Counties.

8. CAREX HOODII Boott in Hook. Fl. Bor. Am. 2: 211. 1839.

Carex muricata var. *confixa* Bailey, Bot. Gaz. 10: 203. 1885.

Carex Hoodii var. *nervosa* Bailey, Mem. Torrey Bot. Club 1: 14. 1889.

Carex Hoodii var. *neurocarpa* Piper, Contr. U. S. Nat. Herb. 11: 167. 1906.

Very densely cespitose, the culms 3-6 dm. high, rough above; leaf-blades 1.5-3.5 mm. wide, flat; head capitate, orbicular or oblong-ovoid, 1-2 cm. long, the spikes androgynous; scales ovate, sharp-pointed, about the length of the perigynia and largely concealing them; perigynia 4-5 mm. long, 1.75-2 mm. wide, plano-convex, lanceolate-ovate, green and brownish-tinged, smooth, serrulate to the middle, contracted into a sharply bidentate beak about half the length of the body.

Mountain meadows and slopes, Alberta to South Dakota and Colorado, westward to British Columbia and California.

Nevada: Washoe and Elko Counties.

9. CAREX OCCIDENTALIS Bailey, Mem. Torrey Bot. Club 1: 14. 1889.

"*Carex muricata* L." Olney in S. Wats. Bot. King's Expl. 362. in part. 1871.

Carex neo-mexicana Mack., Bull. Torrey Bot. Club 34: 153. 1907.

Rootstocks short-creeping, black, fibrillose, stout and tough, the culms rather slender but stiff, 2.5-7 dm. high, roughened above; leaf-blades 1.5-2.5 mm. wide, flat, the margins slightly revolute; spikes 5-10, androgynous, the lower slightly separate, the upper aggregated; bracts much shorter than the head; scales ovate-triangular, acuminate to short-awned, about the length of the perigynia and largely concealing them; perigynia 2.5-3.5 mm. long, 1.75 mm. wide, plano-convex, oblong-elliptic, the margins serrulate at the base of the beak only, very obscurely nerved, abruptly narrowed into a serrulate beak about a third the length of the body of the perigynium.

Dry habitats, Wyoming to Utah, southward to New Mexico and Arizona.

Nevada: no specimens seen but ascribed to the state by Mackenzie, N. Am. Fl. 18: 52. 1931. Olney's report of C. muricata from East Humboldt Mountains, Elko County (S. Wats., Bot. King's Expl. 362. 1871) was probably based upon this species.

10. CAREX ALMA Bailey, Mem. Torrey Bot. Club 1: 50. 1889.

Carex vitrea Holm, Am. Journ. Sci. IV. 17: 302. 1904.

Cespitose, the culms 3-12 dm. high, strict, rough on the angles; leaf-blades 3-6 mm. wide, flat or canaliculate; head 2.5-10 cm. long, decompound, the clusters from closely aggre-

gated to strongly separate; scales ovate, stramineous to brownish, short-pointed, about the length of the perigynia; perigynia 3.5 mm. long, 1.8 mm. wide, plano-convex, broadly ovate, smooth and shining, lightly nerved, serrulate from the middle and tapering into a serrulate, bidentate beak half the length of the body.

Along streams, southern California, eastward to southern Nevada and Arizona.

Nevada: Clark County.

11. CAREX NEUROPHORA Mack. in Abrams Ill. Fl. Pacif. St. 1: 298. 1923.

Cespitose, from slightly elongate rootstocks, the culms 3-7 dm. high, strongly aphyllopodic; leaf-blades about 3.5 mm. wide leaf-sheaths dorsally mottled with green and white, cross-rugulose ventrally; spikes androgynous, in a dense head 1.5-2.5 cm. long, the staminate flowers inconspicuous; scales ovate, about half the length of the perigynia; perigynia 3.5-4 mm. long, 1.5 mm. wide, plano-convex, lanceolate, nerved, tapering into a slightly serrulate, bidentate beak half the length of the body.

High mountains, Colorado, Wyoming and Montana to Washington, Oregon and northeastern Nevada.

Nevada: aboundant in marshes and meadows at 8000 ft. elevation, Bear Creek Meadows, Humboldt National Forest, Elko County (W. B. Sargent 28).

12. CAREX DISPERMA Dewey, Am. Journ. Sci. 8: 266. 1824.

Carex tenella Schkuhr, Riedgr. 23. 1801, not Thuill. 1799.

Loosely cespitose, with long slender stolons, the culms very weak, 1.5-6 dm. high, rough above; leaf-blades 1-1.5 mm. wide, flat, flaccid; spikes distant or the upper aggregated in a terminal inflorescence 1.5-2.5 cm. long, with 1-5 ascending perigynia and 1-2 staminate flowers; scales ovate-triangular, acute, shorter than the perigynia; perigynia 2 mm. long, 1.5 mm. wide, flattened-suborbicular in cross-section, ovoid-elliptic, smooth, finely nerved, light green, not margined, rounded and abruptly beaked at the apex, the minute beak smooth, 0.25 mm. long.

Boggy coniferous woods, Labrador and Newfoundland to Alaska, southward to New Jersey, Indiana, Arizona and California.

Nevada: no specimen seen but recorded from the state by Mackenzie (N. Am. Fl. 18: 86. 1931).

13. CAREX CANESCENS L. Sp. Pl. 974. 1753.

Carex curta Gooden., Trans. Linn. Soc. 2: 145. 1794.

Carex lagopina W. Boott in S. Wats. Bot. Calif. 2: 233. 1880.

Densely cespitose, the culms slender, 2.5-8 dm. high, roughened above; leaf-blades 2-4 mm. wide, flat, glaucous;

spikes 4-9, the lower somewhat distant, 3-12 mm. long; scales ovate, acute, hyaline with green keel, shorter than the perigynia; perigynia 1.8-2.8 mm. long, 1-1.8 mm. wide, appressed-ascending, pale green, white-puncticulate, faintly nerved, minutely beaked.

Swamps and bogs, Labrador to Alaska southward to Virginia and California; also in Eurasia.

Nevada: Elko County.

14. CAREX INTERIOR Bailey, Bull. Torrey Bot. Club 20: 426. 1893.

Carex scirpoides Schkuhr in Willd. Sp. Pl. 4: 237. 1805, in small part, not C. scirpoidea Michx. 1803.

Carex interior subsp. charlestonensis Clokey, Bull. S. Calif. Acad. Sci. 38: 1. 1939.

Densely cespitose, the culms 2-3.5 dm. high, slender and wiry; leaf-blades 1-2 mm. wide, flat or somewhat canaliculate; head 1-2 cm. long, the spikes approximate, the lateral pistillate, suborbicular, with widely spreading perigynia, the upper long-tapering and staminate at the base; scales ovate-orbicular, very obtuse, half the length of the perigynia; perigynia 2.5 mm. long, 1.5 mm. wide, plump, ovoid, dorsally nerved, nerveless or obscurely nerved at the base ventrally, sparingly serrulate on the upper margins, abruptly beaked, the beak a third the length of the body or less, its teeth very short.

Boggy meadows, Maine to Pennsylvania, westward to British

Columbia, Arizona, Mexico and California.

Nevada: Clark County.

15. CAREX ANGUSTIOR Mack. in Rydb. Fl. Rocky Mts. 124. 1917.

Carex stellulata var. angustata Carey in Gray, Man. 544. 1848.

Carex echinata var. angustata Bailey, Mem. Torrey Bot. Club 1: 59. 1889.

Very densely cespitose, the strict culms very slender, 1-3 dm. high; leaf-blades 0.5-2 mm. wide, flat or canaliculate spikes 2-5, approximate or little separate, 4-6 mm. long, with 3-15 widely spreading perigynia, the terminal long-clavate at the base; scales ovate, sharp-pointed, hyaline-margined and strongly keeled, as long as the body of the perigynia; perigynia 2.5-3.5 mm. long, 1.25 mm. wide, plano-convex, lanceolate, tapering into a beak more than half to about the length of the body, with margins sparingly serrulate and apex bidentate.

Boggy meadows, Newfoundland to North Carolina, westward to Washington and California.

Nevada: Washoe and Clark Counties.

16. CAREX BOLANDERI Olney, Proc. Am. Acad. 7: 393. 1868.

Carex Deweyana var. Bolanderi W. Boott in S. Wats. Bot. Calif. 2: 236. 1880.

Cespitose, from slender, elongate rootstocks, the culms

slender, 4-9 dm. high, smooth or slightly roughened beneath the head; leaf-blades 2.5-5 mm. wide, flat; spikes 4-8, linear-oblong, gynaecandrous, sessile, forming a head 3-8 cm. long, the lower somewhat separate; scales ovate, acute or cuspidate, concealing the bodies of the perigynia; perigynia 4-4.5 mm. long, 1-1.5 mm. wide, lanceolate, rather abruptly tapering into a serrulate, deeply bidentate beak half the length of the body.

Woods, British Columbia to western Montana, southward to New Mexico and California.

Nevada: Ormsby County.

17. CAREX FESTIVELLA Mack., Bull. Torrey Bot. Club 42: 609. 1915.

Carex festiva var. viridis Bailey, Mem. Torrey Bot. Club 1: 51. 1889.

"Carex festiva Dewey" Rydb. Fl. Colo. 64. 1906.

Cespitose, the culms slender, annual, 3-10 dm. high; leaf-blades 2-6 mm. wide, flat; spikes 5-20, densely aggregated into a suborbicular or ovoid head 12-25 mm. long; scales ovate, obtuse or somewhat acute, glossy, dark chestnut to brownish-black, narrower and shorter than the perigynia; perigynia 3.75-5 mm. long, 1.5-2 mm. wide, ovate, appressed, thin and flat except where distended by the achene, membranaceous, ventrally 3-4-nerved mostly near the base,

strongly wing-margined to the base, serrulate to the middle, tapering into a serrulate (except for the terete apex), hyaline-tipped beak half the length of the body.

Mountains, Manitoba and South Dakota to British Columbia, southward to Chihuahua and California.

Nevada: Washoe and Elko Counties.

18. CAREX MICROPTERA Mack., Muhlenbergia 5: 56. 1909.

Cespitose, the culms slender, 3-10 dm. high; leaf-blades 2-4.5 mm. wide, flat; spikes 5-10, congested, forming an ovoid or suborbicular head 12-18 mm. long; scales ovate-lanceolate, acute, dull brown, narrower and slightly shorter than the perigynia; perigynia 3.5-4.5 mm. long, 1-1.5 mm. wide, lanceolate-ovate or lanceolate, ascending-spreading, flattened except where distended by the achene, membranaceous, lightly several-nerved ventrally, very narrowly wing-margined to the base, serrulate to the middle, tapering into a serrulate (except for the terete apex) beak one third to one half the length of the body.

Mountains, Alberta to Washington, southward to Wyoming, Nevada and California.

Nevada: Washoe, Humboldt, Elko, Lander, Mineral and Clark Counties.

19. CAREX HAYDENIANA Olney in S. Wats. Bot. King's Expl. 366. 1871.

Carex festiva var. Haydeniana W. Boott in S. Wats. Bot. Calif. 2: 234. 1880.

Carex festiva var. decumbens Holm, Am. Journ. Sci. IV. 16: 20. 1903.

Carex nubicola Mack., Bull. Torrey Bot. Club 36: 480. 1909.

Densely cespitose, the culms 1-3.5 dm. high, mostly low, erect, recurved or even decumbent; leaf-blades 2-3 mm. wide, flat; head ovoid or globular, 9-18 mm. long; scales ovate, acute, blackish, shorter and much narrower than the perigynia; perigynia 4.5-6 mm. long, 1.75-2.75 mm. wide, narrowly to broadly ovate, ascending, very flat and thin except where distended by the achene, membranaceous, nerveless ventrally or obscurely nerved at the base, strongly winged to the base, doubly serrulate to below the middle, abruptly contracted into a slender, bidentate beak nearly half the length of the body.

Summits of high mountains, Alberta to Oregon, southward to Colorado, Nevada, and California.

Nevada: Washoe, Lander and Elko Counties.

20. CAREX ABRUPTA Mack., Bull. Torrey Bot. Club 43: 618. 1917.

Densely cespitose, the culms 4-6 dm. high, slender, smooth; leaf-blades 1.5-2.5 mm. wide; head suborbicular, 9-17 mm. long,

the 4-8 spikes densely aggregated; scales ovate, obtuse, chestnut-brown, narrower and shorter than the ascending perigynia; perigynia 3.75-4 mm. long, 1.5 mm. wide, plano-convex, oblong-lanceolate, membranaceous, few-nerved, rather narrowly wing-margined to the base, the body serrulate on the margins above, abruptly contracted into a terete, smooth-margined beak, one third to one fourth the length of the body.

Mountains, southern Oregon, Nevada and California.

Nevada: no specimen seen but cited by J. W. Stacey (Leafl. West. Bot. 2: 124. 1938) from Douglas County.

21. CAREX TENERAEFORMIS Mack., Bull. Torrey Bot. Club 43: 609. 1917.

Cespitose, the very slender culms 3-4.5 dm. high; leaf-blades 1-2.5 mm. wide, flat; head 1.5-2.5 cm. long, the spikes 5-8, more or less separate; scales ovate, acute, light brown, narrower and slightly shorter than the loosely appressed or spreading-ascending perigynia; perigynia 2.75-3.25 mm. long, 1.25 mm. wide, plano-convex, thickish, ovate, subcoriaceous, winged to the base, nerveless ventrally or nearly so, serrulate above, tapering into a slender, bidentate beak 1 mm. long.

Sierra Nevada of California and western Nevada.

Nevada: along Galena Creek above public camp ground, Mono National Forest, Mt. Rose, alt. 6300 ft., 7 miles

west of Reno Hot Springs, Washoe County (W. A. Archer 5608 and 5649).

22. CAREX SUBFUSCA W. Boott in S. Wats. Bot. Calif. 2: 234. 1880.

Carex Macloviana var. subfusca Kukenth. in Engler, Pflanzenr. 4 (20): 197. 1909.

Carex stenoptera Mack., Erythea 8: 28. 1922.

Densely cespitose, the culms 2-6.5 dm. high, slender but stiff, very smooth; leaf-blades 1.5-3.5 mm. wide, flat; head oblong or ovoid, 1-2 cm. long, the 4-8 spikes closely aggregated; scales ovate, acute, reddish-brown, shorter than the appressed-ascending perigynia; perigynia 3-3.5 mm. long, 1-1.5 mm. wide, plano-convex, thickish, narrowly to broadly ovate, narrowly wing-margined to the base, serrulate to below the middle, subcoriaceous, faintly nerved ventrally, tapering or abruptly contracted into a serrulate, shallowly bidentate beak one half as long as the body.

Mountains and foothills, Oregon to California, eastward to Arizona.

Nevada: Ormsby County.

23. CAREX PRESLII Steud. Syn. Cyp. 242. 1855.

Densely cespitose, the rootstocks short, much thickened, nearly corm-like; leaf-blades 1.5-4 mm. wide, flat; head oblong to globose, 10-20 mm. long, the 3-8 spikes aggregated or

the lower somewhat separate; scales ovate, acute to mucronate, reddish-brown, somewhat shorter than the perigynia; perigynia 3.5-4 mm. long, 2 mm. wide, plano-convex, ovate, distended by the thick achene, sub-coriaceous, nerveless or obscurely nerved towards the base ventrally, strongly green-winged to the base, strongly serrulate to the middle of the achene, abruptly contracted into a non-hyaline beak 1-1.5 mm. long which is serrulate nearly to the somewhat flattened tip.

Mountains, Alberta and Montana, westward to British Columbia and California.

Nevada: drier margins of meadow in gravel, Tahoe Meadows, alt. 8500 ft., Sierra Nevada, Washoe County (W. A. Archer 6721).

24. CAREX TRACYI Mack., Erythea 8: 41. 1922.

Densely cespitose, the culms 2-8 dm. high, roughened on the angles; leaf-blades 2-4 mm. wide, flat; head stiff, narrow, 1.5-4 cm. long, the 4-7 spikes aggregated or the lower somewhat separate; scales ovate, acute, dull reddish-brown and conspicuously white-tipped, as long as and concealing the perigynia; perigynia 4-5 mm. long, 2.25 mm. wide, flattened-plano-convex, ovate with nearly orbicular body, distended over the achene, membranaceous, wing-margined to the base, serrulate to the middle, conspicuously nerved ventrally,

abruptly contracted into a bidentulate beak somewhat shorter than the body.

Wet meadows, northern California to British Columbia.

Nevada: no specimen seen but cited from the state by Mackenzie (N. Am. Fl. 18: 139. 1931).

25. CAREX PHAEOCEPHALA Piper, Contr. U. S. Nat. Herb. 11: 172. 1906.

Carex leporina var. americana Olney, Proc. Am. Acad. 8: 407. 1872.

Carex tahoensis Smiley, Univ. Calif. Publ. Bot. 9: 119. 1921.

Very densely cespitose from matted rootstocks, the culms 1-3 dm. high, more or less roughened beneath the head; leaf-blades 1.5-2 mm. wide, more or less involute; spikes 2-5 (rarely 7), aggregated into a head 12-25 mm. long; scales ovate, acute, dark brownish with strongly hyaline margins, covering the appressed-ascending perigynia; perigynia 4-6 mm. long, 1.75-2.5 mm. wide, plano-convex, oblong-ovate, membranaceous, rather conspicuously green-margined to the base, serrulate to below the middle, lightly nerved ventrally or nearly nerveless, abruptly contracted into a minutely bidentate, hyaline-tipped, serrulate beak 1 mm. long.

High mountain summits, Alberta to Colorado, westward to British Columbia and California.

Nevada: Washoe County.

26. CAREX LEPORINELLA Mack., Bull. Torrey Bot. Club 43: 605. 1917.

Very densely cespitose from short-creeping rootstocks; culms 1.5-3 dm. high, smooth; leaf-blades 0.75-1.5 mm. wide, involute; spikes 3-6, forming a head 1.5-3 cm. long; scales ovate, acute, reddish-brown, covering the appressed perigynia; perigynia 3.5-4 mm. long, scarcely 1 mm. wide, plano-convex, linear-oblanceolate, membranaceous, very narrowly wing-margined, serrulate above the middle, at maturity few-nerved ventrally, tapering into a hyaline-tipped beak 1 mm. long which is serrulate below but terete and smooth above.

Summits of high mountains, Washington to California and western Nevada.

Nevada: dry, rocky soil on rock slide, Mount Grant, alt. 11,300 ft., Wassuk Range, Mineral County (W. A. Archer 7103).

27. CAREX PETASATA Dewey, Am. Journ. Sci. 29: 246. 1836.

Carex Liddoni Boott in Hook. Fl. Bor. Am. 2: 214. 1839.

Cespitose, the culms 3-8 dm. high, smooth or nearly so; leaf-blades 2-3 mm. wide, flat; head erect, 2-4 cm. long, of 3-6 aggregated spikes; scales ovate, acute, reddish-brown with broad hyaline margins, slightly exceeding the appressed perigynia; perigynia 6-8 mm. long, 2.25 mm. wide, plano-convex, submembranaceous, strongly dilated over the achene, oblong-

lanceolate, rather narrowly wing-margined to the base, serrulate to below the middle, strongly nerved ventrally, tapering into a hyaline-tipped, shallowly bidentate beak scarcely 2 mm. long which is serrulate below, terete and smooth above.

Meadows and open woods, Saskatchewan and Colorado, westward to British Columbia and California.

Nevada: Elko County.

28. CAREX SPECIFICA Bailey, Mem. Torrey Bot. Club 1: 21. 1889.

Carex scoparia var. fulva W. Boott in S. Wats. Bot. Calif. 2: 237. 1880.

"Carex arida Schwein. et Torr." W. Boott in S. Wats. Bot. Calif. 2: 237. 1880.

Carex lancifructus Mack., Bull. Torrey Bot. Club 43: 607. 1917.

Cespitose, the culms 2.5-4.5 mm. high, smooth or nearly so; leaf-blades 2-3.5 mm. wide, flat or canaliculate; head globose to oblong, 1.5-2 cm. long, of 6-10 spikes; scales lanceolate-ovate, acute, reddish-brown, exceeded by the appressed perigynia; perigynia 6 mm. long, 1.5 mm. wide, plano-convex, submembranaceous, lanceolate, finely nerved ventrally, narrowly margined to the base, serrulate above, tapering into a deeply bidentate beak one third the length of the body, serrulate below, slender and smooth above.

Sierra Nevada Mountains of California and Nevada.

Nevada: no specimen seen but cited from Washoe County by J. W. Stacey (Leafl. West. Bot. 2: 80. 1938).

29. CAREX STRAMINIFORMIS Bailey, Mem. Torrey Bot. Club 1: 24. 1889.

Carex straminea var. congesta Olney, Proc. Am. Acad. 7: 393. 1868.

Densely cespitose, the culms 2.5-4 dm. high, slightly roughened; leaf-blades 2-3 mm. wide, flat; head 1.5-2.5 mm. long, of 3-6 spikes; scales ovate-lanceolate, acute, reddish-brown with hyaline margins, shorter than the spreading-ascending perigynia; perigynia 4.5-5 mm. long, 2.5-3 mm. wide, plano-convex, membranaceous, ovate, strongly winged to the base, serrulate to below the middle, nerveless ventrally, abruptly narrowed into a flat, serrulate, bidentate beak about one-third the length of the body.

High mountain summits, Washington southward to California and western Nevada.

Nevada: Clark County.

30. CAREX ATHROSTACHYA Olney, Proc. Am. Acad. 7: 393. 1868.

Carex tenuirostris Olney, Am. Nat. 8: 214. 1874.

Densely cespitose, the culms 1-9 dm. high, smooth or somewhat roughened above; leaf-blades 1.5-2.5 mm. wide, flat; head 1-2 cm. long, of 4-20 spikes; one to three of the lower

bracts strongly developed, 1.5-6 cm. long and exceeding the head; scales oblong-ovate, acute to short-cuspidate, brownish with hyaline margins, somewhat shorter than the appressed-ascending perigynia; perigynia 3-4.5 mm. long, 1.25-1.5 mm. wide, flat but distended by the achene, lanceolate-ovate, membranaceous, nerveless or lightly nerved ventrally, margined nearly to the base, strongly ciliate-serrulate to the middle of the achene, tapering into a shallow bidentate beak 1 mm. long.

Wet meadows and thickets, California to Colorado, northward to Alaska and Saskatchewan.

Nevada: Washoe County.

31. CAREX ELYNOIDES Holm, Am. Journ. Sci. IV. 9: 356. 1900.

"Carex Lyoni Boott" Olney in S. Wats. Bot. King's Expl. 362. 1871.

"Carex affinis R. Br." Olney in S. Wats. Bot. King's Expl. 362. 1871.

Densely cespitose, the culms 6-12 cm. high, filiform, wiry, the basal sheaths broad, conspicuous, persistent; leaf-blades about 0.25 mm. wide, wiry, acicular, involute, resembling culms; spike solitary, linear, 8-15 mm. long, 2-4 mm. wide, the upper half staminate, the lower with 4-8 erect-ascending perigynia; bracts none; scales thin, oblong-obovate, obtuse, reddish-brown with hyaline margins, concealing the perigynia; perigynia obpyramidal, 2.5-3 mm. long, 1.5 mm. wide, trigonous,

membranaceous, slightly puberulent at the base of the beak, very abruptly narrowed into a cylindric, truncately-cleft beak about 0.5 mm. long.

Mountain summits, Montana to Colorado, westward to Utah and eastern Nevada.

Nevada: Clover Mountains, alt. 10,000 ft., Elko County (S. Watson 1220).

32. CAREX BREVIPES W. Boott in S. Wats. Bot. Calif. 2: 246. 1880.

Carex globosa var. brevipes W. Boott in S. Wats. Bot. Calif. 2: 285. 1880.

Carex deflexa var. Boottii Bailey, Mem. Torr. Bot. Club 1: 43. 1889.

Carex Rossii var. brevipes Kukenth. in Engler Pflenzenr. 4 (20): 452. 1909.

In dense clumps from matted rootstocks, the culms up to 18 cm. high, slender, roughened above; leaf-blades 1.5-2.5 mm. wide; staminate spike short-peduncled or sessile, 4-12 mm. long; pistillate spikes 3-5, usually 10-20-flowered, the upper 1-2 approximate, sessile to strongly peduncled, the others basal, long-peduncled; scales ovate, more or less reddish-tinged; perigynia 2.5-3 mm. long, 1.25-1.5 mm. wide, puberulent, the body little longer than wide, suborbicular to obscurely triangular in cross-section, 2-keeled but other-

wise nerveless, abruptly contracted into a minutely ciliate-serrulate, shallowly bidentate beak, 0.25-0.75 mm. long.

Mountains, especially in the Sierra Nevada, Washington southward to California and western Nevada.

Nevada: clefts of rocks or at base of boulders, east exposure, summit of Mt. Grant, alt. 11,300 ft., Wassuk Range, Mineral County (W. A. Archer 6778).

33. CAREX ROSSII Boott in Hook. Fl. Bor. Am. 2: 222. 1840.

Carex deflexa var. Rossii Bailey, Mem. Torrey Bot. Club 1: 43. 1889.

Densely cespitose; culms wiry, 5-25 cm. high, slightly roughened above; leaf-blades 1-2.5 mm. wide; staminate spike sessile or nearly so, usually conspicuous, 3-10 mm. long, pistillate spikes globose to short-oblong, 3-5 mm. long, 2-12-flowered, the upper approximate, the lower basal and long-peduncled; scales ovate, acute or awned; perigynia 3-4.5 mm. long, 1.25 mm. wide, short-pubescent, nearly globose in cross-section, 2-keeled but otherwise nerveless, abruptly contracted into a conic, ciliate-serrulate, deeply bidentate beak, 0.75-1.5 mm. long.

Dry soil, mountains of Colorado to California, northward to Yukon; locally in the Black Hills of South Dakota and in northern Michigan.

Nevada: east Humboldt Mountains, alt. 8000 ft., Elko County (S. Watson 1260).

34. CAREX PSEUDOSCIRPOIDEA Rydb., Mem. N. Y. Bot. Gard. 1: 78. 1900.

"Carex scirpoidea Michx." Olney in S. Wats. Bot. King's Expl. 362. 1871.

Loosely cespitose, from stout, long-creeping rootstocks, the culms phyllopodic, 1.5-3.5 dm. high, reddened at the base, little roughened above; leaf-blades 2-3 mm. wide, flat, the sheaths reddish-tinged and puberulent ventrally; spike solitary, erect, either pistillate or staminate, linear, 12-36 mm. long; scales brownish-black, with white-hyaline margin, broadly ovate, obtuse, more or less pubescent, the apex lacerate and ciliate, broader and longer than the perigynia; perigynia 2.5 mm. long, 1.25 mm. wide, obscurely triangular in cross-section, obovoid, strongly pubescent, 2-ribbed and obscurely nerved, very abruptly contracted into a slender, hyaline-tipped beak about 0.5 mm. long.

Dry mountain slopes, Montana to Washington, southward to Colorado and California.

Nevada: Elko County.

35. CAREX MULTICAULIS Bailey, Bot. Gaz. 9: 118. 1884.

Carex Geyeri Boott, Ill. Carex 1: 42, in part. 1858.

Densely cespitose from thick, woody rootstocks, the culms

2-4 dm. high, smooth; leaf-blades 1.5 mm. wide, very rough above, flat or somewhat involute; inflorescence of 2-several perigynia, the lower in the axils of long-cuspidate scales, the upper in the axils of short-cuspidate scales which are enlarged and white-hyaline at the base, and a terminal staminate part 7-25 mm. long; perigynia 5-7 mm. long, the concave sides 2.5 mm. wide, trigonous, oblong-obovoid, glabrous, 2-keeled and finely but obscurely nerved, rounded at the apex and abruptly very minutely beaked, the beak truncate, entire or nearly so.

Dry soil, southern Oregon to California and Nevada.

Nevada: in Abies lasiocarpa-Pinus flexilis woods on mountain slope, 8200 ft. alt., headwaters of Bear Creek, Jarbidge Mountains, Elko County (Percy Train 723).

36. CAREX HASSEI Bailey, Bot. Gaz. 21: 5. 1896.

Carex aurea var. androgyna Olney in S. Wats. Bot. King's Expl. 371, in large part. 1871.

Carex aurea var. celsa Bailey, Mem. Torrey Bot. Club 1: 75. 1889.

Carex celsa Piper in Piper and Beattie Flora Northwest Coast 79. 1915.

Loosely cespitose and long-stoloniferous, the elongated culms 1.5-6 dm. high, phyllopodic, usually much roughened above; leaf-blades 2-4 mm. wide; staminate spike solitary,

more or less peduncled, 6-12 mm. long, often pistillate at the apex; pistillate spikes 3-5, the upper approximate and short-peduncled, the lower long-peduncled, linear-oblong, 8-20 mm. long; bracts sheathing, the lowest exceeding the culm; scales ovate, acute, reddish-brown tinged, somewhat shorter than the ascending perigynia; perigynia 2.5-3 mm. long, 2 mm. wide, obovoid-ellipsoid, suborbicular in cross-section, nerved, minutely granular, white pulverulent, rounded and beakless or very nearly so at the apex.

Moist habitats, Mackenzie and Yukon southward to Utah, Nevada and California.

Nevada: Elko County.

37. CAREX AUREA Nutt. Gen. N. Am. Pl. 2: 205. 1818.

Carex mutica R. Br. in Richards. App. Narr. Franklin Voy. 35. 1823.

Carex pyriformis Schwein., Ann. Lyc. N. Y. 1: 69. 1824.

Loosely cespitose and long-stoloniferous, the culms 0.3-4 dm. high, phyllopodic; leaf-blades 2-4 mm. wide; staminate spike solitary, sessile or short peduncled, 3-10 mm. long, occasionally with a few perigynia; pistillate spikes 3-5, the upper approximate and short-peduncled, the lower from little to strongly separate and often strongly peduncled, 4-20 mm. long; scales ovate, somewhat obtuse to short-cuspidate, reddish-brown tinged, shorter and narrower than the appressed

perigynia; perigynia 2-3 mm. long, 1.5 mm. wide, orbicular-obovoid, flattened-oval in cross-section, coarsely ribbed, fleshy at maturity, translucent and golden-yellow or brownish, densely puncticulate, rounded at the apex and beakless or nearly so.

Wet habitats, Newfoundland to Yukon, southward to Connecticut, Indiana and in the mountains to New Mexico and California.

Nevada: Washoe County.

38. CAREX CAPILLARIS L. Sp. Pl. 977. 1753.

Carex capillaris var. elongata Olney Caric. Bor. Am. 5. 1871.

Cespitose in small, dense clumps, the culms 0.3-6 dm. high, erect or decumbent, phyllopodic, smooth; leaf-blades 0.75-2.5 mm. wide, flat or slightly channelled; terminal spike staminate (occasionally gynaecandrous), very slender, 4-8 mm. long; pistillate spikes 2 or 3, on very slender, elongate, drooping peduncles, approximate to widely separate, linear-oblong, 5-15 mm. long; bracts long-sheathing, tubular; scales orbicular-ovate, closely appressed, obtuse or acute, much shorter than the ascending perigynia, early deciduous; perigynia 2.5-3 mm. long, 0.75 mm. wide, ovoid-lanceolate, obtusely triangular in cross-section, serrulate, slightly ciliate, 2-ribbed but otherwise nerveless, contracted into a conic, entire, straight beak 1 mm. long.

Dry, sunny habitats, Greenland to Alaska, southward to Maine, New York, Michigan, and in the Rocky Mountains to New Mexico and Nevada.

Nevada: no specimen seen but recorded from the state by Mackenzie (N. Am. Fl. 18: 296. 1935).

39. CAREX VIRIDULA Michx. Fl. Bor. Am. 2: 170. 1803.

"Carex Oederi Retz." Schwein. et Torn, Ann. Lyc. N. Y. 1: 334. 1825.

Carex flava var. rectirostrata Bailey, Bot. Gaz. 13: 84. 1888.

Carex Oederi var. pumila Fernald, Rhodora 8: 201. 1906.

Densely cespitose, the culms 0.7-4 dm. high, smooth; leaf-blades 1.5-3 mm. wide, canaliculate; terminal spike usually staminate, sessile or short-peduncled, 3-15 mm. long; pistillate spikes 2-16, oblong or globose-oblong, 4-12 mm. long, aggregated and sessile or the lower separate and exsert-peduncled; bracts leaf-like, usually erect and the lower much exceeding the culm, strongly sheathing; scales ovate, obtuse or somewhat acute, straw-colored with hyaline margins, often reddish-brown tinged, much shorter than the perigynia; perigynia 2-3 mm. long, obovoid, obtusely triangular, many-nerved, abruptly beaked, the beak scarcely half the length of the body, minutely bidentate.

Banks of rivers and lakes, Newfoundland to Alaska, south-

ward to New Jersey, Indiana, Colorado and California.

Nevada: Morey Peak (Clark County?) (C. A. Purpus).

40. CAREX FISSURICOLA Mack., Muhlenbergia 5: 53. 1909.

"Carex frigida All." Olney in S. Wats. Bot. King's Expl. 371. 1871.

Carex ablata var. luzuliformis Bailey, Bot. Gaz. 25: 272. 1898.

Cespitose, the culms 5-8 dm. high, phyllopodic, the leaves mostly clustered at the base; leaf-blades 3-8 mm. wide, thick, flat terminal spike staminate or often with a few perigynia, sessile or short-peduncled; lateral spikes 4 or 5, the upper contiguous and sessile or short-peduncled, the lower separate and strongly peduncled; bracts long-sheathing, the blades short or rudimentary; scales ovate, acute to cuspidate, brownish-black, exceeding the perigynia; perigynia 4.5-5 mm. long, 1.75-2 mm. wide, narrowly ovate, much flattened, very sparsely hairy when young, ciliate-serrulate on the margins above, contracted into a shallowly bidentate beak.

Mountain meadows, western Utah, Nevada and California.

Nevada: Washoe and Elko Counties.

41. CAREX LANUGINOSA Michx. Fl. Bor. Am. 2: 175. 1803.

Carex Watsoni Olney in S. Wats. Bot. King's Expl. 370. 1871.

Carex filiformis var. latifolia Boeckl., Linnaea 41: 309. 1877.

Cespitose and long-stoloniferous, the culms rather stout, 3-10 dm. high, stiff, erect, aphyllopodic, rough above, more or less reddened and filamentose at the base; leaf-blades 2-4 mm. wide, flat, rough; staminate spikes 1-3, 2-6 cm. long, distant; pistillate spikes 1-3, oblong-cylindric, 1-5 cm. long, sessile or short-peduncled; lower bracts mostly exceeding the culm; scales lanceolate, acuminate or aristate, reddish-brown tinged, narrower than, but the lower exceeding, the perigynia; perigynia 2.5-3.5 mm. long, 2 mm. wide, ovoid, densely pubescent, the nerves obscure, abruptly short-beaked, the beak bidentate with teeth 0.5-1 mm. long.

Open, swampy habitats, Nova Scotia to British Columbia, southward to Tennessee, Missouri, New Mexico and California.

Nevada: Washoe and Mineral Counties.

42. CAREX PODOCARPA R. Br. in Richards. Frankl. Journey 751. 1824.

Carex Tolmei Boott in Hook. Fl. Bor. Am. 2: 224. 1839.

Carex microchaeta Holm, Am. Journ. Sci. IV. 17: 305. 1904.

Carex Paysonis Clokey, Am. Journ. Sci. V. 3: 89. 1922.

Loosely cespitose from creeping, woody rootstocks, the culms phyllopodic, 1.5-5 dm. high; leaf-blades 2.5-4 mm. wide, flat with revolute margins; terminal spike staminate, sessile or short-peduncled, 8-20 mm. long; pistillate spikes 2-6,

erect, short-oblong, 8-15 mm. long, approximate or the lower separate, sessile or short-peduncled; bracts sheathless; scales ovate, acute, purplish-black, shorter than the perigynia; perigynia 4 mm. long, 1.8 mm. wide, oblong-ovate, much flattened, granular, rounded at the apex and abruptly minutely beaked, the beak 0.5 mm. long, bidentulate or nearly entire.

Mountain meadows, Wyoming and Alberta to Idaho, Washington and Nevada.

Nevada: wet meadow, alt. 7500 ft., 8 miles east of Lake Tahoe, Sierra Nevada, Washoe County (W. A. Archer 6664).

43. CAREX HELLERI Mack., Erythea 8: 80. 1922.

"Carex nova Bailey" Smiley, Univ. Calif. Publ. Bot. 9: 124. 1921.

Densely cespitose, not stoloniferous, the culms 0.5-3 dm. high, slender but strict, roughened above, reddish tinged at the base; leaf-blades 2-3 mm. wide, flat with slightly revolute margins; spikes 3-5, closely approximate, the terminal gynaecandrous, sessile or short-peduncled, the lateral pistillate, sessile or nearly so, oblong, 10-20 mm. long; lowest bract shorter than the culm; scales ovate-lanceolate to lanceolate, acuminate or aristate, purplish-black with light midvein, longer but much narrower than the perigynia; perigynia 2.5-3.5 mm. long, 2-3 mm. wide, broadly oval to suborbicular, much flattened, puncticulate, with 2 marginal ribs but other-

wise nerveless, minutely and sparingly nerveless, abruptly beaked, the beak 0.25 mm. long, bidentate; achenes substipitate.

At high altitudes in the Sierra Nevada and White Mountains of California, and in western Nevada.

Nevada: Washoe County. The type locality of this species is Mt. Rose.

44. CAREX EPAPILLOSA Mack. in Rydb. Fl. Rocky Mts. 138. 1917.

Densely cespitose, but the rootstocks more or less creeping, the culms 1.5-6 dm. high, stiff, smooth; leaves all toward the base of the culms, the blades 3-8 mm. wide, nearly flat; spikes 3-6, approximate or the lowest a little separate, sessile or short-peduncled, oblong-ovoid, 1-2.5 cm. long, 6-10 mm. wide, the terminal gynaecandrous; scales lanceolate-ovate, sharp-pointed, brownish-black, narrower than but about equaling or exceeding the perigynia; perigynia 3.5-4 mm. long, 1.5-2 mm. wide, broadly oval or obovate, obscurely nerved, not granular, abruptly minutely beaked; achenes on a stipe averaging 1/2 their length.

Mountain meadows, Wyoming to Washington, southward to Utah and California.

Nevada: no specimens seen but ascribed to the state by Mackenzie (N. Am. Fl. 18: 367. 1935).

45. CAREX HETERONEURA W. Boott in S. Wats. Bot. Calif. 2: 240. 1880.

"Carex atrata L." W. Boott in S. Wats. Bot. Calif. 2: 239. 1880.

Carex atrata var. erecta W. Boott in S. Wats. Bot. Calif. 2: 239. 1880.

Carex quadrifida Bailey, Proc. Calif. Acad. II. 3: 104. 1891.

Carex quadrifida var. lenis Bailey, Proc. Calif. Acad. II. 3: 104. 1891.

Carex quadrifida var. caeca Bailey, Bot. Gaz. 21: 8. 1896.

Densely cespitose, the rootstocks little if at all creeping, the culms 2.5-5 dm. high, slender, smooth or nearly so; leaf-sheaths generally reddish tinged ventrally, the blades 2-4 mm. wide; spikes about 4, approximate or the lower more or less strongly separate, the terminal gynaecandrous (rarely staminate), the lateral pistillate, the lower on peduncles of half their length, the upper sessile or short-peduncled, oblong, 1-2 cm. long, 5-7 mm. wide; scales ovate to lanceolate-ovate, acute, purplish-brown with conspicuous midvein, generally shorter than the perigynia and half their width; perigynia 2.5-3.5 mm. long, 1.75-2.5 mm. wide, suborbicular, strongly flattened, puncticulate but not granular-roughened, rounded at the apex, the beak 0.25 mm. long, minutely bidentate; achenes short-stipitate.

Sierra Nevada of California and western Nevada.

Nevada: Washoe County.

46. CAREX ATRATA L. Sp. Pl. 976. 1753.

Cespitose from slender rootstocks, the culms 1.5-5 dm. high, papillose, smooth or little roughened above; red tinged and more or less filamentose at the base, the desiccated leaves of the previous year conspicuous; leaf-blades 2-8 mm. wide, flat or with slightly revolute margins and channeled above; spikes 3-7, approximate or the lowest somewhat separate, the upper short-peduncled and weakly erect, the lower on peduncles of more or less their own length, the terminal spike gynaecandrous, the lateral pistillate, oblong-ovoid, usually 12-24 mm. long; scales ovate to oblong-ovate, more or less acute, black or brownish-black, about as wide as and usually slightly longer than the mature perigynia; perigynia 3-4 mm. long, 1.5-3 mm. wide, broadly oval to obovate, flattened, papillose, rounded at the apex and very abruptly beaked, the beak 0.5 mm. long, emarginate; achenes short-stipitate.

Alpine meadows, Greenland to Alberta, southward to Colorado and Nevada; also in Eurasia.

Nevada: no specimens seen but cited from the state by Mackenzie (N. Am. Fl. 18: 372. 1935).

47. CAREX SCOPULORUM Holm, Am. Journ. Sci. IV. 14: 422. 1901.

Loosely stoloniferous, the culms solitary or in small clumps, 1-4 dm. high, stiff, smooth; leaf-blades 3-7 mm. wide with revolute margins; terminal spike staminate or androgynous; lateral spikes 2-3, approximate, erect, sessile or short-peduncled, pistillate or androgynous, 1-2.5 cm. long; lowest bract shorter than the inflorescence; scales obovate, usually obtuse, black with obsolete midvein, shorter than the squarrose-spreading perigynia; perigynia 2.5-3.5 mm. long, 1.5-2 mm. wide, orbicular or broadly obovoid, strongly biconvex and turgid, papillose, apiculate, the beak 0.2-0.5 mm. long, entire, often abruptly bent.

High mountains, Colorado and Wyoming to Nevada and California.

Nevada: Washoe County.

48. CAREX KELLOGGII W. Boott in S. Wats. Bot. Calif. 2: 240. 1880.

Carex acuta var. pallida Boott Ill. Carex 4: 166. 1867.

"Carex vulgaris var. juncella Fries." Olney in S. Wats. Bot. King's Expl. 368, in part. 1871.

Carex limnea Holm, Am. Journ. Sci. IV. 20: 301. 1905.

Cespitose, with short ascending stolons, the culms 3-7 dm. high, somewhat filamentose at the base, phyllopodic; leaf-blades flat or somewhat channeled at the base, 1.5-3 mm. wide;

pistillate spikes 3-5, sessile or nearly so, approximate or slightly separate, linear, 1.5-4 cm. long; scales oblong ovate, obtuse or acutish, with broad, light-colored center; perigynia 2.5 mm. long, 1.25 mm. wide, ovate, flattened-biconvex, pale green, slenderly nerved, densely granular, strongly stipitate, abruptly minutely beaked, the beak entire.

Wet habitats, Montana to Colorado, westward to Alaska and California.

Nevada: swamp at head of Dave Creek, 15 miles northeast of Jarbidge, Elko County (Percy Train 851).

49. CAREX NEBRASKENSIS Dewey, Am. Journ. Sci. II. 18: 102. 1854.

Carex Jamesii Torr., Ann. Lyc. N. Y. 3: 398. 1835, not Schwein 1824.

Carex nebraskensis var. praevia Bailey, Mem. Torrey Bot. Club 1: 49. 1889.

Carex nebraskensis var. ultriformis Bailey, Bot. Gaz. 21: 8. 1896.

Carex jacintoensis Parish, Bull. S. Calif. Acad. Sci. 4: 110. 1905.

Rootstocks creeping and stoloniferous, the culms 2.5-10 dm. high, stout, rigid, roughened or sometimes smooth; leaf-blades 3-8 mm. wide, flat, the sheaths nodulose; staminate spikes 1-2, more or less peduncled, 1.5-3.5 cm. long; pistillate spikes

2-5, oblong, sessile or short-peduncled, 1.5-6 cm. long, contiguous or the lower separate; scales lanceolate, somewhat obtuse to acuminate, blackish with light midvein, from much shorter than to exceeding the perigynia; perigynia 3-3.5 mm. long, 2 mm. wide, oblong-obovate, compressed biconvex, ribbed, sessile, contracted at the apex into a bidentate beak.

Meadows and swamps, South Dakota and Kansas to New Mexico, California and British Columbia.

Nevada: Washoe, Storey, Lander, Lincoln, Lyon and Elko Counties.

50. CAREX AQUATILIS Wahl., Svensk. Vet.-Akad. Nya Handl. 24: 165. 1803.

Carex stans Drejer, Revis. Caric. Bor. 40. 1841.

Carex variabilis Bailey, Mem. Torrey Bot. Club 1: 18. 1889.

Cespitose, with long, horizontal stolons, the culms 2-7 dm. high, reddened at the base; leaf-blades 2-6 mm. wide; staminate spikes 1-2, slender; pistillate spikes 2-4, sessile or short-peduncled, not aggregated, linear, 1.5-6 cm. long; scales oblong-obovate to lanceolate, obtuse to somewhat acute, blackish to reddish-brown; perigynia 2.5 mm. long, 1.25 mm. wide, elliptic-obovoid, broadest below the apex, much flattened, unequally biconvex, not at all turgid, nerveless but with a median ridge, puncticulate, granular, abruptly apiculate.

Swampy habitats, Greenland to Alaska, southward to Quebec and northern Michigan and in the western mountains to New Mexico and California; also in Eurasia.

Nevada: no specimens seen but recorded from the state by Mackenzie (N. Am. Fl. 18: 398. 1935).

51. CAREX ATHERODES Spreng. Syst. Veg. 3: 828. 1826.

Carex aristata R. Br. in Richards. Frankl. Journey 751. 1823, not Honck. 1792.

Carex trichocarpa var. aristata Bailey, Bot. Gaz. 10: 294. 1885.

Loosely cespitose and stoloniferous, the culms 6-12 dm. high, stout, smooth or somewhat rough above; leaf-blades 4-12 mm. wide, flat, nodulose, more or less pubescent beneath; staminate spikes 2-6, slender, long-stalked; pistillate spikes 3-5, remote, cylindric, sessile or the lower short-stalked, 2-10 cm. long; scales oblong-lanceolate, rough-awned, 3-nerved, the upper shorter than the perigynia; perigynia 8-12 mm. long, 2 mm. wide, lanceolate suborbicular in cross-section, glabrous, subcoriaceous, somewhat inflated, conspicuously many-ribbed, tapering into the very deeply bidentate beak, the teeth usually spreading and 1-3 mm. long.

Swamps, Ontario to Yukon, southward to New York, Indiana, Missouri, Kansas, Nevada and Oregon.

Nevada: Ruby Valley, alt. 6000 ft., Elko County (S. Watson 1264).

52. CAREX ROSTRATA Stokes in With. Arrang. Brit. Pl. ed. 2, 2: 1059. 1787.

Carex vesicaria β L. Sp. Pl. 979. 1753.

Carex ampullacea Gooden., Trans. Linn. Soc. 2: 207. 1794.

Carex utriculata Boott in Hook. Fl. Bor. Am. 2: 221. 1840.

Cespitose and stoloniferous, the culms stout, phyllopodic, 3-12 dm. high, rough below the spikes; leaf-blades 2-12 mm. wide, the sheaths strongly nodulose dorsally; staminate spikes 2-4, slender, 1-6 cm. long; pistillate spikes 2-4, erect, remote, cylindric, densely many-flowered, sessile or short-peduncled, 5-15 cm. long; scales lanceolate, acute or awned, narrower than and from shorter to longer than the spreading perigynia; perigynia 4-6 mm. long, 2 mm. wide, ovoid, orbicular in cross-section, inflated, several nerved, abruptly beaked, the beak smooth, 1.5-2 mm. long, with erect or spreading teeth 1 mm. long or less.

Swampy habitats, Greenland to Alaska, southward to Delaware, New Mexico and California; also in Eurasia.

Nevada: Washoe and Elko Counties.

EXCLUDED SPECIES

I. Species reported from Nevada but no material seen:

1. CAREX MULTICOSTATA Mack.

Reported from Nevada by Van Eseltine in Tidestrom, "Flora of Utah and Nevada" (Contr. U. S. Nat. Herb. 25: 108. 1925).

Mountains of Oregon to California.

2. CAREX ABLATA Bailey

Mackenzie (N. Am. Fl. 18: 314. 1935) refers Olney's "Carex frigida All." in S. Wats. Bot. King's Expl. 371. 1871, to this species. The sheet in the U. S. National Herbarium of Watson's collection upon which Olney's report is based, however, is Carex fissuricola Mack.

Montana to British Columbia, southward to Utah and California.

3. CAREX CHALCIOLEPIS Holm

Van Eseltine ascribes this species to Nevada in Tidestrom, "Flora of Utah and Nevada" (Contr. U. S. Nat. Herb. 25: 109. 1925).

Wyoming and Colorado to Utah and California.

4. CAREX GYMNOCLADA Holm

The basis for Olney's report of C. rigida Gooden. from Nevada in S. Wats. Bot. King's Expl. 370. 1871, seems likely to have been this species.

Washington to California, eastward to Colorado.

5. CAREX VESICARIA L.

Reported from Huntington Valley, Elko County, by Olney in S. Wats. Bot. King's Expl. 374. 1871.

Newfoundland to British Columbia, southward to Delaware, Indiana, New Mexico and California; also in Eurasia.

II. Species not reported from Nevada but whose general known range includes the state:

6. CAREX NIGRICANS C. A. Meyer

Arctic-Alpine Zone, Colorado to California northward to the Aleutian Islands.

7. CAREX VERNACULA Bailey

Alpine slopes, Washington to California, eastward to Wyoming and Colorado.

8. CAREX SICCATA Dewey

Dry open habitats, Maine to New Jersey, westward to Washington and Arizona.

9. CAREX STIPATA Muhl.

Swamps, Newfoundland to Alaska, southward to North Carolina, New Mexico and central California.

10. CAREX PRATICOLA Rydb.

Meadows, Greenland to Alaska, southward to Quebec, Colorado and northern California.

11. CAREX RAYNOLDSII Dewey

Mountain meadows, Alberta to British Columbia, south-

ward to Colorado, Utah and middle California.

12. CAREX BUXBAUMII Wahl.

Swamps and springy places, Newfoundland to Alaska, southward to Georgia, Arkansas, Colorado, Utah and California; also in Eurasia.

13. CAREX APERTA Boott

Swampy meadows and low grounds, British Columbia to Oregon, Idaho and Montana. Reported from Utah and California.

14. CAREX EXSICCATA Bailey

Swamps, middle California to Alaska, eastward to Montana.

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