

firm, scarcely at all scarious; style 3-cleft; achene smaller, broadly obovate. — In a single locality in Delaware Co., Penn.; probably introduced from S. Europe.

++ Culm triangular, tall and stout, from slender running rootstocks; spikelets many-flowered, loosely umbellate or corymbed, involuclate-bracted.

8. *S. Cánbyi*, Gray. Culm (3-5° high) 3-angled, usually sharply so above, obtusely below, the sheath at base extended into a long slender triangular and channelled leaf (2-4° long); involuclal leaf similar (4-8° long), continuing the culm; spikelets oblong (4-6° long), single or sometimes proliferously 2 or 3 together, nodding on the apex of the 5-9 long filiform and flattened peduncles or rays of the dichotomous umbel-like corymb, or the central one nearly sessile; scales loosely imbricated, oblong-ovate, acute, pale, thin and scarious, with a greenish nerved back; bristles 6, firm, furnished above with spreading hairs rather than barbs, equalling the slender abrupt beak of the obovate-triangular shining achene (1½° long). — In a pond near Salisbury, Md.

+++ Culm terete, very tall and stout, from a deep running rootstock, leafless or very nearly so; spikelets numerous, clustered in a one-sided compound umbel-like panicle longer than the involuclal leaf; involuclate bracts small, scale-like and rusty-scarious; scales of the spikelets rusty or chestnut-brown, scarious, the midrib extended into a mucronate point.

9. *S. lacustris*, L. (GREAT BULRUSH.) Culm 3-9° high, ½-1° thick at base; spikelets ovate-oblong (3-4° long); scales mostly a little downy on the back and ciliate; style 2-cleft; achene pale and dull, obovate with a narrow base, plano-convex, mucronate-pointed, usually overtopped by the 4-6 slender downwardly barbed bristles. (*S. validus*, Vahl.) — Common everywhere in still fresh water. (Eu., Asia, etc.)

+++ Culms slender from an annual root, terete, plano-convex or obtusely triangular, naked; the sheaths rarely bearing a short leaf; spikelets few or several in a sessile cluster, sometimes solitary, much overtopped by the involuclal leaf; bristles often few or wanting.

10. *S. débilis*, Pursh. (Pl. 3, fig. 1-5.) Culms obtusely triangular, with somewhat hollowed sides, 1-2° high, yellowish-green, shining; spikelets 3-12, capitate, ovate-oblong, obtuse (3-4° long), chestnut-brown; involuclal leaf often horizontal at maturity; scales roundish; stamens 3; style 2-3-cleft; bristles 6, stout, downwardly barbed, equalling or two surpassing the obovate turgidly plano-convex (or bluntly 3-sided) abruptly mucronate-pointed smoothish achene. — Swamps, Mass. to S. C., Minn. and Neb. Aug., Sept.

11. *S. Smithii*, Gray. Culms terete, slender, 3-12° high, often leaf-bearing from the upper sheath, dull green as are the 1-3 oblong-ovate acute spikelets; involuclal leaf always erect; scales oblong-oval; style 2-cleft; bristles 1 or 2 minute rudiments or none; achene somewhat lenticular, smooth, deciduous with the scales. — Wet shores, Delaware Bay to L. Ontario, Mich., N. Ind., and Ill. July.

12. *S. supinus*, L., var. *Hállii*, Gray. Culms filiform, 5-12° high; upper sheath rarely distinctly leaf-bearing; spikelets 1-7 in a sessile or sometimes geminately proliferous cluster, ovate-oblong becoming cylindrical, green

ish; scales ovate, strongly keeled, mucronate-pointed; stamens 2 or 3; style 2-cleft; bristles none; achene obovate-orbicular, mucronate, plano-convex, strongly wrinkled transversely. — Wet shores, Ill. to Tex.; also found in E. Mass. (Hitchings). (Eu.)

\*\*\* Spikelets in simple or mostly compound umbellate or cymose-panicled clusters, many-flowered, terete; involucre of mostly several flat leaves; culm tall, from tufted or running rootstocks, triangular, leafy, sedge-like; leaves rough on the margin; style mostly 3-cleft.

+ Spikelets large (6-15° long); midrib of the scales extended beyond the mostly lacerate or two-cleft apex into a distinct awn.

13. *S. maritimus*, L. (SEA CLUB-RUSH.) Leaves flat, linear, as long as the stout culm (1-3° high), those of the involucre 1-4, very unequal; spikelets few—several in a sessile cluster, and often also with 1-4 unequal rays bearing 1-7 ovate or oblong-cylindrical (rusty-brown) spikelets; awns of the scales soon recurved; achene obovate-orbicular, compressed, flat on one side, convex or obtuse-angled on the other, minutely pointed, shining, shorter than the 1-6 unequal and deciduous (sometimes obsolete) bristles. — Saline localities, on the coast from N. Scotia to Fla., and in the interior across the continent. (Eu.) — Var. *MACROSTACHYOS*, Michx.; larger, with very thick oblong-cylindrical heads (1-1½° long), and longer involuclal leaf (often 1° long).

14. *S. fluviatilis*, Gray. (RIVER C.) Culm very stout, 3-5° high; leaves flat, broadly linear (½° wide or more), tapering gradually to a point, the upper and those of the very long involucre very much exceeding the compound umbel; rays 5-9, elongated, recurved-spreading, each bearing 1-5 ovate or oblong-cylindrical acute paler heads; scales less lacerate and awns less recurved; achene obovate, sharply and exactly triangular, conspicuously pointed, opaque, scarcely equalling the 6 rigid bristles. — Borders of lakes and large streams, W. Vt. to Conn. and Penn., west to Minn. and Iowa.

++ Spikelets very numerous, small (1-3° long); scales mucronate-pointed or blunt; umbel-like cymose panicle irregular, compound or decompound; culm 2-5° high, unusually leafy; leaves broadly linear, green and rather soft; bristles very slender, often more or less tortuous and naked below.

15. *S. sylvaticus*, L. Spikelets lead-colored, clustered 3-10 together at the end of the mostly slender ultimate divisions of the open decompound panicle, ovoid or lance-ovate, 2° long; scales bluntish; bristles 6, downwardly barbed throughout, rather exceeding the triangular short-pointed achene; style 3-cleft. — Along brooks, E. Mass. to N. Y. and E. Penn.

Var. *digynus*, Boeckl. Style 2-cleft and the achene not at all angled on the back; stamens 2, and bristles 4. (*S. microcarpus*, Presl.) — N. Scotia and N. Eng. to Minn., and westward.

16. *S. atrovirens*, Muhl. Leaves somewhat more rigid; spikelets dull greenish-brown, densely conglomerate (10-30 together) into close heads, these also usually densely clustered in a less compound panicle; scales pointed; bristles sparsely and strongly downwardly barbed above the middle, naked below, nearly straight, as long as the conspicuously pointed and obovate-oblong triangular achene. — Wet meadows and bogs, N. Scotia and N. Eng., west to Minn., Kar. and the Pacific.



17. **S. polyphýllus**, Vahl. Culm usually more leafy; spikelets yellow-brown, ovate, becoming cylindrical, clustered 3-8 together in small heads on the short ultimate divisions of the open decompound umbel; scales mucronate; bristles 6, usually twice bent, soft-barbed toward the summit only, about twice the length of the achene. — Swamps and borders of ponds, western N. Eng. to N. C., west to Minn. and Ark.

9. **ERIOPHORUM**, L. COTTON-GRASS. (Pl. 3.)

Bristles naked, usually very numerous, often silky and becoming greatly elongated. Otherwise as in *Scirpus*. — Spikelets single or clustered or umbellate, usually involucre with erect scale-like bracts, upon a leafy or naked stem; scales membranaceous, 1-3-nerved. Style very slender and elongated, 3-cleft. Achene acutely triangular. (Name composed of *ἔριον*, wool or cotton, and *φῶπος*, bearing.)

\* Bristles 6, rust-colored, becoming tortuous and entangled; culm very leafy, bearing numerous spikelets in an involucre decompound cymose-panicled umbel.

1. **E. lineatum**, Benth. & Hook. Culm triangular, leafy (1-3° high); leaves linear, flat, rather broad, rough on the margins; umbels terminal and sometimes axillary, loose, drooping, the terminal with a 1-3-leaved involucre much shorter than the long slender rays; spikelets oblong, becoming cylindrical (2-4" long), on thread-like drooping pedicels; bristles at maturity scarcely exceeding the ovate green-keeled pointed scales; achene sharp-pointed. (*Scirpus lineatus*, Michx.) — Low grounds, western N. Eng. to Ga., west to Minn. and Mo.

2. **E. cyperinum**, L. (Pl. 3, fig. 6-10, under *Scirpus*.) (WOOL-GRASS.) Culm nearly terete (2-5° high); leaves narrowly linear, long, rigid, those of the involucre 3-5, longer than the umbel, the rays at length drooping; spikelets exceedingly numerous, ovate, clustered, or the lateral pedicelled, woolly at maturity (1½-3" long); the rust-colored bristles much longer than the pointless scales; achene short-pointed. (*Scirpus Eriophorum*, Michx.) — Wet meadows and swamps, Newf. to Fla., west to Minn. and Iowa. Exceedingly variable in the character and size of the umbel, the typical form having the spikelets mostly clustered in small heads. — Var. **LAXUM** has the spikelets scattered, the lateral long-pedicelled.

\* \* Bristles 6, crisped, white; spikelet single, small; involucre of one short bract.

3. **E. alpinum**, L. (Pl. 3, fig. 1-6.) Culms slender, many in a row from a running rootstock (6-10' high), scabrous, naked; sheaths at the base awl-tipped. — Cold bogs, Lab. to N. Eng., west to Minn. June. (Eu.)

\* \* \* Bristles very numerous, not crisped, forming dense cottony heads in fruit.

+ Culm bearing a single spikelet; involucre none.

4. **E. vaginatum**, L. Culms in close tufts (1° high), leafy only at the base, above with 2 inflated leafless sheaths; root-leaves long and thread-form, triangular-channelled; scales of the ovate spikelet long-pointed, lead-color at maturity. — Cold and high peat-bogs, N. Eng. to Penn., Mich., Minn., and northward. May, June. (Eu.)

+ + Culm leafy, bearing several umbellate-clustered heads, involucre.

5. **E. Virginicum**, L. Culm rigid (2-4° high); leaves very narrowly linear, elongated, flat; spikelets nearly sessile, crowded in a dense cluster or head; wool rusty or copper-color, only thrice the length of the scale; stamen 1. — Bogs and low meadows, Newf. to Fla., west to Minn. and Neb. July, Aug. — Var. **ALBUM**, Gray, has the wool white. N. New York.

6. **E. polystachyon**, L. Culm rigid (1-2° high), obscurely triangular; leaves linear, flat, or barely channelled below, triangular at the point; involucre 2-3-leaved; spikelets several (4-12), on smooth nodding peduncles, some of them elongated in fruit; achene obovate; wool white, very straight (1' long or more). — Bogs, Newf. to Ga., Minn., and westward. June, July. (Eu.) — Var. **LATIFOLIUM**, Gray, has peduncles rough; leaves sometimes broader and flatter.

7. **E. gracile**, Koch. Culm slender (1-2° high), rather triangular; leaves slender, channelled-triangular, rough on the angles; involucre short and scale-like, mostly 1-leaved; peduncles rough or roughish-pubescent; spikelets 3-7, small, when mature the copious white wool 6-9" long; achene elliptical-linear. — Cold bogs, Newf. to N. J., west to Minn. and Mo. Scales in our plant mostly light chestnut and about 3-nerved. June-Aug. (Eu.)

10. **FUIRÈNA**, Rottboell. UMBRELLA-GRASS. (Pl. 2.)

Spikelets many-flowered, terete, clustered or solitary, axillary and terminal. Scales imbricated in many ranks, awned below the apex, all floriferous. Perianth of 3 ovate or heart-shaped petaloid scales, mostly on claws, and usually with as many alternating small bristles. Stamens 3. Style 3-cleft. Achene triangular, pointed with the persistent base of the style. Culms from a perennial root, obtusely triangular. (Named for *G. Fuiren*, a Danish botanist.)

1. **F. squarrosa**, Michx., var. **hispida**, Chapm. (Pl. 2, fig. 1-7.) Stem (1-3° high) leafy; leaves and sheaths usually densely hairy; spikelets ovoid-oblong (4-6" long), clustered in heads, bristly with the spreading awns of the scales; perianth-scales rhombic or deltoid-ovate, with a short thick awn or point, the interposed mostly barbed bristles shorter than the achene. — Sandy wet places, N. J. to Fla., west to Ky. and Tex.

Var. **pumila**, Torr. Usually low (1-6' high or more), with 1-6 spikelets; perianth-scales narrowly to broadly oblong or ovate, long-stipitate and attenuate to a long awn; barbed bristles usually exceeding the achene. — Mass. to N. J., Fla., and La.; Mich. The commonest form.

11. **HEMICÁRPHA**, Nees. (Pl. 2.)

Spikelet, flowers, etc., as in *Scirpus*, except that there is a minute translucent scale (readily overlooked) between the flower and the axis of the spikelet. Stamen only one. Style 2-cleft. Bristles or other perianth none. (Name from *ἥμι*, half, and *κάρφος*, straw or chaff, in allusion to the single inner scalelet.)

1. **H. subsquarrosa**, Nees. Dwarf or minute annual (1-5' high); involucre 1-leaved, as if a continuation of the bristle-like culm, and usually with another minute leaf; spikelets 2-3 (barely 2" long); scales brown, tipped with a short recurved point. — Sandy borders of ponds and rivers, N. Eng. to Fla., west to the Pacific.



## 12. LIPOCÁRPHA, R. Br. (Pl. 2.)

Spikelets terete, many-flowered, in a terminal close cluster involucre by leafy bracts. Scales spatulate, regularly imbricated all round in many ranks, awnless, deciduous, a few of the lowest empty. Inner scales (bractlets) 2 to each flower, thin, one between the scale of the spikelet and the flower, one between the latter and the axis of the spikelet. Bristles or other perianth none. Stamens 1 or 2. Style 2-3-cleft. Achene flattish or triangular, naked at the tip. — Culms leafy at base. (Name formed of *λίπος*, fat, and *κάρφος*, chaff, from the thickness of the inner scales of some species.)

1. *L. maculata*, Torr. Annual; culm (4-8' high) much longer than the linear concave leaves; spikelets (1-2' long) green and dark-spotted; inner scales delicate; stamen one; achene oblong with a contracted base. — Springy or miry places, Va. to Fla.; near Philadelphia, probably adventive.

## 13. RHYNCHÓSPORA, Vahl. BEAK-RUSH. (Pl. 4.)

Spikelets paniced or variously clustered, ovate, globular, or spindle-shaped, terete, or sometimes flattish; but the scales open or barely concave (not boat-shaped nor keeled); the lower commonly loosely imbricated and empty, the uppermost often subtending imperfect flowers. Perianth in the form of bristles (mostly 6). Stamens mostly 3. Achene lenticular, globular, or flat, crowned with a conspicuous tubercle or beak consisting of the persistent indurated base or even of the greater part of the style. — Chiefly perennials, with more or less triangular and leafy culms; the spikelets in terminal and axillary clusters; flowering in summer. (Name composed of *ῥύγχος*, a snout, and *σπόρα*, a seed, from the beaked achene.)

§ 1. RHYNCHOSPORA proper. Spikelets terete or biconvex, few-many-flowered; style conspicuously 2-cleft, its base only forming the tubercle of the mostly lenticular achene; bristles usually present, merely rough or barbed-denticulate (not plumose).

\* Achene transversely wrinkled; bristles mostly 6, upwardly denticulate.

1. *R. cymosa*, Nutt. Culm triangular; leaves linear ( $\frac{1}{4}$ ' wide); cymes corymbose, the spikelets crowded and clustered; achene round-obovate, twice the length of the bristles, four times the length of the depressed-conical tubercle. — Low grounds, Penn. and N. J. to Fla., west to N. Ind. and Ill.

2. *R. Torreyana*, Gray. (Pl. 4, figs. 1-5.) Culm nearly terete, slender; leaves bristle-form; cymes paniced, somewhat loose, the spikelets mostly pedicelled; achene oblong-obovate, longer than the bristles, thrice the length of the broad compressed-conical tubercle. — Swamps; pine-barrens of N. J. to S. C.

3. *R. inexpansa*, Vahl. Culm triangular, slender; leaves narrowly linear; spikelets spindle-shaped, mostly pedicelled, in drooping panicles; achene oblong, half the length of the slender bristles, twice the length of the triangular-subulate tubercle. — Low grounds, Va. to Ga.

\*\* Achene smooth and even.

+ Bristles 6, long and conspicuous, upwardly denticulate.

4. *R. fúscá*, Roem. & Schultes. Culm 6-12' high; leaves bristle-form channelled; spikelets ovate-oblong, few, clustered in 1-3 loose heads (dark

chestnut-color); achene obovate, half the length of the bristles, equalling the triangular-sword-shaped acute tubercle, which is rough-serrulate on the margins.

— Low grounds, N. Brunswick to N. J., west to L. Superior. (Eu.)

5. *R. gracilénta*, Gray. Culms very slender, 1-2° high; leaves narrowly linear; spikelets ovoid, in 2-4 small clusters, the lateral long-peduncled; achene ovoid, rather shorter than the bristles, about the length of the flat awl-shaped tubercle. — Low grounds, southern N. Y. and N. J. to Fla.

6. *R. oligántha*, Gray. Culm and leaves filiform, 6-12' high; spikelets very few (1-4), ovate-oblong; bristles plumose below the middle; achene obovate-oblong, bearing a conical tubercle  $\frac{1}{2}$  its length. — Del. (Canby) to Fla.

+ + Bristles none, or 1-3 and minute; spikelets pale, 1-flowered.

7. *R. pállida*, M. A. Curtis. Culm (1-2° high) acutely triangular; leaves and spikelets as in the next species, but only a terminal dense cluster, which is less white or turns pale reddish-tawny; achene obovate-lenticular, tipped with a minute depressed and apiculate tubercle; the delicate bristles 4-5 times shorter or obsolete. — Bogs in pine-barrens of N. J. and N. C.

+ + Bristles long, denticulate downward, or both ways in n. 11.

+ Spikelets white or whitish, becoming tawny with age, perfecting only a single flower; stamens usually 2; bristles 9-12, or even 20.

8. *R. álba*, Vahl. Culm slender (1-2° high), triangular above; leaves narrowly linear or almost bristle-form; spikelets lanceolate, densely crowded in a head-like terminal corymb and usually one or two lateral ones; achene oblong-obovate with a narrowed base, scarcely longer than the flattened-awl-shaped tubercle, shorter than the bristles. — Bogs, Newf. to Fla., west to N. Ind., Minn., and Oregon. (Eu.)

+ + Spikelets chestnut-colored or darker in n. 10 and 11, few-several-flowered; stamens 3; bristles usually 6.

9. *R. capillácea*, Torr. Culm 6-9' high, slender; leaves bristle-form; spikelets 3-6 in a terminal cluster, and commonly 1 or 2 on a remote axillary peduncle, oblong-lanceolate (pale chestnut-color, 3' long); achene oblong-ovoid, stipitate, very obscurely wrinkled, about half the length of the (6, rarely 12) stout bristles, and twice the length of the lanceolate-beaked tubercle. — Bogs and rocky river-banks, N. Vt. to Penn., west to western N. Y. and Minn. — Var. *LEVISÉTA*, Hill. Bristles perfectly smooth. N. W. Ind.

10. *R. Knieskérnii*, Carey. Culm 6-18' high, slender; leaves narrowly linear, short; spikelets numerous, crowded in 4-6 distant clusters, oblong-ovate (scarcely 1" long); achene obovate, narrowed at base, equalling the bristles, twice the length of the triangular flattened tubercle. — Pine-barrens of N. J. (on bog iron ore exclusively) to Va.; rare.

11. *P. glomeráta*, Vahl. Culm 1-3° high; leaves linear, flat; spikelets numerous in distant clusters or heads (often in pairs from the same sheath), ovoid-oblong; achene obovate, margined, narrowed at base, as long as the lance-awl-shaped flattened tubercle, which equals the always downwardly barbed bristles. — Low grounds, N. Eng. to Fla., west to Mich. and N. Ind.

12. *R. cephalántha*, Gray. Culm stout (2-3° high); leaves narrowly linear, flat, keeled; spikelets very numerous, crowded in 2 or 3 or more dense globular heads which are distant (and often in pairs), oblong-lanceolate, dark



brown; achene orbicular-obovate, margined, narrowed at base, about as long as the awl-shaped beak; bristles twice longer, stout, barbed downward and sometimes also upward. — Sandy swamps, Long Island to N. J. and Fla.

§ 2. **CERATOSCHËNUS**. Spikelets lanceolate, acuminate, in fruit flattish, cymose-panicled, of only one perfect and 1-4 staminate flowers; scales few; bristles rigid, minutely scabrous upward; style simple or barely 2-toothed, filiform and gradually thickened downward, in fruit persistent as an exerted, slender-awl-shaped, upwardly roughened beak, several times longer than the smooth flat obovate achene; coarse perennials; spikelets in flower 4", in fruit including the projecting beak about 1' long.

13. **R. corniculata**, Gray. (HORNED RUSH.) Culm 3-6° high; leaves about 6" wide; cymes decompound, diffuse; bristles awl-shaped, stout, unequal, shorter than the achene. — Wet places, Penn. to Fla., west to S. Ind. and Mo.

14. **R. macrostachya**, Torr. (Pl. 4, fig. 1-4.) Cymes decompound, or in the northern form somewhat simple and smaller, and the spikelets usually more clustered; bristles capillary, twice the length of the achene. — Borders of ponds, Mass. to N. J. and Fla.; rare.

#### 14. **CLADIUM**, P. Browne. TWIG-RUSH. (Pl. 5.)

Spikelets ovoid or oblong, of several loosely imbricated scales; the lower empty, one or two above bearing a staminate or imperfect flower; the terminal flower perfect and fertile. Perianth none. Stamens 2. Style 2-3-cleft, deciduous. Achene ovoid or globular, somewhat corky at the summit, or pointed, without any tubercle, in which it differs from *Rhynchospora*. (Diminutive of *κλάδος*, a branch, from the repeatedly branched cyme of the original species.)

1. **C. mariscoides**, Torr. Perennial; culm obscurely triangular (1-2° high); leaves narrow, channelled, scarcely rough-margined; cymes small; the spikelets clustered in heads 3-8 together on 2-4 peduncles; style 3-cleft. — Bogs, N. Scotia to Del., west to S. Minn. and Iowa. July.

#### 15. **SCLËRIA**, Berg. NUT-RUSH. (Pl. 5.)

Flowers monœcious; the fertile spikelets 1-flowered, usually intermixed with clusters of few-flowered staminate spikelets. Scales loosely imbricated, the lower empty. Stamens 1-3. Style 3-cleft. Achene globular, stony, bony, or enamel-like in texture. Bristles, etc., none. Perennials, with triangular leafy culms, mostly from creeping rootstocks; flowering in summer; all in low ground or swamps. Inflorescence, in our species, of terminal and axillary clusters, the lower clusters usually peduncled. (Name, *σκληρία*, hardness, from the indurated fruit.)

\* Achene smooth.

1. **S. triglomerata**, Michx. Culm (1½-3° high) and broadly linear-leaves roughish; fascicles of spikelets few, the lowest peduncled, the upper somewhat in threes; achene ovate-globose or depressed, on an obscure crustaceous disk. — Mass. and Vt. to Fla., west to Minn. and Tex. — Var. **GRACILIS**, Britton. Culms slender (1-2° long); fascicles few-flowered, the lower (2-3-flowered) on very long filiform peduncles; achene not more than half as large, acutish. — N. J.

2. **S. oligantha**, Ell. Culms slender, 2° high, the angles somewhat winged; leaves linear (2" wide), smooth except the scabrous apex; lateral fascicles 1 or 2, usually on long exerted peduncles; achene ovate, on a tuberculate disk. — Va. to Fla. and Tex.

\* \* Achene papillose or warty.

3. **S. pauciflora**, Muhl. Smoothish or hairy; culm slender (9-24' high); leaves narrowly linear; fascicles few-flowered, the lateral pedunculate, sessile, or wanting; bracts ciliate; achene globose-ovate; the disk a narrow ring bearing 3 pairs of minute tubercles. — N. H. to Ohio, south to Fla. and Tex.

\* \* \* Achene reticulated or wrinkled.

4. **S. reticularis**, Michx. (Pl. 5, fig. 6-10.) Culms slender, erect, scabrous (1-24° high); leaves linear (1-1½" wide), smooth; lateral fascicles 1-3, loose, remote, nearly erect, on short often included peduncles; bracts glabrous; achene globose, regularly reticulated and pitted, not hairy, resting upon a double greenish conspicuously 3-lobed disk, the inner appressed to and deciduous with the achene. — E. Mass. to Fla. — Var. **PUBESCENS**, Britton. Edges of reticulations more or less hairy, especially toward the apex; lateral fascicles generally on longer peduncles. Pine-barrens of N. J. to Fla. — Var. **OBSCURA**, Britton. Achene bony, its surface with very obscure reticulations, nearly smooth at the summit. R. I. and N. C.

5. **S. Torreyana**, Walpers. Culms weak, diffuse, slightly scabrous or smooth; leaves linear (2-4" wide), smooth; lateral fascicles loose, on more or less elongated and drooping filiform peduncles; achene irregularly pitted-reticulated or pitted-rugose with the ridges somewhat spirally arranged and more or less hairy (sometimes smooth); otherwise as in the last. (*S. laxa*, Torr.) — Pine-barrens, N. J. to Fla. and Tex.

6. **S. verticillata**, Muhl. Smooth; culms simple, slender (4-24' high); leaves narrowly linear; fascicles 3-9-flowered, 4-6, sessile in an interrupted spikelet; achene globose (½" broad), somewhat triangular at base, rough-wrinkled with short elevated ridges; disk obsolete. — E. Mass. to Ont., Minn., and south to the Gulf.

#### 16. **CAREX**, Ruppius. SEDGE. (By L. H. BAILEY.)

Flowers unisexual, destitute of floral envelopes, disposed in spikes; the staminate consisting of three stamens, in the axil of a bract, or scale; the pistillate comprising a single pistil with a bifid or trifid style, forming in fruit a hard lenticular or triangular achene, which is enclosed in a sac (*perigynium*) formed by the complete union of the borders of a bractlet or of connate bractlets and borne in the axil of a bract, or scale. Staminate and pistillate flowers borne in different parts of the spike (spike androgynous), or in separate spikes on the same culm, or rarely the plant diœcious. — Perennial grass-like herbs with mostly triangular culms, 3-ranked leaves, usually with rough margins and keel, and spikes in the axils of leafy or scale-like bracts, often aggregated into heads. An exceedingly critical genus, the study of which should be attempted only with complete and fully mature specimens. (The classical Latin name, of obscure signification; derived by some from *καίρω*, to cut, on account of the sharp leaves — as the English name *Shear-grass*.) (Pl. 5 and 6.)



## Synopsis of Sections and Groups.

- § 1. *CAREX* proper. Staminate flowers forming one or more terminal linear or club-shaped spikes (often pistillate at base or apex). Pistillate flowers usually in distinct and simple mostly peduncled spikes. Cross-section of perigynium circular, obtusely angled, or prominently triangular in outline. Style mostly 3-parted and achene triangular or triquetrous.
- \* 1. *Physocarpæ*. Perigynium mostly straw-colored at maturity, papery in texture, usually more or less inflated, smooth (sometimes hairy in n. 6), nerved, tapering into a beak as long as or longer than the body; spikes few to many, distinct, compactly flowered; stigmas 3 (2 in n. 10).
  - + 1. *Paucifloræ*. Perigynium greenish, linear-lanceolate or almost needle shaped, not inflated, strongly deflexed at maturity, several times longer than the inconspicuous scale; spike androgynous, the pistillate flowers at base, few. — Sp. 1.
  - + 2. *Lupulinae*. Perigynium green or greenish-tawny or sometimes yellow, more or less inflated (except in n. 2-4), long, usually very turgid at base, mostly erect or nearly so, very gradually attenuate to a long slenderly toothed beak exceeding the scale; spikes 3 or more, the staminate mostly 1 and stalked, the pistillate often sessile, usually short and thick, often becoming dark colored in drying. — Sp. 2-8.
  - + 3. *Vesicariæ*. Perigynium smooth and shining, much inflated, at maturity straw-colored or sometimes purple, beaked and conspicuously short-toothed (entire in n. 10), usually prominently few-nerved, much shorter than in + 2; staminate spikes commonly 2 or more; pistillate spikes as a rule long and densely cylindrical. — Sp. 9-16.
  - + 4. *Pseudocyperæ*. Perigynium less inflated, more conspicuously nerved or even costate, and with more or less setaceous or awned teeth; scale usually awned; spikes mostly nodding or spreading, comose in appearance, greenish, greenish-yellow, or ochroleucous. — Sp. 17-19.
  - + 5. *Squarrosæ*. Perigynium obconic or obovoid, squarrose in exceedingly dense short spikes. — Sp. 20, 21.
  - \* 2. *Trachychlænæ*. Perigynium mostly thick and hard in texture, often scabrous or hirsute, straight-beaked; pistillate spikes compactly flowered, mostly large, erect or nearly so; staminate spikes 1 or more; stigmas 3. Generally large and coarse.
  - + 1. *Shortianæ*. Terminal spike androgynous, staminate below; perigynium small, scabrous, nearly beakless, entire. — Sp. 22.
  - + 2. *Anomalæ*. Terminal spike all staminate; pistillate spikes long and cylindrical, mostly dense; perigynium broad and short, short-beaked, the orifice very slightly notched or entire, mostly granulate. — Sp. 23.
  - + 3. *Hirtæ*. A heterogeneous group, distinguished from + 2 by the longer and more deeply cut beak (slightly toothed in n. 24), and by the hairy perigynium (smooth in n. 25). — Sp. 24-27.
  - + 4. *Paludosæ*. Staminate spikes 2 or more, long-stalked; the pistillate 2-several, usually all peduncled, long and heavy, loose-flowered, erect or nodding; perigynium large, thick in texture, strongly nerved, mostly smooth, usually conspicuously beaked. Coarse species. — Sp. 28, 29.
  - \* 3. *Microhynchæ*. Parallel with \* 2; distinguished in general by the much smaller and nearly or entirely beakless and mostly entire-mouthed perigynium, which is much thinner in texture; stigmas 2 or 3. Paludose and alpine species, of various habit, mostly with colored spikes, often in dense tufts or tussocks.
  - + 1. *Atratae*. Terminal spike club-shaped and androgynous with the staminate flowers below (very rarely all staminate in n. 32); pistillate spikes mostly short and dark-colored, erect or drooping; stigmas 3. — Sp. 30-32.
  - + 2. *Rigidae*. Mostly stiff, with short erect closely flowered spikes, an entirely staminate terminal spike, dark colored scales, and bracts with purple or black auricles at base; stigmas 2 or 3. — Sp. 33.
  - + 3. *Acutæ*. Mostly larger and more slender, usually paludose, with green or light-colored large and long spikes; stigmas 2 (3 in n. 39). Distinguished from + 2 mainly by habit. — Sp. 34-39.

- + 4. *Cryptocarpæ*. Large, with nodding or drooping large spikes, their dark scales very long and conspicuous; stigmas 2. — Sp. 40, 41.
- + 5. *Pendulinae*. Distinguished from + 4 by the smaller size, smaller spikes, sheathless bracts, and whitish, more or less granulated, nearly pointless perigynium; stigmas 3. — Sp. 42-45.
- \* 4. *Hymenochlænæ*. Perigynium mostly light green or whitish, usually thin and membranous, often somewhat inflated or loosely investing the achene, commonly smooth and shining (hairy in n. 46, sometimes in n. 47), slender or oblong, attenuate to a distinct or long minutely toothed straight beak (or beakless or nearly so in + 1 and n. 55); pistillate spikes several or many, mostly loosely flowered and on filiform nodding or widely spreading peduncles; bracts leaf-like; terminal spike staminate or androgynous; stigmas 3. Mostly rather tall and slender upland species.
- + 1. *Virescentes*. Terminal spike pistillate at top; pistillate spikes oblong or cylindrical, dense, erect; perigynium ovate or obovate, nearly or quite beakless, often hairy. — Sp. 46, 47.
- + 2. *Sylvaticæ*. Terminal spike all staminate; pistillate spikes mostly long-exserted, slender; perigynium few-nerved, contracted into a cylindrical beak which is longer than the body. — Sp. 48.
- + 3. *Flexiles*. Terminal spike all staminate; pistillate spikes rather thick (very small in n. 50), more or less drooping; perigynium beaked, few-nerved or nerveless, tawny or whitish. — Sp. 49, 50.
- + 4. *Debiles*. Terminal spike all staminate (occasionally pistillate above in n. 53); pistillate spikes very narrow and slender, long-exserted and nodding, mostly very loosely flowered; perigynium rather small, not turgid, prominently beaked. — Sp. 51-53.
- + 5. *Gracillimæ*. Terminal spike pistillate at top; pistillate spikes habitually thicker than in + 4; perigynium ovate-oblong, more or less turgid; the beak short or none. — Sp. 54-57.
- + 6. *Griseæ*. Terminal spike staminate; perigynium more or less turgid or plump, often glaucous, scarcely beaked, finely striate; spikes erect. — Sp. 58, 59.
- \* 5. *Spirostachyæ*. Perigynium smooth or minutely granulated or rarely somewhat serrate on the margins, prominently nerved, mostly yellowish, squarrose, mostly beaked (entirely beakless in n. 63), the orifice entire; staminate spike mostly single; pistillate spikes 2-5, short (usually 1' long or less), yellow or fuscous, compactly flowered; stigmas 3. — Medium-sized species, growing in meadows and grassy swales.
- + 1. *Granulares*. Spikes scattered, cylindrical, the lowest long-stalked; bracts erect, long and leafy; sheaths short or nearly obsolete. — Sp. 60, 61.
- + 2. *Extensæ*. Spikes mostly approximate or aggregated at the top of the culm (becoming remote in *C. extensa*), the lowest 1 or 2 subtended by a long and leafy mostly abruptly spreading and nearly or entirely sheathless bract. Terminal spike sometimes androgynous. — Sp. 62.
- + 3. *Pallescentes*. Spikes globular or short-oblong, obtuse, sessile or short-peduncled, approximate at the top of the culm; bracts short, leaf-like, sheathless; perigynium entire at the orifice, the beak none or very short and stout. — Sp. 63, 64.
- \* 6. *Dactylostachyæ*. Perigynium mostly short and triangular, mostly with a short and straight or curved beak, green or greenish, scarcely inflated; scales of the pistillate spikes mostly whitish (sometimes dark-colored in the *Digitatæ*), often small; staminate spike mostly one; pistillate spikes short (seldom exceeding 1'), commonly rather loosely flowered and slender (spike single and plant dioecious in n. 83); bracts sheathing, the sheaths often conspicuous and colored. — Low and lax or slender species inhabiting meadows and copses.
- + 1. *Oligocarpæ*. Slender and narrow-leaved, with leafy bracts and inconspicuous green sheaths; perigynium rounded on the angles, finely many-striate, often somewhat punctulate as in n. 58, to which the group forms a transition. — Sp. 65-67.
- + 2. *Laxifloræ*. Slender and more or less broad-leaved, with mostly leafy bracts, green or purple sheaths, and loosely flowered spikes; perigynium mostly conspicuously three-angled, with a more or less curved beak. — Sp. 68-74.



- 3. *Panicæ*. Mostly stouter and narrow-leaved, with thinner spikes; perigynium often strongly nerved, not conspicuously triangular, often somewhat turgid; bracts and sheaths various. — Sp. 75-78.
- 4. *Bicolores*. Small species with a beakless, more or less round or pyriform perigynium, which is commonly glaucous; terminal spike androgynous or all staminate; stigmas mostly 2. — Sp. 79.
- 5. *Digitata*. Low species; sheaths membranaceous or hyaline and colored, either not prolonged into a bract or the bract very short and not foliaceous; perigynium more or less three-angled, often hairy, the beak straight or nearly so. — Sp. 80-83.
- 7. *Sphaeridiophoræ*. Perigynium mostly short and rounded, three-angled in the *Triquetra*, firm or hard in texture, not inflated, hairy or scabrous, the beak straight and usually bifid; staminate spike one; pistillate spikes short (1' long or less), usually globular or short-oblong, more or less sessile and approximate or the longer ones radical (spike single in n. 84); bracts sheathless, short, or obsolete; stigmas rarely two. — Low species of dry ground, with leaves all radical.
- 1. *Scirpinæ*. Spike one, unisexual; plant dioecious. — Sp. 84.
- 2. *Montanæ*. Spikes two to several, the lowest occasionally long-peduncled and radical; perigynium rounded, contracted above and below, mostly bearing two prominent ribs, more or less hairy. — Low species of dry soils. — Sp. 85-91.
- 3. *Triquetra*. Taller; spikes mostly approximate at the top of the culm, oblong or cylindrical; perigynium conspicuously 3-angled. — Sp. 92.
- 8. *Phyllostachyæ*. Perigynium much as in the *Montanæ*; spike one, staminate above; pistillate flowers few, often remote, usually on a more or less zigzag rhachis; scales prolonged and leaf-like. — Sp. 93-95.
- 9. *Leptocephalæ*. Perigynium thin in texture, green, oblong or lanceolate or linear in general outline, beakless; spike one, staminate above, thin and slender; stigmas mostly three. — Small, slender and grass-like. — Sp. 96.
- 10. *Physocephalæ*. Spike one, globular or short-oblong, staminate at the apex; perigynium straw-colored, paper-like, more or less inflated; stigmas three. Leaves remarkably broad in our species. — Sp. 97.
- § 2. *VIGNEA*. Staminate flowers few and inconspicuous, borne at the base or apex of the pistillate spikes. Pistillate flowers in short sessile spikes (or spike single in some cases), which are commonly more or less aggregated into heads or even panicles. Perigynium plano-convex. Styles two and achene lenticular. — The spikes, especially the uppermost, usually have contracted bases when the staminate flowers are borne below the pistillate ones, and empty scales at the top when the staminate flowers are borne at the summit.
- 11. *Acroarrhenæ*. Staminate flowers borne at the top of the spikes (or, in the *Multifloræ* and *Arenariæ*, spikes often wholly staminate and the plants occasionally dioecious).
- 1. *Fœtida*. Spikes tawny or brown, not elongated, very densely aggregated into a continuous globose somewhat chaffy head; perigynium ovate or ovate-lanceolate, nerveless or nearly so, mostly thin in texture. — Sp. 98, 99.
- 2. *Vulpinæ*. Spikes mostly yellow or tawny when mature, densely aggregated or sometimes somewhat scattered below or even panicle; perigynium thick in texture, spongy at base, mostly stipitate, bearing very conspicuous nerves, which converge below and are especially prominent on the outer side. — Sp. 100-102.
- 3. *Multifloræ*. Heads various, mostly loosely flowered, sometimes a panicle, yellow or tawny; spikes short (rarely longer than broad), staminate flowers sometimes occupying whole spikes in the middle or at the apex of the head; perigynium mostly small and short and nearly nerveless, or in some species becoming nearly lanceolate and more or less prominently nerved, firm in texture, usually numerous. — Sp. 103-108.
- 4. *Arenariæ*. Spikes longer than in the last section, linear or nearly so, aggregated into short, almost globose heads; perigynium lanceolate or ovate-lanceolate, mostly larger and more delicate in texture; scales awn-pointed or very acute. Staminate flowers variously situated. — (*C. arenaria*.)

- 5. *Muhlenbergianæ*. Spikes green or nearly so when mature, aggregated or scattered, never in compound heads; perigynium mostly short-ovate, staminate flowers always at the top of the spike. — Sp. 109-114.
- 6. *Dioicæ*. Spike commonly one, small; plants small and slender, often dioecious. — Sp. 115-117.
- 12. *Hyparrhenæ*. Staminate flowers borne at the base of the spikes (or in n. 124 and 125 variously situated).
- 1. *Elongatæ*. Spikes silvery green or sometimes tawny when mature, distinct, mostly small; perigynium not wing-margined nor conspicuously broadened, mostly nearly flat on the inner surface. — Sp. 118-124.
- 2. *Ovales*. Spikes tawny or dark, rather large, sometimes crowded; perigynium with a more or less thin or winged margin, which is mostly incurved at maturity, rendering the perigynium concave inside. — Sp. 125-132.
- 3. *Cyperoidæ*. Spikes green, oblong, densely crowded into a short head subtended by two or three leafy bracts which are erect and prolonged from six inches to a foot; perigynium linear-lanceolate, scarcely margined. — Sp. 133.

## Artificial Key.

- Spike 1, staminate at top; scales of pistillate flowers leaf-like . . . . . Sp. 98-95
- Spike 1, scales not leaf-like.
- Usually dioecious; stigma 2 . . . . . 84
- Stigmas 3. — Perigynium densely hairy . . . . . 115-117
- Spike staminate at base; perigynia squarrose . . . . . 21
- Spike staminate at top. — Globose; leaves broad . . . . . 97
- Perigynium nearly linear, beakless . . . . . 96
- Perigynium long, spindle-shaped . . . . . 1
- Spikes several or numerous, sessile, spicate or capitate; stigmas 2.
- All in a globose or ovoid uninterrupted head.
- All staminate above. — Usually green at maturity . . . . . 112, 114
- Usually yellow or tawny or brown . . . . . 98, 99, 104, 105
- All staminate below. — Leafy-bracteate . . . . . 133
- Not leafy-bracteate. — Green . . . . . 118-120
- Usually tawny or brown . . . . . 125-132
- Some or all of the spikes distinct or the head interrupted.
- Staminate and pistillate flowers variously disposed, some of the spikes often unisexual.
- Head large and long . . . . . 108, *C. arenaria*.
- Head short or linear . . . . . 124, 125
- Spikes staminate above . . . . . 100-114
- Spikes staminate below . . . . . 118-133
- Spikes usually more or less pedicelled, the wholly or partially staminate spikes uppermost.
- Terminal spike (rarely the 2 or 3 uppermost) staminate only at base.
- Stigmas 2 . . . . . 34-38, 79
- Stigmas 3; spikes erect,
- Short and squarrose . . . . . 20, 21
- Not squarrose . . . . . 22, 30, 32, 46, 47, 54, 79
- Stigmas 3; spikes more or less drooping . . . . . 31, 51-53, 55-57
- Terminal spike or spikes staminate.
- Stigmas 2. — Spikes spreading or pendulous . . . . . 34, 37, 40, 41
- Spikes erect or nearly so . . . . . 9-16, 34-41, 85-91, 79
- Stigmas 3; spikes spreading or drooping.
- Perigynium prominently 3-angled . . . . . 68-74
- Perigynium large, thin, much inflated . . . . . 9-16
- Perigynium firmer, not inflated.
- Beakless . . . . . 42-45
- Beaked or prominently pointed. — Teeth long, stiff and sharp . . . . . 17-19
- Teeth short and thin, or none . . . . . 30, 31, 39, 48-53



Stigmas 3; spikes erect or ascending.	6
Perigynium hairy. — Spikes very large, globose . . . . .	81-83, 85-92
Spikes very small, sessile or nearly so . . . . .	24-28
Spikes cylindrical, heavy . . . . .	28
Perigynium granular-roughened . . . . .	
Perigynium smooth,	58, 59
Thin and turgid, loosely enclosing the achene. — Beakless	
Beaked . . . . .	5-17
Firm in texture, not inflated,	
Long-beaked, deeply toothed . . . . .	2-4, 26, 28
Less prominently beaked, short-toothed, sharply 3-angled . . . . .	69-74
Wholly beakless and pointless . . . . .	58, 59, 63, 78, 79
Very small, black and shining; leaves capillary . . . . .	80
Culm and leaves thinly pubescent . . . . .	64
Perigynium more or less pointed or beaked.	
Spikes spreading or drooping . . . . .	51-53, 68-70, 75
Spikes erect . . . . .	60-62, 65-68, 71-78

\* 1. *PHYSOCARPÆ*. — + 1. *Pauciflora*.

1. *C. pauciflora*, Lightf. (Pl. 5, fig. 1-16.) Very slender but erect, 6-18' high; leaves very narrow, much shorter than the culm; staminate and pistillate flowers 2-5; perigynium at maturity easily detached. — Cold sphagnum swamps, New Eng. to N. Penn. and Minn.; local. (Eu.)

\* 1. — + 2. *Lupulina*.

++ *Teeth of the perigynium strongly reflexed.*

2. *C. subulata*, Michx. Green, very slender but erect, 6'-2° high; leaves narrow, somewhat shorter than the culm; bracts leafy, sheathing; pistillate spikes 2-4, scattered, 2-6-flowered; perigynium deflexed. — Deep sphagnum swamps, R. I. to E. Penn., and southward; very local.

++ ++ *Teeth erect or spreading.*

= *Whole plant yellowish; perigynium little or not at all inflated.*

3. *C. Michauxiana*, Boeckl. Slender but stiff and erect, 1-2° high; leaves narrow and firm, shorter than the culm; spikes 2-3, the lowest usually remote and short-peduncled, the remainder aggregated and sessile; staminate spike small, wholly sessile; perigynium not inflated, erect or spreading, twice longer than the blunt scale. (*C. rostrata*, Michx.) — Bogs and lake-borders, mountains of N. H. and N. Y., and westward to L. Superior; local.

4. *C. folliculata*, L. Stout, 2-3° high; leaves very broad and flat, lax; pistillate spikes 3-4, scattered, all but the uppermost prominently peduncled; staminate spike short-peduncled; perigynium larger, inflated, the scale awned and nearly as long. — Cold swamps, New Eng. to N. J. and Penn., and west to Mich.; rather local.

= = *Plant green; perigynium much inflated.*

5. *C. intumescens*, Rudge. Slender, 18-30' high; leaves narrow; pistillate spikes two, loosely 1-8-flowered, the perigynium erect-spreading, not prominently many-nerved. — Wet pastures and swamps; common.

6. *C. Grayii*, Carey. Larger and stouter; leaves broad and flat, 3-4" wide; pistillate spikes 1 or 2, the lowest often peduncled, perfectly globular and compactly 12-30-flowered, the perigynium spreading or deflexed and prominently many-nerved. — Meadows and copses, Vt. to Ill., and south

to Ga.; rare eastward. — In var. *HISPIDULA*, Gray, the perigynium is sparsely hispidulous.

7. *C. lupulina*, Muhl. Very stout and leafy; leaves rather broad and loose; pistillate spikes 2-6, approximate at the top of the culm, all closely sessile or the lower sometimes short-peduncled, oblong or short-cylindrical, very heavy and densely flowered; staminate spike small and sessile; perigynium large and rather soft, erect or but slightly spreading, giving the spike a hop-like aspect (whence the name). (*C. lurida*, Bailey.) — Swamps and wet pastures; frequent.

Var. *pedunculata*, Dewey. Spikes more or less scattered, some or all prominently peduncled; staminate spike usually conspicuous, often long-peduncled, very variable in size; perigynium more spreading. (*C. gigantea*, Rudge.) — With the species, but more common.

Var. *polystachya*, Schwein. & Torr. Stouter, the leaves very broad (often  $\frac{3}{4}$ "); bracts broad and far exceeding the culm; pistillate spikes 4-6, all long (3-4') and cylindrical, more or less short-peduncled, somewhat scattered, becoming yellow; perigynium very large, ascending. (*C. lupuliformis*, Sartw.) — N. Y. and N. J.; not common.

*C. LUPULINA* X *RETRORSA*, Dudley. Distinguished from *C. lupulina* by its straw-colored perigynium, which is less inflated and more spreading, standing at nearly right angles to the axis of the spike; scales acute to short-awned, rough. (*C. lurida* X *retrorsa*, Bailey.) — Ithaca, N. Y. (Dudley), and Lansing, Mich. (Bailey). Resembles n. 16.

8. *C. grandis*, Bailey. Distinguished from *C. lupulina*, var. *polystachya*, by its much more scattered and mostly shorter slim spikes, which are comparatively loosely flowered; perigynium swollen below but very abruptly contracted into a slender beak 3-4 times as long as the body, spreading at right angles or nearly so, never becoming yellow; scales narrow, smooth. (*C. gigantea* of previous editions.) — Swamps, Ky., Del., and southward; local.

\* 1. — + 3. *Vesicaria*.

++ *Spikes very small, globular or short-oblong.*

9. *C. oligosperma*, Michx. Very slender, but stiff, 18-30' high; leaves and bracts very narrow, becoming involute; staminate spike single, peduncled; pistillate spikes 1 or 2, sessile or the lowest very short-peduncled, 3-8-flowered; perigynium turgid, short-ovoid, gradually contracted into a very short and minutely toothed beak, prominently few-nerved, yellow, nearly twice longer than the blunt scale. — Deep swamps and borders of lakes, N. Eng. to Penn. and Minn.; frequent.

10. *C. miliaris*, Michx. Culm very slender but erect, 12-18' high, smooth, or slightly rough above on the angles; leaves almost filiform, mostly shorter than the culm; staminate spikes 1-2, exceedingly narrow, elevated an inch or two; pistillate spikes 1-3, the upper one sessile and the lowest very short-stalked, 9" long or less, the lower subtended by a short leafy bract; perigynium very small, broad- or round-ovate or ovate-oblong, thin but firm, bearing a nerve on each side but otherwise nerveless or very nearly so, rounded into a very short terete entire or somewhat erose beak; scales brown, lance-ovate, white-tipped, about as long as the perigynium. (*C. rotundata*? of last ed.) — Outlet of Moosehead Lake, Maine, and northward.