

MONOGRAPH
OF
NORTH AMERICAN CYPERACEÆ.

BY
JOHN TORREY, M. D.

TO WHICH IS APPENDED
A MONOGRAPH OF THE NORTH AMERICAN
SPECIES OF
RHYNCHOSPORA, &c.

BY ASA GRAY, M. D.

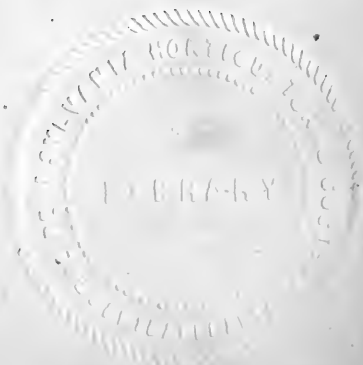
Minimis partibus, per totum Naturæ campum, certitudo omninis ininitur; quas
qui fugit, pariter Naturam fugit.—*Linnaeus Philosophia Botanica.*

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A MONOGRAPH of the North American species of
RHYNCHOSPORA. By ASA GRAY, M. D.

Read December, 1834.

The natural order CYPERACEÆ has, in proportion to the number of species it comprises, been less carefully studied than any other family of phenogamous plants. Notwithstanding the researches of R. Brown, Kunth, Nees von Esenbeck, &c. who have illustrated particular portions of this family, the distinctive characters of the genera are, in many cases, highly unsatisfactory, and the determination of species is frequently difficult. The whole order requires an elaborate revision by some competent person, who can consult the principal herbaria of preceding botanists, as well as many important works, which, from their great cost or extreme scarcity, are inaccessible to us.— But the plants of any single country may be most advantageously studied by a botanist who is familiar with them in their native situations, and who has opportunities of examining and comparing with each other numerous specimens from various localities.

A person who in this way confines his attention, for a time at least, to the critical examination of a single genus or family of plants, and who carefully records the *facts* which he observes, may furnish important materials to those who, with more ample means, are to succeed him in the same field; and thus contribute, in some degree, to the advancement of the cause of science.

The following account of the North American species of Rhynchospora has been prepared under circumstances highly favourable for arriving at correct results. With a liberality which does honour to the cause in which they are engaged, my botanical friends have placed their collections at my disposal

or permitted me to examine them; and have, in various ways, favoured me with important assistance.

To the kindness of Abraham Halsey, Esq. I am indebted for the drawings of the fruit, &c. of all the species which are described in this paper. My acknowledgments are also especially due to Professor Torrey; who has, with great liberality, placed in my hands his entire collection in this genus, together with some interesting notes upon the specimens contained in the herbarium of Michaux, at the Garden of Plants in Paris; and a suite of the spikelets and flowers of most of the species described by that author, taken, by the kind permission of the curators, from his original specimens. By the aid of these specimens and notes, I have been enabled to determine, with entire satisfaction, all the species described in the *Flora Borcali-Americana* of Michaux.

The herbarium of Professor Torrey is also especially rich in specimens from the southern states, communicated by the late Mr. Elliott, the late Rev. Mr. Schweinitz, Dr. T. R. Ingalls, of New Orleans, Rev. Moses A. Curtis, of Wilmington, North Carolina, &c.

I am also under obligations to Dr. Charles Pickering, principal curator of the Academy of Natural Sciences at Philadelphia, for the opportunity of examining the herbarium of the late excellent Mr. Schweinitz, now in the possession of that institution. I also had the privilege of examining a very extensive and interesting collection in this genus, made in Georgia and Florida by the late Dr. Baldwin of the United States navy and army: a suite of which, with the original labels, now forms a part of that herbarium.* Major J. Le Conte had the kindness to allow me to examine a fine collection made by himself in Georgia and South Carolina.

* Since this paper was prepared for the press I have had the opportunity of consulting the manuscripts and original herbarium of Dr. Baldwin, now in the possession of Dr. Torrey. Among his papers we find detailed descriptions of all the species of *Rhynchospora* which his her-

By far the greatest number of the species of Rhynchospora are natives of America. The *Systema Vegetabilium* of Sprengel, the latest enumeration I have seen, comprises 38 species, exclusive of 5 species of *Carpha* of R. Brown, which are by Sprengel referred to this genus. To these we may add 5 species from Ræmer and Schultes, *Mantissa*, vol. II. which increases the number of species to 43. Of these, 30 are natives of America, 6 of New Holland, 4 of the East Indies, 1 of the Cape of Good Hope, and 2 are common both to Europe and North America.

In Willdenow's *Species Plantarum* two species of Rhynchospora are described as natives of North America, viz. *Schœnus glomeratus* and *cymosus*. Lamarck, in the first volume of his illustrations of the Genera of Plants, published in 1791, has imperfectly characterized three species, which were collected in Carolina and Florida by Mr. Fraser. Two of these can be satisfactorily determined, and to these the specific names of Lamarck must be restored, to the exclusion of those conferred by later authors. Michaux, in the *Flora Boreali-Americana*, has enumerated nine species, and they are, for the most part, very accurately described. The *Descriptio Ueberior Graminum* of Muhlenberg, contains detailed descriptions of thirteen species of this genus. Specimens of many of these, however, do not exist in his herbarium; and those which have a place there are in such a state of confusion, (there being often three or four species with a single label) that little information is to be obtained by consulting it.

The species of *Schœnus* with hypogynous bristles and a sub-articulated tubercle were separated to form the genus *Rhynchospora*, by Vahl, in the second volume of his *Enume-*

barium comprises. It appears that he had paid much attention to this genus and to the Cyperaceæ in general, and many of his observations are valuable.

I have adopted the specific names proposed by Dr. Baldwin, except in cases where they have been previously applied to other species, or are for some other reason objectionable.

ratio Plantarum, which was published in the year 1806. His specific characters are drawn almost exclusively from the culm, leaves, and inflorescence—characters of minor consequence—to the exclusion of the much more eligible and important ones which are furnished by the spikelets, bristles, and fruit. Consequently, there remain some doubts as to the synonymy of Vahl, which can only be removed by the examination of his original specimens.

Pursh appears not to have studied this genus with care. In the *Flora America Septentrionalis* ten species are enumerated, and the specific characters of Vahl are quoted without alteration.

The late Mr. Elliott, in the Botany of South Carolina and Georgia, has described thirteen species of *Rhynchospora*. Although the synonymy is often inaccurate, yet his detailed descriptions are so far correct, that we have little difficulty in determining the plants to which they are intended to apply. In a few cases, moreover, I have had the opportunity of examining authentic specimens, labelled by Mr. Elliott, and by him communicated to Dr. Torrey.

RHYNCHOSPORA. *Vahl.*

SPICULÆ paucifloræ; glumis undique imbricatis, inferioribus vacuis. SETÆ hypogynæ plerumque sex. NUX indurata, basi styli persistente subarticulata.

Vahl, Enum. II. p. 229. *R. Brown, Prodr. Fl. Nov. Holl.* I. p. 229. *Pursh, Fl. Am. Sept.* I. p. 24. *Nuttall, Gen. N. Am.* pl. I. p. 33. *Ræmer et Schultes, Syst. Veg.* II. p. 2.—*Elliott, Bot. S. Car. et Georg.* I. p. 57. *Torrey, Fl. N. et M. Un. St. Am.* I. p. 54. *Sprengel, Syst. Veg.* I. p. 129. *Nees von Esenbeck, Cyp. Ind. in Wight. Contrib. Bot. India.*

SCHŒNI species, *Linn. Gen. Pl.* 92. *Willd. Sp. Pl.* I. p. 259. *Lamarck, Ill. Gen.* I. p. 135. *Michaux, Fl. Bor. Am.* I. p. 34. *Persoon, Syn. Pl.* I. p. 58. *Muhlenberg, Gram.* p. 4

CHÆTOSPORÆ, *Humboldt, Bonpland, and Kunth, Synop. Pl. Æquinoc. Orb. Nov. I. p. 158.*

ORD. NAT. CYPERACEÆ, *R. Brown, De Cand., Agardh, Bartling, etc.* CYPEROIDEÆ, *Juss.* CALAMARIÆ, *Linn.* In *Syst. Sex.* TRIANDRIA MONOGYNIA.

Culms mostly simple, triangular or subterete, leafy. *Inflorescence* corymbose, paniculate or fasciculate, rarely capitate.

Corymbs one or several, terminal or lateral, mostly single, but sometimes 2 or 3 emerging from the same sheath.

Spikelets ovate or lanceolate, few-flowered.

Glumes (bracteæ, *Lindl.*; bracteolæ, *Bartl.*; squamæ, *R. Brown.*) loosely imbricated on every side, one-nerved, cuspidate; the inferior ones shorter and empty.

Perianthium,* (*R. Brown, Bartling.*) (prolongations of the torus, *De Cand.*†) composed of a definite number of hypogynous bristles. *Bristles* 5—12, but for the most part 6, in two series: the 3 outer ones opposite to, and the 3 inner ones alternate with, the stamens, plumose or denticulate-hispid; the hispidness directed either upward or downward.

Stamens 3; rarely 2, 6, or 12. *Filaments* broad and flat.

Anthers linear, exserted.

Style 1, bifid (rarely entire), dilated at the base.

Nut (*R. Brown*) (seed, *Linn.*; caryopsis, *Spreng.*; akenium, *Kunth.*) crustaceous, ovate, obovate or rotund, lenticular or subglobose; often attenuated at the base, crowned and subarticulated with the indurated, persistent base of the style, or

* "Perianthium nullum vel setosum, rariusve membranaceum 1—3 valve." *R. Brown, Prodr. Fl. F. Holl. (in charac. famil. Cyperac.)* I. p. 212.

† "Le torus se prolonge quelquefois autour du fruit, ou sous forme d'écaillés petaloïdes distinctes, comme dans l'ancolie; ou des filets pili-formes, comme dans plusieurs cyperacées." *De Cand. Organogr. Veg.* II. p. 89.

(as in *R. laxa* and *R. macrostachya*) with the whole style indurated and persistent.

Seed ovate or globose, not adhering to the pericarp.

* *Nut rugose.*

1. RHYNCHOSPORA CYMOSA, Nutt.

R. culmo triquetro; corymbis subcymosis, terminalibus axillaribusque; spiculis ovatis, glomeratis; nuce orbiculato-obovata, subcompressa, transversim undulato-rugulosa, setis sursum hispidulis longiori; tuberculo brevi conico.

R. cymosa, Nutt. *Gen.* I. p. 33. *Ræm. et Schult. Mant.* II. p. 47. *Torrey, Fl.* I. p. 56. (excl. syn. Elliott and Pursh).

Schœnus cymosus, Willd. *Sp. Pl.* I. p. 265. *Muhl.! Gram.* p. 9.

Culm 1—2 feet high, smooth, acutely triangular. *Leaves* 2—3 lines wide, glabrous; the radical ones somewhat crowded, the upper cauline ones often overtopping the culm. *Sheathes* striate. *Corymbs* 3—4, somewhat densely flowered; the terminal ones largest, the lateral ones on short, exsert peduncles. *Spikelets* aggregate in fives (*in threes*, Willd.) on the ultimate division of the corymbs. *Glumes* fuscous; the inferior ones sub-orbicular, emarginate, mucronate; the interior ones ovate. *Bristles* 6, a little more than one half the length of the nut, slightly hispid upward. *Stamens* 3. *Style* bifid. *Nut** a line in length, compressed or somewhat tumid. *Tubercle* (the persistent base of the style) depressed conic, about one-fourth the length of the nut.

HAB. New Jersey to Louisiana; July—August. Near Princeton, New Jersey, *Torrey*; Pamunkey, Maryland, *Dr. Robbins*; Charleston, S. Carolina, *B. D. Greene, Esq.*; Georgia, *Le Conte*; New Orleans, *Dr. Ingalls*; Middle Florida, *Dr. Chapman*.

* When the nut is compared with any other part, or its length referred to, the tubercle is always excluded.

OBS. *R. cymosa* of Elliott is described as having a terete culm and a smooth nut. His plant is most probably *Schænus fascicularis* of Michaux.

2. RHYNCHOSPORA TORREYANA.

R. culmo gracili, subtereti; foliis setaceis; paniculis corymbosis, subsparsifloris; spiculis ovatis, plerumque pedicellatis; nuce elliptico-obovata, compressa, transversim rugosa, setis sursum hispidulis longiori; tuberculo compresso-conico, basi latitudine nucis.

R. micrantha, Gray, Gram. et Cyp. I. no. 96, (excl. syn.)

Culms cæspitose, 1—3 feet high, striate, subterete and with the leaves glabrous. *Radical leaves* 6—8 inches long, narrow and rigid; cauline ones much shorter, setaceous. *Panicles* 1—3, corymbose, somewhat loosely flowered, on short peduncles. *Spikelets* ovate, mostly pedicellate. *Glumes* fuscous, ovate, mucronate. *Bristles* 6, hispid upward, one-half to two-thirds the length of the nut. *Stamens* 3. *Nut* exceeding a line in length, oblong-ovate, very evenly transversely rugose, with minute longitudinal striæ. *Tubercle* compressed conic, very broad at the base, scarcely one-third the length of the nut.

HAB. Monmouth county, New Jersey, *Torrey*; also in wet ground, near Quaker Bridge, New Jersey. July—August.

OBS. In its nut and bristles this species approaches *R. rariflora*, but its habit is widely different.

3. RHYNCHOSPORA RARIFLORA, Ell.

R. culmis cæspitosis foliisque setaceis; paniculis simplicibus, paucifloris; spiculis ovatis; nuce obovata, compressa, transversim rugosa, setis sursum hispidulis longiori; tuberculo compresso-conico.

R. rariflora, Elliott, Bot. S. Car. et Georg. I. p. 58. (excl. syn.)
Schænus rariflorus, Michx. Fl. I. p. 36. et Herb. Pers. Syn. I. p. 60. Muhl. Gram. p. 10.

Culms capillary, 6—12 (rarely 15) inches high. *Leaves* setaceous, shorter than the culm. *Panicles* sub-corymbose, nearly simple. *Spikelets* few, (3—8) ovate, all pedicelled. *Glumes* ovate, mucronate, fuscous. *Bristles* 6, very fragile so that the whole number is seldom seen when the fruit is mature, minutely hispid upward, variable in length, but always shorter than the nut. *Stamens* 3. *Style* bifid. *Nut* obovate, deeply rugose, crowned with a compressed conic tubercle scarcely half the length of the nut.

HAB. S. Carolina and Georgia, *Elliott* and *Dr. Baldwin*; Louisiana, *Dr. Ingalls*; Middle Florida, *Dr. Chapman*.

OBS. This plant was erroneously referred by Vahl, (*Enum.* I. p. 231.) to his *R. micrantha*, from the West Indies, a species nearly allied to ours, but which differs in the length of its bristles and tubercle. There is no specimen of *Schœnus rariflorus* in Muhlenberg's Herbarium.

4. RHYNCHOSPORA MILLIACEA.

R. culmo triquetro, folioso; paniculis axillaribus terminalibusque, ramis divergentibus, laxe multifloris; spiculis turgido-ovatis, omnibus pedicellatis; nuce globuloso-obovata, transversim rugulosa, setis sursum hispidulis $\frac{1}{3}$ *breviore; tuberculo brevissimo, depresso-conico.*

Schœnus miliaceus, Lamarck, Ill. Gen. (1791) I. p. 137.

S. sparsus, Michx. Fl. I. p. 35. Muhl.! Gram. p. 7.

Rhynchospora sparsa, Vahl, Enum. II. p. 230. Pursh. Fl. I. p. 48. Rœm. et Schult. Syst. Veg. II. p. 83, et Mant. II. p. 45. Elliott, Bot. S. Car. et Georg. I. p. 62. tab. II. Torrey, Fl. I. p. 56. Spreng. Syst. Veg. I. p. 195.

Whole plant smooth and somewhat glaucous. *Culm* 2 feet high, triangular, fistulous, very leafy below. *Lower leaves* linear lanceolate, 8—10 inches long, 3—4 lines wide; the upper ones 2—3 inches in length, linear. *Panicles* corymbose, compound, diffuse, 5—7, on subexsert peduncles. *Spikelets* ovate, turgid, ("vix magnitudine seminis milii," *Rœm. et Schult.*) borne on slender pedicels $\frac{1}{4}$ — $\frac{1}{2}$ an inch in length; each spikelet perfecting 4—6 nuts. *Glumes* fuscous, very ca-

duccous, ovate, carinate. *Bristles* 6, about one third longer than the nut, (twice as long as the seed, *Ell. setæ nonnullæ, Rœm. et Schult.*) somewhat caducous, hispid upward. *Style* bifid. *Nut* about half a line in length, tumidly obovate or ovate, crowned with a depressed-conic tubercle, scarcely one-fourth its length.

HAB. "Wet soils, in pine barrens generally," *Elliott*; New Bern, North Carolina, *Mr. Moses A. Curtis*; Georgia, *Le Conte*; New Orleans, *T. Drummond*; Middle Florida. *Dr. Chapman*.

OBS. This species is also a native of *Puerto Rico*, where it was collected by *Bertero*; *fide Rœm. et Schult. Mant. l. c.* I have adopted the specific name of *Lamarck* on account of its priority.

5. RHYNCHOSPORA CADUCA, *Ell.*

R. culmo triquetro; paniculis axillaribus terminalibusque, erectis; spiculis ovatis; nuce orbiculato-ovata, paululum planoconvexa, transversim rugulosa, basi subattenuata, tuberculum excedente, setis sursum hispidis subduplo brevior.

R. caduca, *Elliott, Bot. S. Car. & Georg. I. p. 62. Rœm. & Schult. Mant. II. p. 51. Spreng. Syst. Veg. I. p. 196.*

Culm acutely triangular, 1—2 feet high. *Leaves* broad-linear, 2—3 lines wide, glabrous. *Panicles* corymbose with the flowers somewhat crowded, on peduncles twice as long as the sheaths. *Spikelets* ovate, acute, nearly twice as large as in *R. cymosa*, pedicellate or sessile. *Glumes* caducous; exterior bones broad-ovate, carinate, with a short mucro; the interior ones longest, acute. *Bristles* 6, twice the length of the nut, hispid upward. *Stamens* 3. *Style* long, slightly bifid. *Nut* a line in length, somewhat plano-convex, crowned with a compressed-conic tubercle, nearly one-third its length.

HAB. In wet soils, Charleston, S. Carolina, *Elliott*; Wilmington, North Carolina, *Mr. Curtis*; St. John's, Florida, *Dr. Baldwin*.

OBS. "This species is nearly allied to *R. sparsa*, (*R. milicea, nob.*) from which it differs in having its spikelets larger,

clustered, and its panicle rather appressed than diffused. It is also remarkable for the facility with which it drops its mature glumes; so that, in a specimen where the seeds are perfect, many of them will be found naked, adhering to their pedicels." *Elliott, l. c.* It is also closely allied to *R. cymosa*, but it is readily distinguished from that species by its larger, often pedicellate spikelets, plano-convex fruit, and longer bristles.

6. RHYNCHOSPORA INEXPANSA, *Vahl.*

R. culmo subtriquetro, debili; paniculis subsparsifloris, ramulis approximato-erectis; spiculis fusiformibus; nuce oblonga, compressa, transversim rugosa, setis sursum hispidis dimidio longiori; tuberculo nuce subtriplo brevior.

R. inexpansa, *Vahl, Enum. II. p. 233. Elliott, Bot. S. Car. & Georg. I. p. 61. Ram. & Schult. Syst. Veg. II. p. 85. Spreng Syst. Veg. I. p. 197.*

Schœnus inexpansus, *Michx. Fl. I. p. 35, et Herb. Muhl. Gram. p. 9.*

Culm 1½—2 feet high, obscurely triangular, slender, somewhat nodding. *Leaves* narrow-linear, smooth and short; cauline ones rather remote, as long as the internodes. *Panicles* 2—4, on filiform subpendulous peduncles. *Spikelets* fusiform, subfasciculate. *Glumes* fuscous, ovate, acute. *Bristles* 6, twice as long as the nut, hispid upward. *Stamens* 3. *Style*, long, deeply bifid. *Nut* oblong, compressed, evenly rugose. *Tubercle* compressed, acute, with the base about the width of the summit of the nut.

HAB. Charleston, S. Carolina, *Elliott*; Georgia, *Dr. Baldwin*; near New Orleans, *Dr. Ingalls*.

7. RHYNCHOSPORA MULTIFLORA.

R. culmo triquetro, basi folioso; paniculis axillaribus terminalibusque, ramis subapproximatis, laxifloris; spiculis ovatis; nuce obovata, compressa, valde rugosa, setis sursum hispidis duplo brevior.

Scirpus schœnoides, Elliott, ! *Bot. S. Car. & Georg.* I. p. 89.

Culm about three feet high, triangular, leafy, especially towards the base. *Leaves* somewhat coriaceous, glabrous, 2 lines wide: the lower ones 8—10 inches in length; the upper ones much shorter and somewhat distant. *Panicles* 4—5, on somewhat exerted peduncles: the terminal one largest. *Branches* of the panicle subapproximate, filiform: the lower ones nearly 2 inches in length, with a scabrous, setaceous bract at the base of each. *Spikelets* ovate, small, rather loosely disposed upon the ramuli, on short pedicels or glomerate in twos and threes. *Glumes* fuscous, broad-ovate, carinate, with a very short mucro. *Bristles* 6, twice as long as the nut, strongly hispid upward. *Style* long, cleft almost to the base. *Nut* a little exceeding half a line in length, obovate, much compressed, deeply transversely rugose, crowned with a compressed-conic tubercle, nearly one-third its length.

HAB. New Orleans, *T. Drummond*, (*v. sp. in Herb. Torr.*);
St. Mary's, Florida, *Dr. Baldwin*; Georgia, *Le Conte*;
Gadsden County, Middle Florida, *Dr. Chapman*.

OBS. This very distinct species somewhat resembles *R. caduca*; from which, however, it may be readily distinguished by its more numerous and smaller spikelets, its strongly hispid bristles, and its much compressed and deeply rugose nut. The herbarium of *Dr. Baldwin* contains specimens of this plant, with *R. inexpansa* and *R. patula*, under the name of *R. pendula*. In his manuscript detailed description he has very strangely confused these three species; but the plant here described is doubtless the one which he transmitted under this name to *Elliott*, as a specimen of *Scirpus schœnoides* from *Mr. Elliott* in the herbarium of *Dr. Torrey*, agrees in all respects with our plant. This species produces a greater number of nuts than is usual with the genus, on which account *Mr. Elliott* referred it to the genus *Scirpus*; but *R. miliacea* and *R. caduca* often ripen nearly the same number.

S. RHYNCHOSPORA PATULA.

R. culmo triquetro, superne gracili; corymbis axillaribus terminalibusque, patulis, laxifloris; spiculis ovatis; nuce orbi-

culata (vel orbiculato-obovata), compressa, transversim rugosa, setis sursum hispidis brevioribus.

Culm about 2 feet high, thick and strong at the base, slender above. *Leaves* linear, shorter than the culm; cauline ones very short, narrow-linear, flat. *Corymbs* 3—5, (the terminal one largest) exsertly pedunculate, compound or decompound, many-flowered, diffusely patulous. *Bracts* setaceous, shorter than the corymbs, smooth or somewhat scabrous on the margins. *Spikelets* ovate, about as large as in the preceding species. *Glumes* ovate, mostly mucronate. *Bristles* 6, less strongly hispid than in *R. multiflora*, somewhat exceeding the nut. *Stamens* 3. *Style* bifid. *Nut* about half a line in length, nearly orbicular, compressed, transversely rugose, with minute longitudinal striæ. *Tubercle* compressed-conic, dilated at the base, nearly half as long as the nut.

HAB. Florida, *Le Conte*. "In moist lands and near streams of water, Savannah, Georgia; also in East Florida," *Dr. Baldwin*. Flowers June—July.

Obs. This species is very nearly allied to the preceding, with which it is confounded in the herbarium of Dr. Baldwin. It is sufficiently distinguished, however, by its nearly orbicular and less deeply rugose nut, its shorter bristles and patulous corymbs.

9. RHYNCHOSPORA MICROCARPA, *Baldw.*

R. culmo gracili subtrigono; corymbis sparsifloris, exserte pedunculatis, plerumque approximatis; setis fragilibus, sursum hispidulis, nucem minimam, ovatam, compressam, rugosam, subæquante.

R. microcarpa, Baldw. Mss. et Herb!

Cæspitose. *Culms* slender, obscurely triangular. *Radical leaves* narrow-linear, somewhat coriaceous, 4—6 inches long and about 2 lines wide. *Cauline leaves* few, very narrow, flat, with setaceous tips. *Corymbs* 4—5, exsertly peduncled and rather loosely flowered; the 3 upper ones approximate at the summit of the culm; the lower ones rather

remote. *Spikclets* turgidly ovate, about a line in length. *Glumes* dark fuscous. *Bristles* 6, ? very fragile, scarcely equalling the nut, minutely hispid upward. *Stamens* 3. *Nut* less than half a line in length, ovate, flattened, transversely rugose, with minute longitudinal striæ. *Tubercle* very short, compressed.

HAB. In wet savannahs. Flowers June—July. St. Mary's Florida, *Dr. Baldwin*; Wilmington, N. Carolina, *Cr. Murtis*.

OBS. The bristles in this species, on account of their extreme fragility, are seldom found entire when the fruit is mature.

10. *RHYNCHOSPORA PLUMOSA*, *Ell.*

R. culmo triquetro foliisque setaceis; glomerulis paucifloris, ad summitatem culmi subcongestis; bracteis aristatis; nuce globuloso-obovata, transversim rugosa, setas plumosas æquantem; tuberculo brevissimo.

R. plumosa, *Elliott, Bot. S. Car. & Georg. I. p. 58. Rœm. & Schult. Mant. II. p. 50. Spreng. Syst. Veg. I. p. 195.*

Schœnus ciliaris, *Muhl. Gram. p. 11.*

Culm 8—12 inches high, triangular, smooth. *Leaves* setaceous and somewhat rigid, shorter than the culm. *Flowers* in small fascicles, forming a loose cylindrical spike, sometimes furnished with a subremote, pedunculate, axillary spike. *Bracts* setaceous; the lower ones an inch or more in length. *Glumes* fuscous, broad-ovate; the outer ones mucronate. *Bristles* 6, plumose, as long as the nut. *Nut* globosely obovate or ovate, about a line in length. *Tubercle* short, depressed-conic, apiculate.

HAB. In dry pine barrens. Flowers from June to August. Charleston, South Carolina, *Elliott*; Florida, *Dr. Baldwin*; Georgia, *Le Conte*; Fayetteville, N. Carolina, *Schweinitz*; Wilmington, N. Carolina, *Mr. Curtis*.

11. *RHYNCHOSPORA PUNCTATA*, *Ell.*

R. paniculis corymboso-fasciculatis, exserte pedunculatis; nuce obovato-compressa, reticulato-rugulosa, alveolis impressis,

setis sursum hispidulis paulo brevioribus; tuberculo compresso-conico.

R. punctata, *Elliott, Bot. S. Car. & Georg. I. p. 60. Ram. & Schult. Mant. II. p. 51. Spreng. Syst. Veg. I. p. 196.* (excl. syn.)

Culm slender, triangular, 1—2 feet high. *Radical leaves* not seen; cauline ones 1—2 inches in length, linear-lanceolate, acute. *Corymbs* 3—4, lateral and terminal, fascicled; the lateral ones subsimple, distant and long-peduncled. *Fascicles* subtended by short setaceous and rigid bracts. *Spikelets* ovate. *Glumes* chestnut-coloured, ovate, the lower ones mucronate. *Bristles* 6, a little exceeding the nut, slightly hispid upward. *Stamens* 3. *Nut* ovate, compressed, reticulately rugose, with impressed alveoli. *Tubercle* compressed-conic, shorter than the nut.

HAB. Savannah, Georgia; and St. Mary's, Florida, *Dr. Baldwin*. Flowers May—June.

OBS. In the specimens collected in Florida by the late *Dr. Baldwin*, the discoverer of this species, the lateral corymbs are distant and not clustered together at the summit of the culm. Except in this unimportant variation, the plant I have described agrees in every respect with the detailed description of *Elliott*, who also obtained his specimens from *Dr. Baldwin*.

12. RHYNCHOSPORA ELLIOTTII.

R. culmo triquetro; corymbis fasciculatis, paucifloris; spiculis ovato-oblongis; nuce subgloboso-ovata, lævissime rugulosa, setis sursum hispidis paulo brevioribus; tuberculo brevi, depresso-conico.

R. distans, *Elliott, Bot. S. Car. & Georg. I. p. 59, (excl. syn.) non Vahl.*

Schoenus distans, *Muhl. Gram. p. 10.*

S. fuscus, *Muhl. Gram. p. 6.*

Culm 1—2 feet high, rather slender, exactly triquetrous. *Leaves* narrow-linear, flat, glabrous. *Corymbs* 3—4, terminal and lateral, exsertly

pedunculate, nearly simple and few-flowered. *Spikelets* fasciculate, sessile, ovate or oblong-ovate. *Glumes* light chesnut-coloured, ovate; the interior ones mucronate. *Bristles* 6, hispid upward, fuscous, a little longer than the nut, but scarcely exceeding the tubercle. *Stamens* 3—6. *Style* very long, deeply bifid. *Nut* brownish red, subglobose ovate, a little attenuate at the base and slightly produced at the summit; under a lens appearing minutely transversely rugose, but to the naked eye nearly smooth. *Tubercle* very short, depressed-conic.

HAB. In damp savannahs, Wilmington, North Carolina, *Mr. Curtis*; Havana, Georgia, and New Smyrna, Florida? *Dr. Baldwin*, (*sub. nom. R. distans.*); Gadsden County, Middle Florida, *Dr. Chapman*.

OBS. This species, which is well described by the distinguished botanist whose name it bears, differs widely from *Schœnus distans* of Michaux. It is compared by Elliott with his *R. punctata*, which indeed it somewhat resembles, but the two species cannot be confounded. The light chesnut-coloured spikelets in this species are quite remarkable. There is a specimen of this plant in Muhlenberg's herbarium, labelled "*Schœnus fuscus, Elliott*;" and from this specimen the detailed description of *S. fuscus, Muhl. Gram.* was probably drawn, as it compares quite well with this species, and not at all with *S. fuscus, Linn.* There is no specimen under the name of *S. distans* in Muhlenberg's herbarium; but as he asks whether his *S. fuscus* may not be *S. distans, Michx.* and as he probably drew his description from specimens sent either by Elliott or Dr. Baldwin, I cannot doubt that the synonym is properly referred.

* * *Nut not rugose.*

13. RHYNCHOSPORA CORNICULATA.

R. corymbis decompositis, diffusis; spiculis (magnis) laxe fasciculatis; nucis obovata, lævi, stylo persistente multo brevioris, setis subulatis, inequalibus, sursum hispidulis, longiori.

Schœnus corniculatus, *Lam'k. Ill. Gen.* I. p. 137.

S. longirostris, *Michx. Fl.* I. p. 87. *Muhl.! Gram.* p. 7.

S. umbellatus, *Walt. Fl. Car.* p. 70.?

Rhynchospora laxa, *Vahl Enum.* II. p. 231. *Pursh. Fl.* I. p. 48. *Rœmer & Schultes, Syst. Veg.* II. p. 84. *Torrey, ! Fl.* I. p. 57. *Sprengel, Syst. Veg.* I. p. 196.

R. longirostris, *Elliott, Bot. S. Car. & Georg.* I. p. 59.

Whole plant smooth and somewhat glaucous. *Culm* triquetrous, 3—6 feet high. *Leaves* a foot or more in length, $\frac{1}{4}$ — $\frac{1}{2}$ an inch wide, smooth, scabrous on the margin. *Flowers* axillary and terminal, in decomposed, subumbellate corymbs; the terminal one largest. *Spikelets* subulated by the persistent exerted styles; when mature nearly an inch in length, loosely fasciated in fours and fives at the extremity of the elongated triquetrous peduncles. *Glumes* ovate, fuscous. *Bristles* for the most part 6, subulate, minutely scabrous upward; the three outer ones (one of which is frequently wanting) about $\frac{1}{4}$ the length of the nut; one of the inner series about $\frac{1}{2}$, and the two others $\frac{1}{4}$ the length of the nut. *Stamens* 3. *Style* undivided. *Nut* smooth, obovate, compressed, crowned with the scabrous (upward), persistent, indurated style, about twice and a half its length.

HAB. In wet places, Ohio to Florida; common; Delaware, *Muhlenberg, (Cat. Pl. Am. Sept.)*

OBS. I have restored the specific name of Lamarck on account of its priority.

14. RHYNCHOSPORA MACROSTACHYA, *Torrey, Herb.*

R. corymbis axillaribus simplicibus, terminalibus compositis; spiculis magnis, confertim fasciculatis; nuce obovata, lævi, setis sursum hispidulis dulpo—stylo persistente subquadriplo—breviore.

Culm 2—3 feet high, smooth, triangular. *Leaves* glabrous, 1—2 feet long and 2—4 lines broad; the upper ones scabrous on the margin. *Corymbs* about 4, densely fasciculated; the lateral ones subsimple, on peduncles twice the length of the sheaths; the terminal one largest, compound, subsessile, leafy; the fascicles sessile and pedun-

culate. *Glumes* fuscous, scarious, acute; the outer ones ovate; the inner ones ovate-lanceolate. *Bristles* 6, filiform, minutely hispid upward, about twice as long as the nut; the 3 exterior ones somewhat shortest. *Stamens* 3. *Style* undivided; the whole indurated and persistent, hispidly scabrous upward; when mature, nearly four times the length of the obovate, compressed nut.

HAB. "Leverett Pond," near Amherst, Massachusetts, *Prof. Hitchcock*; New Bedford, *Mr. Thomas A. Greene*.

Obs. This species and the preceding, to which it is closely allied, differ in habit from the other North American species; they also have simple and entirely persistent styles, and might perhaps be referred to the genus *Cephaloschænus* of Nees von Esenbeck.*

15. RHYNCHOSPORA DODECANDRA, *Baldw.*

R. paniculis corymbosis, laxiusculis; spiculis ovato-lanceolatis; staminibus duodenis; nuce oblonga, lævi, tuberculum subhemisphericum longe excedente; setis sursum hispidulis nucem æquante.

R. dodecandra, Baldw. Mss. et Herb.!

Culm triquetrous, 2 feet or more in height. *Radical leaves* not seen. *Cauline leaves* equalling the culm, rigid and subcoriaceous, 3—4 lines wide, smooth, a little scabrous on the margin. *Panicles* 5—6, lateral and terminal, on peduncles twice the length of the sheaths, corymbose, loosely flowered; the lateral ones simple; the terminal one compound, or with two or three clustered together at the summit of the culm. *Spikelets* ovate-lanceolate, sessile and pedicellate. *Glumes* chesnut coloured. *Bristles* 6, equalling the nut, minutely hispid upward. *Stamens* 10—12. *Anthers* long-linear, orange-red. *Style* bifid. *Nut* (*immature*) oblong, somewhat attenuated downward, smooth or slightly corrugated longitudinally. *Tubercle* short, hemispherical, somewhat compressed, as wide as the summit of the nut.

* CEPHALOSCHÆNUS. Spiculæ hermaphroditæ. Stylus simplex. Perigynium setosum, setis antrorsum denticulatis aut hirsutis. Caryopsis styli basi persistente discretaque rostrata. *Nees, Cyp. Indica l. c. p. 71.*

HAB. "Near the sea shore, Fort George Island, East Florida, April, 1817." *Dr. Baldwin.*

OBS. The habit of this remarkable species is very similar to that of *R. corniculata* in a young state. *Dr. Baldwin* remarks of this species, that the bristles equal the stamens in number. I have seen only six in the specimens which I have examined.

16. RHYNCHOSPORA MEGALOCARPA.

R. hexandra; corymbis sparsifloris; nuce ovata, lenticulari, lævi, nigrescente, tuberculo obtuse conico confluyente; setis caducis, sursum hispidulis, nucem subæquante.

Schœnus macrocarpus, *Baldw. Mss. et Herb.!*

Culm glabrous, somewhat triangular, 4 feet high. *Leaves* rigid and coriaceous, pungently acute, carinate, smooth; radical leaves numerous, 1—2 feet in length, 3—5 lines wide; cauline ones few and short. *Corymbis* axillary and terminal, exsertly pedunculate, few and loosely flowered. *Spikelets* about $\frac{1}{3}$ of an inch in length, ovate, tumid, sessile or on short pedicels. *Glumes* obtuse, the inner ones mucronate. *Bristles* 6, caducous, minutely scabrous upward, equalling the nut. *Stamens* 6. *Nut* (including the tubercle,) 2—3 lines in length, smooth and shining, becoming black with age, round-ovate, and strongly convex on both sides. *Tubercle* turgidly conic, much shorter than the nut, with which it appears to be confluent.

HAB. Fort George, East Florida, *Dr. Baldwin.*

OBS. The bristles in this species are so exceedingly caducous that they escaped the notice of *Dr. Baldwin*, who referred the plant to the genus *Schœnus*. He remarks, however, that it only differs from *Rhynchospora* in wanting the bristles.

17. RHYNCHOSPORA PYCNOCARPA.

R. corymbis sparsifloris; spiculis turgido-ovatis; nuce lævi, ovata, tumida, vertice crasso, tuberculo acutiusculo, brevissime conico, ampliore; setis densis, caducis, sursum hispidulis, nucem subæquante.

Culm triangular, 2—3 feet high, *Leaves* rigid, broad-linear, carinate, pungently acute; the lower ones elongated, 3—4 lines broad; the upper ones narrower, short. *Corymbs* terminal and lateral, somewhat distant, few and loosely flowered. *Spikelets* ovate, turgid, 3—4 lines in length. *Glumes* ovate, acute or mucronate. *Bristles* 10, equal to the nut or a little shorter, minutely hispid upward, somewhat caducous. *Stamens* 3, *Style* slender, deeply bifid. *Nut* rufous, smooth and shining, slightly attenuated and compressed at the base, tumid above, with the summit somewhat thickened and wider than the depressed-conic, very short tubercle.

HAB. In dry sandy barrens, Wilmington, N. Carolina, *Mr. Curtis*; Georgia, *Le Conte*; West Florida, *Mr. Ware*, (*in Herb. Nutt.*)

OBS. This species is very similar to the preceding, in habit and general appearance.

18. RHYNCHOSPORA CILIATA, *Vahl*.

R. foliis obtusis bracteisque ciliatis; spiculis ovatis, corymboso-fasciculatis, terminalibus; nuce lævi, orbiculato-ovata, lenticulari, setis sursum hispidulis triplo longiori.

R. ciliata, Vahl, Enum. II. p. 238. Pursh. Fl. I. p. 49. Rœm. & Schult. Syst. Veg. II. p. 87. Spreng. Syst. Veg. I. p. 196. Schœnus ciliaris, Michx. Fl. I. p. 36, et Herb.!

Culm, leaves and sheaths beautifully striate and somewhat glaucous *Culm* 1—2½ feet high, obscurely triangular. *Leaves* broad-linear, obtuse; radical ones 4—6 inches in length and 2—3 lines wide; cauline ones few and short. *Flowers* in a crowded, terminal corymb, sometimes with a much smaller, pedunculate, lateral fascicle. *Bracts* somewhat exceeding the corymb. *Glumes* ovate, carinate, mucronate, pubescent on the back above the middle. *Bristles* 6, very short, minutely hispid upward. *Stamens* 3. *Nut* nearly orbicular, lenticular, minutely alveolate under a powerful lens. *Tubercle* about one-third as long as the nut, broad at the base, compressed.

HAB. St. Mary's and St. John's, Florida, *Dr. Baldwin*; New Orleans, *Dr. Ingalls*; Georgia, *Le Conte*; Wilmington, N. Carolina, *Mr. Curtis*.

19. RHYNCHOSPORA BALDWINII.

- R. foliis acutis, glaucis; spiculis ovatis, corymboso-fasciculatis, terminalibus; nuce lævi, (ovata vel suborbiculato-ovata,) lenticulari; setis duodenis, sursum hispidulis, nucem æquante.*
R. glauca, Baldw. Mess. et Herb.!

Culms acutely triangular, 2—3 feet high, rather slender and, with the leaves, glaucous. *Leaves* linear, carinate, somewhat narrower than in the preceding species, acute, with slightly scabrous margins. *Corymb* terminal. crowded; sometimes with a smaller, rather distant, pedunculate axillary one. *Eracts* shorter than the corymb, setaceous, with hispid-scabrous margins and keel. *Glumes* ovate, cuspidate. *Bristles* 12, minutely hispid upwards, scarcely longer than the mature nut. *Stamens* 3. *Nut* very smooth, ovate or subrotund, lenticular. *Tubercle* about $\frac{1}{2}$ the length of the nut, somewhat narrowed at the base, compressed.

HAB. “Georgia, in pine barren swamps, between the Satilla and Altamaha rivers, December, 1816.” *Dr. Baldwin.*

OBS. This species is very similar in habit to the preceding; but it differs in having acute, not ciliate leaves, a larger nut, and longer bristles. *R. ciliata* also has six bristles, the ordinary number for this genus: this species has uniformly twelve. *R. glauca*, of Vahl, a native of Æquinoctial America, has a rugose nut, and is doubtless distinct from our plant. I have therefore dedicated this species to the memory of its enterprising discoverer, who paid much attention to the genus *Rhynchospora*.

20. RHYNCHOSPORA FASCICULARIS, Nutt.

- R. culmo subtrigono; spiculis oblongis, corymboso-fasciculatis, pauciusculis, terminalibus lateralibusque; nuce lævi, ovata, lenticulari, setis sursum hispidulis duplo longiori; tuberculo compresso, nuce brevior.*
R. fascicularis, Nutt. Gen. I. p. 33. Vahl, Enum. II. p. 334? Pursh, Fl. I. p. 48?

R. cymosa, Elliott, Bot. S. Car. & Georg. I. p. 58?

Schœnus fascicularis, Michx. Fl. I. p. 37, et Herb! Pers. Syn. I. p. 60.

Culm 18 inches to 2 feet high, obscurely triangular. *Leaves* narrow-linear, shorter than the culm. *Corymbs* about 3, densely fasciated and somewhat few-flowered; the lower one subdistant, exsertly pedunculate; the two upper approximate, subsessile. *Pedicels* very short. *Bracts* setaceous. *Spikelets* oblong. *Glumes* ovate, carinate, with a long mucro; the exterior shorter, obtuse; the inner ones acute. *Bristles* 6, about half as long as the nut, minutely hispid upward. *Stamens* 3. *Style* bifid. *Nut* lenticular, ovate or round-ovate, smooth. *Tubercle* much compressed, with the base as broad as the nut, about half its length.

HAB. In Carolina, Michaux; Georgia, Dr. Baldwin; New Orleans, Dr. Ingalls.

OBS. The spikelets, nut, and bristles of our plant agree in every respect with a fragment of *Schœnus fascicularis* from Michaux's herbarium. The description in his Flora Boreali-Americana applies minutely to our specimens, excepting the paragraph "*setulis semine lævi duplo longioribus* : whereas in his own plant, and in all the specimens I have examined, the reverse is true, the nut being about twice the length of the bristles. Elliott, who copies the description of Michaux, remarks that the plant had not fallen under his observation. I suspect that he has taken it for *R. cymosa*. I have not the means of determining whether our plant is the *R. fascicularis* of Vahl: it certainly does not agree in some respects with the detailed description of that species in Rœmer and Schultes' System a Vegetabilium. There is no specimen under the name of *Schœnus fascicularis* in the Muhlenbergian herbarium.

21. RHYNCHOSPORA PANICULATA.

R. culmo triquetro; paniculis numerosis, approximatis, interdum geminatis; spiculis oblongo-lanceolatis, ad ramulos fasciculatis; nuce lævi, obovata, lenticulari, tuberculum subula-

tum æquante; setis retrorsum hispidis, nucem plus duplo longioribus.

Culm triangular, 3—4 feet high. *Leaves* linear, smooth, somewhat scabrous on the margin and keel. *Panicles* numerous, approximate, so as to appear like a single elongated, compound panicle; often two or more from the same sheath. *Peduncles* compressed, scabrous, nearly erect, much longer than the sheaths; the lower ones longest. *Bracts* filiform-setaceous, with scabrous margins, equal to the panicles. *Flowers* in small fascicles, crowded on the ultimate divisions of the panicles. *Spikelets* ovate-lanceolate, *Glumes* lanceolate, rather obtuse, with a short mucro. *Bristles* 6, conspicuously retrorsely hispid, more than twice the length of the nut. *Stamens* 3. *Style* slightly bifid. *Nut* smooth, obovate, lenticular, broad at the summit, subattenuate at the base. *Tubercle* subulate, compressed, as long as the nut.

HAB. New Orleans, *T. Drummond*, (*in Herb. Torr.*); Middle Florida; *Dr. Chapman*.

22. RHYNCHOSPORA OLIGANTHA.

R. culmo subaphyllo, filiformi; spiculis paucissimis, ovato-oblongis; setis sursum hispidis, infra medium plumosis, nucem oblongiuscule obovatam (minutissime exasperatam,) paulo superante; tuberculo brevissimo, conico.

Culm filiform, 6—12 inches high, nearly leafless. *Spikelets* 1—4, two to four lines long, solitary or in twos or threes on a slender, scabrous peduncle, surrounded by a single filiform bract, which appears like a continuation of the culm: sometimes there is a single, remote, long-pedunculate, lateral spikelet. *Glumes* broad-ovate, acute. *Florets* raised on a naked, articulated stipe, about a line in length. *Bristles* 6, as long as the nut and tubercle, hispid upward, plumose below the middle. *Stamens* 3. *Style* bifid. *Nut* to the naked eye nearly smooth, (minutely roughened under a powerful lens,) obovate-oblong, subterete, with a very short acumination supporting a conic tubercle, scarcely $\frac{1}{4}$ the length of the nut.

HAB. Fayetteville, N. Carolina. *Schweinitz* (*sub nom. R. rari-floræ*); near Wilmington, N. Carolina, *Mr. Curtis*.

23. RHYNCHOSPORA SEMIPLUMOSA.

R. culmo subtereti; foliis bracteisque setaceis; spicis approximatis ad summitatem culmi; setis sursum hispidis, infra medium plumosis, nucem ovatam, lævem, paulo superante; tuberculo compresso-conico, nucem subæquante.

Culm a foot high, subterete, striate, smooth. *Leaves* setaceous, shorter than the culm, scabrous on the margin. *Bracts* setaceous, surpassing the culm. *Spikes* 3, oblong, densely flowered, approximate, nearly sessile. *Spikelets* small, ovate. *Glumes* ovate, acute. *Bristles* 6, a little exceeding the nut, hispid upward, plumose below the middle. *Stamens* 3. *Filaments* very broad. *Style* deeply bifid. *Nut* ovate, compressed, smooth or with a very minute deciduous pubescence. *Tubercle* compressed-conic, acute, minutely hispid, nearly as long as the nut.

HAB. New Orleans. *Dr. Ingalls.*

OBS. This species is nearly allied to *R. plumosa*, but it is well characterised by its bristles, which are only plumose below the middle, its smooth nut, and long flattened tubercle. I regret, however, that I have seen no specimens in which the fruit is fully mature.

24. RHYNCHOSPORA ALBA, *Vahl.*

R. culmo superne triquetro; spiculis corymboso-fasciculatis; setis denis, retrorsum hispidis, nuce lævi, lenticulari, basi subattenuata, longioribus.

R. alba, *Vahl, Enum.* II. p. 236. *Pursh, Fl.* I. p. 49. *Elliott, Bot. S. Car. & Georg.* I. p. 57. *Ræm. & Schult. Syst. Veg.* II. p. 87. *Torrey, Fl.* I, p. 54. *Gray, Gram. & Cyp.* I. n. 92. *Schænus albus, Linn. Sp. Pl.* 65. *Michx. Fl.* I. p. 64. *Muhl. Gram.* I. p. 5. *Bigel. Fl. Bost.* p. 17.

Culm slender, a foot or 18 inches high, glabrous. *Leaves* setaceous, shorter than the culm. *Flowers* in close, corymbose clusters, terminal

and axillary, with short setaceous bracts at the base. *Spikelets* lanceolate. *Glumes* ovate, acute, white, becoming brownish with age. *Bristles* 10, retrorsely hispid, nearly $1\frac{1}{2}$ the length of the nut, (equaling the nut with the tubercle.) *Stamens* 2, (3, 2, and 1, *Muhl.*) *Style* bifid. *Nut* lenticular, ovate, somewhat attenuate at the base, when young triquetrous, elevated on a short stipe upon which the bristles are inserted. *Tubercle* compressed, one-half the length of the nut.

HAB. In sphagnous swamps, common; Canada to Carolina. Flowers, July—September.

OBS. The North American plant agrees in every respect with specimens from the north of Europe.

25. RHYNCHOSPORA CAPILLACEA, *Torrey.*

R. culmo trigono, gracili; spiculis 3—6, plerumque terminalibus; nuce lævi, oblongo-ovata, stipitata, setis retrorsum hispidis dimidio—tuberculo duplo—longiori.

R. capillacea, Torrey, ! Fl. I. p. 55. Gray, Gram. & Cyp. I. n. 95.

Schænus setaceus, Muhl. ! Gram. p. 6.

Culm 6 to 12 inches high, very slender, smooth. *Leaves* setaceous, nearly flat; radical ones short. *Spikelets* oblong, mostly terminal, with a setaceous bract at the base of each. *Glumes* chesnut coloured, with scarious margins, oblong-ovate, carinate, mucronate. *Bristles* 6, large, retrorsely hispid, about twice the length of the nut. *Stamens* 3. *Style* bifid. *Nut* oblong-ovate, somewhat lenticular, attenuate at the base, triquetrous when young, raised on a short stipe which bears the bristles. *Tubercle* compressed, acute, about half as long as the nut.

HAB. In swamps, Pennsylvania, *Muhlenberg*; Penn-Yan, New York, *Dr. H. P. Sartwell*. On limestone rocks, Watertown, New York. Flowers in July.

26. *RHYNCHOSPORA FUSCA*, *Ram & Schult.*

R. foliis setaceis, canaliculato-carinatis; spiculis ovato-oblongis; nuce levi, obovata, subtumida, basi paulo attenuata, setis sursum hispidulis duplo brevioribus; tuberculo compresso, margine serrulato-scabro.

R. fusca, *Ram. & Schult. Syst. Vcg.* II. p. 81. *Spreng. Syst. Vcg.* I. p. 194.

R. alba var. fusca, *Vahl. Enum.* II. p. 236.

Schœnus fuscus, *Linm. Sp. Pl.* p. 1664. *Wahl. Fl. Succ.* I. p. 23.

Culm 6 to 12 inches high, very slender, smooth. *Leaves* setaceous, channelled; radical ones elongated; cauline ones very short. *Fascicles* 1—3, few-flowered; the uppermost approximate, on short included peduncles; the lowest remote, exsertly pedunculate. *Spikelcts* ovate, oblong, acute. *Glumes* mucronate, dark fuscous and shining. *Bristles* 6, very slender, hispid upward, about twice the length of the nut; three alternate ones somewhat shortest, or scarcely exceeding the nut. *Stamens* 3. *Nut* smooth, but with its surface often slightly irregular, obovate, sub-attenuate at the base, lenticular, somewhat tumid. *Tubercle* much compressed, broad at the base, serrulate on the margin, attenuate into the style, which is sometimes almost wholly persistent.

HAB. Pine barrens of New Jersey, *Torrey*; Boston, *Dr. Pickering*.

OBS. Our plant agrees in every respect with a Swedish specimen of *R. fusca*, except that in the foreign plant, the nut is somewhat uneven and a little more tumid than in ours. I am, however, satisfied of their identity. This species is quite distinct from *R. alba*, of which some European botanists have considered it a variety. It is much more nearly related to *R. capillacea*, from which it is well distinguished by the form of the nut, the upward direction of the hispidness of the bristles, and the serrulate tubercle. In this species the glumes are dark fuscous; in *R. capillacea* they are light fuscous or chesnut coloured. *R. fusca* has carinate and channelled leaves; in *R. capillacea* they are nearly flat.

R. fusca is said by Sprengel, Rœm. & Schult. &c. to have but three bristles; there are six in all the specimens, both European and American, which I have examined. A specimen from N. Carolina, collected by Mr. Curtis, appears to differ from this species only in its smaller spikelets, but it is too imperfect to be positively determined.

27. RHYNCHOSPORA GRACILENTA.

R. culmis foliisque gracillimis; corymbis minimis, subconfertis, terminali subsessili, lateralibus exserte pedunculatis; nucelævi, ovata (vel orbiculato-ovata), lenticulari, setis sursum hispidulis brevioribus; tuberculo subulato, basi dilatato, nucem subæquante.

R. fusca, Gray, *Gram. & Cyp.* I. n. 93. (excl. syn.)

Culm slender, sometimes almost capillary, 1—2 feet high, obscurely triangular. *Leaves* linear-setaceous, 4—12 inches in length. *Fascicles* 2—4, (often with a solitary terminal fascicle or subcapitate corymb) lateral and terminal, small, few-flowered; the uppermost subsessile, the lower ones exsertly and often filiformly pedunculate. *Spikelets* ovate. *Glumes* ovate, acute or mucronate, fuscous. *Bristles* 6, about half as long again as the nut, minutely hispid upward. *Stamens* 3. *Nut* ovate or round ovate, smooth. *Tubercle* subulate, dilated at the base, compressed.

HAB. Pine barrens of New Jersey: Aug.—Sept. Philips-town, Putnam county, New York, *Dr. Barratt*; Salem, N. Carolina, *Schweinitz*.

OBS. This plant is proposed as a new species with some hesitation. It is possibly *R. distans* of Vahl, but is quite different from *Schænus distans* of Michaux. It does not disagree with the specific character of *S. axillaris* Lam'k. *Ill. Gen.* I. p. 137; but the character of that species is so brief and general that it applies equally well to several other species.

28. RHYNCHOSPORA DISTANS, Nutt.

R. corymbis fasciculatis, lateralibus subdistantibus; spiculis

subconfertis, ovatis; nuce lævi, ovata, lenticulari, tuberculo brevi apiculata, setis sursum hispidulis subæquante.

R. distans, Nutt *Gen.* I. p. 33, non Vahl? nec Elliott.

Schœnus distans, Michx. *Fl.* I. p. 36, et *Herb!* Pers. *Syn.* I. p. 60.

Culm rather slender, 1—2 feet high, obtusely trigonous. *Leaves* narrow-linear, flat; the lower ones 4—6 inches in length; the upper ones shorter. *Corymbs* fascicled; the (2 or 3) upper ones aggregated at the summit of the culm: the lateral ones (1 or 2) distant, on short, exsert peduncles. *Spikelets* ovate. *Glumes* fuscous, broad-ovate, mucronate. *Bristles* 6, minutely hispid upward, about as long as the nut. *Nut* smooth, broad-ovate, lenticular. *Tubercle* compressed-conic, a little dilated at the base, one-third the length of the nut.

HAB. In Carolina, *Michaux*; Wilmington, N. Carolina, *Mr. Curtis*.

β . fasciculis laxiusculis; setis nucem excedente.

R. tenuis, *Baldw. Mss. et Herb.!*

Culm somewhat acutely triangular. *Corymbs* rather loosely fasciculate, the lower ones long-pedunculate. *Bristles* nearly twice the length of the nut. *Tubercle* not dilated at the base.

HAB. Savannah, Georgia, *Dr. Cutler*, (*in Herb. Baldwin.*)

OBS. The synonyms of Vahl and Pursh are omitted, as it is impossible to determine the plant to which they belong. They may be referred with about an equal chance of correctness to *R. glomerata*, *R. gracilentata*, and the present species. Var. β , although differing in the above-mentioned particulars, and uniformly having bristles longer than the nut, is not, I think, specifically distinct.

29. RHYNCHOSPORA GLOMERATA, Vahl.

R. corymbis fasciculato-glomeratis vel subsPICATIS, axillaribus terminalibusque, interdum germinatis; spiculis ovato-oblongis; nuce lævi, obovata, lenticulari, basi attenuata quasi sti-

pitata, tuberculum subulatum æquante; setis retrorsum hispidis, nucem duplo longiori.

R. glomerata, *Vahl, Enum.* II. p. 234. *Pursh, Fl.* I. p. 48. *Ræm. & Schult. Sys. Veg.* II. p. 86. *Elliott, Bot. S. Car. & Georg.* I. p. 61. *Torrey, Fl.* I. p. 55.

R. capitellata, *Vahl, Enum.* II. p. 235. *Ræm. et Schult. Syst. Veg.* II. p. 87. *Elliott, Bot. S. Car. & Georg.* I. p. 61.

Schœnus glomeratus, *Lim. Sp. Pl.* 65. *Willd. Sp. Pl.* I. p. 236. *Muhl. Gram.* p. 8. *Walt. Fl. Car.* p. 69.

S. capitellatus, *Michx. Fl.* I. p. 36.

S. capitatus, *Pers. Syn.* I. p. 60. *Muhl. Gram.* p. 10.

Culm 1—2 feet high, triangular. *Leaves* narrow-linear, carinate, smooth, scabrous on the margin, shorter than the culm. *Flowers* in corymbose or capitate fascicles, on included or somewhat exerted peduncles, lateral and terminal, often 2 or more from the same sheath; the lower ones distant. *Spikelets* ovate-oblong or lanceolate. *Glumes* brownish, lanceolate, mucronate. *Bristles* 6, retrorsely hispid, twice as long as the nut. *Stamens* 3. *Nut* smooth, obovate, lenticular, attenuate at the base. *Tubercle* subulate, compressed, equalling the nut.

HAB. In bogs and moist places; Canada to Florida. Flowers from July to September.

30. RHYNCHOSPORA CEPHALANTHA.

R. capitulis axillaribus terminalibusque, subglobosis, multifloris, interdum geminatis; spiculis oblongo-lanceolatis; nuce lævi, orbiculato-obovata, lenticulâri, submarginata, basi attenuata, tuberculum subulatum æquante; setis sursum vel retrorsum hispidis, nuce duplo longiori.

Culm thick, triangular, 2—3 feet high. *Leaves* narrow-linear, flat, subcarinate; lower ones elongated; the upper ones much shorter. *Capituli* 2—7, large, subglobose, remote, on included or slightly exerted peduncles, often two or more from the same sheath. *Spikelets* oblong-lanceolate. *Glumes* fuscous, ovate-oblong, acute. *Bristles* 6, about twice the length of the nut, hispid upward or downward. *Stamens* 3. *Style* bifid. *Nut* larger than in *R. glomerata*; when mature appear-

ing as if surrounded with a thickened margin, smooth, obovate, very broad at the summit, attenuate at the base as if raised on a short stipe. *Tubercle* subulate, compressed, as long as the nut.

HAB. Pine barrens of New Jersey and on Long Island about Babylon, *Torrey*; Wilmington, N. Carolina, *Mr. Curtis*; Georgia, *Le Conte*; New Orleans, *Dr. Ingalls*; Gadsden County, Middle Florida, *Dr. Chapman*.

OBS. This interesting species was discovered by Prof. Torrey several years since, in the pine barrens of New Jersey and on Long Island; and as in these localities it occurs, for the most part, with only two heads, it received the name of *R. biceps*. Our specimens from the southern states, however, have uniformly more than two heads, and often six or seven. I have therefore ventured to substitute for the manuscript name of Professor Torrey, one which is in a good degree characteristic of the habit of the species. This plant is very closely allied to *R. glomerata*, but is much larger and stronger in all its parts. Its larger and margined nut, and its more ample, and for the most part, spherical heads, will sufficiently distinguish it from that species. A most remarkable circumstance with regard to this species, and so far as my observation extends, peculiar to it, is the diversity in the direction of the hispidness of the bristles: even in different individuals from the same cluster some of the bristles are hispid upward and others downward. With this single exception, the direction of the hispidness of the bristles is, in each species of this genus, perfectly constant.

| *Species inquirenda.*

Schænus axillaris, "culmo triquetro, folioso; corymbis minimis, alternis, axillaribus; spiculis confertis." *Lam'k. Ill. Gen. I. p. 137.*

HAB. Carolina, *D. Fraser*.—*Lamarck*.

EXPLANATION OF PLATE VI.

FIG.

1. *Rhynchospora cymosa*, *Nutt.*
2. *R. Torreyana.*
3. *R. rariflora*, *Ell.*
4. *R. miliacea.*
5. *R. caduca*, *Ell.*
6. *R. inexpansa*, *Vahl.*
7. *R. multiflora.*
8. *R. patula.*
9. *R. microcarpa*, *Baldw.*
10. *R. plumosa*, *Ell.*
11. *R. punctata*, *Ell.*
12. *R. Elliottii.*
13. *R. corniculata.*
14. *R. macrostachya*, *Torr.*
15. *R. dodecandra*, *Bald.*
16. *R. megalocarpa.*
17. *R. pyenocarpa.*
18. *R. ciliata*, *Vahl.*
19. *R. Baldwinii.*
20. *R. fascicularis*, *Nutt*
21. *R. paniculata.*
22. *R. oligantha.*
23. *R. semiplumosa.*
24. *R. alba*, *Vahl.*
25. *R. capillacea*, *Torr*
26. *R. fusca*, *Ræm. & Schult.*
27. *R. gracilentia.*
28. *R. distans*, *Nutt.*
29. *R. glomerata*, *Vahl.*
30. *cephalantha.*

A notice of some new, rare, or otherwise interesting PLANTS, from the Northern and Western portions of the State of New York. By ASA GRAY, M. D.

Read December, 1834.

RANUNCULACEÆ.

1. ANEMONE CYLINDRICA (*sp. nov.*); sericeo-pubescentis; foliis ternatim sectis, segmentis lateralibus bipartitis, intermedio trifido, laciniis lineari-lanceolatis apice inciso-dentatis, involucralibus petiolatis conformibus; involucellis nullis; sepalis obovatis, obtusis, subcoriaceis; carpellis lanatis, in capitulum cylindricum congestis.

Root perennial, fibrose-fasciculate, Stem 1—3 feet high, and with the leaves, covered with an appressed silky pubescence. Radical leaves mostly on long petioles, finely and reticulately veined, light green above, paler beneath. Peduncles 2—6 (rarely 1), 1-flowered, all arising from the same point, 8—12 inches in length when the fruit is mature. Leaves of the involucre on short petioles, twice or three times the number of the peduncles, somewhat crowded. Involucels none. Sepals 5, pale yellowish-green, obovate, obtuse, somewhat coriaceous, sericeous beneath. Carpels acuminate into a very short style, with the apex deflexed; in every part densely covered with a long, silky tomentum, and disposed in a cylindrical elongated capitulum, about an inch in length.

HAB. In dry pine barrens, near Oneida Lake, New York. Flowers in June.

OBS. This species, although closely allied to *A. Virginiana*, Linn. is quite distinct. It must be referred to the section ANEMONANTHEA of De Cand., and be placed next to *A. alba*, which it resembles in many respects. From *A. Virginiana* it is readily distinguished by its more finely divided leaves, by the greater number and length of its peduncles, the absence of involucels, its obtuse sepals, and especially by its long, cylindrical and very woolly head of carpels. In this species also all

the flowers expand nearly at the same time, and the peduncles are not, as in *A. Virginiana*, developed one by one during the summer, so that both flowers and mature fruit are found at the same time.

2. *A. MULTIFIDA*, β HUDSONIANA, *De Cand. Prodr.* I. p. 21. *De Les, Ic.* I. tab. 16. *Hooker, Fl. Bor. Am. (γ . sanguinea)* I. p. 7. *A. sanguinea*, *Pursh, in Herb. Lamb.* *A. Hudsoniana*, β . *sanguinea*, *Rich. in Frankl. Jour. ed. 2. App.* p. 22.

On limestone rocks, Watertown, Jefferson county, where it was discovered by *Dr. I. B. Crane*. My specimens agree well with De Lessert's figure. The mature heads of pericarps are oblong and very woolly.

3. *TROLLIUS LAXUS*, *Salisb. in Linn. Trans.* VIII. p. 303. *Pursh, Fl.* II. p. 391. *T. Americanus*, *Muhl. Cat.* p. 56. *De Cand. Syst.* p. 313. *Hook. Fl. Bor. Am.* I. p. 23.

Shady sphagnous swamps near Utica.

Flowers twice as large as those of *Ranunculus acris*. *Sepals* 5—6, ochroleucous, with a tinge of green beneath. *Petals* 15—25, minute, deep orange-yellow. *Carpels* 8—15.

4. *RANUNCULUS PURSHII*, *Hook. Fl. Bor. Am.* I. p. 15.

α . "foliis omnibus capillaceo-multifidis, flore majore, caule fistuloso." *Hook. l. c.* *R. multifidis*, *Pursh, Fl.* II. p. 736. *De Cand. Prodr.* I. p. 34. *R. lacustris*, *Beck & Tracy in Transactions of the Albany Institute*, I. p. 148. tab. 5.

In stagnant water, throughout the western and northern portions of the state.

β . "foliis submersis capillaceo-multifidis, natantibus, reniformibus palmato-multifidis." *Hook. l. c. tab.* VII. B. fig. 1.

In muddy pools, near Oneida Lake.

γ . "repens, foliis inferioribus lineari-multipartitis, superioribus reniformibus palmato-multifidis." *Hook. l. c. tab.* VII. B. fig. 2. *R. Purshii*, *Rich. in Frankl. Jour. App.* p. 23.

In marshes, Watertown, Jefferson county.

CRUCIFERÆ.

5. *NASTURTIUM NATANS*, *De Cand. Syst.* II. p. 198; *Prodr.* I. p. 139. *De Less. Ic.* II. tab. 15.

β. *AMERICANUM*; petalis calyce duplo longioribus; siliculis obovatis. *N. natans*, *Hook. Fl. Bor. Am.* I. p. 39. *Beck. Bot. Northern and Middle States*, p. 32.

HAB. Oneida Lake, where it is very abundant, in water 2—5 feet deep. In the St. Lawrence river, near Ogdensburgh, *Dr. I. B. Craue.* Flowers in July.

OBS. This plant, which I observed at the first mentioned locality several years since, differs in some respects from the Siberian *N. natans*, as described by De Candolle and figured by De Lessert. In our specimens the flowers are about *twice as large as those of N. amphibium*, the petals are *pure white* in the living plant, *oblong, and twice the length of the calyx*, the mature silicles *obovate or obovate-oblong, more than 2 lines in length*; but in all other respects they agree minutely with De Candolle's detailed description and De Lessert's figure. The submersed leaves separate with great ease at their articulation with the stem, so that perfect specimens are not readily obtained. Although a rare plant, its geographical range is quite extensive, as Dr. Ingalls has recently found it at New Orleans.

6. *DRABA INCANA*, *Linn. Sp. Pl.* p. 897. *Hook. Fl. Bor. Am.* I. p. 54. *D. contorta*, *Ehrh. De Cand. Syst.* II. p. 348. *Prodr.* I. p. 170. *D. confusa*, *Ehrh. De Cand. l. c.* *Hook. Fl. Bor. Am. l. c.*

β. *GLABRIUSCULA*; læviter substellato-pubescentis; foliis radicalibus spathulato-lanceolatis, caulinis oblongis, repando-dentatis; siliculis oblongo-linearibus. *D. glabella*, *Pursh. Fl.* I. p. 344? *Hook. Fl. Bor. Am.* I. p. 54?

Whole plant covered with a minute, branched pubescence, but not hoary. *Root* perennial! *Stems* many from the same root, simple or a little branching from the base. *Radical leaves* numerous and crowded, forming a roseolate tuft, oblong or lanceolate spathulate, much attenuated at the base, sparingly dentate. *Cauline leaves* oblong

or oblong-lanceolate, sub-amplexicaul, acute, sparsely and repandly dentate; those on the young branches somewhat entire. *Flowers* in a short, somewhat compact, simple (or sometimes branching) raceme. *Lower pedicels* nearly as long as the mature silicle; the upper ones shorter. *Sepals* ovate, obtuse, with white margins. *Petals* white, broad-ovate, entire, a little more than twice the length of the sepals. *Silicles* oblong, linear, contorted, 6—8 lines long when mature, glabrous, crowned with a distinct but very short style. *Seeds* 10—15 in each cell.

OBS. This plant, which I refer to *D. incana* with some hesitation, will perhaps prove to be a distinct species. It much resembles *D. confusa* of Hooker, (specimens of which I have examined in the herbarium of Prof. Torrey,) and which, as Prof. Hooker observes, insensibly passes into *D. incana*. His specimens, however, differ from ours in having shorter styles, a much more dense pubescence and sparingly dentate, or sub-entire leaves, which are somewhat ovate: the radical leaves are not, as in our plant, much attenuated at the base, so as to appear petiolate. In our plant also the silicle is glabrous, and rather linear than oblong. I suspect that the character of *D. glabella*, Pursh, is drawn from dwarf specimens of this plant. It also agrees perfectly with the *D. glabella* of Hooker's Flora, except in the number of cauline leaves, and in the calyx, which in that species is said to be very glabrous. Prof. Hooker, however, has not had an opportunity of examining the fruit.

The habit of our plant is precisely that of *Drabra ramosissima* of Desvauz (*D. arabizans*, Dursh, non Michx. *D. dentata*, Hook. & Arn. in Hooker's Journal of Botany. *Alyssum dentatum*, Nutt.); a species which is well characterized by its lanceolate, deeply dentate leaves, its compound racemose inflorescence, its shorter and pubescent silicles, and longer style.

RHAMNEÆ.

7. **CEANOTHUS OVALIS**, Bigelow, *Fl. Bost*, ed. 2. p. 92.
C intermedius, Hook, *Fl. Bor. Am.* I. p. 124, non Pursh.

On rocks and barren grounds, Watertown, Jefferson county.

OBS. A shrub, 2—3 feet high. Flowers in May. This plant is undoubtedly quite distinct from *C. intermedius*, Pursh, which is merely a narrow-leaved form of *C. Americanus*, nearly confined to the Southern States. The specific name of Bigelow is not happily chosen, as the leaves are for the most part oblong-lanceolate.

LEGUMINOSÆ.

8. LATHYRUS PISIFORMIS, *Linn. De Cand. Prodr.* II. p. 371. *Hook. Fl. Bor. Am.* I. p. 158. *L. maritimus*, Bigel. *Fl. Bost. ed. 2.* p. 268. *Pisum maritimum*, *Linn. et aliorum.*

Shore of Lake Ontario. Flowers June—August. It agrees with our sea-shore plant in every respect.

9. L. OCHROLEUCUS, *Hook. Fl. Bor. Am.* 1. p. 158. *L. pisiformis*, *Rich. in Frankl. Jour. app.* p. 28. *L. glaucifolius*, *Beck. Bot. and Middle States*, p. 90.

Gorham, Ontario county, *Dr. H. P. Sartwell*: Watertown, Jefferson county, *Dr. Craze*.

OBS. This species resembles *L. venosus*, Muhl. but differs in its ochroleucous flowers and larger stipules. *L. venosus* also has larger leaves, which, with the segments of the calyx, are much more prominently veined.

10. L. PALUSTRIS, *Linn. Pursh, Fl.* II. p. 147.

Along the banks of rivers and lakes. Its leaves from lanceolate (the ordinary form) to oblong-ovate.

II. L. MYRTIFOLIUS, *Muhl. in Willd. Spec.* III. p. 1091. *De Cand. Prodr.* II. p. 371. *Pursh, Fl.* II. p. 471. *L. stipulaceus*, *Le Conte, in Cat. N. Y. Plants*, p. 92.

Grows in similar situations with the preceding, from which it may not be specifically distinct. Leaves elliptical or oval, in 3—4 pairs, (“*foliis quatuor*,” Pursh.) Stem naked or winged; stipules variable in size.

VALERIANÆÆ.

12. VALERIANA SYLVATICA, *Rich. in Frankl. Jour. app. p. 42.* *Hook. Fl. Bor. Am. I. p. 291.* *Beck, Bot. N. and Middle States, p. 164.*

Very abundant in a sphagnous swamp in Wayne county, near the shore of Lake Ontario; where it was discovered, in the summer of 1833, by Dr. Sartwell. My specimens agree in every respect with those from Prof. Hooker, in Prof. Torrey's herbarium.

COMPOSITÆ.

13. DIPLOPAPPUS ALBUS, *Hook. Fl. Bor. Am. II. p. 21.* *Aster albus, (Willd. Herb.) Spreng. Syst. Veg. III. p. 528?* *Chrysopsis alba, Nutt. Gen. II. p. 152, (v. sp. in Herb. Nutt.)* *Dœllingeria? ptarmicoides, Nees ab Esenbeck, Ast. p. 183.*

On the rocky banks of Black River, near Watertown, Jefferson county; where it is very abundant, and was first noticed by Dr. Crave. Flowers early in August.

OBS. This interesting species was discovered by Nuttall around Fort Mandan, on the Missouri: it has also been found on the shore of Lake Superior, by Dr. Pitcher, and on the banks of the Saskatchewan, by Dr. Richardson; so that its geographical range is very extensive. I have not been able to find any trace of an outer pappus in the numerous specimens which I have examined. They agree in all respects with a specimen from Prof. Hooker, (in Herb. Torrey,) except that in our plant the hairs of the inner pappus are subclavate at the extremity. Our plant appears to me to differ from *Dœllingeria* of Nees ab Esenbeck only in wanting the outer pappus. I have no means of determining whether this species is identical with *Aster albus* of Willdenow's herbarium; but as there is a species under this name in the catalogue of Muhlenberg, from whom Willdenow received many North American Asters, it is highly probable that this synonym is correctly referred.

LABIATÆ.

14. DRACOCEPHALUM PARVIFLORUM, *Nutt. Gen.* II. p. 35. (*v. sp. in Herb. Nutt.*) *Benth. Lab.* p. 495.

Barren fields and woods, Watertown, Jefferson county. Flowers from May to August.

OBS. This species, which was found by its discoverer around Fort Mandan, on the Missouri, has since been collected in British N. America by Mr. Drummond.

15. BLEPHILIA HIRSUTA, *Benth. Lab.* p. 320. *Monarda hirsuta. Pursh, Fl.* I. p. 19.

Abundant throughout the northern and western portions of the state of New York.

LENTIBULARIÆ.

16. UTRICULARIA INTERMEDIA, *Hayne. Schrader, Fl. Germ.* I. p. 55. *Ræm. & Schult. Syst.* I. p. 195. *Spreng. Syst.* I. p. 61. *U. media, Wahl. Fl. Succ.* I. p. 15.

In very wet swamps, Watertown, Jefferson county, *Dr. Crawe.* Flowers in June and July.

This species is near *U. vulgaris* and *U. minor*, but is quite distinct from both. My specimens agree in all respects with the foreign plant, of which I have seen Swedish specimens in the herbarium of Dr. Torrey.

17. U. MINOR, *Willd. Sp. Pl.* I. p. 112. *Ræm. & Schult. Syst.* I. p. 166. *Wahl. Fl. Succ.* I. p. 14.

In the same locality as the preceding. *Corolla* dull yellow. Flowers in June. As far as can be determined by the comparison of dried specimens, our plant is identical with the foreign *U. minor*.

18. U. CORNUTA, *Michx. Fl.* I. p. 12. *Ræm. & Schult. I.*

p. 197. *Torrey, Fl. I. p. 19.* *U. personata, Le Conte, Utric. in Ann. Lyc. Nat. Hist. New York, I. p. 77.*

Occurs sparingly throughout the western portion of the state of New York. Very abundant in an extensive sphagnous swamp bordering Perch Lake, Jefferson county. Stem one to six flowered.

ORCHIDEÆ.

19. *MICROSTYLIS BRACHYPODA* (*sp. nov.*); caule unifoliato; racemo subspicato floribus breviter pedicellatis; petalis lateralibus refractis; labello hastato-triangulari, cucullato, acuminato.

Root a pseudo-bulb. *Stem* 2—6 inches high, triangular, with two of the angles somewhat winged. *Leaf* solitary, (rarely two,) ovate, sheathing the lower portion of the stem. *Raceme* elongated, somewhat spiked, many (20—40) flowered. *Bractæ* minute, a little shorter than the pedicels. *Pedicels* about a line long, somewhat appressed. *Sepals* spreading, oblong-lanceolate, acute. *Lateral petals* linear, attenuate upwards, refracted and appressed to the ovarium. *Lip* triangular-hastate, with a long recurved acumination; lateral lobes rounded and rolled inwards. *Anther* terminal, two celled. *Polinia* 4, collateral.

HAB. In deep shady swamps, Fairfield, Herkimer county, *Prof. Halley*. Bridgewater, Oneida county. Flowers in July.

OBS. This species more nearly resembles *M. monophyllos*, *Lindl. Gen. & Sp. Orchid.* p. 19. (*Ophrys monophyllus*, *Linn.*) than any other with which I am acquainted. That species, however, differs from our plant, in its much longer pedicels and bracts, and also in the form of the lip, the auricles of which, in *M. monophyllos*, are directed forward. I am not certain that these characters are constant.

20. *HABENARIA ORBICULATA*, *Torrey, Compend.* p. 318. *H. macrophylla*, *Goldie, in Edinb. Phil. Jour.* VI. p. 331. *Orchis orbiculata*, *Pursh, Fl. II.* p. 588.

Scape with two orbicular leaves at the base, which spread flat on the ground. *Leaves* large, (5—8 inches in diameter,) fleshy, very smooth

and shining. *Scape* 1—2 feet high, bearing the flowers in a spiciform raceme. *Flowers* 17—20, greenish-white, spreading. *Pedicels* 3—4 lines long. *Bracteæ* lanceolate, shorter than the flowers. *Sepals* conspicuously nerved; the upper one nearly orbicular, erect; the lateral ones ovate, and very oblique, so as to appear somewhat semilunar, spreading. *Petals* smaller than the sepals, ovate-lanceolate, oblique, reflexed. *Lip* linear, obtuse, longer than the ovary, depending and recurved. *Spur* three times the length of the ovary, incurved, clavate. *Anther* two-horned, two-celled, cells approximate. *Ovary* $\frac{1}{2}$ — $\frac{3}{4}$ of an inch long, a little curved.

HAB. Woods throughout the Northern states, but somewhat rare. It is seldom found except in the deep shade of the Coniferæ. Flowers in July.

21. *H. HOOKERIANA*, *Torrey, Herb. H. orbiculata, Goldie, l. c. Hook. Exot. Fl. 145. non Pursh.*

Scape 8—12 inches high, bearing at the base two orbicular, oval or obovate leaves. *Leaves* fleshy, smooth and shining, 3—4 inches long. *Spike* 4—6 inches in length, somewhat loosely flowered. *Flowers* 10—20, yellowish-green, erect or a little spreading, subsessile. *Bracteæ* lanceolate, nearly as long as the flowers. *Sepals* ovate-lanceolate, acute; the upper one connivent with the petals, erect; the lateral ones deflexed, so as to meet posteriorly. *Petals* a little shorter than the sepals, linear, very acute, dilated at the base. *Lip* lanceolate, acuminate, scarcely as long as the ovary, standing forward and somewhat incurved. *Spur* straight, acute, depending, about twice the length of the ovary. Cells of the *anther* linear-clavate, widely separated at the base by the broad stigmatic surface. *Ovary* $\frac{1}{2}$ — $\frac{3}{4}$ of an inch in length, straight.

HAB. In similar situations with the preceding, but much more abundant in the northern part of the state. I am not aware that it has been found south of the Highlands of the Hudson river, where it occurs sparingly. Flowers in June.

OBS. These two very distinct species of *Habenaria* are still generally confounded by our botanists, although they were very clearly distinguished by Mr. Goldie, in his paper on "New and rare Plants detected in Canada during the year 1819," published in the 6th volume of the Edinburgh Philosophical Journal. There can, however, be little doubt that *H. macro-*

phylla, of Goldie, is the original *Orchis orbiculata*, although the question can only be *positively* decided by referring to Pursh's herbarium. The specific character of Pursh applies minutely to this plant, if we except the expression *petalis 3 superioribus conniventibus*; but he may have drawn his description from very young specimens, in which the perianth had not fully expanded; or, which is not improbable, he may have seen and confounded the two plants. The phrase, *labello linearari integerrimo obtusiusculo*, in no respect applies to *H. orbiculata* of Goldie and Hooker, in which the lip is lanceolate and very acute. The lower sepals in our plant are very oblique, as noted by Pursh; in that of Goldie and Hooker they are slightly so. Our plant has the scape 12 to 15 inches or more in height, and the leaves entirely prostrate, as described by Pursh; in that of Goldie and Hooker, the scape is seldom a foot in height, and the leaves are suberect. To this may be added the habitat, "*on the mountains of Pennsylvania and Virginia, July—August*;" a region in which the *H. orbiculata* of Goldie and Hooker has not, as far as I am aware, been detected. If this view proves correct, the specific name of Pursh must be restored to the larger species. For the *H. orbiculata* of Goldie, &c. Dr. Torrey has proposed the name *H. Hookeriana*, in honour of Wm. Jackson Hooker, LL.D. whose name is identified with North American botany, by his splendid *Flora Boreali-Americana*, and other publications on the plants of this country.

22. *H. CILIARIS*, *R. Brown in Hort. Kew.* *Orchis ciliaris*, *Willd. Sp. Pl. IV. p. 8.* Ontario county, *Dr. Sartwell.*

Flowers bright golden yellow.

23. *H. BLEPHARIGLOTTIS*, *Hook. Exot. Fl. 87.* *Orchis blephariglottis*, *Willd. Sp. Pl. IV. p. 9.* Watertown, Jefferson county; Utica, Oneida county. Flowers pure white.

This species and the preceding grow in similar situations

and frequently in company, and are not readily distinguished, except by the colour of the flowers. But, as Prof. Hooker justly remarks, in *H. ciliaris*, the lip is more thickly fringed, and the upper petals are likewise fringed; whereas in *H. blephariglottis* these are quite naked.

24. *H. BRACTEATA*, R. *Brown in Hort. Kew.* Orchis bracteata, *Willd. Sp. Pl. IV.* p. 34.

In deep woods, Fairfield, Herkimer county.

25. *H. DILATATA*, *Hook. Exot. Fl.* 95? *non Torrey, Compend,* &c. Orchis dilatata, *Pursh, Fl. II.* p. 588.

Root fasciculated. *Stem* 1—2 feet high, multangular, leafy. *Leaves* lanceolate, upper ones shorter. *Spike* 2—4 inches long, somewhat sparsely flowered. *Bractææ* linear-lanceolate; the lower ones equal to the flowers, the uppermost shorter. *Flowers* white. *Sepals* ovate obtuse, the lateral ones somewhat oblique, spreading or reflexed; the upper one connivent with the linear-lanceolate petals, and somewhat arched over the column. *Lip* linear, entire obtuse, dilated at the base. *Spur* as long as the lip, a little shorter than the ovarium; obtuse, somewhat incurved. *Cells of the anther* subdistant at the base. *Glands* of the pollinia distinct.

HAB. In deep sphagnous swamps, not uncommon in the northern part of the state. I have also seen specimens from Quebec, and from Sault St. Marie. Flowers June—July.

OBS. The plant described above agrees entirely with *Orchis dilatata* of Pursh, but is not the plant commonly known to our botanists under that name. The true *O. dilatata*, as I consider it, has white flowers with the lip linear and distinctly dilated at the base. The plant referred to this species in Torrey's Compendium, Beck's Flora, &c. has greenish flowers, with the lip lanceolate, acutish, not distinctly dilated at the base, and cannot be distinguished from *O. hyperborea* of Pursh. I have seen no specimens corresponding in all respects with the figure and detailed description of the *Habenaria dilatata* of Hooker, *Exot. Fl. l. c.* His plant appears to connect this with the succeeding species.

26. *H. HYPERBOREA* *R. Brown in Hort. Kew. V. p. 193. Rich. in Frankl. Jour. App. p. 33. (v. sp. in Herb. Torr.) Orchis hyperborea, Willd. sp. Pl. IV. p. 37? Pursh, Fl. II. p. 588.*

Throughout the Northern states, in similar situations with the preceding: not uncommon. Flowers in July.

OBS. This species differs from the preceding principally in having greenish-yellow flowers, with a lanceolate lip which is not dilated at the base. The spur is about one half the length of the ovarium, obtuse or somewhat acute and incurved. The size of the plant is quite variable. It often occurs 6—12 inches in height, with a somewhat ovate or oblong spike of flowers. In this state it agrees entirely with specimens of *H. hyperborea* collected in the arctic regions of America by Dr. Richardson. In favourable situations it not unfrequently attains the height of 2 or 3 feet, with a virgate spike 6—8 inches in length, and in this state is the *H. dilatata* of most American botanists.

27. *H. HERBIOLA*, *R. Brown, in Hort. Kew. V. p. 193. Orchis herbiola, Pursh. Fl. II. App. p. 743.*

Watertown, Jefferson county. Flowers in June.

OBS. Flowers greenish-yellow. Lip oblong, obtuse, bidentate at the base, with a projecting tooth on the palate.

28. *CYPRIPEDIUM ARIETINUM*, *R. Brown in Hort. Kew. Pursh, Fl. II. p. 595. Arietinum Americanum, Beck, Fl. N. & Middle States, p. 352.*

Near Oneida Lake.

SMILACEÆ.

29. *STREPTOPUS AMPLEXIFOLIUS*, *De Cand. Fl. Fran III. p. 174.*

β. *AMERICANUS* (*Rœm. & Schult. VII. p. 311.*); *stigmatē fere integro; pedunculis supra medium geniculatis. S. distortus, Michx. Fl. I. p. 200. Torrey, Fl. I. p. 353.*

In deep swamps near Utica.

JUNCEÆ.

30. *JUNCUS STYGIUS*, *Linn. Willd. Sp. Pl.* II. p. 215.
Wahl. Fl. Succ. 1. p. 213.

In an extensive sphagnous swamp bordering Perch Lake, Jefferson county : August. This species has not previously been known as a native of North America.

31. *J. SETACEUS*, *Rostkow, Junc.* p. 13. *tab.* 1. *Torrey, Fl.* 1. p. 360.

Shore of Lake Ontario, near Sackett's Harbour.

32. *J. ECHINATUS*, *Muhl. Gram.* p. 207. *Ell. Bot. S. Car. & Georgia*, I. p. 410.

With the preceding ; perhaps not distinct from *J. polycephalus*, *Michx.*

PODOSTEMEÆ.

33. *PODOSTEMON CERATOPHYLLUM*, *Michx. Fl.* II. p. 165.
tab. 44.

In flowing water, Watertown, Jefferson county, *Dr. Craue.*

GRAMINEÆ.

34. *VILFA HETEROLEPIS*, (*sp. nov.*) ; foliis setaceis ; panícula pyramidata, sparsiflora ; gluma inferiore subuliformi, superiore ovata, cuspidata, subduplo breviori ; valvulis perianthio subæqualibus, muticis, gluma extima paulo minori.

Root perennial. *Culm* 1—2 feet in height, smooth. *Leaves* convolute-setaceous, with the margins hispidly scabrous upward ; the lower ones equalling the culm ; the upper ones much shorter. *Lower sheaths* pilose ; upper ones smooth. *Panicle* pyramidal, spreading or subcontracted ; branches solitary, nearly simple, few and loosely flowered. *Glumes* purplish ; the outer one reduced to a subula, about one half the length of the inner one, which is strikingly membranaceous in texture, ovate or ovate-oblong, one-nerved, with the nerve produced into a short cusp. *Valves of the perianth* oblong-lanceolate, rather obtuse, thin and membranaceous, a little shorter than the superior glume. *Inferior valve*, obscurely one-

nerved, slightly apiculate. *Superior valve* two-nerved, a little shorter than the outer one. *Stamens* 3. *Anthers* large, linear, orange-red. *Stigmas* 2, hairy. *Styles* very short. *Caryopsis* subglobose, coriaceous, smooth and shining.

HAB. On rocks, Watertown, Jefferson county, *Dr. Craze*. Flowers Aug.—Sept. I have also specimens collected near New Haven, Connecticut, by Mr. J. D. Dana. In Muhlenberg's herbarium there is a fragment of this grass with a specimen of *V. juncea*, from the late Dr. Baldwin. The locality is not noted on the label, but it was most probably collected in Delaware. Dr. Torrey has also received specimens from the vicinity of Montreal.

35. *V. VAGINIFLORA*, *Torrey*, in *Gray's Gram. & Cyp.* I. n. 3. *Agrostis virginica*, *Muhl. Gram.* p. 74. *Torrey, Fl. I.* p. 89. *non Linn.*

Watertown, Jefferson county.

36. *PANICUM XANTHOPHYSUM*, *Gray, Gram. & Cyp.* I. n. 28.

Whole plant light green, becoming yellowish in drying. *Root* perennial. *Culm* simple or branching from the base, 12—15 inches high, glabrous. *Leaves* broad-lanceolate, 3—6 inches in length, 4—6 lines broad, acute, strongly nerved, nearly smooth, ciliate at the base. *Sheaths* villose, shorter than the joints. *Peduncles* elongated when old. *Panicle* sub-simple, few-flowered, with the branches appressed, nearly smooth, *Spikelets* globose-obovate, as large as in *P. latifolium*. *Glumes* pubescent; the inferior one oblong, acutish, 3-nerved, about half the length of the 9-nerved superior one. *Abortive floret* staminiferous, 2-valved; inferior valve equalling the superior glume; superior valve shorter membranaceous. *Perfect floret* cartilaginous, rather obtuse, smooth and shining, equalling the superior glume.

HAB. In dry pine barrens, near Oneida Lake; and Hamilton, Madison county, *Dr. J. S. Douglas*. Flowers June and July. This interesting species has also been found at Conway,

ne, and on the White Mountains of New Hampshire by *Dr. Pickering*, and at Burlington, Vermont by *J. Carey, Esq.* also near Lake Winnipeg, by *Dr. Richardson*.

CYPERACEÆ.

37. *CAREX CHORDORRHIZA*, *Willd. Sp. Pl. IV. p. 219. Wahl. Fl. Suec. II. p. 588.*

In an elevated sphagnous swamp, Bridgewater, Oneida county. I have recently received this plant, hitherto unknown in this country, from Seneca county, *Dr. Sartwell*, and St. Lawrence county, *Dr. Crawe*.

38. *C. LIVIDA*, *Willd. Sp. Pl. IV. p. 28. Wahl. Fl. Suec. II. p. 601. Schk. Car. tab. ssss. fig. 211. C. limosa, var. livida, Wahl. Act. Holm. 1803, p. 162. C. Grayana, Dewey, Caricog. in Am. Jour. Sc. XXV. p. 141. tab. S. fig. 59.*

In a sphagnous swamp near Utica. This species has also been detected on the Rocky Mountains by Mr. Drummond; and at Hudson's Bay by *Dr. Richardson*. My specimens agree in every respect with an European specimen of *C. livida* in the herbarium of the late Rev. Mr. Schweinitz; but I have never, except in a single specimen, noticed the distant or sub-radical peduncles, as in Schkuhr's figure. Wahlenberg, however, in his *Flora Suecica*, remarks that the disposition of the pistillate spikes upon the culm is variable.—Whole plant glaucous. Culm 4—10 inches in height. Glumes of the pistillate spike for the most part obtuse, but sometimes a little acute. Flowers in June.

39. *C. FOLLICULATA*, *Linn. Sp. Pl. n. 1387. Rudge, in Linn. Trans. VII. p. 98. tab. 9. f. 4. non Schkuhr et Auct. C. xanthophysa, Wahl. Car. n. 73. Dewey, Caricog. l. c. VII. p. 274, & X. tab. D. f. 15. Schw. & Torr. Carr. in Ann. Lyc. Nat. Hist. New York, I. p. 339. Spreng. Syst. Veg. III. p. 824. C. folliculata, β . xanthophysa, *Muhl. Gram. p. 244. C. rostrata, Mich. Fl. II. p. 173. (vide Torrey.)**

In cedar swamps, &c. not uncommon in the western part of the state. Flowers in June and July.

OBS. It appears, by a letter from the late Sir James E. Smith to Prof. Torrey, that the plant well known to American botanists as *C. xanthophysa*, is *C. folliculata* of the Linnæan herbarium. The specific character of Linnæus, "spicis terminalibus pedunculatis, mascula fœmineaque, capsulis subulatis longitudine spicæ," would at once be noticed as inapplicable to *C. folliculata* of Schkuhr and succeeding botanists. The figure of Rudge, in the Linnean Transactions, well represents our *C. xanthophysa*, with only two (sub-approximate) pistillate spikes; a form which is by no means uncommon. The specimen from which the figure of Rudge was taken, is said to be the same as one under the name of *C. folliculata* in the Banksian herbarium. It is evident, therefore, that the original name of Linnæus must be restored to this species.

40. *C. INTUMESCENS*, Rudge, in *Linn. Trans.* VII. p. 97. *tab. 9. f. 3.* *C. folliculata*, *Schk. Car. f. 52.* *Michx. Fl. II. p. 172.* *Willd. Sp. Pl. IV. p. 281.* *Schw. & Torr. Car. p. 338. non Linn.*

In wet meadows and swamps; common. Flowers early in June.

OBS. This plant, the *C. folliculata* of Schkuhr, Willdenow, and all American botanists, is well figured by Rudge, in the Transactions of the Linnean Society as above quoted. It not unfrequently bears a single pistillate spike, as figured by Schkuhr.

β. *GLOBULARIS*; culmo crassiore; spicis fertilibus globosis, multi- (20—30) floris.

HAB. In meadows; Utica. Flowers in July.

OBS. This variety is characterized by its larger and coarser habit, and by its globose, many-flowered pistillate spikes. It flowers a month later than the ordinary form of the species, and when young might readily be mistaken for *C. lupulina*.

41. *C. BLEPHAROPHORA*, (*sp. nov.*); spica mascula solitaria, erecta; femineis ternis vel quaternis, oblongo-cylindraceis, nutantibus; stigmatibus tribus; perigyniis ovatis, rostratis, bidentatis, glumam ciliolatam, obtusiusculam, æquantibus; foliis bracteisque ciliatis.

Culm 12—18 inches in height, smooth and slender, leafy at the base. *Leaves* linear, much shorter than the culm, ciliate, and with the sheaths pubescent on the nerves. *Bracteæ* minute, squamaceous, not sheathing the peduncles, cuspidate, with the cusps somewhat hispidly ciliate; the lower one nearly an inch in length. *Stam. spike* oblong, obscurely trigonous, on an erect peduncle about an inch long. *Glumes* oblong, membranaceous. *Pist. spikes* 3—4, oblong-cylindric, rather densely flowered, on filiform, nodding peduncles about their own length; the upper spikes often more or less sterile (not staminiferous), the lowest sometimes remote. *Perigynium* (fruit) ovate, obsolete triquetrous when young, smooth, attenuated into a straight beak nearly as long as itself; orifice bidentate. *Glumes* ovate, rather obtuse, one-nerved, membranaceous, ciliate, equalling the fruit. *Caryopsis* triquetrous.

HAB. In moist shady places, Bridgewater, Oneida county, in company with *C. aurea* and *C. flava*. Flowers in June.

OBS. This species should be placed between *C. sylvatica* and *C. miliacea*. It somewhat resembles *C. patula*, *De Cand. Syn. Fl. Gall.* p. 144; which differs, however, in having foliaceous bracteæ, trigonous fruit, and naked glumes.

42. *C. ARISTATA*, *R. Brown*, in *Rich. App. Frankl. Jour.* p. 36. *C. atherodes*, *Spreng. Syst.* III. p. 828.

Watertown, Jefferson county, *Dr. Craue*.

Our plant agrees entirely with specimens in the herbarium of Dr. Torrey, collected at Cumberland House, &c. by Dr. Richardson.

43. *C. HITCHCOCKIANA*, *Dcwey, Caricog. l. c. X.* p. 274, *tab. E. fig. 17.*

Watertown, Jefferson county, *Dr. Crave*; Penn-Yan, Yates county, *Dr. Sartwell*, Cayuga county, *J. Carey*.

FILICES.

44. *ASPIDIUM ACROSTICHOIDES*, *Willd. Sp. Pl. V. p. 225.*

β. INCISUM; pinnis inequaliter inciso-dentatis: soris plerumque distinctis. *A. Schweinitzii*, *Beck, Bot. N. and Middle States*, p. 449.

HAB. In woods and shady ravines, near Hamilton College; growing with, and insensibly passing into, the ordinary form of the species.

OBS. *Dr. Beck* suggests that this plant may be identical with a species brought from the North West coast of America by *Menzies*, and mentioned by *J. E. Smith*, under *A. auriculatum*. *Dr. Torrey's* herbarium contains a specimen of this plant, collected by *Dr. Sconler*. It differs widely from our plant, and is without doubt a distinct species.

45. *PTERIS GRACILIS*, *Michx. Fl. II. p. 262. Pursh, Fl. II. p. 668.*

Penn-Yan, Ontario county, *Dr. Sartwell*.

MONOGRAPH of North American CYPERACEÆ.

By JOHN TORREY.

Read August 8th, 1836.

THE natural family CYPERACEÆ comprehends at least 1600 recorded species, and about 100 genera. It belongs to the great class Endogenæ, and the cohort Glumaceæ. On the one hand it is nearly related to Gramineæ, and on the other to Restiaceæ. From the former it is distinguished by its solid, and mostly angular culms, entire leaf-sheaths, and embryo partly included in the albumen; and from the latter by its nucamentaceous fruit, entire leaf-sheaths, and the position of the embryo. The genera of this order were very imperfectly characterized until the appearance of Dr. Brown's incomparable *Prodromus Floræ Novæ Hollandiæ* in 1810, in which work a great number of Cyperaceous genera are described with the precision for which this author is so celebrated. Before the publication of that work, Richard, in Persoon's *Synopsis*, (1805) described several new genera of Cyperaceæ, and characterized them in a perspicuous manner. Vahl, also, in his *Enumeratio Plantarum*, vol. 2. (1806) revised that part of the order belonging to Triandria Monogynia of the sexual system, and described some new genera. In 1819, Lestiboudois published his *Essai sur la Famille des Cypéracées*, in which he gave a good account of its organography, and a brief description of all the genera, including several new ones. He appears to have adopted the views of Palisot de Beauvois, which he frequently quotes. It is much to be regretted that the work on Cyperaceæ promised by that celebrated agrostographer has never been published. A memoir containing some valuable observations on this order was communicated to the Institute of France, by M. Kunth, and printed in the *Annales du Muséum* (1809).

Agardh, in his *Aphorismi Botanici*, (1823) gave a good description of the characters of the family, together with a list of the genera, and the number of species belonging to each genus. Lindley, in his *Introduction to the Natural System of Botany*, (1830) has given, in a clear but succinct manner, the characters, affinities, geography and properties of the Cyperaceæ. He states, in a note, that Mr. Prescott of St. Petersburg has long been making these plants an especial study, but the botanical world has not yet been favored with the results of his labours. The botanist who has lately directed his attention to the Cyperaceæ with the greatest success is Professor Nees ab Esenbeck of Breslau. This accomplished and indefatigable cultivator of our science, prepared about the same time two valuable memoirs on the Cyperaceæ, one of which, inserted in the ninth volume of the *Linnaea*, (for 1834) is entitled *Uebersicht der Cyperaceengattungen*: the other under the title of *Cyperaceæ Indicæ*, forms a large part of Dr. Wight's "Contributions to the Botany of India," which appeared in the same year. The former, besides a synopsis of all the genera of the order, and a list of the species examined by the author, contains some profound observations on the structure of the floral organs. He considers the hypogynous bristles, hairs, squamulæ, and petaloid bodies which occur in most of these plants, as metamorphosed stamens, and not divisions of a perianth.* Respecting the position of the embryo he gives no opinion. He announces his intention to publish at some future day a full monograph of this immense family.

The Cyperaceæ of North America have been studied with considerable care by many botanists. In the time of Linnæus very little was known concerning even the European species; and in his last edition of the *Species plantarum* (1764)

* *Linnaea* 8, p. 277 et seq. But in his *Cyp. Ind.* (p. 93.) he seems to take another view of these organs. "*Puirena Vaginaris* flos e tribus verticillis constat; scil. 1mo, Calyce trisepalo, sepalis setaccis. 2do, Corolla tripetala, petalis unguiculatis cum sepalis alternis. 3tio, Stamimbus tribus sepalis oppositis angulisque ovarii respondentibus. Igitur, 4to, Carpellis tribus petalis oppositis planis valvatin connatis," &c.

we find only eleven species (belonging to five genera) recorded as natives of North America. In the *Species Plantarum* of Willdenow, (vol. 1. part 1, 1797, and vol. 4, part 1, 1805, which contain all the *Cyperaceæ*) we find 60 North American species, 42 of which belong to the genus *Carex*, and were mostly communicated to the author by Muhlenberg. The *Flora Boreali-Americana* of Michaux, (1803) edited in part by the elder Richard, contains only 54 species of *Cyperaceæ*, which are, however, very accurately described. The second volume of Vahl's *Enumeratio Plantarum*, published in 1806, contains much original information respecting these plants. He described some important new genera, and a great number of new species, but his work contains comparatively few North American *Cyperaceæ*. Persoon, in his *Synopsis Plantarum* (1805—6,) added very little to our knowledge of the *Cyperaceæ*, except the materials contributed by Richard. He described no new N. American species. Pursh was evidently not familiar with the plants of this order, although he records in his *Flora* (1814) most of the species described by preceding writers. His list comprises 119, only three or four of which are new. Nuttall does not profess to have studied the *Cyperaceæ* with particular care, and in his *Genera of North American plants*, (1818) he merely gives a catalogue of the species enumerated in botanical works, amounting to 174. He, however, described two new species of *Carex*. The late Dr. Muhlenberg devoted much attention to the *Cyperaceous* plants and *Grasses* of this country, and his posthumous work entitled *Descriptio uberior Graminum et Plantarum calamariarum, &c.* contains faithful detailed descriptions, without diagnostic characters, of 138 *Cyperaceæ*. The latest general enumeration of this family is that of Sprengel, in his *Systema Vegetabilium*, (vol. 1, 1825, and vol. 3, 1826,) where we find recorded 178 species as inhabiting North America. In my catalogue of the genera of North American plants published in the appendix to the American Edition of Lindley's *Introduction to the Natural System*, (1831) the number of *Cyperaceæ* is 247, or one fif-

teenth part of the phænogamous vegetation. The list in the present monograph is increased to 326, but the proportion which they bear to the whole number of phænogamous plants remains about the same, owing to the great additions which have been made to our Flora within a few years past.

It affords me great pleasure to record the labours of some of our own botanists in this field. The late excellent Mr. Elliott, in his work modestly entitled *A Sketch of the Botany of South Carolina and Georgia* (1817—1824,) accurately described a great number of Cyperaceæ, among which are many new species. Prof. Dewey's *Caricography*, published in *Silliman's Journal*, (vol. 7—30, 1824—1836,) is an exceedingly valuable account of our native species of *Carex*. The first volume of the *Annals of the Lyceum of Natural History* contains an Analytical table of North American Carices, communicated in 1823 by the late lamented Dr. L. D. von Schweinitz, in which the essential characters of the species known at that time are given in a perspicuous manner, and several new species are indicated, most of which have been subsequently confirmed. The *Monograph of North American Carices* by Mr. Schweinitz and myself, was published the following year in the second volume of the same work. The monograph of North American Rhynchosporæ, published in the present volume of the *Annals of the Lyceum*, and the volumes of North American Gramineæ and Cyperaceæ by my esteemed friend Dr. Gray, are most valuable contributions to the Flora of this country. In the difficult genus *Rhynchospora* the author has doubled the list of indigenous species before recorded, and has described them with such clearness that hereafter their determination will be comparatively easy.

A paper, entitled "*Cyperaceæ novæ*," &c. by Dr. C. A. Meyer, (published in the *Mémoires présentés à l'acad. St. Petersb.* 1830) contains excellent descriptions and figures of several Cyperaceæ, mostly from Russian America, many of which have been identified by means of a suite of specimens from Sitcha and Unalashka, communicated by M. Bongard of the St. Petersburg Imperial Academy.

TABLE

EXHIBITING THE GEOGRAPHICAL DISTRIBUTION OF NORTH AMERICAN CYPERACEÆ.

TRIBES AND GENERA.	Whole number of Species.	Exclusively N. American.	Common to most parts of the U. S. east of the Mississippi.	Exclusively Southern.	United States north of Virginia.	Northwest Coast and Russian possessions.	Texas.	British America and Arctic Regions.	Common to N. and S. America, or to N. America & W. Indies.	Native also of the E. Indies.	Common to N. America and Europe.
Tribe I. CYPEREÆ.											
Gen. 1. <i>Dalichium</i> - - -	1	1	1	0	0	0	0	1	0	0	0
Gen. 2. <i>Cyperus</i> - - -	44	35	12	16	2	1	16	2	4	2	1
Gen. 3. <i>Mariscus</i> - - -	1	1	1	0	0	0	0	0	0	0	0
Gen. 4. <i>Kyllingia</i> - - -	3	2	1	2	0	0	0	0	0	1?	0
Tribe II. HYPOLYTREÆ.											
Gen. 5. <i>Lipocarpa</i> - - -	1	1	0	1	0	0	0	0	0	0	0
Gen. 6. <i>Fuirena</i> - - -	3	3	1	2	0	0	0	0	0	0	0
Tribe III. SCIRPEÆ.											
Gen. 7. <i>Abildgaardia</i> - -	1	1	0	0	1	1	0	0	0	0	0
Gen. 8. <i>Chaetocyperus</i> - -	1	1	0	1	0	0	0	0	0	0	0
Gen. 9. <i>Eleocharis</i> - - -	19	15	7	8	2	1	1	1	1	1	3
Gen. 10. <i>Scirpus</i> - - -	15	10	7	1	5	3	0	2	1	1	4
Gen. 11. <i>Eriophorum</i> - - -	10	2	1	0	4	2	0	7	0	0	7
Gen. 12. <i>Elytrospermum</i> - -	1	1	0	0	0	1	0	0	0	0	0
Gen. 13. <i>Fimbristylis</i> - - -	3	3	2	1	0	0	0	0	0	0	0
Gen. 14. <i>Isolepis</i> - - -	8	8	1	5	1	0	1	0	0	0	0
Gen. 15. <i>Trichelostylis</i> - -	1	1	1	0	0	0	0	0	0	0	0
Tribe IV. RHYNCHOSPOREÆ.											
Gen. 16. <i>Dichromena</i> - - -	2	2	0	2	0	0	0	0	0	0	0
Gen. 17. <i>Psilocarya</i> - - -	3	3	0	1	1	0	1	0	0	0	0
Gen. 18. <i>Rhynchospora</i> - -	28	26	5	19	3	0	4	0	0	0	2
Gen. 19. <i>Ceratoschœnus</i> - -	2	2	1	0	1	0	0	0	0	0	0
Tribe V. CLADIEÆ.											
Gen. 20. <i>Cladium</i> - - -	2	2	0	1	1	0	0	0	0	0	0
Tribe VI. SCLERIEÆ.											
Gen. 21. <i>Scleria</i> - - -	7	7	4	3	0	0	0	0	0	0	0
Gen. 22. <i>Hypoporum</i> - - -	4	4	0	3	1	0	0	0	0	0	0
Tribe VII. ELYNEÆ.											
Gen. 23. <i>Elyna</i> - - -	1	0	0	0	0	0	0	1	0	0	1
Tribe VIII. CARICEÆ.											
Gen. 24. <i>Carex</i> - - -	164	120	40	10	59	18	7	99	0	0	46
Gen. 25. <i>Uncinia</i> - - -	1	1	0	0	0	0	0	1	0	0	0
TOTAL - - -	326	252	85	76	81	27	30	114	6	5	61

In arranging the *Cyperaceæ* described in the following pages, I have adopted the classification of Nees ab Esenbeck, as given in the 9th volume of the *Linnaea* already quoted, without, however, agreeing with the learned author in all his views, particularly in the extent to which he has divided some of the older genera. The characters of his tribes and genera are so brief, that I have thought it expedient to enlarge, and in many cases to modify them materially. In framing the diagnoses of the species, it may be thought by some botanists that I have employed characters which are too microscopic, but this course was absolutely necessary, since the most certain marks of discrimination in this family exist in the minute and highly organized parts of fructification, which until lately have been very little regarded by botanical writers. The form, texture, relative size, position, &c. of the scales, perianth, nut, and style, afford characters on which we can place the most reliance in the *Cyperaceæ*.

The accompanying table exhibits a view of the North American genera of this family, arranged according to the Synopsis of Nees ab Esenbeck, with the number of species belonging to each genus, and the proportion which the endemic species bear to those which also inhabit Europe, or other parts of the world.

Of the Tribe *Cypereæ* the greatest proportion belong to the Southern States. The genus *Cyperus* itself scarcely extends into Canada, and in all New England not more than 7 or 8 species have been found. Proceeding south they become more frequent, and the maximum is attained in the regions bordering the Gulf of Mexico. *Kyllingia* does not occur north of Pennsylvania. *Mariscus* is found throughout the United States, and *Dulichium*, a doubtful member of this tribe, has an equally extensive range.

Hypolytreæ constitute a small tribe. *Lipocarpha* is peculiarly southern, and *Fuirena* is rarely found as far north as Boston; and, in the northern and middle states, only in the vicinity of the ocean.

Scirpeæ are widely distributed, but at least two thirds of the species occur south of Virginia. *Abildgaardia* and *Elytrospermum* have only been observed on the Pacific coast of America. The genuine species of *Scirpus* range from the Arctic regions to Florida, and from the Atlantic to the Pacific; and *Eleocharis*

has a similar range. *Eriophorum* is a northern genus, only one of its species extending beyond Pennsylvania. *Chætocyperus* is peculiar to the south. *Fimbristylis* does not reach the northern limits of the United States. *Isolepis* is chiefly southern. Our solitary species of *Trichelostylis* occurs in nearly all parts of North America south of Canada.

Rhynchosporæ are, with few exceptions, southern plants. *Dichromena* is not found north of Virginia nor far from the ocean. Two *Psilocaryæ* are southern, and a third has been observed only in Massachusetts. Of the 28 species of *Rhynchospora* but four are found as far north as Boston, and only eight belong to the middle states; the remainder are mostly peculiar to the southern states, but many of them extend west to Texas. Of the two species of *Ceratoschœnus*, one inhabits a large part of the United States south of Delaware and west to the Mississippi; the other is found only in New England.

The tribe *Cladiæ* is represented by two species of the genus *Cladium*, one of which is northern, the other southern.

Of *Scleriæ* we have but two genera and eleven species, two or three of which have an extensive range in latitude and longitude, but most of them are southern and are confined to the vicinity of the ocean.

A solitary species of the small tribe *Elyneæ* inhabits the boreal regions of the continent.

The vast genus *Carex*, which almost exclusively constitutes the tribe *Cariceæ*, predominates in the northern parts of the continent, and many of its species are peculiar to the boreal and arctic regions; but a large number inhabit almost every part of North America. Of *Uncinia* we have but a single species, a native of British America.

It remains for me to state the sources from whence I obtained a large portion of the materials used in the preparation of this monograph.

To my much valued friend Sir William J. Hooker I am greatly indebted, not only for free access to his unrivalled herbarium, but for a liberal supply of specimens from the collections made by Dr. Richardson, T. Drummond and other travel-

lers in British America, for many specimens from the North West Coast, and for a set of Mr. Drummond's plants collected in Louisiana and Texas, containing many rare species of this family. To my excellent friend G. W. Arnott, Esq. of Scotland, I am under many obligations for a good set of the Cyperaceæ collected by Dr. Wight in the Peninsula of India, which have been of great use to me in the examination of our native species, as they are duplicates of the collection from which N. ab Esenbeck prepared his Cyperaceæ Indicæ. I have also received many other exotic Cyperaceæ from Mr. Arnott and Dr. Lindley. Major Le Conte, Rev. M. A. Curtis of North Carolina, H. B. Croom, Esq. of Tallahassee, Dr. Chapman of Middle Florida, Dr. Ingalls of New Orleans, and Dr. Loomis of Georgia have supplied me with numerous specimens of southern Cyperaceæ. Dr. Pitcher of the Army, has contributed some valuable materials from Arkansas, and from the borders of the great lakes. The late estimable Stephen Elliott, Esq. supplied my herbarium with several of the Cyperaceæ described in his excellent Flora; and I only regret that I have not been able, by an examination of his own herbarium, to verify all the species which he has described. Prof. Dewey has sent me most of the Carices described in his valuable Caricography. My valued friend B. D. Greene, Esq. of Boston has supplied me with New England and southern Cyperaceæ, and likewise loaned me his entire set of Texan plants collected by the late Mr. Drummond. T. A. Greene, Esq. and Prof. Hitchcock of Amherst, have contributed several interesting plants of this family, from Massachusetts. To my highly esteemed correspondent, Dr. Short of Kentucky, as also to Dr. Peter, I am greatly indebted for large supplies of the Cyperaceæ of that state. My excellent friend, J. Carey, Esq. has greatly obliged me by the communication of many valuable observations on the subjects of this monograph, as well as by supplying me with specimens from various localities. Some interesting Cyperaceæ have been obligingly sent to me by Dr. Darlington, from Chester County, Pennsylvania. My lamented friend the late Rev. Dr. Schweinitz was a large contributor to my herbarium,

and some rare southern Cyperaceæ were received through his liberality. After his decease, I obtained from his amiable widow a portion of the herbarium of the late Dr. Baldwin, which is particularly rich in the Cyperaceæ of the southern states. My friend Dr. Barratt, of Connecticut, has sent me several extensive collections of Carices and other plants of this order, from the Highlands of New York, Vermont, the White Hills of New Hampshire, and Connecticut. Most valuable aid has been afforded me, not only in the communication of specimens, but in every part of this work by my friend Dr. Gray. The revision of the Rhynchosporæ is entirely his own; and the Synopsis of North American Carices, I wish to have considered as our joint performance. It was thought unnecessary to prepare descriptions of these plants, except of the new species, as they have so recently been made the subjects of monography by Prof. Dewey, and also by Dr. Schweinitz and myself. To Charles Pickering, M. D., curator of the Herbarium of the Academy of Natural Sciences in Philadelphia, my best thanks are due for the valuable aid he has afforded me in examining the extensive collection under his charge. This herbarium contains all Mr. Schweinitz's plants, a full set of Dr. Baldwin's, most of Nuttall's, besides a vast number of specimens from all parts of the world. The herbarium of Dr. Muhlenberg has been repeatedly examined, and nearly all his Cyperaceæ identified. Michaux's herbarium in the Jardin des Plantes of Paris was carefully examined in the summer of 1833, and most of his Cyperaceæ satisfactorily determined. The herbarium of Pursh, now incorporated in the immense collection of A. B. Lambert, Esq. of London, was, with the characteristic liberality of that gentleman, placed under my inspection; but I found it very deficient in Cyperaceæ.

It is, perhaps, hardly necessary to state that the exclamation point used in the succeeding pages is employed in accordance with the practice of De Candolle and other recent botanical writers. When affixed to the name of an author or correspondent it indicates that an original or authentic specimen has been examined or received by myself. Localities from which I have seen specimens are designated by the same sign.

TRIBE I. CYPEREÆ.

FLOWERS perfect. SPIKELETS distichously imbricated (rarely in a spike imbricated on all sides), mostly naked, one or many-flowered. PERIGYNIUM none, or setaceous, or cup-shaped. INTERIOR SCALES growing to the rachis of the spikelet, sometimes becoming free, or altogether wanting. NUT compressed or triangular, rarely rostrate or crowned with the persistent base of the style.

A. *With a Perigynium.*1. DULICHIUM, *Richard.*

SPIKELETS compressed, distichously imbricated, many-flowered. BRISTLES of the perigynium 6—9, rigid, retrorsely hispid. STAMENS 3. STYLE very long, bifid at the summit. NUT compressed, linear-oblong, acuminate by the long persistent style.—Culm terete, leafy; leaves short and spreading; spikes axillary, compound, with the spikelets distichously arranged on a common rachis.—*Richard in Pers. syn.* 1. p. 65; *Nutt. gen.* 1. p. 35; *Lestib. ess. fam. Cyp.* p. 37. no. 40; *N. ab Esenb. in Linnæa*, 9. p. 283. SCHCENI sp. *Vahl, &c.* CYPERI sp. *Linn.*

DULICHIUM SPATHACEUM, *Persoon.*

Pers. syn. l. c.; *Pursh, fl.* 1. p. 53; *Elliott, sk.* 1. p. 73. t. 2. f. 3; *Torr.! fl.* 1. p. 58; *Darlingt.! fl. Cest.* p. 9. ed. 2. p. 17; *Beck! bot. N. & M. St.* p. 422; *Gray! N. Amer. Gram. & Cyp. part 2. no.* 131; *Spreng. syst.* 1. p. 194.

Schœnus spathaceus, Linn. sp. ed. 2. p. 63.

S. angustifolius, Vahl, enum. 2. p. 225; *Ram. & Schult. syst.* 2. p. 71.

Scirpus spathaceus, Michx.! fl. 1. p. 32.

Cyperus spathaceus, Linn. syst. p. 84; *Willd. sp. 1, p.* 289; *Muhl.! gram.* p. 26; *Big. fl. Bost. ed. 2. p.* 19.

CYP. racemis simplicibus lateralibus, &c. *Gron. Virg. ed. 1. p.* 131.

CYF. culmo tereti, &c. *Gron. Virg. ed. 2. p. 9.*

GRAM. junceum, elatius, &c. *Pluk. alm. 279. t. 301. f. 1.*

Culm about 18 inches high, terete below, obscurely triangular above, smooth. *Leaves* linear, flat, 2—3 inches long, 2—3 lines wide, acute, spreading almost horizontally in three directions; *sheaths* rather loose, truncate, brownish and naked at the throat. *Spikes* or racemes on short exserted peduncles, growing from the sheaths of the leaves, each bearing from 8 to 14 lanceolate-linear, distichously spreading spikelets, about three-fourths of an inch long. *Partial rachis* flexuous, 6—10-flowered, articulated, easily separating at the joints, which are excavated by the pressure of the nuts. *Scales* lanceolate, very acute, appressed, yellow-ferruginous with a green keel. *Bristles* seldom less than 7, and often 9, (16 *Vahl!*) strong and rigid, persistent, projecting a little beyond the scale when mature, longer than the nut without the style. *Stamens* 3; *filaments* very slender, longer than the bristles, and inserted within them at their base. *Style* attenuated into a long point, bifid at the extremity, smooth. *Nut* about a line and a half long, smooth and dull, light brown, contracted into a short pedicel at the base, flat at the back, and a little convex in front, the summit tapering into a long, straight point, formed of the inarticulate, persistent, undivided style.

HAB. Borders of ponds, and in swamps, from Canada! to Georgia and Pennsylvania! and west to the Mississippi.—August to September.

I have seen in the herbarium of my friend John Carey, Esq. a specimen of this plant, in which most of the nuts were in the state of *Ergot*; a disease which very rarely occurs in this natural order.

OBS. The genus *Dulichium* is very distinct in habit from any other Cyperaceous plant growing within the limits of our Flora, and there is considerable difficulty in determining the true section to which it belongs. In many respects it agrees with the *Scirpeæ*, in others with the *Rhynchosporeæ*. It resembles the *Cypereæ* in the distichous arrangement of the scales; and the spikelets long on the common rachis; but it differs from most of them in its rostrate fruit and rigid perigynous bristles.

The *D. Canadense* of Persoon is probably identical with this species, the number of florets in the spikelet being variable.

B. *Without a Perigynium.*† *Spikelets many-flowered.*2. CYPERUS, *Linn.*

SPIKELETS with the scales distichously imbricated. RACHIS generally margined with the adnate persistent interior scales. STAMENS 2—3, deciduous. STYLE 2—3-cleft, deciduous. NUT compressed or triangular.—Culms mostly triangular (rarely terete), simple, leafy at the base; corymb terminal, simple or compound; rays more or less elongated, ochreate at the base.

Cyperus, *Linn.*; *Juss. gen.* p. 27; *Lam. ill. t.* 38; *Ræm. & Schult. gen.* 183; *R. Brown, prodr.* 1. p. 212; *Lestib. ess.* p. 30. no. 23; *N. ab Esenb. in Linnæa*, 9. p. 283; *Nutt. gen.* 1. p. 34.

Pycrus, *P. de Beauv. in Lestib. ess.* p. 28. no. 17; *N. ab Esenb. in Linnæa*, l. c.

Papyrus, *A. du Petit-Thouars; Kunth, syn.* 1. p. 148; *Lestib. ess.* p. 31. no. 25; *N. ab Esenb. in Wight's contrib.* p. 69, & *in Linnæa*, 9. p. 286.

Torreyia, *Rafin. nov. gen. in jour. de phys.* 89. p. 105.

The genera Pycrus and Papyrus of several late writers on Cyperaceæ appear to differ too little from Cyperus to be separated from that genus. The diagnostic character of the former is the compressed nut and 2-cleft style, the genuine Cyperi having a triangular nut and trifold style; but the difference can hardly be regarded as of generic importance. Papyrus has the two interior scales (appendices, *Meyer*; perianthium bipaleaceum, *Lestib.*) separated from the rachis, either throughout their whole length or at their tips; but this character exists in several genuine species of Cyperus, especially in the mature spikelet; and in many others, the interior scales are very conspicuous, though inseparably united with the rachis. C. A. Meyer, (*in Mem. de l'Acad. Imp. de St. Petersb. VI. sér. t. 1. p. 202. t. 3. ff.*

1—8, 1830) has, in our opinion, clearly shown that the characters usually assigned to *Papyrus*, are insufficient for removing that genus from *Cyperus*. This excellent botanist, however, considers the “interior scales” of *N. ab Esenbeck*, as appendages of the glume immediately above them on the opposite side of the rachis, from which they proceed obliquely downward, and are inserted on each side of the rachis at the base of the subjacent glume, the stamens and ovary of which they closely embrace. In most of our species of *Cyperus* these scales or appendages can be more or less distinctly seen, and it must be allowed that they *appear* to constitute a part of the glume above them; but it may be doubted whether they are not mere winged margins of the rachis, (from which they sometimes split off, as in *C. erythrorhizos*,) rather than inner scales or bracteæ cohering with the rachis.

§ 1. *Style 2-cleft; nut compressed-lenticular.* PYCREUS,

1. *CYPERUS FLAVESCENS, Linn.*

Umbel of 2—4 short rays; spikelets linear, 14—20-flowered, rather obtuse, fasciculate and solitary on the common rachis; flowers triandrous; scales obtuse, one-nerved; nut minutely wrinkled transversely, suborbicular, slightly mucronate, shining.

C. flavescens, *Linn. sp.* 1. p. 68; *Muhl. ! gram.* p. 16; *Elliott, sk.* 1. p. 67?; *Torr. ! fl.* 1. p. 60; *Big. ! fl. Bost.* ed. 2. p. 18; *Beck ! bot.* p. 421; *Willd. sp.* 1. p. 279; *Ræm. & Schult. syst.* 2. p. 191; *Spreng. syst.* 1. p. 22).

Perennial. *Culm* 4—10 inches high, triquetrous, leafy near the base. *Leaves* about a line and a half broad, as tall as the culm. *Involucral leaves* 3, spreading thrice as long as the umbel. *Rays* of the umbel often very short, so that the spikes appear fasciculate; the longer ones seldom more than an inch in length, each bearing from 4 to 10 spikelets, which are crowded mostly in fascicles of 3—4 on the common rachis. *Spikes* half an inch or more in length, slightly tapering towards the summit, which is rather obtuse than acute, of a yellowish colour, sometimes 30-flowered. *Scales* broadly ovate, thin and membranaceous except on

the keel. *Stamens* always 3, often remaining attached to the rachis after the fall of the scale. *Style* deeply 2-cleft. *Nut* dark-brown, exactly lenticular, finely striate longitudinally, with distinct transverse wrinkles.

HAB. Low boggy places, particularly near salt water. Massachusetts! to Florida! and west to Kentucky! Not common. August—September.

OBS. Our plant differs in no essential character from the European *C. flavescens*.

C. poæformis of Pursh appears to be nothing but *C. flavescens* in an immature and imperfect state. His specimens in Lambert's Herbarium are scarcely sufficient to determine the species with certainty.

The synonym of Elliott may possibly belong to the next species.

2. CYPERUS DIANDRUS, Torrey.

Umbel of 2—5 short rays; spikelets lanceolate-oblong, much compressed, acute, many-flowered (14—24), alternate and subfasciculate on the common rachis; flowers diandrous; scales rather obtuse, one-nerved, membranaceous; nut oblong-obovate, somewhat scabrous, dull; style much exserted; culm obtusely triangular.

C. diandrus, Torr.! *cat. pl. N. York*, p. 90; & *fl.* 1. p. 61, *Schult. mant.* 2. p. 103; *Spreng.! syst.* 1. p. 217; *Beck! bot.* p. 421; *Darlington! fl. Cest.* ed. 2. p. 15; *Gray! Gram. and Cyp.* part 1. no. 70.

Perennial. *Culm* slender, 8—10 inches high, often bearing leaves half its length, frequently reclining, or decumbent, and generally solitary. *Leaves* few, bright green. *Involucre* of three very unequal leaves, two of which are 6—7 inches long. *Umbel* of few rays, which are sometimes so short that the spikelets are nearly sessile; rays when elongated, very unequal, each bearing towards its extremity 6—12 sessile spikelets. *Spikelets* spreading or reflexed, much compressed, so as to appear thin and flat. *Scales* ovate, with a broad light-brown margin and a green keel. *Stamens* sometimes three in the upper florets. *Style* 2-cleft nearly to the base, the divisions 3—4 times the length of the nut, and much exserted, so as to give the spikelets a woolly appearance. *Nut* gray or light-brown, mucronate, never shining.

HAB. In wet places, particularly near salt water, Massachusetts! to Pennsylvania!—Sept. n. b. r.

OBS. Nearly allied to *C. flavescens*, but differing in the form and colour of the spikelets, the diandrous flowers, and larger dull nuts, &c. It is easily recognised by its handsome, compressed, light-brown spikelets.

β. ? castaneus.

Culms cespitose; rays mostly very short; scales subcoriaceous, shining, closely imbricated; style scarcely exerted.

C. castaneus, *Big. ! fl. Bost. ed. 2.* (not of *Willd.*)

C. flavescens β. castaneus, *Pursh, fl. 1. p. 52.*

C. bicolor, *Bart. fl. Phil. 1. p. 27,* (not of *Vahl.*)

Plant about 3—4 inches high. Culms numerous, tough, and rather rigid, often prostrate. Spikelets oblong-lanceolate. Scales very closely imbricated, and of a firm texture, dark-chestnut on the sides, with a green keel. Stamens frequently 3 in the upper florets. Style scarcely twice the length of the nut, and generally making a short curve before emerging from the scale. Nut gray or light-brown, dull, somewhat scabrous.

HAB. On the muddy and sandy banks of rivers; Massachusetts! to Pennsylvania! Very common in New England! and in the western parts of the state of New York!—August, September.

OBS. The peculiar characters of this variety may be owing to the situations in which it grows. Its appearance, however, is very distinct from *C. diandrus*, as described above. Muhlenberg notices it in his *Desc. uber. gram.* as a “co-species” of *C. flavescens*.

3. CYPERUS NUTTALLII, *Torrey.*

Rays few, short or nearly sessile, loose; spikelets linear-lanceolate, compressed, acute; scales oblong-lanceolate, acute; stamens 2; nut oblong-obovate, very obtuse, dull; culms cespitose, acutely triangular; involucre 4-leaved, two of the leaves very long.

C. Nuttallii, *Torr. ! in Spreng. neue entd. 1. p. 240; Torr. ! fl. 1. p. 60; Schult. mant. 2. p. 109; Spreng. ! syst. 1. p. 222; Beck ! bot. p. 142; Gray ! Gram. and Cyp. part 1. no. 69.*

C. cæspitosus, Torr.! *cat. pl. N. York*, p. 89, (not of Poiret); Spreng.! *syst.* 1. p. 224.

C. Torreyanus, Schult *marit.* 2. p. 101.

C. tenuis, Muhl.! *gram.* p. 22. (in part.)

Perennial. Culms 4—12 inches high, forming dense tufts. Leaves narrow, nearly as tall as the culm. Umbel sometimes very distinctly rayed, the rays 3—4 in number, usually very short. Involucre of two short and two very long leaves. Spikelets alternate, sometimes compound, closely approximated on the rachis, nearly an inch in length, and a line and a half broad, much compressed, very acute. Scales loosely imbricated, especially when the spikes are mature, rather cartilaginous, very minutely three-toothed at the tip; the sides of a yellowish-brown colour, the keel green. Stamens always 2. Style deeply two-parted. Nut gray or light-brown, narrow-obovate, and almost truncated at the apex; under a strong lens somewhat roughened with minute elevated dots.

HAB. On the borders of salt marshes; very abundant in the vicinity of New York! and along the coast of New Jersey! North Carolina, Mr. Curtis!; Charleston, South Carolina, B. D. Greene, Esq.!; Alabama, Dr. Gates!; New Orleans, Dr. Ingalls!

4. CYPERUS FLAVICOMUS, Michx.

Umbel many-rayed, somewhat compound; spikelets lanceolate-linear, numerous, many- (12—30)-flowered, spreading; scales oblong, very obtuse, with a broad scarious margin, when mature distinct, and somewhat spreading; stamens 3; nut obovate, with a short abrupt point.

C. flavicomus, Michx.! *fl.* 1. p. 27; Pursh, *fl.* 1. p. 53; Elliott! *sk.* 1. p. 71; Muhl.! *gram.* p. 24; Vahl, *enum.* 2. p. 260; Ram. & Schult. *syst.* 2. p. 215.

Annual? Culm 1-3 feet high, triangular. Involucre 3—5-leaved, very long, somewhat glaucous. Umbel spreading; rays about five, 2—3 inches long. Spikelets three-fourths of an inch long, and one and a half line wide; on the lower part of the rachis compound, spreading horizontally or even reflexed, when old. Scales somewhat emarginate, the sides light yellowish-brown, with a green three-nerved keel, and a conspicuous white

scarious margin. *Stamens* commonly 3. *Style* short, two-cleft. *Nut* punctulate, dark-brown, or black.

HAB. In bogs, and also in dry soils; South Carolina and Georgia, *Muhlenberg!* and *Elliott!*—May to September.

OBS. This species appears to be confined to the southern states, and I doubt whether it has been found north of South Carolina. It is easily distinguished by its remotely-flowered spikelets, and very obtuse, almost truncated scales, with broad scarious margins. In a specimen, received from Mr. Elliott, the spikelets are from twenty to thirty-flowered. Mr. E. remarks, that "In bogs it becomes a large plant, 2—3 feet high, thick and succulent; in dry soils, even where not sandy, it rarely exceeds 12—15 inches in height."

5. CYPERUS ELLIOTTIANUS, *Schultes*.

"Spikelets ovate-oblong, many-flowered, in terminal fascicles; involucre two-leaved, and with the leaves linear and very narrow."

C. Elliottianus, *Schult. mant. syst. veg.* 2. p. 101.

C. fasciculatus, *Elliott, sk.* 1. p. 63, (not of Lamarck.)

"Culm 6 inches high, triangular. *Leaves* 1—2, very narrow and almost setaceous, shorter than the culm. *Involucre* 2-leaved, one of the leaves scarcely longer than the spikelets, the other very long. *Spikelets* 5—7, all sessile, 12—24-flowered. *Scales* rather obtuse: the keel deep green, the margins membranaceous." *Elliott*.

HAB. Near Milledgeville, Georgia. *Dr. Boykin*, fide *Elliott*.

Mr. Elliott's plant may be some larger species in a dwarf state, but his description is too incomplete to distinguish it from several other Cyperi. Nees, however, refers it, in his *Synops. gen. Cyp.* to the genus *Pycurus* of P. de Beauvois, but unless he has seen a specimen from Elliott himself (which is hardly probable) I suspect that he has examined a different species, perhaps the *C. diandrus* of this monograph.

6. CYPERUS MICRODONTUS.

Umbel with short crowded rays, or sessile; spikes numerous, lanceolate-linear, about 14-flowered; scales deciduous, ovate, rather acute, submembranaceous; stamens 2; style deeply 2-cleft; nut oblong-obovate, obtuse; rachis denticulate with the inner scales.

“*C. brizæus?*” *Schweinitz!* in litt.

Annual. *Culm* cespitose, 2—4 inches high, triangular. *Leaves* a line and a half broad. *Umbel* sessile, or with several rays scarcely half an inch long. *Involucre* 4—5-leaved. *Spikelets* half an inch in length, 12—16-flowered, alternate on the common rachis. *Scales* spreading but closely imbricated, indistinctly striate; the keel narrow and rather obtuse, green; the sides pale yellowish-brown; margin not scarious. *Interior scales* persistent, giving the rachis a denticulate appearance when the primary scales have fallen. *Stamens* always 2. *Style* cleft more than half way down. *Nut* rather tumid, dark-gray, dull, minutely dotted under a strong lens.

HAB. Salem, North Carolina, *Schweinitz!*

OBS. This species does not appear to have been hitherto described. It cannot be the *C. brizæus* of Richard, which has oblong-ovate spikelets. I have only received it from *Mr. Schweinitz*.

7. CYPERUS GATESII.

Umbel of many (6—8) distinct rays; spikelets somewhat distant, alternate (with the lower ones fasciculately compound), linear-lanceolate, 10—12-flowered; scales oblong-lanceolate, rather acute, loosely imbricate, submembranaceous; stamens 2; style deeply 2-cleft; nut oblong-obovate, obtuse; rachis with a narrow margin.

Perennial. *Culm* nearly a foot high, slender, obtusely-triangular. *Leaves* narrow, pale green; those of the *involucre* about three in number. *Rays* of the umbel very unequal, 4 or 5 of the longer ones about 2 inches

in length, and somewhat erect. *Spikelets* acute, 6—8 lines long and one line broad, of a pale-yellowish colour; the lowest ones on the common rachis a little compound. *Partial rachis* flexuous, the narrow winged margin formed of the confluent and persistent inner scales. *Nut* as in the preceding species.

HAB. Near Mobile, Alabama, *Dr. H. Gates!*

OBS. This species resembles *C. microdontus* in the spikelets and nut, but is otherwise very distinct. I have only received it from the above-named locality.

§ 2. *STYLE 3-cleft; nut triangular; interior scales membranaceous and adnate to the rachis, not separating in the mature spikelet, sometimes almost wanting.*—CYPERUS.

a. *Culm subterete, nodose.*

8. CYPERUS ARTICULATUS, *Linn.*

Umbel compound, loose; spikelets long, linear, alternate, approximate; culm with leafless sheaths towards the base.

C. articulatus, *Willd. sp.* 1. p. 270; *Michx.!* *fl.* 1. p. 27; *Pursh, fl.* 1. p. 50; *Muhl.!* *gram.* p. 18; *Vahl, enum.* 2. p. 301; *Kunth, syn.* 1. p. 137; *Ram. & Schult. syst.* 2. p. 163; *N. ab Esenb. Cyp. Ind. in Wight's contrib.* p. 80.

Rhizoma creeping, clothed with large lanceolate scales. *Culm* 2—6 feet high, the middle part about as thick as a goose-quill, filled with dry pith, which is condensed at intervals of about an inch, producing false nodes, very conspicuous in the dried plant. *Sheaths* 2—3, clothing the lower part of the culm, and terminating in large, acute, erect scales, rather than leaves. *Umbel* of five or more primary rays, 2—4 inches in length; the rays simple or compound, each division bearing about 10 spikelets. *Involucre* very short, 2—3-leaved. *Spikelets* an inch long, 15—20-flowered, convex on the sides. *Rachis* distinctly margined. *Scales* ovate-lanceolate, rather obtuse, membranaceous on the margin; midrib green; the sides whitish mixed with red. *Stamens* 3; *anthers*

linear, very long. *Style* slender, 3-cleft. *Nut* acutely triangular, punctate.

HAB. In wet places, particularly in river swamps of the Southern States; South Carolina, *Elliott!*; Georgia, *Muhlenberg*; New Orleans, *T. Drummond!* and *Dr. Ingalls!*

OBS. This species is also a native of South America, the East and West Indies, and Africa.

9. CYPERUS BIPARTITUS.

Spikelet solitary, appearing lateral, ovate-oblong, many-flowered; involucre mostly one-leaved, or with an additional short setaceous bract; scales ovate, rather obtuse and coriaceous; stamens 2; style cleft nearly to the base; nut biconvex, obovate, obtuse, with a papillose surface.

Annual. *Culm* triquetrous, 4—6 inches high, with two setaceous leaves at the base. *Spikelet* about 14-flowered, half an inch long, 2½ lines wide, appearing to grow from the side of the culm about an inch and a half below the summit, but really terminal and subtended by the involucre, which is commonly one-leaved and erect, sometimes two-leaved, the second leaf being short and subulate. *Rachis* naked. *Scales* closely imbricated with appressed points, a sharp keel and 5 pale ferruginous sides. *Style*, in the mature flower, cleft nearly to the base, the divisions thicker than in most Cyperi. *Nut* tumid, dark-brown, dull, covered with minute papillæ.

HAB. Near New Orleans, *Dr. Ingalls!*

OBS. This species resembles *C. mucronatus*, *Linn.* in many respects, but the latter is distinguished by having usually several spikelets on each culm, a smooth plano-convex nut, and long compressed style bifid only at the summit. It is not improbable, however, that our plant sometimes bears more than one spikelet.

10. CYPERUS TENELLUS, *Linn.?*

Culm and leaves setaceous; spikelet solitary, appearing lateral, lanceolate-linear, 10—12-flowered; involucre mostly

one-leaved; scales linear-oblong, loosely imbricate, rather acute, membranaceous, 3-nerved on the keel; stamen 1; style two-cleft; nut oblong-obovate, much compressed, puncticulate.

C. tenellus, *Linn. sup.* p. 103?; *Vahl, enum.* 2. p. 305?

C. minimus? *Nutt.! gen.* 1. p. 35, not of *Thunb.*; *Bart.! prodr. fl. Phil.* 1. p. 26.

Culm triquetrous, scarcely as thick as a bristle, about 4 inches high. *Involucre* of one erect setaceous leaf, about an inch long, and a minute bract 2—3 lines in length. *Spikelet* half an inch long, and one line broad, much compressed, rather loosely imbricated. *Rachis* slightly margined. *Style* filiform, cleft half way down. *Nut* brown, dull, obtuse, with a minute point.

HAB. Monmouth county, New Jersey, *Dr. Isaac Cleaver!*

OBS. This interesting species appears to be extremely rare, as it has not been found since its discovery in New Jersey by the late *Dr. Cleaver* of Philadelphia. Whether our plant is the *C. tenellus* of Linnæus and Vahl, (which seems to be the *C. minimus* of Thunberg) cannot be certainly determined from the imperfect descriptions of those authors. It is probable, however, that our species is distinct, and should it prove to be so, I propose to call it *C. Cleaverii*, in honor of its discoverer. *C. minimus* is described by Vahl as bearing from one to three oblong spikelets, with ovate acute scales, while our plant has a solitary lanceolate-linear spikelet and linear-oblong scales.

b. *Culm* triangular; *umbel* simple or compound.

† *Spikelets* alternate, or disposed towards the extremity of the rays in a distichous or spiciform manner, the lowest ones often compound.

11. CYPERUS OCCIDENTALIS.

Culms densely cespitose, thick and very short; leaves flat; rays of the umbel short, crowded; spikelets closely aggregated into ovate heads; the lowest ones compound, 8—10-flowered; scales ovate, rather acute, membranaceous; style 3-cleft at the summit; nut ovate, compressed-triangular.

Annual! *Culms* acutely triangular, numerous, forming dense tufts about two inches high. *Leaves* broad for the size of the plant. *Umbel* large, of 3—4 short rays. *Involucre* about 3-leaved, much longer than the umbel; the leaflets $1\frac{1}{2}$ line broad. *Spikelets* very numerous, 3 lines long, those on the lower part of the rays more or less compound. *Scales* rather loosely imbricated, not scarious on the margin, with a broad deep-green keel and ferruginous sides. *Interior scales* very conspicuous. *Stamens* 3. *Style* long, slightly cleft. *Nut* smooth, short, ovate.

HAB. On the North-west coast of America, near the mouth of the Oregon river!

OBS. This humble species, for which I am indebted to my excellent friend, Dr. Hooker, resembles, at first sight, the *C. inflexus* of Muhlenberg, but a slight examination shows it to be totally distinct.

12. CYPERUS MICHAUXIANUS, *Schultes*.

Culm acutely triangular; umbel compound, the rays short; involucels 1—2-leaved, setaceous, or wanting; spikelets somewhat terete when mature, 6-8-flowered, the lower ones compound; rachis very broad, easily separating at the joints; scales ovate, rather obtuse; interior scales herbaceous, obovate, folded round the ovate, triquetrous nut.

C. Michauxianus, *Schult. mant.* 2. p. 123.

C. strigosus, *Lam. ill.* 1. no. 726. (not of *Linn.*); *Michx.*! *fl.* 1. p. 28; *Pers. syn.* 1. p. 64.

C. erythrorhizos, *Torr.*! *fl.* 1. p. 61; *Beck!* *bot.* p. 421; *Gray!* *Gram. & Cyp.* part 1. no. 72.

Annual. *Culm* 12—15 inches high, firm and erect, thickened and reddish towards the root. *Leaves* commonly shorter than the culm, 3—4 lines wide. *Involucre* 5—6-leaved, many times longer than the umbel. *Rays* of the umbel 4—6, the naked part scarcely more than an inch in length, mostly divided at the summit, and sometimes bearing short setaceous involucels. *Spikelets* much crowded on the rays, the lower ones compound, about three-fourths of an inch long, at first compressed, but nearly terete when mature. *Scales* of a rather firm texture, not scarious on the margin, loosely imbricated, somewhat indistinctly striate. *Rachis* very broad and thick, separating at the joints when mature. *Interior scales* adnate, persistent, appearing like obtuse auricles, folding round the nut and firmly embracing its base. *Stamens* 3. *Style* 3-cleft more than half-way down. *Nut* whitish, somewhat acute, flattened on the back, obtusely angled in front, puncticulate.

HAB. Borders of salt marshes. Common in New Jersey, particularly in the neighbourhood of Hoboken; Salina, New York, *J. Carey!*; Carolina, *Michaux!*; Wilmington, North Carolina, *Mr. Curtis!*; Georgia and Delaware, *Dr. Baldwin!*; New Orleans, *Dr. Ingalls!*

OBS. This plant probably grows in many parts of the Atlantic States, being confounded either with *C. strigosus* or *C. erythrorhizos*. It is clearly the *C. strigosus* of Michaux, as I have ascertained by examining his herbarium; and he correctly describes the plant as having *subterete* spikelets. To the *C. pennatus* of Lamarck (of which I possess a specimen from A. de Jussieu,) it is very nearly allied, not only in general appearance, but in the structure of the spikelets. That species, however, has a loose corymb, longer spikelets, slightly mucronate glumes, and an oblong nut.

13. CYPERUS TETRAGONUS, *Elliott.*

Umbels many-rayed, without involucels; spikes oblong, cylindrical; spikelets 3—5-flowered, somewhat quadrangular; scales slightly mucronate; nut oblong.

C. tetragonus, *Elliott, sk.* 1. p. 71; *Schult. mant.* 2. p. 130.

Culm 2—3 feet high, the angles a little scabrous near the umbel. *Leaves* 12—18 inches long, 3 lines wide, channelled; the margins and midrib serrulate. *Spikes* about an inch long, disposed at the extremity of the rays. *Spikelets* distinctly 4-angled in consequence of the width of the rachis. *Scales* compressed. *Stamens* 3. *Style* 2-cleft [?] *Nut* triangular.—*Elliott*.

HAB. On Eding's Island, near Charleston, South Carolina, *Elliott*; and near St. Mary's, Georgia, *Dr. Baldwin*. "A rare plant in South Carolina and Georgia, but becomes predominant in the live-oak forests south of St. John's river, in Florida." *Baldw. MS.*

OBS. This plant has not fallen under my notice. It does not exist in that portion of *Dr. Baldwin's* herbarium which has come into my possession. *Mr. Elliott's* description is brief and incomplete, but sufficient to show that the plant is a very distinct species.

14. CYPERUS STRIGOSUS, *Linn.*

Umbel simple, or rather compound; rays numerous, elongated; involucels mostly wanting, or setaceous; ochreæ 2-bristled; spikes ovate; spikelets 8—10-flowered, much crowded, spreading horizontally or somewhat reflexed, linear-lanceolate, flattened; rachis subterete, slender; scales oblong-lanceolate, approximate, strongly nerved, subacute and slightly mucronate; interior scales lanceolate, narrow, hyaline; nut oblong-triquetrous.

C. strigosus, *Linn. sp. pl.* p. 69? (excl. syn.); *Vahl, enum.* 2. p. 253; *Pursh, fl.* 1. p. 52; *Elliott, sk.* 1. p. 70; *Muhl.! gram.* p. 21; *Torr.! fl.* 1. p. 62, (excl. syn. *Michx.*); *Big. fl. Bost.* ed. 2. p. 19; *Beck! bot.* p. 421; *Darling.! fl. Cest.* ed. 2. p. 15; *Ræm. & Schult.* 2. p. 214; *C. A. Meyer, in Mem. Acad. St. Petersb. (VI. sér.)* 1. p. 201. t. 3.

C. Enslenii, *Pursh! fl.* 1. p. 53; *Schult. mant.* 2. p. 123; *Elliott, sk.* 1. p. 73.

Culm triquetrous, 1—3 feet high, the base somewhat swollen. *Umbel* 5—9 rayed, somewhat spreading. *Rays* 2—6 inches in length, sometimes with one or two short partial rays. *Ochreæ* terminating in 2 bristles

a fourth of an inch in length. *Involucre* 5—9-leaved, very long. *Spikes* 1—2 inches long, and more than an inch in diameter, formed by numerous (20—80) spikelets, which spread on all sides, and in a mature state are a little reflexed on the common rachis. *Spikelets* $\frac{3}{4}$ of an inch long, much compressed, acute, deciduous when old. *Scales* somewhat loosely imbricate, many-striate, with a narrow scarious margin; the sides yellowish. *Interior scales* hyaline, confluent with the next scale above. *Stamens* 3. *Style* entire the greater part of its length. *Nut* not half the length of the scale, grayish brown, acute, the surface marked with elevated dots arranged in longitudinal lines.

HAB. Wet meadows and low grounds; common. Massachusetts! to New Orleans!

β ?—umbel compound, many-rayed, with setaceous involuclcs; ochrea 2-awned; spikes cylindrical-oblong, 3—5 on each ray; spikelets linear-subulate, 4—5-flowered; very numerous, somewhat reflexed; scales narrow-oblong, indistinctly striate; nut oblong, triquetrous.

Culm a foot and a half high, triquetrous. *Umbel* about 7-rayed; the rays 3—4 inches long, terminating in several short branches which bear spikelets their whole length. *Involucels* consisting of several very slender leaves, about as long as the spikes. *Spikelets* one-third of an inch long, acute, compressed. *Scales* acute, appressed. *Interior scales* narrow, hyaline. *Stamens* 3. *Style* 3-cleft about one-third of the way down. *Nut* somewhat attenuated downward.

HAB. Burke county, North Carolina, *Mr. Curtis!*

OBS. The original *C. strigosus* of Linnæus appears to have been a Virginian plant. The synonyms of Sloane quoted by Willdenow and Rottbœll belong to two other species, the former to *C. torosus* of Vahl, and the latter to *C. planifolius* of Richard. It is uncertain, whether the *detailed* description of Willdenow refers to one of these, or to the *C. strigosus*, but probably to the latter.

I have never seen the spikelets so many flowered as they are said to be by Mr. Elliott (14-24); in my specimens very few of them have as many as 10.

The variety β . is referred to this species with some hesitation. My specimen of it is not sufficiently mature to exhibit the character of the fruit. It resembles *C. speciosus*, but wants the distinct foliaceous involucels.

15. *CYPERUS STENOLEPIS*.

Umbel simple; rays 3-4, elongated; ochreæ truncate, pointless; spikes ovate; spikelets much crowded, spreading horizontally or somewhat reflexed, linear, compressed, 5-8-flowered, the florets distant and free nearly to their base; rachis subterete, slender, flexuous; scales narrowly linear, nerved, involute towards the summit when old; interior scales very narrow, adnate; nut oblong-linear, triangular.

C. distans, Pursh, *fl.* 1. p. 53? (not of Linn.)

Culm about 3 feet high, triquetrous, rather slender. *Leaves* 12-18 inches long, 2-3 lines wide. *Umbel* somewhat spreading; rays 3-5 inches long. *Involucre* 3-4-leaved. *Spikes* nearly 2 inches long and an inch in diameter, composed of numerous (40-60) spikelets which spread on all sides. *Spikelets* 6-7 lines long. *Scales* very narrow, and in contact only at their base; dusky yellow, the margins, particularly in the mature spikelet, involute. *Interior scales* hyaline, adnate to the rachis and the scale above. *Stamens* 3. *Style* 3-cleft one-third of its length. *Nut* scarcely one-third the length of the scale, acute, brown, covered with lines of elevated dots.

HAB. Wilmington, North Carolina, Mr. Curtis!

OBS. Nearly allied to *C. strigosus*, but easily distinguished by its loosely flowered spikelets and narrow scales.

Dr. Baldwin in his MS. notes on *Cyperus* remarks that he has seen a species of this genus in Georgia, resembling *C. strigosus*, but differing in its distant expanding florets.

16. *CYPERUS SPECIOSUS*, Vahl.

Umbel compound, many-rayed, the rays distinctly alternate; partial umbels shorter than the many-leaved involucels; ochreæ deeply 2-parted; heads oblong; spikelets spreading horizontally, 6-8-flowered; scales oblong, obtuse, appressed.

C. speciosus, *Vahl, enum.* 2. p. 364; *Ræm. & Schult.* 2. p. 218; *Pursh, fl.* 1. p. 58; *Elliott, sk.* 1. p. 72.

Culm 2—4 feet high, rather acutely angled. *Leaves* 1—2 feet long, 4—6 lines wide, deeply channelled, somewhat glaucous underneath, scabrous on the margin. *Umbel* about 8-rayed; the primary rays 2—3 inches long, and more distinctly alternate than in most other Cyperi. *Ochreæ* loose, obliquely truncate, terminating in two lanceolate points nearly an inch long. *Involucre* foliaceous, a little longer than the partial rays; the leaflets alternate like those of the rays. *Spikes* numerous, compound, with setaceous bracteæ at the base. *Spikelets* subulate. "*Stamens* 3. *Style* 3-cleft. *Nut* 3-angled, compressed, slightly incurved."—*Elliott*.

HAB. In ditches and wet places, South Carolina. *Elliott*. Wilmington, North Carolina, *Mr. Curtis!*; Virginia, *Vahl*; New Orleans, *Dr. Ingalls!*; Middle Florida, *Dr. Chapman!*

OBS. My specimens of this plant are too young to exhibit the characters of the spikelet and fruit; yet there can be little doubt of its being the *C. speciosus* of Elliott, as it is the only native species bearing conspicuous *partial* as well as *general* involucre. *Vahl's* plant, which was described from specimens preserved in the Herbarium of the Jardin des Plantes in Paris, may be distinct from ours. He describes the spikelets as scarcely half an inch long, terete, 6-flowered, with linear scales.

17. CYPERUS REPENS, *Elliott*.

Rhizoma creeping, tuberiferous; umbel simple, 4—6-rayed; involucre much longer than the rays; spikes distichous; spikelets 10—14, approximated, somewhat spreading, 12—20-flowered, linear, compressed, obtuse; scales oblong, rather acute, slightly mucronate, the margin scarious; nut oblong, triquetrous; style 3-cleft half-way down.

C. repens, *Elliott, sk.* 1. p. 69; *Schult. mant.* 2. p. 112; *Spreng. syst.* p. 224.

C. phymatodes, *Muhl.!* *gram.* p. 23; *Torr.!* *fl.* 1. p. 62; *Beck!* *bot.* p. 42; *Gray!* *Gram. & Cyp.* part 1. no. 73; *Link, jahrb.* 3. p. 87. (fide *Schult. mant.* 2. p. 117.)

C. tuberosus, *Pursh, fl.* 1. p. 52. (excl. syn.)

Rhizoma creeping extensively; the branches often terminating in tubers about the size of a large pea. *Culm* 12—18 inches high, acutely triangular. *Leaves* a little recurved, 2—3 lines broad, strongly carinate, smooth, yellowish. *Umbel* rather erect; the rays 2—4 inches long, without involucels. *Involucre* mostly 3-leaved. *Spikelets* three-fourths of an inch long, linear, somewhat obtuse when mature, for the most part distichously arranged on the common rachis, the lowest ones frequently geminate or fasciculate. *Scales* yellowish, nerved, at length distinct at the point. *Interior scales* lanceolate, adnate, hyaline. *Stamens* 3. *Style* sometimes unequally 3-cleft. *Nut* acute.

HAB. Wet sandy places, particularly on the banks of rivers, and on the sea shore; western part of New York to New Orleans. Common on the sea coast of Long Island and New Jersey, and on the Hudson as far north as Newburgh!; near Oneida Lake, New York; Pennsylvania, North Carolina, and Georgia, *Muhlenburg!*; S. Carolina, *Elliott* and *Mr. Forbes!*; New Orleans, *Dr. Ingalls!*; Delaware and East Florida, *Dr. Baldwin!*

OBS. The tubers or thickened extremities of the subterranean stems are edible, but are inferior in size to those of the *C. tuberosus* of Vahl, with which Pursh confounded our plant. Dr. Baldwin, in his notes, states that this species is the "Nutgrass" of East Florida, where it covers cultivated fields, and is much more common than *C. Hydra*. He remarks that he found the same plant on the banks of the river Plata, near Buenos Ayres.

Muhlenberg's *Cyperus*, No. 9, is a mere variety of *C. repens*.

18. CYPERUS HYDRA, *Michaux.*

Rhizoma creeping, tuberiferous; umbel simple, 3—4-rayed; involucre a little longer than the ray; spike, distichous; spikelets 4—5 on each ray, lanceolate-linear, acute, much compressed, 14—20-flowered; scales ovate, approximated, somewhat spreading, rather acute, appressed, nerveless, not scarious on the margin; nut triquetrous.

C. Hydra, Michx. ! fl. 1. p. 27; *Vahl, enum.* 2. p. 344, *Pursh, fl.* 1. p. 52; *Elliott! sk.* 1. p. 68; *Kunth, syn.* 1. p. 140; *Ræm. & Schult. syst.* 2. p. 201; *Spreng. ! syst.* 1. p. 224.

C. rotundus, *Muhl. ! gram.* p. 17.

Rhizoma creeping extensively, its branches ending in small tubers. *Culm* 6—12 inches high, smooth, triquetrous. *Leaves* about two lines wide, shorter than the culm, often recurved, somewhat glaucous. *Umbel* usually 4-rayed; the rays 2—3 inches long, erect or only a little spreading. *Involucre* 2—3-leaved; the leaves often shorter than the umbel, rarely exceeding it in length. *Ochreæ* truncate, pointless. *Spikelets* nearly an inch long, alternate along the upper part of the rays. *Scales* closely imbricated, bright chesnut and shining, without nerves, slightly mucronate. *Interior scales* narrow, adnate, hyaline. *Stamens* 3. *Style* 3-cleft about half-way down. Ripe fruit not seen.

HAB. Sandy fields, and in sand-drifts near the sea; Virginia to Florida. Virginia, Carolina and Florida, *Michaux*; Wilmington, N. Carolina, *Mr. Curtis!*; sea shore of S. Carolina, *Elliott!*; St. Mary's, Georgia, *Dr. Bacon!*; Florida, *Dr. Baldwin!*; Arkansas, *Nuttall*; Mexico, *Humboldt*; Bahia, Brazil, *Dr. Baldwin!*; Guadeloupe, *Dr. Madiana!*

OBS. This species is nearly allied to *C. rotundus*, *Linn.* and also to *C. hexastachyus*, *Rottb.* In the Southern States, it is very troublesome to planters on account of its rapid multiplication by means of its creeping rhizomas and tubers. See *Elliott.*

19. CYPERUS DISSITIFLORUS.

Culms filiform, cespitose, tumid at the base; leaves very narrow; umbel simple 3—4-rayed; involucre 3-leaved; spikelets lanceolate, compressed, very acute, 5—7-flowered, remotely and somewhat distichously inserted along the common rachis; scales appressed, oblong-lanceolate, acute; inner scales conspicuous; nut obovate-oblong, flattened on the back.

Rhizoma short and thick. *Culm* 1—2 feet high, the base somewhat swollen, and of a reddish colour. *Leaves* mostly radical, narrow. *Rays*

of the umbel slender, 1—2 inches long, somewhat erect. *Involucre* 2—3 times as long as the umbel. *Ochreæ* with a short mucronate tip. *Spikelets* 16—24 on each ray, scattered along its upper half. *Scales* membranaceous, nerved, not mucronate. *Stamens* 3. *Style* 3-cleft nearly to the base. *Nut* light brown, obtusely angular in front.

HAB. Near New Orleans, *Hooker!*

OBS. For specimens of this distinct species of *Cyperus*, I am indebted to my most liberal friend Dr. Hooker, who received them either from Mr. Drummond, or Mr. Teinturier. In its slender and wiry cespitose culms, which are swollen at the base, this species resembles *C. mariscoides* & *C. Grayii*, but in its alternate spikelets it is more nearly related to *C. repens* of Elliott.

Involucre mostly 3-leaved. *Spikelets* three-fourths of an inch long, linear, somewhat obtuse when mature, for the most part distichously arranged on the common rachis; the lowest ones frequently geminate or fasciculate. *Scales* yellowish, nerved, at length distinct at the point. *Interior scales* lanceolate, adnate, hyaline, *Stamens* 3. *Style* sometimes unequally 3-cleft. *Nut* acute.

†† *Spikelets aggregated in a capitate or subumbellate manner on the summit of the rays.*

20. CYPERUS FILICULMIS, *Vahl.*

Culm triangular, tuberos at the base, assurgent; leaves linear; umbel simple, of 1—2 divaricate rays, or wanting; ochreæ pointless; heads globose, dense, composed of 15 or 20 spikelets; spikelets linear-lanceolate, rather convex, 6—10-flowered; rachis naked; scales loose, ovate, obtuse or emarginate, slightly mucronate, scarious on the margin; nut obovate-triangular, with a short acuminate point.

C. filiculmis, *Vahl, enum.* 2. p. 328; *Pursh, fl.* 1. p. 51; *Ræm. & Schult. syst.* 2. p. 186; *Spreng. syst.* 1. p. 218.

C. mariscoides, *Elliott, sk.* 1. p. 67; *Spreng. ! neue entdeck.* 1. p. 239; *Torr. ! fl.* 1. p. 63, (excl. syn.); *Bigel. fl. Bost.* ed. 2. p. 19; *Beck ! bot.* p. 422; *Gray ! Gram. & Cyp.* part 1. no. 74; *Darlingt. ! fl. Cest.* ed. 2. p. 16; *Schult. mant.* 2. p. 100.

C. Killingæoides, *Pursh, fl.* 1. p. 50. (excl. syn.)

Scirpus cyperiformis, *Muhl. ! gram.* p. 41.

S. lupulinus, *Spreng. mant.* 2. p. 30; *Ræm. & Schult. syst.* 2. p. 135.

Mariscus cyperiformis, *Torr. ! cat. pl. N. York*, p. 14. (excl. syn. *Pursh.*)

M. glomeratus, *Bart. prodr. fl. Phil.* 1. p. 30. (excl. syn. *Vahl, Linn. & Pursh.*)

Rhizoma creeping. *Culms* cespitose, about a foot high, forming a cluster of small tubers at the root, the sides striated and rather convex. *Leaves* 1—2 lines broad, carinate, shorter than the culm, of a dull green colour. *Umbel* often wanting, the spikelets being collected in a single dense, globose head; but usually there are one or two widely spreading rays, each bearing a head of spikelets an inch in diameter. *Involucre* 3—4-leaved, twice as long as the umbel. *Spikelets* 5—6 lines long, acute; the florets somewhat distinct. *Scales* subcoriaceous, with a broad scarios margin, strongly nerved, of an obscure yellowish-green colour; the upper ones more acute. *Stamens* 3. *Style* deeply 3-cleft. *Nut* two-thirds the length of the scale, unequally triangular, minutely dotted in lines.

HAB. On dry hills, and in sterile fields, Massachusetts! to Florida! and west to Arkansas!—September.

OBS. This species, to which I have restored the original name of Vahl, appears to have greatly perplexed botanists. Although it is a genuine *Cyperus*, it has been referred by some to *Mariscus*, and by others to *Scirpus*. It is a very common plant in all parts of the United States, and is easily distinguished by its pale green colour, wiry stems, globose heads of spikelets, and loose, broad, obtuse scales.

21. CYPERUS GRAYII.

Culm filiform, obtusely triangular, erect, tuberos at the base; *leaves* setaceous; *umbel* 4—6-rayed, somewhat erect; *ochrææ*

truncate, pointless; heads loose, composed of 6—9 spikelets; spikelets linear-lanceolate, compressed, 5—7-flowered; rachis winged with the inner scales; scales ovate, rather obtuse when old, somewhat distinct, hardly scarious on the margin; nut obovate-triangular, with a short acuminate point.

C. mariscoides, var. *setifolius*, Torr. ! in *Gray's Gram. & Cyp.* part 1. no. 75.

Rhizoma creeping. *Culms* 8—12 inches high, growing in tufts, tough and wiry, tuberos at the base. *Leaves* all radical, channelled, scarcely half a line wide, shorter than the culm. Rays of the *umbel* almost capillary, 2—3 inches long, slightly spreading, each bearing a loose head of chestnut-coloured spikelets. *Involucre* about 4-leaved; 2 of the rays a little longer than the umbel; all of them setaceous. *Spikelets* 4—5 lines long, acute, at first slightly convex but flat when mature. *Scales* nerved, not mucronate, closely imbricated in the young spikelet, at length distinct at their tips. *Interior scales* lanceolate, persistent. *Stamens* 3. *Style* 3-cleft half-way down. *Nut* two-thirds the length of the scale, dotted, gray.

HAB. Barren sandy fields. Common in the pine-region of New Jersey,—September.

OBS. This species, although nearly allied to *C. filiculmis*, differs sufficiently in its still more filiform culm, setaceous leaves, umbel of many rays, and fewer-flowered spikelets, with the rachis winged.

22. CYPERUS FORMOSUS, Vahl.

“Umbel compound; spikelets capitate, ovate-lanceolate; involucre about 6-leaved, very long, scabrous on the margin.”

C. formosus, *Vahl. enum.* 2. p. 327; *Pursh, fl.* 1. p. 51; *Ræm. & Schult. syst.* 2. p. 184.

Culm as thick as a goosequill, acutely triangular, leafy at the base. *Leaves* linear. *Involucels* 2—3-leaved, shorter than the partial umbels. *Ochreae* short, truncate. Rays of the *umbel* about 12, an inch and a half long, terete; partial rays fewer, short. *Spikelets* about 8, half an inch long, 20—30-flowered, yellowish. *Scales* linear-lanceolate, acute, deciduous.—*Vahl.*

HAB. In Louisiana, *Jussieu*.

OBS. With this plant I am unacquainted.

23. CYPERUS BALDWINII.

Culm obtusely triangular; involucre 6—9-leaved; umbel of 6—12 rays; heads globose; spikelets narrow-lanceolate, compressed, acute, 5—8-flowered, spreading; scales ovate-lanceolate, acute, appressed; interior scales conspicuous, hyaline; nut obovate.

Mariscus echinatus, *Elliott*, *sk.* 1. p. 75, t. 3. f. 1. (excl. syn.)

Cyperus globosus, *Baldw.!* *Mss.* (not of *Allioni*.)

Culm 1—2 feet high, smooth, somewhat tumid at the base. *Leaves* shorter than the culm, 2—3 lines wide, scabrous on the margin. *Rays* of the *umbel* somewhat erect, 1—3 inches long. *Ochreæ* mucronate. *Involucre* more than twice as long as the umbel. *Heads* 6—8 lines in diameter, depressed, globose, formed of about 40 aggregated spikelets, which spread horizontally but are not refracted. *Spikelets* 3—4 lines long, attenuated to a sharp point. *Rachis* broadly winged with the persistent inner scales. *Scales* membranaceous, somewhat scarious on the margin; the two lowest short, ovate, and empty. *Stamens* 3. *Style* 3-parted. *Nut* narrowed at the base, half the length of the scale.

HAB. In cultivated lands; very common in the Southern States. South Carolina and Georgia, *Dr. Baldwin!* and *Elliott*; Middle Florida, *Dr. Chapman!*; New Orleans, *Dr. Ingalls!*

OBS. This plant differs from the *C. ovularis*, to which Mr. Elliott referred it, in its more numerous and looser heads, and compressed, many-flowered spikelets. In many respects it resembles *C. Grayii*.

24. CYPERUS COMPRESSUS, *Linn.*

Umbel simple (rarely compound,) or wanting; rays spreading; spikelets in a loose head, or aggregated in a somewhat digitate manner, lanceolate, somewhat convex and ancipital, many-(12—40) flowered; rachis winged with the interior scales; scales ovate, acuminate, carinate, indistinctly nerved; nut obovate, triquetrous, polished; root fibrous.

C. compressus, *Linn. sp.* p. 68; *Willd. sp.* 1. p. 282, (excl. syn. Gron.); *Vahl, enum.* 2. p. 324; *Pursh, fl.* 1. p. 51; *Muhl. ! gram.* p. 15; *Elliott ! sk.* 1. p. 65; *Ram. & Schult. syst.* 2. p. 182; *Kunth, syn.* 1. p. 141; *Spreng. syst.* 1. p. 220, (excl. syn. Muhl.); *N. ab Esenb. in Wight's Contrib.* p. 76; *C. A. Meyer, in Mem. Acad. St. Petersb. VI. sér.* 1. t. 3.

Root fibrous, descending. *Culm* 3—8 inches high, somewhat tumid at the base, triangular, the sides a little convex. *Leaves* narrow, carinate, pale green. *Umbel* often sessile, seldom more than 3-rayed; the rays 1—2 inches long, spreading. *Ochreae* cuspidate. *Involucre* about 3-rayed, twice as long as the umbel. *Involucels* wanting. *Spikelets* 3—5 on each ray, in the sessile umbels about 12, from half an inch to nearly an inch in length, remarkably ancipital owing to the acute keel of the scales; the sides rather convex. *Scales* somewhat coriaceous, pale green, striped with yellow, conspicuously acuminate and almost cuspidate, the points projecting so as to give the spikelets a sharply serrated appearance. *Interior scales* membranaceous, distinct. *Stamens* 3. *Style* 3-cleft half way down. *Nut* very short for its breadth, obtuse, equally 3-sided, when old smooth and shining.

HAB. Dry sandy soils. North Carolina to Florida, and West to Missouri. Wilmington, N. C. *Mr. Curtis!*; near Charleston, South Carolina, *Elliott!*; New Orleans, *Dr. Ingalls!*, *T. Drummond!*; on the Missouri, *Nuttall!*

OBS. The *C. compressus* is also a native of Mexico, and in the East and West Indies.

25. CYPERUS DENTATUS, Torrey.

Umbel compound, with 4—7 somewhat erect rays; spikelets 3—5 on each partial ray, clustered, ovate-oblong, ancipital, much compressed, many (6—30)-flowered; rachis naked; scales very acute, carinate, membranaceous, nerved; nut obovate, triquetrous; rhizoma creeping, bearing tubers.

C. dentatus; *Torr. ! fl.* 1. p. 61; *Big. ! Bost. ed.* 2. p. 18; *Beck ! Bot.* p. 421; *Gray ! Gram. & Cyp.* part 1. no. 71.

C. parviflorus, *Muhl. ! gram.* p. 19, (not of *Vahl.*)

C. micranthus, *Schult. mant.* 2. p. 121.

Rhizoma creeping extensively; its branches often bearing small tubers at their extremity. *Culm* about a foot high; the angles somewhat obtuse. *Leaves* rather rigid, shorter than the culm, strongly keeled. *Rays* of the

umbel crowded, usually 1—2 inches long; *secondary rays* half an inch long. *Involucre* somewhat erect; one of the leaves longer than the umbel, the others equalling it; the *involucels* are mere short lanceolate bracts. *Ochreæ* obliquely truncate. *Spikelets* 3—7 lines long, varying from ovate to oblong, rather obtuse. *Scales* closely imbricated, but spreading at the points, giving the edge of the spikelets a finely serrated appearance; the side of a bright reddish colour, the keel and part of the back green. *Stamens* 3. *Style* 3-cleft. *Nut* whitish, very obtuse, minute.

HAB. Sandy swamps, and in wet places on the banks of rivers, Massachusetts! to Florida! near Boston, and Charleston, South Carolina, *B. D. Greene, Esq.!*; Litchfield, Connecticut, *Mr. Brace!*; New Jersey, from S. Amboy to Cape May!; Pennsylvania, *Muhlenberg!* & *Schweinitz!*—September.

OBS. This beautiful species, though resembling *C. compressus* in many respects, can easily be distinguished by the characters above enumerated. It appears to have been overlooked by Elliott, although inhabiting the Southern States. I have found it near South Amboy, in one or two instances growing two feet high, with the umbel decomposed, and the involucels very distinct: but it was evidently in a diseased or unnatural state. It very frequently occurs with the scales and ochreæ foliaceous, giving the spikelets and axils a viviparous appearance. The whole plant, except the spikelets, is of a yellowish green colour.

$\beta?$ *multiradiatus*: umbel many-rayed, the rays elongated; scales oblong, scarcely acute, 3-nerved.

Rhizoma creeping. *Culm* 2 feet high. *Umbel* 10—12-rayed; the primary rays 4—6 inches long; secondary 1—2 inches long, erect. *Ochreæ* cuspidate. *Involucre* about 6-leaved. *Spikelets* 14—24-flowered, obtuse, much compressed, 5—8 lines long, 2 lines broad. *Rachis* naked. *Scales* rather obtuse than acute, greenish, shaded with yellow and brown, closely imbricated, their tips scarcely distinct.

HAB. East Florida, *Le Conte!*; New Orleans, *Dr. Ingalls!*

OBS. This may prove to be a distinct species from *C. dentatus*, but I have concluded to let it remain as a variety till

I have an opportunity of seeing more specimens of it. If its characters prove to be constant, it may take the name of *C. Lecontii*. My Florida specimen has longer spikelets, and more numerous florets than the plant sent to me by Dr. Ingalls; but in other respects there is no essential difference.

26. *CYPERUS LEPTOS*, Schultes.

Culm triquetrous, fragile; umbel compound or decompound, many-rayed; involucre 2-leaved, one or both of the leaves shorter than the umbel; involucels 0; spikelets 3—5 in a loose head, linear-lanceolate, 12—20-flowered; scales ovate-lanceolate, acute, carinate; nut minute, (white) depressed, triangular, verrucose.

C. leptos, *Schult. mant.* 2. p. 105.

C. gracilis, *Muhl.! gram.* p. 18. (not of *R. Brown*;) *Elliott, sk.* 1, p. 68; *Spreng. syst.* 1. p. 220.

Root fibrous. *Culm* 1—2 feet high, tender and herbaceous, often clothed with several leafless sheaths at the base. *Leaves* radical, shorter than the culm. *Umbel* of 12—15 filiform rays, generally compound and often decompound. *Involucre* 2-leaved; the leaves very unequal. *Ochreæ* obliquely truncate. *Spikelets* 4—5 lines long, very slender, usually about 12-flowered, but sometimes bearing as many as 20 or more florets. *Scales* reddish brown, yellow on the side, membranaceous, indistinctly 3-nerved, slightly mucronate. *Interior scales* narrow. *Stamens* 3. *Style* 3-cleft a little more than one-third of the way down; the divisions recurved. *Nut* short and thick, shining, covered with minute warts.

HAB. In damp soils, North Carolina, to Alabama. Near Wilmington, North Carolina, *Mr. Curtis!*; South Carolina, *Elliott!*; Georgia, *Muhlenberg!*, *Le Conte!*; Middle Florida, *Dr. Chapman!*; Alabama, *Dr. Gates!*

OBS. Very near a *Cyperus* from Surinam, in my herbarium, and only to be distinguished by its more acute scales and shorter verrucose nut.

27. *CYPERUS INFLEXUS*, *Muhl.*

Umbel 1—2-rayed, contracted or sessile; involucre 3-leaved, very long; spikelets collected into ovate heads, oblong-linear,

about 8-flowered; rachis laterally compressed, straight, winged; scales cuspidate, squarrose at the tip, strongly nerved; stamen 1; nut obovate, triquetrous.

C. inflexus, *Muhl.!* *gram.* p. 16; *Torr.!* *fl.* 1. p. 59; *Bigel. fl. Bost.* ed. 2. p. 18; *Beck!* *Bot.* p. 421; *Gray!* *Gram. & Cyp.* part 1. no. 68; *Darlingt. fl. Cest.* ed. 2. p. 16; *Link, jahrb.* 3. p. 88. (fide *Schult.*)

C. uncinatus, *Pursh, fl.* 1. p. 50, (not of *Poiret.*)

C. Purshii, *Ram. & Schult, syst.* 2. p. 177.

C. pygmæus, *Nutt. in Amer. Phil. Trans. N. Ser.* 5. p. 142, (not of *Cavan.* or *Rottb.*)

Root fibrous, biennial? *Culms* cespitose, 2—3 inches high, leafy at the base. *Leaves* linear, flat, equalling the culm. *Umbel* often sessile, the inflorescence then consisting of aggregated heads of spikelets; but more commonly there are 2 or 3 short rays. *Involucre* many times longer than the umbel. *Spikelets* in heads of 8—16 or more. *Scales* oblong, gradually attenuated into a remarkably squarrose or recurved point, of a greenish colour, not scarious on the margin. *Stamen* always solitary. *Style* 3-parted. *Nut* gray, triangular, with the sides a little convex.

HAB. Banks of rivers from latitude 52° N, to North Carolina. Lake Winnipeg, *Dr. Richardson!*; Lower Canada, *Mr. Benedict!*; banks of the Otter Creek, Vermont, *Dr. James!*; on the Connecticut river, in many places, *Prof. Hitchcock* and *Dr. Cooley!*; near Albany, *Mr. Tracy* and *Mr. H. H. Eaton!*; Cambridge, New York, *Dr. Sterenson!* on Lake Champlain, *Pursh!*; Pennsylvania, *Muhlenberg!*; Salem, North Carolina, *Schucinitz!*; Lincolnton, in the same state, *Mr. Curtis!*; Kentucky, *Dr. Short!*; Arkansas, *Dr. Pitcher* and *Mr. Nuttall!*; upper part of the Platte, *Dr. James!*

OBS. This species has a wider range than almost any other of the genus in North America. When dried, it exhales a powerful odour, scarcely to be distinguished from that of *Trifolium cœruleum*. It is nearly related to *C. aristatus*, *Rottb.* and several other species with subaristate squarrose scales, but it differs from all the Cyperi of this section in my herbarium, in its much more cespitose habit, fewer-flowered spikelets, attenuated scales and straight laterally compressed rachis.

28. CYPERUS VIRENS, Michx.

Culm acutely triangular; umbel compound; involucre many-leaved, very long; involucels nearly equalling the partial rays; spikelets ovate and ovate-lanceolate, much compressed, collected in dense globose heads, 12—20-flowered; rachis naked; scales oblong-lanceolate, acute; stamen 1; nut oblong, triquetrous, acute at each end.

C. virens, Michx.! fl. 1. p. 28; Pursh, fl. 1. p. 52; Muhl.! gram. p. 24; Elliott, sk. 1. p. 66; Vahl, enum. 2. p. 353; Ræm. & Schult, syst. 2. p. 210; Spreng. syst. 1. 226.

C. glomeratus, Walt. fl. Car. p. 70?

Culm 2—5 feet high, thick and firm, very acutely triquetrous, the angles sharply serrulate near the summit. Leaves nearly as long as the culm, 4—5 lines wide, rough on the edges and keel, the sides folded together. Umbel with 5—7 very unequal rays; partial rays nearly an inch long, each bearing a dense head of about 20 spikelets. Ochrææ bifid. Involucre 6—8 times as long as the umbel; involucels foliaceous, about as long as the partial umbels. Spikelets varying from ovate to lanceolate, rather obtuse, 3—5 lines long, and a line and a half broad. Scales carinate, greenish. Interior scales entirely wanting. Stamen always solitary. Style 3-cleft. Nut acute at each end, dull yellow.

HAB. In swamps: confined to the Southern States. Wilmington, North Carolina, Mr. Curtis!; South Carolina, Elliott!; Georgia, Muhlenberg!; Middle Florida, Dr. Chapman!; New Orleans, Dr. Ingalls!

29. CYPERUS VEGETUS, Willd.?

Culm obtusely triangular, smooth on the angles; umbel compound; involucre 4-leaved; involucels bracteiform, shorter than the partial rays; spikelets ovate, much compressed, collected in dense globose heads, 9—16-flowered; rachis naked; scales oblong, acute, somewhat incurved; stamen 1; nut lanceolate, attenuated to a long point, tumid at the base.

C. vegetus, Willd., sp. 1. 283!; Vahl, enum. 2. p. 326!; Pursh, fl. 1. p. 51; Muhl.! gram. p. 25; Elliott, sk. 1. p. 65.

Culm 2—4 feet high, the lower part with the sides convex. Leaves 4 lines wide, scabrous on the margin towards the summit. Umbel about 5-rayed; the longer rays 2—3 inches in length; partial rays very short, each bearing a head of 10—15 spikelets. Involucre much longer than the umbel. Ochrææ bifid. Spikelets 3—4 lines long, and 2 lines wide, somewhat ancipital. Scales closely imbricated, greenish white, 3-nerved. Stamens always solitary. Style 3-cleft. Nut brown, very narrow, gradually tapering to a sharp point, the short pedicel swollen into a kind of bulb.

HAB. Ponds and ditches. Wilmington, North Carolina, Mr. Curtis;! South Carolina and Georgia; Elliott, Muhlenberg!; East Florida, Dr. Baldwin!

OBS. This species greatly resembles *C. virens*, but it can be distinguished by its smooth, obtusely triangular culm, and long-pointed nut with a remarkable cellular bulbous base. It is probable that our plant is a distinct species from the *C. vegetus* of Vahl and Willdenow.

†† Spikelets few, linear, loosely flowered, somewhat convex, inserted in an irregular manner towards the summit of the rays; nut nearly as long as the scales.

30. CYPERUS SCHWEINITZII.

Culm triquetrous, with scabrous angles; umbel simple; rays elongated; involucre 3—5-leaved; spikelets 6—7, alternate and approximate, somewhat appressed lanceolate, 6—8-flowered, with a setaceous bract at the base of each; scales ovate, acuminate, mucronate, keeled; rachis margined with the narrow interior scales; style 3-cleft to the base; nut triquetrous, ovate, acute.

C. alterniflorus, Schweinitz! in Long's 2nd. exped. append. 2. p. 381, (not of R. Brown.)

Rhizoma tuberous. *Culm* 8 inches to 2 feet high, slender, sharply triangular, the upper part rough on the angles. *Leaves* shorter than the culm, about one line wide. *Umbel* erect, 4—6 rayed; the rays very unequal; the longer ones nearly three inches in length. *Ochreæ* truncate, entire. *Involucre* about twice the length of the leaves, scabrous on margin. *Spikelets* irregularly inserted on the summit of the rays in a somewhat imbricate manner, forming a loose oblong head or cluster; the florets distinct. *Rachis* laterally compressed. *Scales* concave, subcoriaceous, somewhat membranaceous on the broad margin, nerved, yellowish; with a short straight mucro a little below the apex. *Interior scales* very narrow, hyaline, firmly united with the rachis. *Stamens* 3. *Style* about as long as the nut; the segments slender, smooth. *Nut* light brown, slightly pointed, smooth, a little shorter than the scale.

HAB. Dry sand on the shore of Lake Ontario, near Greece, Monroe County, New York, *Dr. Samuel B. Bradley!*; on the Arkansas river, *Nuttall!*; on the river St. Peter? *Mr. Say!* (The locality not given in Mr. Schweinitz's list.)

OBS. This very distinct species differs from all the other North American Cyperi in the mode of aggregation of the spikelets. They are inserted on all sides of the common rachis, and stand nearly erect, instead of spreading horizontally, or being in part reflexed, as in most other species.

31. CYPERUS HOUGHTONII.

Culm somewhat obtusely triangular, smooth on the angles; umbel simple; the rays few, very short; involucre 2—3-leaved; spikelets oblong-linear, few, approximated towards the summit of the rays, 6—8-flowered; scales roundish-ovate, obtuse, slightly mucronate; rachis scarcely margined; nut short, ovate, obtuse.

Rhizoma tuberous, short. *Culm* about a span high, the sides somewhat convex. *Leaves* shorter than the culm, narrow, smooth on the margin. *Umbel* subsessile, or with rays scarcely half an inch long. *Ochreæ* truncate. *Involucre* about 3 times as long as the umbel. *Spikelets* half an inch in length, somewhat spreading, without setaceous bracts at the base. *Scales* distinct, subcoriaceous, deeply concave, nerved,

scarious on the margin, yellowish on the sides; the keel green. *Stamens* 3. *Style* deeply three-parted. *Nut* nearly as long as the scale, light brown.

HAB. Lake of the Isles, North-West Territory, *Dr. Houghton!*

OBS. Resembles the spreading species in the disposition and structure of the spikelets, its large nut, and deeply 3-parted style; but the umbel is nearly sessile, the glumes much broader, and scarcely mucronate.

††† *Spikelets subterete or angular, 2—4-flowered, forming dense ovate or globose heads at the summit of the rays; the two lowest scales commonly sterile.*

32. CYPERUS OVULARIS.

Culm acutely triangular; umbel of 1—6 rays; involucre 3—4-leaved; heads globose, compact; spikelets 2—4-flowered, (only two of the florets fertile) radiated; rachis winged; scales ovate, rather obtuse, the two lowest short and empty; nut obovate, triangular.

Mariscus ovularis, *Vahl, enum.* 2. p. 374; *Pursh, fl.* 1. p. 58; *Torr.!* 1. p. 58(excl. syn. *Ell.*); *Beck! Bot.* p. 429; *Gray! Gram. & Cyp.* part 1. no. 76; *Darlingt.!* *fl. Cest.* ed. 2. p. 16; *Ræm. & Schult. syst.* 1. p. 244.

Kyllingia ovularis, *Michx.!* *fl.* 1. p. 29; *Pers. syn.* 1. p. 57.

Scirpus echinatus, *Linn. fl. Zeyl.* 38?; *Muhl.!* *gram.* p. 40.

CYPERUS floribus capitatus, &c. *Gron. fl. Virg.* 12.

GRAMEN Cyperoides Americanum, &c. *Pluk. alm.* 179. to 91. f. 4.

Rhizoma short, tuberous. *Culm* 1—2 feet high, slender, smooth on the angles. *Leaves* all radical, shorter than the culm, 2—3 lines wide. *Rays* of the umbel simple, 1—2 inches long, sometimes contracted, so that the heads appear to be almost sessile. *Ochreae* obtuse. *Involucre* many times longer than the umbel. *Heads* about half an inch in diameter, exactly globose, composed of 50—100 spikelets which radiate in every direction from the common rachis. *Spikelets* commonly about 3-flowered, short and thick, rather quadrangular than terete. *Scales* ap-

pressed, slightly mucronate, nerved, somewhat scarious on the margin; the two lowest much shorter than the others. *Interior scales* persistent, and forming a winged margin to the rachis. *Stamens* 3. *Style* 3-parted. *Nut* flattened on the back, dull grayish brown.

HAB. Boggy grounds, and also in dry soils; common. New York! to Florida! and west to Arkansas!—August to October.

β. tenellus; culms cespitose, slender, heads ovate, small. *Gray, Gram. & Cyp.* part 1. no. 77. (excl. syn.) *Culms* 4 inches to a foot high.

HAB. Sandy places in the pine barrens of New Jersey; common.

γ. cylindricus; heads oblong, or cylindrical.

Mariscus cylindricus, *Elliott, sk.* p. 74; *Schult. mant.* 2. p. 143.

M. umbellatus, *Pursh! fl.* 1. p. 59. (excl. syn.)

M. neglectus, *Schult. mant.* 2. p. 144 (founded on *Scirpus*, no. 31. (without a name) *Muhl. gram.* p. 46.)

Culms 2 feet or more in height. *Umbel* 5—7 rayed, the rays somewhat erect. *Heads* or spikes varying from ovate to cylindrical, compact. *Spikelets* 3—4-flowered. *Scales* and *nut* as in the preceding variety.

HAB. Sandy soils; sometimes in wet situations. Common in the Southern States, as far south as Louisiana.

OBS. I have removed the *Mariscus ovularis* of Vahl to this genus, because I cannot discover it to possess characters sufficient to distinguish it from many undoubted species of *Cyperus*. Indeed all the species of *Mariscus* which have fallen under my observation (with the exception, perhaps, of *M. retrofractus*) resemble, in the structure of their flowers, the plant above described. The 2 valves of the common calyx of *Mariscus* can only be regarded as short abortive scales, such as occur in *Cyperus flavescens*, *dentatus*, *articulatus*, and many others. Little dependence can be placed on the number of florets in the spikelet, as there are six and even eight in the *M. dilutus* of N. ab *Esenbeck*. *R. Brown (prodr.* 1. p. 218) describes the spikelet as *roundish* (spicula teretiuscula), but this character exists in

Cyperus Michauxianus, torosus, pennatus, &c. This profound botanist remarks, that *Mariscus* differs from *Cyperus* only in its few-flowered spikelet, but he does not seem inclined to unite the two genera.* Nees has more recently† endeavoured to characterize *Mariscus* by the deciduous spikelet, separating at a kind of articulation, immediately above the two lowest scales, which remaining attached to the rachis, give it a chaffy appearance.‡ But the same kind of separation takes place in *C. strigosus*, and probably in many other species.

§ 3. *Interior scales herbaceous, free.*—PAPYRUS.

33. CYPERUS ERYTHORRHIZOS, Muhl.

Umbel compound, many-rayed; involucre 4—5-leaved, very long; involucels setaceous, shorter than the partial rays; spikes cylindrical-oblong, nearly sessile; spikelets very numerous, spreading horizontally, terete-compressed, many-flowered; scales lanceolate, mucronate; interior scales lanceolate, acute, free their whole length.

C. erythrorhizos, Muhl. *gram.* p. 20; *Schult. mant.* 2. p. 120.

C. tenuiflorus, Elliott, *sk.* 1. p. 70. (not of Rottb.)

Culm 2—3 feet high, obtusely triangular, very smooth. *Leaves* shorter than the culm, 2—4 lines wide. *Umbel* about 7-rayed; the rays 3—4 inches long, each bearing 3—4 partial rays, which are crowded with spikelets nearly their whole length. *Ochreae* obliquely truncate, entire. *Involucre* three times as long as the umbel. *Spikelets* half an inch long, linear, 10—18-flowered. *Scales* closely imbricated, chestnut-coloured, shining, without nerves. *Interior scales* cuspidate, one third the length of the

* "Limites itaque inter *Cyperum*, *Mariscum* et *Kyllingam* omninò artificiales, at genera minimè conjungenda sint." *R. Brown, prodr. l. c.*

† *Synops. gen. Cyp. in Linnæa*, vol. 9, and in *Wight's contrib.* pp. 69 and 89.

‡ "Differt a *Cypero* spiculis a squamis inferioribus articulo solubilibus, rachi residua post lapsum spicularum quasi paleacea remanente." *N. ab E.*

exterior ones, free their whole length in the mature spikelet, and resembling a 2-valved perianth. *Stamens* 3 (2 in the superior florets). *Style* 3-cleft one third of its length; the segments revolute. *Nut* ovate, acute, half as long as the scale, compressed-triangular, flattened on the back, smooth and shining.

HAB. Wet places, particularly on the banks of rivers. Pennsylvania, North Carolina and Georgia, *Muhlenberg!*; Delaware, *Dr. Baldwin!*; Middle Florida, *Dr. Chapman!*; New Orleans, *Dr. Ingalls!*

The following species of *Cyperus*, recorded by Pursh and other writers on North American Botany, are omitted, as they either do not belong to our Flora, or cannot be identified by the imperfect descriptions of the authors who have noticed them.

1. *C. AUTUMNALIS*, *Pursh*, *fl.* 1. p. 51. (excl. syn.)

Along the margins of ponds and ditches. Virginia and Carolina.—*Pursh*.

This species was founded by Vahl on the *Scirpus autumnalis*, *Rottb.* and *Linn.*, which is a species of *Trichelostylis* (*Scirpus* L.) The *Cyperus complanatus*, *Willd.* and *Scirp. foliis pusillus autumnalis*, &c. *Clayt.* 772, which Vahl refers to his *C. autumnalis*, likewise belong to a species of *Trichelostylis* (*T. complanata*, *N. ab E.*) The *C. juncooides* of Lamk., another of Vahl's synonyms, is an East Indian species. Pursh's plant seems to be *C. articulatus*.

2. *C. TENUIFLORUS*, *Pursh*, *fl.* 1. p. 52. (not of *Rottb.*, *Vahl*, *Elliott*, and others.)

In wet fields in Carolina and Georgia, *Pursh*.

Pursh has probably confounded some other species with the *C. tenuiflorus* of Rottbœll.

3. *C. FILICINUS*. Spikelets linear-lanceolate, somewhat remote, loosely imbricated; involucre 3-leaved, longer than the umbel, and, as also the leaves, lax. *Culm* half a foot high, filiform, acutely angular, as long as the leaves, lax. Leaflets of the involucre resembling the leaves; involucels wanting. *Ochreæ* truncate. *Umbel* somewhat compound, 3—4-rayed; rays an inch or more in length; partial umbels 3-rayed; the rays very short. *Spikelets* 4—8, scarcely half an inch long, 12-flowered,

flat, widely spreading, loosely imbricated, yellow-ferruginous, shining. Scales oblong. *Vahl, enum.* 2. p. 332; *Pursh, fl.* 1. p. 52?

In swamps of Virginia and North Carolina, *Vahl, Pursh.*—As the characters of the fruit are not given by Vahl, it is impossible to identify this species, or even to point out the section of the genus to which it belongs. I am inclined, however, to believe, that it is one of the *Pycurus* group, and probably *C. diandrus*. Pursh's imperfect specimen in Lambert's herbarium seems to be *C. Nuttallii*. Nees, in the catalogue of *Cyperus* examined by him (*Linnæa*, l. c.) places *C. filicinus* in the section *Aristati*, but his plant must be distinct from the species above described.

4. *C. ODORATUS*, *Linn.?*; *Pursh, fl.* 1. p. 52, (excl. syn.)

“On the banks of rivers, Pennsylvania to Florida, rare,” *Pursh.*—Linnaeus, and Willdenow, under *C. odoratus*, refer to *Gron. fl. Virg.* p. 131, and this is probably the reason why Pursh described this species in his work. It does not appear, however, that the true *C. odoratus* has been found in North America.

5. *C. DISTANS*, *Linn.?*; *Pursh, fl.* 1. p. 53. (excl. syn.)

“In sandy wet woods; Carolina and Georgia,” *Pursh.*—Pursh is the only writer on North American Botany who has introduced this species into our Flora. Can his plant be *C. stenolepis* of this Monograph?

6. *C. FUSCUS*, *L.*—Sprengel, in his *Systema Vegetabilium*, (1. p. 223.) states that this species inhabits North America, but I consider it a very doubtful native.

7. *C. BRIZÆUS*, *Richard?*; *Pursh, fl.* 1. p. 51.

In swamps of Carolina, *Pursh.*

The *C. brizæus* of Richard and Vahl, a native of Cayenne and Portorico, seems to be a very distinct plant from Pursh's, which, I am inclined to think, is merely a variety of *C. diandrus*.

Since the preceding matter was written and mostly printed, I have received from my friend G. A. W. Arnott, Esq. an extract from a MS. of N. ab Esenbeck on some N. American Cyperaceæ, particularly those collected by Drummond in his last expeditions. Among the species found by Drummond near St. Louis, Nees notices *C. Elliottianus*, (my *C. diandrus?*), *C. filicinus* (probably not Vahl's plant), *C. repens*, and *C. Kyllingæoides*, which last, as Mr. Arnott remarks, must be *C. filiculmis*, and not the East Indian *C. Killingæoides*.

†† Spikelets about one-flowered.

3. MARISCUS, Vahl.

SPIKELETS subterete, distichously imbricated, rarely bearing more than one fertile floret. RACHIS margined with the adnate persistent interior scales. STAMENS 3. STYLE 3-cleft. NUT triangular.—Habit of *Cyperus*; spikelets subulate, mostly collected in dense ovate heads; common rachis appearing chaffy from the persistence of the lower scales of the spikelets.

Mariscus, Vahl, *enum.* 2. p. 372 (in part); *R. Brown, prodr.* 1. p. 218; *Ræm. & Schult. gen.* 190; *Lestib. ess.* p. 31, no. 24; *N. ab Esenb. in Wight's contrib.* p. 69, and in *Linnæa*, 9. p. 286; *Nutt. gen.* 1. p. 34.

Species of *Cyperus*, and *Kyllingia*, Linn., Vahl, Willd. &c.
Species of *Scirpus*, Linn. &c.

The genus *Mariscus*, as here characterized, includes only those species of Vahl, N. ab Esenbeck and others, which bear 1—2-flowered spikelets; such as *M. cyperinus*, *M. umbellatus*, and *M. retrofractus*. It is so nearly related to *Cyperus*, that it might, perhaps, form a section of that genus.

MARISCUS RETROFRACTUS, Vahl.

Umbel simple, rays numerous, elongated; heads obovate, retrorsely imbricate; spikelets subulate, 1-flowered; the two lowest scales short, terminal one very narrow, involute.

M. retrofractus, Vahl, *enum.* 2. p. 373; *Pursh, fl.* 1. p. 58; *Elliott, sk.* 1. p. 74; *Torr.! fl.* 1. p. 57; *Beck! bot.* p. 429; *Ræm. & Schult, syst.* 2. p. 245.

Scirpus retrofractus, Linn. *sp.* 74; *Willd. sp.* 1. p. 304; *Muhl.! gram.* p. 40.

CYPERI genus indianum, &c. *Pluk. alm.* 179. t. 91. f. 4.

Root fibrous. *Culm* tumid at the base, 2—3 feet high, nearly leafless, pubescent, obtusely triangular, the sides very convex. *Leaves* mostly radical, half the length of the culm, 3—4 lines wide, flat, pubescent and somewhat glaucous. *Rays* 6—10, unequal, somewhat terete, 2—6 inches long. *Ochrea* bicuspidate. *Involucre* many-leaved; 3 of the leaves broader and longer than the others, all of them generally shorter than the umbel. *Heads* nearly an inch long, and half an inch in diameter, very obtuse, obovate, or rather turbinate, the base acute. *Spikelets* very slender, and numerous, (about 100); uppermost ones spreading horizontally, the rest bent backwards against the peduncle. *Scales* generally 5 in each spikelet, striate; the two lowest (calyx, *Vahl.*) short, ovate, empty; the fourth lanceolate, fertile; the uppermost one subulate. *Style* 3-cleft. *Nut* linear, triquetrous, minutely papillose.

HAB. Sandy soils, and sometimes in wet places; New York to Florida. In the pine barrens of New Jersey!; not common; Pennsylvania, *Muhlenberg!*; North Carolina, *Mr. Curtis!*; South Carolina, and Georgia, *Elliot, Dr. Baldwin!*; Middle Florida, *Dr. Chapman!*; Alabama, *Dr. Gates!*; Arkansas, *Nuttall.*

OBS. The spikelets, in their earliest state are merely spreading, but immediately after flowering they bend backward and are appressed to the common rachis, as in *M. umbellatus* of the East Indies.

KYLLINGIA, *Rotb.*

SPIKELETS compressed, the scales distichously imbricated, usually bearing but one fertile flower. **SCALES** generally 4; the 2 lowest short and empty (rarely wanting), the others larger, for the most part only the lower one fertile. **STAMENS** 1—3. **STYLE** elongated, 2-cleft. **NUT** lenticular.—Culms triangular; spikelets collected in roundish sessile heads, which are solitary or aggregated; involucre mostly 3-leaved, foliaceous.

Kyllingia, *Linn.*; *Lam. ill.* t. 38; *Juss. gen.* p. 27; *Nutt. gen.* 1. p. 30; *R. Brown, prodr.* 1. p. 218; *Ræm. & Schult. gen.* 188; *Kunth, syn.* 1. p. 143; *N. ab Esenb. in Wight's contrib.* p. 69, and in *Linnæa.* 9. p. 286.

Species of *Mariscus*, *Lestib.*

Hedychloa, *Rafin. annals of nature*, (1820) p. 16.

Thryocephalum, *Forst. gen.* 65.

This genus differs from *Mariscus* in the sessile head, compressed spikelets, lenticular nut, and bifid style.* Linnæan botanists generally regard the 2 inferior scales of the spikelet as a 2-valved calyx, and the other two scales as constituting a corolla. *Hedychloa*, as characterized by Rafinesque, agrees in all respects with the ordinary species of *Kyllingia*.

KYLLINGIA PUMILA, *Michx.*

Heads 1—3; spikelets 1-flowered, diandrous; scales 3—4, the lowest very minute, the two upper ovate, acuminate, smooth on the sides, scabrous on the keel; nut, obovate; involucre 3-leaved, very long; leaves linear.

K. pumila, *Michx.! fl.* 1. p. 28; *Pursh, fl.* 1. p. 46; *Elliott, sk.* 1. p. 55; *Muhl.! gram.* p. 4; *Vahl, enum.* 2. p. 380; *Rœm. & Schult.* 2. p. 237.

Hedychloa fragrans, *Rafin.! ann. nat.* (1820) p. 16.

Root fibrous. Culms cespitose, 2—12 inches high, triquetrous, slender, smooth. Leaves generally shorter, but sometimes as long as the culm, somewhat glaucous. Heads one-third of an inch in diameter, mostly solitary, but often 2—3 closely aggregated, varying in form from globose to oblong. Spikelets ovate; one or two of lowest scales very small (wanting, *Elliott*); the two upper slightly mucronate, 3-nerved on each side. Rachis terete, tuberculated with the short pedicels of the flowers. Stamens always 2. Style longer than the ovary, 2-cleft nearly half-way down. Nut much compressed, obtuse, fulvous.

* "Transitus ab hoc genere ad Mariscos, præcipuè ad unifloros, perfacilis; et ex contemplatione specierum flosculo secundo instructarum vera natura partium in unifloris luculenter apparet; in his enim valvula interior (quæ sæpiùs paulò major) uti rachis spiculæ abortivæ considerari debet, e cujus basi v. medio flosculus secundus ejusve rudimentum ortum ducit."—*R. Brown*, l. c.

HAB. Wet places, particularly along rivers; North Carolina to Florida. Lincolnton, N. C., *Mr. Curtis!*; Kentucky, *Dr. Short* and *Dr. Peter!*; St. Louis and New Orleans, *Drummond!*; South Carolina and Georgia, *Elliott, Le Conte!*

OBS. Mr. Elliott states that the valves of the "calyx" (minute lowest scales) are wanting, but I have generally been able to see at least one of them. This little scale, however, Nees ab Esenbeck (in a MS. account of some N. American Cyperaceæ already alluded to) is inclined to regard rather as a bracteole than one of the scales of the spikelet, as it appeared to stand somewhat remote from the rest; but in the specimens which I examined it was in close contact with the others.

2. KYLLINGIA MONOCEPHALA, *Linn.*

Head simple, globose, compact; spikelets 1-flowered, monandrous, ovate, acuminate; the two superior scales striate, nearly equal, smooth on the sides, serrulate, ciliate on the keel; the two inferior minute; nut somewhat orbicular; involucre 3-leaved, one of the leaves erect; the others horizontal.

K. monocephala, *Vahl, enum.* 2. p. 379; *Elliott, sk.* 1. p. 54; *Muhl.!* *gram.* p. 3 (in part); *Torr.!* *fl.* 1. p. 43.

Rhizoma creeping. *Culm* about a foot high, triquetrous, slender, smooth. *Leaves* much shorter than the culm, one line wide, scabrous on the margin towards the summit, abruptly pointed. *Head* generally inclining to one side, always solitary. *Involucre* sometimes 4-leaved, one of the leaves very short. *Spikelets* very numerous, spreading horizontally. *Scales* 4; the 2 lowest very small and difficult to find, one of them (the inferior) ovate, the other lanceolate; the 2 superior scales much larger, spreading and somewhat recurved at the point, membranaceous, 3-nerved on each side; the keel green and ciliated with a few minute spiculæ. *Stamen* always solitary. *Style* as long as the nut, 2-cleft. *Nut* much compressed, the breadth nearly equalling the length, very obtuse, fulvous.

HAB. Low moist places; near Darien, on the Alatomaha, Georgia, *Dr. Baldwin!*; and Sunbury in the same state, *L. Le Conte, Esq.!*; Carolina and New Jersey, *Muhlenberg.*

This species is rare in the United States. It is probably distinct from the *K. monocephala*, Linn. a native of the East Indies and South America, that species having diandrous flowers and an obovate nut. Our plant is perhaps the *K. cruciformis*, Schrad. (in Schult. mant. 2. p. 137; N. ab Esenb. in Wight's contrib. p. 91.), with which it agrees in its monandrous flowers; but the nut is rather orbicular than "obovate." To the *K. pumila*, it has a strong resemblance, but it is generally a much taller plant, the leaves are firmer and more abruptly pointed, the head solitary, and it differs also in the flowers.

The localities quoted from Muhlenberg are rather doubtful, as the specimens in his herbarium are mixed with another species of *Kyllingia*, and also with *Scirpus subsquarrosus*.

3. KILLINGIA SESQUIFLORA:

Heads 3, cylindrical-oblong, the intermediate one largest; spikelets ovate-oblong, diandrous, with one perfect, and often one imperfect floret; scales 4—6; the two lowest minute; the third and fourth nearly equal, ovate-lanceolate, acute, membranaceous, 5-nerved, smooth on the keel; the fifth imperfect, concealed in the fourth; style deeply 2-cleft; nut obovate; involucre 4—5-leaved, and with the leaves, broadly linear.

Root creeping. *Culm* 8—12 inches high; obtusely triangular, smooth. *Leaves* nearly as tall as the culm, 2—3 lines wide. *Heads* always 3; the middle one three-fourths of an inch long, the others shorter. *Involucre* of 4 long leaves and a shorter one. *Spikelets* spreading, of a whitish colour. Lowest scales closely appressed, one of them ovate, the other lanceolate; the third and fourth whitish, with a green keel. *Style* one-third longer than the ovary, cleft about two-thirds of the way down. *Nut* much compressed, very obtuse, fulvous.

HAB. Damp rich soils, Middle Florida, *Dr. Chapman!*

OBS. This species resembles *K. triceps*, Linn., but differs in its longer heads, somewhat 2-flowered spikelets, smooth scales, and obovate nuts. It is distinguished at once from the other North American species of the genus, by the large whitish heads, broad leaves, and thick culm. The whole plant has a strong balsamic odour.

TRIBE II. HYPOLYTRÆ.

FLOWERS perfect. SCALES (bracteæ,) of the spike imbricated on all sides. SPIKELETS several-flowered, composed of many distichous scales (squamulæ); or one-flowered with few scales placed in a valvate or circular order, and no perigynium; or one-flowered with a petaloid perigynium (perianth), and no scales.

5. LIPOCARPHA, *R. Brown.*

SCALES of the spike imbricated on all sides, coriaceous. SPIKELETS oblong, composed of two squamulæ (perianthium, *N. ab E.*) parallel with the scale; one of them fertile, one-flowered, the other abortive. PERIGYNIUM wanting.—Habit of *Kyllingia*; heads compact, clustered.

Lipocarpa, *R. Brown*,* fide *N. ab Esenb. in Wight's contrib. p. 70, and in Linnæa, p. 287.*

Species of *Hypolytrum*, *Richard, Kunth, Vahl*, and others.

Species of *Kyllingia*, *Michaux.*

The genus *Lipocarpa* differs from *Hypolytrum* chiefly in the position of the squamulæ of the spikelet. In the latter, they are *contrary* to the scale, in the former they are inserted *parallel* with the scale, one of them (the inferior,) being placed immediately behind the nut, and the other between the nut and the scale.

LIPOCARPHA MACULATA.

Spikes 3—5, ovate, acute; scales cuneiform-rhombic, acute, narrowed at the base, spotted; spikelet shorter than the scale; squamulæ lanceolate, the interior chartaceous; the exterior membranaceous, convolute; stamen solitary; style 2-parted; nut obscurely 3-sided; leaves narrow; involucre somewhat two-leaved; culm triangular.

* I am unable to quote the work in which Mr. Brown published this genus.

Kyllingia maculata, Michx. ! fl. 1. p. 29; Pursh, fl. 1. p. 47; Elliott, sk. p. 55.

Mariscus maculatus, Rœm. & Schult. syst. 2. p. 243.

Root fibrous. Culms 3—8 inches high, cespitose, smooth. Leaves scarcely a line wide, shorter than the culm, often involute. Involucre of 2 long leaves, and one very short one. Spikes usually 3, a little larger than a pepper-corn, closely aggregated. Scales very numerous, rather loosely imbricated, concealing the spikelets, persistent, marked with minute oblong red dots, particularly on the inner side; midrib green. Spikelet composed of 2 squamulæ; the interior obtuse, often dotted like the scales; the exterior (next the scale) very thin and delicate. Stamen always solitary. Style slender, longer than the nut. Nut 3-sided, but the sides and angles are so rounded that it appears nearly cylindrical, contracted into a neck near the base, yellow.

HAB. "Wet springy land, Georgia; common in the vicinity of Savannah," Dr. Baldwin!; Middle Florida, Dr. Chapman!

OBS. To the *L. Humboldtiana* of Nees ab Esenbeck (*Hypocytrum argenteum*, Kunth, syn. 1. p. 149, not of Vahl,) this species bears a strong resemblance, but it differs in the scales, which are acute but not acuminate, and in the style which is bifid, not 3-cleft. Michaux states that our plant resembles *Kyllingia triceps*, but it undoubtedly belongs to the present genus, while *K. triceps* is a true *Kyllingia*. Muhlenberg's *K. triceps* appears to be merely *K. pumila*.

6. FUIRENA, Rottb.

SCALES of the spike imbricated on all sides, one-flowered, awned. PERIGYNIUM single or double; the exterior (calyx), when present; consisting of 3 bristles, the interior (corolla) of 3 unguiculate petaloid laminæ, alternating with the bristles. STAMENS 3. STYLE 3-cleft. NUT triquetrous, pointed with the remains of the style, abruptly contracted into a pedicel at the base.—Culms mostly simple, erect, articulated, angular, leafy (rarely with nearly naked sheaths); spikes subumbellate, axillary and terminal, mostly squarrose; external lamina of the scale produced into a short awn or bristle.

Fuirena, Rottb. gram. p. 70. t. 19; Juss. gen. p. 26; Lamk. ill. 1. p. 150. t. 39; R. Brown, prodr. 1. p. 220; Kunth, syn.

1. p. 150; *Lestib. ess. fam. Cyp.*, p. 44. no. 59; *N. ab Esenb.* in *Wight's contrib.* pp. 70 & 93, & in *Linnaea*, 9. p. 288; *Michx. fl.* 1. p. 37; *Nutt. gen.* 1. p. 37.

Vaginaria, *Rich.* in *Pers. syn.* 1. p. 70; *Nutt. gen.* 1. p. 37.

1. FUIRENA SQUARROSA, *Michx.*

Culm obtusely 3-angled, sulcate; leaves ciliate; sheaths hairy; spikes clustered (3—6—12), ovate; awn as long as the scale; petals cordate or ovate.

α. Nut twice the length of its stipe; bristles shorter than the claws of the petals, nearly smooth.

F. squarrosa, *Michx. fl.* p. 37; *Vahl, enum.* 2. p. 286; *Pursh, fl.* 1. p. 58; *Elliott, sk.* 1. p. 53. t. 2. f. 1; *Muhl.! gram.* p. 50, (in part); *Torr.; fl.* 1. p. 67; *Clayt. fl. Virg.* 173; *Curt.! cat. pl. Wilmingt.* no. 56; *Ræm. & Schult. syst.* 2. p. 234; *Spreng. syst.* 1. p. 236.

Culm 1—2 feet high, leafy. *Leaves* 6 inches long, 2—4 lines broad, flat, pubescent on both sides and distinctly ciliate on the margin; upper ones smoothish; sheathes sulcate. *Ligula* membranaceous, brown, ciliate. *Umbels* simple or compound, one or two, supported on peduncles which grow from the upper sheaths; the terminal one 2—3-rayed, and composed of 6—20 spikes, subtended by an involucre of 2 or 3 very short narrow leaves. *Spikes* half an inch in length, ovate-oblong, closely aggregated into heads at the summit of the short rays. *Scales* ovate, hairy, obtuse or emarginate, marked with three strong approximated ribs, which uniting towards the summit, form the (upwardly scabrous) awn. *Bristles* of the perianth, (calyx), shorter than the claw of the petals, flat, incurved, nearly smooth. *Petals* with claws longer than the lamina, mucronate, but not awned; lamina of a spongy texture throughout, the breadth nearly equal to the length. *Style* deeply 3-cleft; the segments glandularly pubescent. *Nut* very acutely and equally triangular, with flat sides, distinctly pedicellate.

HAB. Swamps; North Carolina to Florida. *Wilmington, N. C., Mr. Curtis!*; *South Carolina, Elliott!*; *Georgia, Le Conte and Dr. Baldwin!*; *Alabama, Dr. Gates!*; *New Orleans, T. Drummond!*

β . Nut on a very short stipe; bristles as long as the claws of the petals, somewhat denticulate; petals cordate, with a short acuminate point.

Culm 2 feet high, slender; sheaths very hairy. *Umbels* composed of 5—9 spikes. *Awns* of the scales nearly straight.

HAB. Southern States, *Delile!*

γ . Nut twice the length of its stipe; petals ovate, cuspidate, and terminating in a short bristle; the claw shorter than the retrorsely scabrous bristle; leaves and sheaths hairy.

F. squarrosa, *Gray!* *Gram. & Cyp.* part 1. 78; *Beck bot.* p. 129.

Culm 12—18 inches high, slender. *Leaves* and sheaths hispidly hairy. *Spikes* mostly terminal, 6—12 in an irregular umbel or cluster. *Petals* rounded at the base, the summit attenuated into a long slender point or short bristle.

HAB. Bogs and swamps. New Jersey, particularly in the pine barren region, and along the sea coast!—September.

δ . (*pumila*.) Nut somewhat obovate, gradually attenuated at the base; petals ovate-lanceolate, narrow at each end; bristles longer than the nut, retrorsely scabrous; spikes 2—6, mostly terminal, sessile; leaves smoothish.

F. squarrosa, β . *pumila*, *Torr.!* *fl.* 1. p. 68.

F. pumila, *Spreng. syst.* 1. p. 237; *Schult. mant.* 3. p. 546.

F. Torreyana, *Beck!* *bot.* p. 429.

Culm 3—6 inches high, pubescent above; lower sheaths pubescent; throat hairy. *Involucre* longer than the spikes; 1—2 leaved. *Spikes* ovate, thick. *Scales* ovate, obtuse, hairy, terminated by a recurved awn nearly the length of the lamina. *Bristles* straight, very scabrous. *Petals* much attenuated at the base, obscurely 3-nerved, the summit tapering into a long cusp, or short bristle. *Nut* broadest near the top abruptly acuminate.

HAB. Sandy wet places. Near Babylon, Long Island, and in the pine barrens of New Jersey!; Tewksbury pond, near Boston, *B. D. Greene, Esq.!*—August—September.

ϵ . (*aristulata*.) Nut on a short stipe, dilated in the middle;

petals ovate-oblong, obtuse, with a short scabrous awn below the summit, 3-nerved; the upper portion tumid; bristles nearly as long as the nut.

F. squarrosa, Torr!. Rocky mount. plants, in *Ann. Lyc. N. York.* 2. p. 252.

Culm about a span high, rather slender, *Leaves* one line broad, flat, somewhat hairy. *Involucre* 1-leaved. *Spikes* about 3, sessile, ovate. *Scales* ovate, obtuse, hairy; awn longer than the lamina. *Bristles* stiff, a little incurved, two thirds the length of the petals, retrorsely scabrous. *Petals* subcordate at the base; lower part of the lamina compressed, the upper part spongy, submarginate, bearing a distinct, abrupt, retrorsely scabrous awn a short distance below the summit. *Nut* abruptly contracted at the base.

HAB. Arkansas? Collected by Dr. James in Long's Expedition to the Rocky Mountains.

ORS. The five forms of *Fuirena* here described are, for the present, referred to *F. squarrosa*, although it is probable they include several distinct species. I have not yet determined to my entire satisfaction what degree of dependence is to be placed on the shape and relative length of the floral envelopes in this genus. If they are liable to variation, we probably have, besides the *F. scirpoidea*, but one other species of the genus in the United States.

2. *FUIRENA HISPIDA*, Elliott.

“Leaves long, and with the sheaths very hispid; culm hispid above; heads many (5—8) clustered; valves of the corolla ovate, mucronate.”

F. hispida, Elliott! *sk.* 1. p. 579.

“Culm 1—2 feet high, erect and decumbent, smooth along the lower joints. *Leaves* narrow, tapering, 4—8 inches long, many-nerved, hispid, particularly on the lower surface. *Scales* oval, the outer ones hispid, the inner ones finely pubescent; awn long, expanding. *Stamens* 3, scarcely longer than the corolla. *Styles* twice as long as the stamens.”

HAB. Borders of ponds in the middle districts of Georgia and Carolina, Elliott!, Dr. Boykin.—July—October.

OBS. I have specimens of this plant which were sent to me by Mr. Elliott, but the inflorescence is not sufficiently advanced for comparing it with the preceding species and varieties. It appears, however, to be almost identical with my variety β .

3. FUIRENA SCIRPOIDEA, Mich.

Rhizoma creeping; culm furnished with leafless, subinflated, mucronate sheaths; spikes (1—6,) ovate, terminal; scales ovate, with a short appressed mucro; bristles slender, scabrous, longer than the claws of the ovate, somewhat obtuse petals.

Fuirena scirpoidea, Michx.! *fl.* 1. p. 38. t. 7; *Elliott, sk.* 1. p. 54; *Muhl.! gram.* p. 51; *Vahl, enum.* p. 387; *Ram. & Schult.* 2. p. 235; *Spreng. syst.* 1. p. 237.

Vaginarina Richardi, *Pers. syn.* 1. p. 70; *Pursh, fl.* p. 58, *Nutt. gen.* 1. p. 37.

Rhizoma creeping, scaly. *Culm* a foot and a half high, smooth and subterete swollen at the joints. *Sheaths* remote, never bearing leaves, but merely a short subulate point. *Spikes* all terminal, often solitary, but sometimes as many as six, 4—5 lines long, pubescent. *Scales* 3-nerved, the nerves confluent at the summit, and terminating in a short straight point. *Bristles* straight, retrorsely scabrous. *Petals* with the claw longer than the lamina, 3-nerved, purplish, thin and subdiaphanous except near the summit, which is cellular and tumid. *Stamens* 3, filaments much longer than the petals. *Style* compressed, dilated upward, 3-parted, the divisions glandular-pubescent. *Nut* acutely triangular, whitish, stipitate, acuminate with the remains of the style.

HAB. Swamps which are dry in summer. Florida, *Michaux!*; Georgia, *Dr. Baldwin!* & *Le Conte!*; New Orleans, *Dr. Ingalls!*

OBS. This interesting plant, as Michaux remarks, has the characters of a *Fuirena*, but its habit is different from that of the other species. In the structure of the flowers, it agrees minutely with *F. squarrosa*, especially the variety which I have called *aristulata* (ε .) In one instance, I found the style 3-cleft with one of the divisions again 3-parted.

TRIBE III. SCIRPEÆ.

FLOWERS perfect. SCALES of the spike imbricated on all sides (rarely bi-trifarious). PERIGYNIUM composed of several bristles, hairs, or linear scales, (sometimes cyathiform and membranaceous) or wanting.

A. Scales of the spike bi-trifarious.

7. ABILDGAARDIA, Vahl.

SPIKES with the scales bifariously imbricated, (by the torsion of the rachis trifarious, *N. ab E.*) PERIGYNIUM 0. STYLE 3-cleft, the base bulbous and articulated to the triquetrous nut. —Culm angular, leafy at the base; spikes solitary, clustered, or umbellate.

Abildgaardia, *Vahl, enum.* 2. p. 296; *R. Brown, prodr.* 1. p. 229; *Lestib. ess. fam. Cyp.* p. 32, no. 26; *N. ab Esenb. in Wight's contrib.* p. 70, & in *Linnæa.* 9. p. 289.

Species of *Cyperus*, *Linn.*, *Kunth.*

Cyperus §. *Iria*, *Rich. in Pers. syn.* 1. p. 65.

ABILDGAARDIA CYPEROIDES, *N. ab E. & Meyen.*

“Culm triquetrous, sulcate on one side; leaves linear, obtuse, scabrous on the margin; umbel somewhat decompound, the rays pubescent; involucre and involucels shorter than the common and partial umbels; spikelets somewhat 2-flowered.”

A. cyperoides, *N. ab E. & Meyen in Acad. Nat. Cur.* 16. *supp.* (fide *N. ab E. in Wight's contrib.* p. 95.)

Gussonea cyperoides, *Presl. in rel. Haenk.* 3. p. 183, t. 33, (fide *N. ab E.*)

HAB. Monte Rey in California, *Henke.*

OBS. This species has not come under my observation. It is said by Nees to be allied to his *A. Eragrostis*, & *A. fusca*, described in *Wight's Contributions*, l. c.

8. CHÆTOCYPERUS, *N. ab Esenb.*

SPIKE compressed, few-flowered; the scales somewhat distichously imbricated. PERIGYNIUM of 3—6 cartilaginous retrorsely-hispid bristles. STAMENS 3. STYLE 3-cleft; the base bulbous and articulated to the ovary, persistent. NUT triangular, crowned with the bulb of the style. Culm slender, often procumbent; spikes terminal, solitary, often proliferous.

Chætocyperus, N. ab Esenb. in Wight's contrib. pp. 70 and 95, & in Linnæa, 9. p. 289.

Species of *Scirpus*, *Vahl, Kunth, & Lam.*

Species of *Eleocharis*, *Ram. & Schult.*

Species of *Cyperus*, *Retz., Willd.*

CHÆTOCYPERUS BALDWINII.

Spikes ovate, much compressed, proliferous and rooting at the base; scales lanceolate-linear, somewhat obtuse, loose; nut smooth, with prominent angles; bristles 3—4, half the length of the nut.

Scirpus sarmentosus, Baldw. MS. & herb!

Root fibrous, annual. Culms 5—6 inches long, cespitose, of the thickness of a strong bristle, subterete, sulcate, prostrate and rooting at the extremity. Spikes 3—8-flowered, manifestly distichous, about one third of an inch long. Scales somewhat spreading, smooth, slightly keeled. Stamens 3; filaments long and slender; anthers oblong. Ovary linear-oblong. Bristles scarcely half the length of the nut, and appressed to its sides. Style deeply 3-parted; segments glandularly pubescent. Nut oblong, much smaller than the scale, shining, distinctly triangular, with the angles prominent and somewhat margined. Tubercle small, white, set close on the summit of the nut, the base spreading out into three lobes which correspond with the angles of the nut; the apex pointed with a short beak.

HAB. Low wet places. Near St. Mary's, Georgia, *Dr. Baldwin!*—Flowers from July to September.

OBS. This interesting plant is nearly allied to *C. setaceus*, *N. ab E. in Linnæa, 9. p. 289, (C. Limnocharis in Wight's*

contrib. p. 98; *Cyperus setaceus*, Retz.; *Eleocharis setaceus*, R. Brown;*) but in that species the nut is punctato-striate, and there are six bristles, four of which equal the nut in length.

B. Scales of the spikes imbricated on all sides.

† With a perigynium.

9. ELEOCHARIS, R. Brown.

SCALES of the spike imbricated on all sides. BRISTLES of the perigynium 3—12, (commonly 6,) rigid, persistent. STYLE 2—3 cleft; the base bulbous and persistent, articulated to the ovary. NUT commonly obovate, lenticular, or obtusely triangular, crowned with a tubercle or bulbous base of the style. —Culms simple, leafless, with truncate or mucronate sheaths at the base; spike terminal, solitary, naked.

Eleocharis, R. Brown, *prod.* 1. p. 224; *Ræm. & Schult. syst.* 2. p. 3; *Gray's nat. arrang. of Brit. pl.* 2. p. 77.

Eleocharis, *Eleogenus*, *Limnochloa* and *Scirpidium*, N. ab *Escrib. in Linnæa*, 9, pp. 293, 294, and in *Wight's contrib.* p. 71.

Heleocharis, and *Limnochloa*, *Lestib. ess. fam. Cyp.* p. 41, no. 50 and 52.

Species of *Scirpus*, Linn., Vahl, Kunth.

§ 1. Spike cylindrical; scales rigid, arranged in a spiral order; style 3-cleft; nut biconvex; pericarp thin; tubercle cartilaginous, compressed, colored.—LIMNOCHLOA.

1. ELEOCHARIS EQUISETOIDES.

Culm terete, remotely nodose, papillose; spike cylindrical; scales suborbicular-ovate, very obtuse, or slightly pointed;

* "*Cyperus setaceus*, Retz. et Willd. sp. pl. 1. p. 269, huc quoque-referendus a reliquis differt, nuce 3-gonâ, et spiculâ distichâ." R. Brown, *prod.* 1. p. 221, in his Observations on the genus *Eleocharis*.

bristles 6, as long as the nut; style 3-cleft; nut obovate, strongly biconvex, smooth; tubercle closely sessile, conical-rostrate, acute.

Scirpus equisetoides, *Elliott, sk.* 1. p. 79; *Nutt.! gen.* 1. p. 32; *Ræm. and Schult. mant.* 2. p. 74.

S. geniculatus, *Pursh, fl.* 1. p. 55!

Culm 1½—2 feet high, of the size of a goose quill; the pith condensed at intervals of about two inches into nodes or false joints; the surface slightly roughened with minute papillæ, which are depressed in the centre. *Sheaths* radical, leafless. *Spike* about an inch long, rather acute. *Scales* cartilaginous, with a narrow scarious margin; the lower ones very obtuse; the upper often somewhat pointed. *Bristles* retrorsely hispid, as long as the nut without the tubercle. *Style* 3-cleft, about one-third its length. *Nut* obovate, tumid, brown, shining, towards the base very minutely striate transversely. *Tubercle* one-third the length of the nut, compressed, black.

HAB. Bogs, and in water. Near Lewistown, Delaware, *Nuttall!*; Fayetteville, N. Carolina, *Schweinitz!*; St. John's, Georgia, *Dr. Baldwin!*

2. ELEOCHARIS QUADRANGULATA, *R. Brown.*

Culm acutely and unequally quadrangular, three of the sides concave, the other wider and flat; spike cylindrical; scales broadly ovate, very obtuse, bristles 6, as long as the nut; nut obovate, striate, and minutely reticulate; tubercle conical, compressed, somewhat free at the base.

E. quadrangulata, *R. Brown, prodr.* 1. p. 224, (in *Obs.*); *Ræm. & Schult. syst.* 2. p. 155.

Scirpus quadrangulatus, *Michx.! fl.* 1. p. 30; (not of *Muhl.*); *Pursh, fl.* 1. p. 55; *Elliott! sk.* 1. p. 76, t. 3. f. 2; *Vahl, enum.* 2. p. 252; *Spreng. syst.* 1. p. 204.

S. marginatus, *Muhl.! gram.* p. 28.

S. albomarginatus, *Ræm. & Schult. mant.* 2. p. 74.

Rhizoma thick and creeping. *Culm* 2—4 feet high and two lines in diameter, clothed at the base with a few purplish sheaths, which some-

times bear short leaves. *Spike* 12—16 lines in length. *Scales* coriaceous, with a narrow scarious margin, sometimes a little pointed, often minutely dotted with purple. *Bristles* retrorsely hispid, four of them equalling the tubercle. *Stamens* 3. *Style* cleft about one-third of its length. *Nut* rather broadly obovate, somewhat tumid, grayish white, not shining; the surface appearing very finely reticulate under a lens. *Tubercle* minute, dark brown, articulated to the nut by a very short neck.

HAB. Swamps and margins of rivers, growing in the water. Near Philadelphia, *Mr. Steinhaur* and *Mr. Z. Collins!*; Pomonkey Creek, Maryland, *Dr. Robbins!*; near Wilmington, North Carolina, *Mr. Curtis!*; Carolina, *Michaux!*; near New Orleans, *Dr. Ingalls!*

OBS. This plant, as Michaux correctly remarks, resembles *Scirpus mutatus*, Linn. It has also a strong resemblance to *S. acutangulus*, Roxb. (*Limnochloa*, *N. ab E.*) Mr. Elliott states, that in the rice fields of the South, it is a very injurious intruder; its thick roots occupying the ground, and permitting nothing to grow where they extend.

§. 2. *Spike cylindrical; scales rigid, arranged in a spiral order; style 3-cleft; nut biconvex, tumid; pericarp very thick and spongy; tubercle conical, spongy, confluent.*—SOMPHOCARYA.

3. ELEOCHARIS CELLULOSA.

Culm subterete above, obtusely triangular below, with a long truncate sheath; spike cylindrical; bristles longer than the nut, nearly smooth; nut broadly obovate, cellular and reticulated, crowned with a broad conical subacute tubercle.

Culms 2 feet high, 1½ line in diameter, spongy, invested one third of its length with a single sheath, obscurely 3-sided towards the base, but terete near the spike, scarcely striate. *Spike* an inch long, obtuse. *Scales* nearly orbicular, obscurely spiral, pale brown, sometimes dotted with red; margin distinct, scarious, whitish. *Bristles* 6, strong, smooth, with

the exception of a few slight denticulations, most of them overtopping the tubercle. *Stamens* 3; filaments long and slender. *Style* deeply 3-cleft. *Nut* covered with a thick cellular integument, tumid, pale brown and shining, reticulated, and striated longitudinally. *Tubercle* large, of a whitish colour, confluent with the nut, so as to appear blended with it, of a spongy texture like the pericarp.

HAB. Wet sandy marshes. Bay of St. Louis, Dr. Ingalls!

OBS. For this rare plant I am indebted to my friend Dr. Ingalls, who sent it to me under the name of *Scirpus reticulatus*; but there is a *S. reticulatus* of Lamarck, and as the genus *Eleocharis* may possibly be hereafter restored to *Scirpus*, I have not retained the specific name of Dr. Ingalls. In its cylindrical spike and the structure of its scales, it resembles the species of the preceding section; but in its spongy whitish tubercle, it is more nearly allied to the next group. The thick cellular covering of the nut is its most remarkable character.

§ 3. *Spike ovate or oblong; scales membranaceous, (rarely coriaceous) very numerous, irregularly imbricated; style mostly 2-cleft; nut obovate, biconvex, smooth; tubercle somewhat suberose.*—ELEOCHARIS.

4. ELEOCHARIS PALUSTRIS, R. Brown.

Culm terete, striate, spongy; spike oblong-lanceolate; scales somewhat obtuse; the two lowest large orbicular and empty; bristles scabrous, longer than the nut; style 2-cleft; nut lenticular, smooth, (fulvous); tubercle conical, acute, distinct.

Eleocharis palustris, R. Brown, *prodr.* 1. p. 224. (*in Obs.*); *Ram. & Schult. syst.* 2. p. 153; *N. ab Escnb. in Wight's contrib.* p. 113, *Smith, Eng. fl.* 1. p. 63.

Scirpus palustris, Linn.; *Willd. sp.* 1. p. 291; *Pursh, fl.* 1. p. 54; *Elliott, sk.* 1. p. 77; *Muhl.! gram.* p. 28; *Torr.! fl.* 1. p. 45; *Big. fl. Bost. ed.* 2. p. 20; *Beck! bot.* p. 425; *Darlingt.! fl. cest. ed.* 2. p. 19.

S. glaucus, Torr.! fl. 1. p. 44.

S. glaucescens, Willd.

Culm 1—2 feet high, of a soft texture, varying in diameter from filiform to a line and a half. *Spike* 3—5 lines long, many-flowered. *Scales* fuscous in the middle, with a broad scarious and generally lacerated margin. *Bristles* 3—6, overtopping the tubercle, retrorsely scabrous. *Stamens* 3. *Nut* compressed, smooth, but dull. *Tubercle* rostrate-conical, nearly half the length of the nut, which is contracted into a short neck beneath it.

HAB. Swamps, and low grounds, from near the Arctic Regions! to Florida! and from the Atlantic! to the Pacific Ocean!

OBS. A native also of Europe, Caucasus, the East Indies, and the Sandwich Islands. The nut is incorrectly described by Muhlenberg and in my Flora, as “punctate and rugose.” The *S. glaucus* of the Flora of the Northern and Middle States, I now believe to be only a variety of *S. palustris*,

5. ELEOCHARIS OLIVACEA.

Culms filiform, (often diffuse) compressed, sulcate, soft; *spike* ovate, somewhat obtuse, many-flowered; *scales* ovate, obtuse, membranaceous; *bristles* 6, nearly as long as the nut; *style* bifid; *nut* obovate, lenticular, dull; *tubercle* conical, rostrate, distinct.

Scirpus intermedius, Gray! Gram. & Cyp. part 1. no. 80, (excl. syn.)

Culms cespitose, often (particularly when growing out of water) diffuse, or subdecumbent, generally about a span long, and nearly a line in diameter, but sometimes not more than an inch in length, of a soft flexible texture, (as in *E. palustris*), with mucronate sheaths at the base. *Spikes* 3 lines long, 20—30-flowered. *Scales* rather loosely imbricated, one or two of the lowest shorter, and bractiform; the others with a narrow scarious margin, reddish sides, and a green midrib. *Bristles* conspicuous, generally 6, retrorsely hispid. *Stamens* 3. *Nut* broadly obovate, distinctly compressed, smooth, but not polished, dark olive when ripe. *Tubercle* rather free round the base, acute, about one third the length of the nut.

HAB. Wet sandy places, generally partly under water.

Pine barrens of New Jersey!; on Long Island near Babylon!; Tewksbury pond, Massachusetts, *B. D. Greene, Esq.!* Fruit mature in August and September.

OBS. Nearly allied to *E. palustris*, but differs in its shorter ovate and more obtuse spikes, compressed, sulcate culm, more obtuse scales, and dark-olive nut. It is also much shorter than the ordinary form of that species. The upper scales are sometimes rather acute.

6. *ELEOCHARIS UNIGLUMIS*, *Link.*

Culms stoloniferous at the base, terete, striate; spike oval; scales ovate, rather obtuse, the lowest one large, and embracing nearly the whole base of the spike; style 2-parted, very thick at the base.

Eleocharis uniglumis, *Link, hort. Ber.* 1. p. 281, (fide *N. ab Escnb.*) *N. ab E. in Wight's contrib.* p. 113; *Schult. mant.* 2. p. 88.

Scirpus uniglumis, *Link. jarb.* 3. p. 77; *Mert & Koch, fl. Germ.* 1. p. 427; *Weihe! deut. grass,* no. 278.

Culm with truncated sheaths at the base. *Lowest scale* semicircular, green with a fuscus border; the others with a white margin and a narrow green keel.—*N. ab E.*

HAB. North America, *N. ab E.* Also a native of Germany and Nepal.

OBS. North American specimens of this *Eleocharis* have not come under my observation, but I have examined authentic specimens of the plant in the collection of German grasses by Weihe, quoted above. It strongly resembles depauperate specimens of *E. palustris*, and cannot, I think, be separated from that species. Almost the only differences I have been able to observe, are the more obtuse spike, with the broad clasping scale at its base, and the less distinct tubercle, in *E. uniglumis*. In the works quoted, the fruit is not described; but in Weihe's specimens, which contain mature fruit, the nut is precisely that of *E. palustris*, though the tubercle which crowns it is closely sessile.

7. ELEOCHARIS INTERMEDIA, *Schultes*.

Culms setaceous, diffuse, compressed, angular and sulcate; spike lanceolate-ovate, 8—10-flowered; scales ovate-lanceolate, somewhat acute; bristles longer than the nut; style 3-cleft; nut obovate, compressed, with an obtuse ridge in front, attenuated at the base, longitudinally striated, dull; tubercle distinct, rostrate, slender.

Eleocharis intermedia, *Schult. mant.* 2. p. 91.

Scirpus intermedius, *Muhl.!* *gram.* p. 31; *Torr.!* *fl.* 1. p. 46.

Culms cespitose, about a span long, mostly diffuse or prostrate, of a firm wiry texture, conspicuously sulcate and somewhat angular. *Sheaths* cuspidate at the summit. *Spike* 2½ lines long, rather acute. *Scales* membranaceous, not scarious on the margin; midrib narrow, green; the sides reddish brown. *Bristles* 6, strong, whitish, retrorsely hispid, a little overtopping the tubercle. *Stamens* 3. *Nut* of a light brown when mature, very finely striate longitudinally, remarkably attenuated at the base. *Tubercle* quite free around the base, very slender and acute.

HAB. Wet places, particularly in shallow running water: New Jersey!; Pennsylvania, *Muhlenberg!*; Oneida county, New York, *Dr. Gray!* and Jefferson county, in the same state, *Dr. Crawe!*; Georgia, *Dr. Baldwin!*

OBS. A well characterized species, easily distinguished from the three preceding by the slender wiry sulcate culms, the nut attenuated at the base, and the trifid style. In the Muhlenbergian herbarium the specimens are marked "*Scirpus acicularis*, Smith, *Herb. Linn.*," but I can see no resemblance between our plant and that species.

8. ELEOCHARIS OBTUSA, *Schultes*.

Culm terete, or slightly compressed, spongy; spike globose-ovate, or globose-oblong, crowded; scales very obtuse; bristles longer than the nut; style 3-cleft; nut obovate, lenticular, margined, smooth and shining; tubercle much dilated at the base, subacute, compressed.

Eleocharis obtusa, *Schult. mant.* 2. p. 89; *Link, enum.* p. 42, (fide *Schult.*); *Gaud. in Freyc. voy.* p. 414, (fide *Hook.*); *Hook. & Arn. in bot. of Beechey's voy.* p. 98.

Scirpus obtusus, *Willd. enum. hort. Berol.* 1. p. 76; *Ram. & Schult. syst.* 2. p. 126; *Darlingt. ! fl. Cest. ed. 2.* p. 19; *Gray ! Gram. & Cyp. part 2. no. 132.*

S. capitatus, *Walt. Car.* p. 70, (not of *Linn.*); *Pursh ! fl. 1.* p. 55, (excl. syn.); *Elliott, sk. 1.* p. 77; *Muhl. ! gram.* p. 30; *Torr. ! fl. 1.* p. 45, (excl. syn. *Linn., Willd. sp. and R. Brown.*); *Big. fl. Bost. ed. 2.* p. 20; *Beck ! bot.* p. 424.

S. ovatus, *Pursh, fl. 1.* p. 54; *Muhl. ! cat.* p. 6.

S. culmo setaceo nudo, spica subglobosa, *Gron. fl. Virg. 12.*

Culms cespitose 8—14 inches high, attenuated immediately below the spike, of a soft and spongy texture, clothed with one or more purplish truncate sheaths at the base. *Spike* thick and obtuse, 50—80-flowered, often subglobose, and sometimes elongated so as to appear subcylindrical. *Scales* membranaceous, with a scarious margin and green midrib. *Bristles* 6, nearly twice as long as the nut, rigid, retrorsely hispid. *Stamens* 3. *Nut* doubly convex, the margin tumid and distinct, light brown. *Tubercle* somewhat axe-form, (the breadth greater than the length) with a short obtuse angled summit.

HAB. Bogs, and muddy ditches, particularly near salt water;—Canada to Florida; common.

OBS. This species, which is so common in the United States, (though not confined to North America, it having been found in the Sandwich Islands,) has been confounded by most of our botanists with *E. capitata*, *R. Br.* (*Scirpus capitatus*, *Linn.* It is also considered by some as the *E. ovata*, *R. Br.** (*S. ovatus*, *Ehr.*) The former is very distinct, as will

* *Linnaeus* referred "*Scirpus culmo setaceo nudo, spica subglobosa*," *Gron. fl. Virg. 12*, to *S. capitatus*, and this error having been copied by *Willdenow* and other writers, the *S. capitatus* has obtained a place in our Flora, although the true plant is, for the first time, described as a North American species, in the present Monograph. *Mr. Brown*, long ago, (*prodr.* 1. p. 225) corrected the mistake of *Linnaeus*, and pronounced *Gronovius's* plant to be distinct from *Eleocharis capitata*.

appear by comparing the characters of the two species; the latter differs in its obovate-oblong nut, much smaller and far less dilated tubercle and bifid style. I have specimens of *E. obtusa* from Oahu which agree minutely with the N. American plant. It is very doubtful whether the *E. ovata* has been found within the limits of our Flora.

β . spikes elongated, tapering to a blunt point; bristles scarcely longer than the nut.

HAB. Hills, Waltham, Massachusetts, *B. D. Greene, Esq.*!

OBS. In my specimens of this variety, the tubercle is as broad as the summit of the nut, but the plant can by no means be considered specifically distinct from *E. obtusa*.

9. ELEOCHARIS ALBIDA.

Culm filiform, terete, with a groove on one side; spike globose-ovate, many (20—30)-flowered; scales ovate, mostly obtuse, coriaceous, subcarinate; bristles longer than the nut (red); style 3-cleft; nut broadly obovate, obtusely angular in front, dull.

Culms caespitose, rather wiry, finely striate, clothed with cuspidate sheaths at the base. *Spike* $2\frac{1}{2}$ lines long, thick, mostly obtuse. *Scales* generally whitish, or light brown, when old sometimes rather acute, but in the young state obtuse. *Bristles* 6, of a reddish colour both in the young and the mature state, rigid, densely hispid downward. *Stamens* 3; *anthers* oblong. *Nut* brown when ripe, smooth but not polished. *Tubercle* one-third or one-fourth the length of the nut, quite free round the base; the point rather acute.

HAB. Wet sandy places, particularly near the sea shore. On the coast of East Florida, and on Talbot Island, Georgia, *Dr. Baldwin!*; near New Orleans, and at Baratavia, Louisiana, *Dr. Ingalls!*

OBS. This species resembles at first sight, *E. capitata*, but it differs in its somewhat angular and dull nut, 3-cleft style, and much more coriaceous scales.

10. *ELEOCHARIS CAPITATA*, *R. Brown.*

Culm̄ filiform, sulcate, angular; spike globose-ovate; scales somewhat coriaceous, oblong, obtuse; bristles a little longer than the nut; style 2-cleft; nut broadly obovate, lenticular, (black) shining; tubercle minute, with a very short abrupt point.

Eleocharis capitata, *R. Brown, prodr.* 1, p. 225; *Ram. & Schult. syst.* 2, p. 153, (excl. syn. *Pursh.*)

Scirpus capitatus, *Linn.*; *Willd. sp.* 1, p. 294, (excl. syn. *Gron.*), *Vahl, enum.* 2, p. 250; *Kunth, syn.* 1, p. 155; *Spreng. syst.* 1, p. 204.

S. Caribæus, *Rottb. gram.* p. 46. t. 15, f. 3, (fide *Vahl.*)

Eleogenus capitatus, *N. ab E. in Wight's contrib.* p. 112, & *in Linnaea*, 9, p. 294.

Culms cespitose 4—6 inches high. *Spike* 2 lines long, of a greenish white colour, 12—16-flowered. *Scales* rather loose, several of the lower ones empty. *Bristles* 6, strong, unequal, retrorsely scabrous, the longest projecting a little above the nut. *Stamens* 3. *Style* deeply 2-cleft. *Nut* when mature almost black, very minutely roughened, but shining, crowned with a very small depressed whitish tubercle.

HAB. Wet places, in the vicinity of both salt and fresh water. Georgia and Florida, *Dr. Baldwin!*; near New Orleans, *T. Drummond*, (Mr. Arnott); Middle Florida, *Dr. Chapman!*

OBS. This species inhabits many parts of the world, but has not hitherto been introduced into the Flora of North America, the *Scirpus capitatus* of most of our botanical writers being the *Eleocharis obtusa*. Nees ab Esenbeck has constituted of this, and several other species of *Eleocharis*, his genus *Eleogenus*, which is chiefly characterized by the bulbous base of the style or tubercle being of a callous instead of a corky or soft substance. I have not been able to detect the hypogynous bristles in the specimen sent to me from Middle Florida by Dr. Chapman.

β. Spikes ovate-oblong, many-flowered; bristles rather shorter than the nut.

Culm 8 inches long, sulcate, rather soft. *Spike* nearly one-third of an inch in length. *Nut* lenticular, black and polished.

HAB. Texas, *T. Drummond!*

Obs. This variety has much the appearance of *E. obtusa*, but it is easily distinguished by its small black shining nut, and minute tubercle.

§ 4. *Spike* ovate; *glumes* coriaceous; *nut* compressed, sulcate and pitted; *tubercle* rostrate; *bristles* 6, rigid; *style* 3-cleft.—BOTHROCARPA.

11. ELEOCHARIS SIMPLEX.

Culm terete, filiform, striate; *spike* ovate, somewhat acute; *scales* ovate, obtuse, whitish, rather loose; *bristles* retrorsely scabrous, as long as the nut; *style* 3-cleft; *nut* obovate, biconvex, longitudinally furrowed; the furrows strongly pitted; *tubercle* conical, compressed, produced into a beak nearly one-third the length of the nut.

Scirpus simplex, *Elliott! sk.* 1. p. 76; *Curt.! fl. Wilming.* no. 59; *Schult. mant.* 2. p. 74.

Culm erect, 12—18 inches high, very slender, clothed at the base with one or two obliquely truncate, mucronate sheaths. *Spike* 3—4 lines long, 15—20-flowered. *Scales* of a firm coriaceous texture, but scabrous on the margin, somewhat shining, the sides of a light chestnut colour. *Bristles* remarkably strong, a little overtopping the nut. *Stamens* 3. *Style* deeply 3-cleft. *Nut* somewhat gibbous in front, nearly as long as the scale, of a light brown colour, marked on each side with 8 or 9 lines and deep pitted grooves, so that it exhibits a reticulated appearance. *Tubercle* somewhat distinct around the base, very acute, of a firm and rather woody texture.

HAB. Wet places.—South Carolina, *Elliott!*; Wilmington, North Carolina, *Mr. Curtis!*

Obs. A very distinct species, apparently confined to the Southern States.

§ 5. *Spike ovate; scales coriaceous; bristles 6, rigid; nut triangular; tubercle mitriiform, nearly as large as the nut, spongy; style 3-cleft.*—MITROCARPA.

12. *ELEOCHARIS TUBERCULOSA, R. Brown.*

Culm terete, filiform, striate; spike globose-ovate, somewhat acute; scales broadly ovate, very obtuse, loose, subcoriaceous; bristles rigid, retrorsely hispid; nut oblong, obtusely triangular, striate and pitted longitudinally; tubercle ovate, obtuse, subcompressed, nearly as large as the nut.

Eleocharis tuberculosa, R. Brown, prodr. 1. p. 224. (in obs.); Ræm. & Schult. syst. 2. p. 152.

Scirpus tuberculosus, Michx.! fl. 1. p. 30; Vahl, enum. 2. p. 248; Poir. enc. meth. 6. p. 753; Pursh, fl. 1. p. 54; Beck! bot. p. 424; Gray! Gram. & Cyp. part 1. no. 79; Spreng. syst. 1. p. 203.

S. tuberculatus, Elliott, sk. 1. p. 78.

S. no. 7, Muhl.! gram. p. 29, & herb.!

Culm 8—12 inches high, slender and wiry, pale green, clothed at the base with one or two obliquely truncated sheaths. *Spike 3—4 lines long, 12—16-flowered. Scales pale green, or whitish, mixed with light brown, of a firm cartilaginous texture. Bristles 6, strong, longer than the nut, but not exceeding the tubercle, hispid downward. Stamens 3. Style 3-cleft. Nut large, and bulging out the scale, shining, marked with longitudinal lines with intermediate rows of shallow indentations, and thus appearing somewhat reticulated. Tubercle shaped like a cap, mostly obtuse, of a soft spongy texture, whitish, free round the base.*

HAB. Wet places; particularly in sandy swamps; seldom found far from tide-water; Massachusetts to Florida, Tewksbury, Massachusetts, *B. D. Greene, Esq.!* also near Salem in the same State, *Dr. Pickering!*; pine barrens of New Jersey, abundant!; South Carolina, *Michaux!*, *Elliott!*; East Florida, *Dr. Baldwin!*; West Florida, *Mr. Ware!*; New Orleans, *Dr. Ingalls!*—September.

OBS. A species remarkable for its large thick tubercle, by which it is easily distinguished from every other plant of the tribe Scirpeæ.

β. spikes ovate-oblong; bristles pubescent-scabrous, the pubescence spreading or pointing upward.

HAB. Florida, *Dr. Chapman!* and *Dr. Baldwin!*

Obs. In this variety the spikes are twice as large as in the common *E. tuberculosa*, and the bristles, instead of being hispid, are rather pubescent. On the upper part of the bristles, the pubescence is directed upward, lower down it is spreading, but it seldom occurs reflexed. The tubercle, also, is larger than the nut. Still I regard the plant as a mere variety of *E. tuberculosa*.

§. 6 *Spike ovate or elongated; scales membranaceous; bristles 1—4, slender, brittle, (rarely 0); nut roundish or triangular, smooth; style 3-cleft.*—SCIRPIDIUM.

13. ELEOCHARIS ACICULARIS, *R. Brown.*

Culm setaceous, angular and sulcate; spike ovate, subcompressed, acute, few-flowered; scales oblong, somewhat obtuse; bristles 3—4, short and very slender, (sometimes 0); nut oblong, rather acute at each end, nearly terete, many-ribbed, with fine transverse lines; tubercle minute, triangular, acute.

Eleocharis acicularis, *R. Brown, prodr.* 1. p. 224, (in obs.); *Ram. & Schult. syst.* 2. p. 154; *Schult. mant.* 2. p. 90; *Hook. fl. Lond. new ser.* 9. t. 49.

Scirpus acicularis, *Linn.*; *Willd. sp.* 1. p. 295; *Vahl, enum.* 2. p. 25; *Pursh, fl.* 1. p. 54; *Torr.! fl.* 1. p. 45; *Beck! bot.* p. 424; *Spreng. syst.* 1. p. 204; *Darlingt. fl. Cest. ed.* 2. p. 20; *Gray! Gram. & Cyp.* part 2, no. 133.

S. trichodes, *Muhl.! gram.* p. 30; *Elliott, sk.* 1. p. 76; *Big. fl. Bost. ed.* 2. p. 2.

S. capillaceus, *Michx.! fl.* 1. p. 30; *Pers. syn.* 1. p. 65.

S. Chæta, *Schult. mant.* 2. p. 72.

Scirpidium aciculare, *N. ab Escrb. in Linnæa*, 9. p. 293.

Culm 2—8 inches long, generally very slender and hair-like. *Spike*

2—3 lines long, seldom more than 5 or 6-flowered, and sometimes bearing only one or two flowers. *Scales* often barren, seldom more than one or two of them fructiferous, greenish, with a red stripe on each side of the midrib. *Bristles* shorter than the nut, very slender and fragile, sometimes entirely wanting. *Stamens* 3. *Style* 3-cleft about half its length. *Nut* whitish, often contracted at the neck, obscurely triangular; or rather polygonal from the prominent longitudinal ridges which mark its sides, and which are about 15 in number, with very fine transverse lines. *Tubercle* conical-triangular, somewhat free at the base.

HAB. Borders of ponds; generally partly under water; Hudson's Bay to Florida.—June—July.

Obs. When this plant grows in overflowed situations, its culms are quite capillary, and the spikes seldom produce fruit. In drier situations the culm is much firmer and wiry. Nees ab Esenbeck refers to his *Chatocyperus polymorphus*, the *Scirpus capillaceus* of Michaux, and also the *Scirpus trichodes*, H. B. & K.; but Michaux's plant is surely nothing more than a slender form of *Eleocharis acicularis*.

14. ELEOCHARIS TENUIS, Schultes.

Culm filiform, quadrangular, with the sides concave; spike elliptical, somewhat acute at each end; scales ovate, obtuse; bristles 2—3 or none; nut obovate, triangular, with the angles prominent, corrugated transversely, and somewhat papillose, crowned with a minute short triangular tubercle.

Eleocharis tenuis, Schultes, *mant.* 2. p. 89.

Scirpus tenuis, Willd. *enum. hort. Berol.* 1. p. 76; *Muhl.!* *gram.* p. 27; *Ram. & Schult.* 2. p. 127; *Torr.!* *fl.* 1. p. 44; *Beck!* *bot.* p. 425; *Big. fl. Bost.* ed. 2. p. 21; *Spreng. syst.* 2. p. 205; *Darlingt.!* *fl. Cest.* ed. 2. p. 20.

S. quadrangulatus, *Muhl. cat.* ed. 2. p. 6. (not of Michx.)

Culms scarcely thicker than a horse-hair, 8—12 inches long, acutely quadrangular, the base clothed with one or two purple sheaths. *Spike*, when young, rather obtuse. *Scales* dark chestnut-coloured, with a whitish scarious margin; several of the lowest ones larger and empty. *Bristles* 2—3, short, slender and fugacious. *Style* 3-cleft. *Nut* of a

whitish or light brown colour, much shorter than the scale, distinctly triangular, the sides strongly corrugated, and marked likewise by fine longitudinal lines, the summit abruptly contracted into a short neck, on which the minute tubercle stands.

HAB. Bogs, generally growing partly in the water. Common in New York and New Jersey!; Pennsylvania, *Muhlenberg!*, *Dr. Darlington!*; Salem, Massachusetts, *Dr. Pickering!*; Arkansas, *Dr. Pitcher!*

OBS. Nees ab Esenbeck, in the Linnæa, vol. 9, refers *Scirpus tenuis*, Willd. both to *Scirpidium* and *Eleocharis*! It is probable that the latter reference is a mistake, and that he considered the plant as a genuine species of his genus *Scirpidium*.

β . nut not wrinkled; bristles 3—4, one-third the length of the nut.

Culm a foot high, acutely triangular. *Spike* ovate, acute. *Scales* ovate-oblong, obtuse. *Nut* obovate, minute, whitish, the angles prominent. *Tubercle* short, with a minute abrupt point.

HAB. Near New Orleans, *Dr. Ingalls!*

OBS. This variety resembles the common *E. tenuis* in nearly all respects except in the smooth and less rounded nut. It forms the connecting link between that species and *E. tricostata*.

15. ELEOCHARIS TRICOSTATA.

Culm subcompressed, filiform, striate; spike cylindrical-oblong, densely-flowered; scales ovate, obtuse, membranaceous; bristles 0; nut obovate, triangular, the angles very prominent and thickened; sides convex, roughened with very minute wrinkles; tubercle short, conical, acute.

Culm 1—2 feet high, half a line in diameter, smooth, not angular. *Spike* 5—9 lines in length, and a line and a half in diameter, somewhat pointed at the summit. *Scales* mostly ovate, very obtuse, ferruginous, with a broad scarios margin; the midrib green. *Bristles* entirely wanting. *Stamens* 3. *Nut* very small, brown, dull, appearing

scabrous under an ordinary lens, but exhibiting minute wrinkles when highly magnified. *Tubercle* distinct, whitish, minute.

HAB. Georgia, *Le Conte!*; Middle Florida, *Dr. Chapman!*; East Florida, *Mr. Ware!*

16. ELEOCHARIS MELANOCARPA.

Culm compressed, sulcate; spike oblong or cylindrical-oblong; scales ovate, obtuse, membranaceous; bristles 3—4, as long as the nut, slender; nut somewhat turbinate, obtusely triangular, (blackish) smooth; tubercle broad, triangular, flat, with a short point in the centre.

Scirpus melanocarptis, *Baldw. MSS.!*

Culms cespitose, 12—18 inches long, almost filiform, but strong and wiry, distinctly sulcate, clothed with truncate sheaths at the base. *Spike* 4—6 lines long, obtuse, many-flowered. *Scales* scarios on the margin, rufescent, with a yellowish midrib, the lowest broader and empty. *Bristles* commonly 3, one on each side of the nut, which they nearly equal in length, excluding the tubercle; they are very slender, of a dark purple colour, and retrorsely scabrous. *Stamens* 3. *Style* 3-cleft about half-way down. *Nut* half a line long, thick and obscurely 3-sided, appearing (without the tubercle) truncate at the summit, of a brownish black colour, smooth and shining. *Tubercle* very short and dilated; the margin thickened and projecting over the top of the nut, the centre produced into a short triangular point.

HAB. "Pine barrens, generally not far from streams of water—near Savannah, Georgia," *Dr. Baldwin!*—May and June.

OBS. This well-marked species differs from any other of the genus *Eleocharis*, in its black turbinate nut, crowned with the large spreading triangular tubercle. On account of its slender bristles, trifid style, triangular nut, and membranaceous scales, I have placed it in the section *SCIRPIDIUM*, but it might with propriety be formed into a distinct subgenus.

§. 7. Spike compressed, often somewhat distichous; scales membranaceous, bristles slender, nut triangular; style three-cleft.—CYPEROSCIRPUS.

17. ELEOCHARIS MICROCARPA.

Culm capillary, quadrangular, with three of the sides channelled; spikes oblong, compressed, (often proliferous) 10—20-flowered; scales broadly ovate, rather acute, somewhat carinate, the lowest one much the largest; bristles 3—5, shorter than the nut, slender; fragile; nut minute, obovate, obtusely triangular, smooth; tubercle very minute, closely sessile.

Culms 6—8 inches long, a little thicker than a human hair. *Spikes* nearly 2 lines long, frequently proliferous; the axil of one or more of the lowest scales bearing a pedunculate spikelet. *Scales* rather loose, somewhat acuminate but scarcely acute, all of them deciduous, except the lowest one, which may be regarded as a bract or reduced one-leaved involucre; margin whitish; the sides brownish-red. *Bristles* very slender, closely appressed to the sides of the nut, and not half its length. *Stamens* 3. *Nut* scarcely one-third of a line long, grayish white, very smooth. *Tubercle* triangular, apiculate, scarcely free round the base.

HAB. Wet places. Near Orleans, *Dr. Ingalls!*

OBS. The species of this section resemble in their compressed and somewhat distichous spikes the genus *Chaetocyperus*, but in other respects they have all the characters of *Eleocharis*. In some of the spikes of the present species, the axil of the lower scales bears a slender peduncle instead of a flower, supporting a spike at its summit, as in *Chaetocyperus Baldwinii*.

$\beta?$ *filiculmis*. Culms cespitose, capillary or filiform, quadrangular, wiry; spikes oblong; bristles nearly as long as the nut without the tubercle; nut obovate-oblong.

Culms 3—4 inches high. *Spikes* more than two lines long. *Scales* dark chestnut-coloured:

HAB. Wet places in the pine barrens of New Jersey.

OBS. Differs from the southern variety in the thicker culm, longer and firmer bristles and more oblong nut, but resembles it in the tendency to become proliferous. I have seen it with spikes bearing more than 25 flowers, but the usual number is from 15 to 20. The taller specimens resemble *E. intermedia*, but it is easily distinguished from that plant by the form of the nut.

18. ELEOCHARIS PYGMÆA.

Culms setaceous, much compressed and sulcate (dwarf); spike ovate, compressed, 3—6-flowered; scales ovate; bristles longer than the nut, retrorsely scabrous; nut ovate, acutely triangular, smooth and shining; tubercle very minute, confluent.

Scirpus pusillus, Vahl, *enum.* 2. p. 246?; Pursh, *fl.* 1. p. 54; Torr. *fl.* p. 46; Ræm. & Schult. *syst.* 2. p. 124? (excluding the synonym of Michx. erroneously quoted "*S. capillaris*.")

S. capillaceus, Elliott, *sk.* 1. p. 75. (excl. syn. Michx.)

Culms 1—2 inches high, often destitute of spikes at the summit, and then appearing like subulate leaves. Spike a line and a half in length, broadly ovate, seldom perfecting more than one or two nuts. Lowest scale empty, very obtuse; the others more or less acute, especially when old. Bristles 6, whitish, slender. Nut acute at each end, grayish white. Tubercle extremely minute, forming merely a triangular apex to the nut.

HAB. Salt marshes, and along the banks of rivers where the salt water reaches; growing in patches. Near New York, and on the sea coast of New Jersey. September.

OBS. This species is frequently confounded with *E. acicularis*, a dwarf variety of which it greatly resembles; but it differs entirely from that species in its triquetrous, smooth (not oblong and ribbed) nut. Some of our botanists have supposed it to be the *Scirpus capillaceus* of Michaux, but I have ascertained his plant to be *E. acicularis*. Whether the synonym of

Vahl is correct or not, can hardly be determined from his brief description, but we have no other *Eleocharis* that so nearly agrees with it. *Scirpus nanus*, Spreng. syst. 1. p. 205, (*S. parvulus*, Rœm. & Schult. 2. p. 124), of which I possess specimens from the author himself, is closely related to our plant, but differs in its terete culm and more obtuse carinate scales. It is, however, a true *Eleocharis*; for the tubercle, though extremely minute, can be distinguished with an ordinary lens.

The following species of *Eleocharis* are omitted for reasons given at page 281.

1. *E. GEMICULATA*, R. Brown?—*Scirpus geniculatus*, Pursh, fl. 1. p. 55, not of Vahl.

This species, which is a native of Cayenne, Surinam, and Jamaica, is said by Pursh to inhabit the sea shore of Virginia and Carolina, but it was not known to Muhlenberg, Elliott or Baldwin, neither has it to my knowledge been found by any other American botanist, and Pursh may have mistaken for it, the *E. equisetoides*. There is no specimen of it among his plants, now incorporated in the Lambertian Herbarium.

2. *E. OVATA*, R. Brown?—*Scirpus ovatus*, Pursh, not of Vahl.

Pursh states that he found this species in Pennsylvania, but his specimens, named *S. ovatus*, in Lambert's Herb. seem to belong to *Eleocharis intermedia*. The *S. ovatus* of most other writers on N. American botany is *Eleocharis obtusa*.

3. *E. GLAUDESCENS*, Schult. mant, 2. p. 89.—*Scirpus glaucescens*, Willd. enum. hort. Berol, 1. p. 76; Rœm. & Schult, syst. 2. p. 126.

Willdenow says he received his *S. glaucescens* from N. America, but the description which he has given of it is so imperfect, that the plant can only be identified by consulting his herbarium.

4. *E. TORTILIS*, Schult mant. 2. p. 92; *Scirpus tortilis*, Bosc, apud Link, jahrb. 3. p. 78. (fide Schult.)

North America, Link.

I have received from my estimable friend, B. D. Greene, Esq. of Boston, specimens of an *Eleocharis* in an immature state, collected by

him in a pond at Tewksbury, Massachusetts, which may belong to this species; but Link's description will apply almost equally well to *E. mutata* and *E. media*.

5. *E. BÆOTHRYON*, Schult. mant. 2. p. 92.

This is founded on *Scirpus*, no. 7, *Muhl. gram.* p. 29, which is the *S. tuberosus*, Michx. and the description is copied without alteration from Muhlenberg.

6. *E. MUHLENBERGIANA*, Schult. mant. 2. p. 74.

This very imperfectly characterized species is the *Scirpus* (anon.) no. 4, *Muhl. gram.* p. 28. I did not find specimens of the plant when I examined the Muhlenbergian herbarium.

7. *E. ACUMINATA*, N. ab Esenb. in *Linnæa*. 9. p. 294.

Nees does not describe this species in the work here quoted, but as he quotes as a synonym "*Scirpus*, *Muhl.*" he probably refers to *S. acuminatus*, *Muhl. gram.* p. 27. Muhlenberg's description of the plant is very brief and imperfect, and I could find no specimens to correspond with it in his herbarium.

Among my undetermined Cyperaceæ, is a species of *Eleocharis* from the Southern States, which I have never been able to obtain with mature fruit. It grows in shallow water, and is not uncommon in North and South Carolina, Georgia and Florida. The culm is filiform, 4—12 inches in length, compressed and sulcate. The spike is ovate, and compressed, but instead of producing flowers, it throws out a tuft of long filiform peduncles, or rather culms, one from the axil of each scale, which strike root into the mud, or float on the surface of the water, and likewise bear proliferous spikes.* In these characters the plant resembles *E. microcarpa* and *Chatocyperus Baldwinii*. It differs from the latter in the spike, which, though compressed, is not distichous; and from the former in its obtuse and more membranaceous scales. In some of the spikelets I observed immature flowers, in which there were several retrorsely scabrous bristles, three stamens, and a 3-cleft

* See Gray's Elements of Botany, page 250.

style. I am inclined to consider the species as distinct from any other described in this monograph. It may be distinguished by the name of *E. prolifera*.

9. SCIRPUS, *R. Brown*.

SCALES imbricated on all sides. BRISTLES of the perigynium 3—6, rigid, persistent, for the most part retrorsely denticulate. STYLE 2—3-cleft, simple at the base, deciduous. NUT biconvex or triangular.—Culms mostly triangular, simple, often with leafless sheaths; spikes solitary, conglomerated or corymbose, terminal or lateral.

Scirpus, *R. Brown*, *prodr.* 1. p. 223; *Lestib. ess. fam. Cyp.* p. 42. no 53; *Nees ab Escnb. in Wight's contrib.* p. 71, and in *Linnæa*, 9. p. 293.

Heliophylax, *Lestib. l. c.* no. 51.

Species of *Scirpus*, *Linn.*, *Kunth*, *Spreng.*, *Nutt.* &c.

§. 1. *Spike solitary, terminal.*

1. SCIRPUS PLANIFOLIUS, *Muhl.*

Culm triquetrous; leaves flat, linear, nearly equalling the culm; spike oblong, compressed; scales carinate, cuspidate, the lowest one longer than the spike; nut triangular.

Scirpus planifolius, *Muhl.*! *gram.* p. 32; *Torr.*! *fl.* 1. p. 46; *Big. fl. Bost.* ed. 2. p. 20; *Beck!* *bot.* p. 424; *Bart. prodr. fl. Phil.* 1. p. 33; *Darlingt.*! *fl. Cest.* ed. 2. p. 20; *Schult. mant.* 2. p. 72; *Spreng. syst.* 1. p. 206.

Isolepis planifolia, *Spreng.*! *neue entd.* 3. p. 10.

Eleocharis planifolia, *N. ab Escnb. in Linnæa.* 9. p. 294.

Culms cespitose, about a span high, acutely triangular, scabrous on the angles. *Leaves* gramineous, tapering to a long, rather obtuse point, carinate, scabrous on the margin; the lowest ones shorter and broader. *Spike* at first lanceolate, but at length somewhat ovate, 6—7-flowered. *Scales* somewhat trifarious, ovate-lanceolate, yellowish, with a green

keel, which is continued beyond the summit into a sharp cusp; the lowest one terminating in a bristle, and usually projecting beyond the spike. *Bristles* 4—6, slender, nearly as long as the nut, hairy rather than denticulate, the hairs pointing upward. *Stamens* 3. *Nut* oblong, triquetrous, of a light brown colour, dull, minutely punctulate, scarcely pointed. *Style* compressed, pubescent or ciliate, 3-cleft, separating entirely from the nut.

HAB. Woods, often in dry stony situations; also in bogs. Near New York, not uncommon!; New Brunswick and Princeton, New Jersey!; Deerfield, Massachusetts, *Dr. Cooley!* and *Prof. Hitchcock!*; near Boston, *Dr. Bigelow!*; Washington county, New York, *Dr. M. Stevenson!*; Pennsylvania and Delaware, *Muhlenberg!* and *Dr. Baldwin!*—June.

Obs. This species differs so much from all our *Scirpi*, that it may yet be removed to some other genus. It is remarkable that N. ab Esenbeck should have referred it to *Eleocharis*, since it has not the least trace of a tubercle; and Sprengel, to whom I sent specimens many years ago, placed it in *Isolepis*, (which genus he reduced to a section of *Scirpus* in his *Syst. Veg.*) notwithstanding its manifest bristles.

2. SCIRPUS SUBTERMINALIS, Torrey.

Culm (immersed) filiform, terete, leafy at the base; spike oblong-lanceolate, (emersed) shorter than the bract at the base; scales ovate-lanceolate; nut triangular, abruptly acuminate; style 3-cleft.

Scirpus subterminalis, *Torr.!* *fl.* 1. p. 47; *Beck!* *bot.* p. 425; *Gray!* *Gram. & Cyp.* part 2. no. 81

Culm 1—3 feet long, growing under water, often roughened when dry by the irregular contraction of the pith. *Leaves* 6—18 inches long, filiform, channelled. *Spike* 3—4 lines long, with a narrow straight bract at the base extending beyond the spike, and appearing like a continuation of the culm. *Scales* membranaceous, somewhat mucronate, pale brown, with a green midrib. *Bristles* 6, rigid, retrorsely scabrous, nearly as long as the nut. *Stamens* 3. *Style* cleft nearly half-way down into three smooth divisions. *Nut* large for the size of the spike, triquetrous,

dark brown, smooth and somewhat shining, pointed with the sharp base of the style.

HAB. Slow-flowing streams, and ponds, both in fresh and brackish water. Salem, Massachusetts, *Dr. Pickering*; Tewksbury pond, near Boston, *B. D. Greene, Esq.!*; Leverett pond, near Amherst, and Deersfield, Massachusetts, *Dr. Cooley & Prof. Hitchcock!*; Sand-Lake, near Troy, *Mr. H. H. Eaton!*; Princeton, Batsto, and Tom's River, New Jersey!; Rocky mountains, *T. Drummond!*—August—September.

Obs. I first received this plant many years ago from Dr. Cooley, of Deerfield, Massachusetts, and described it in the work above quoted. It appears to have a wide range to the north and west, but it has not, to my knowledge, been found south of New Jersey.

3. SCIRPUS ROSTELLATUS.

Culm compressed, filiform, sulcate; spike ovate-lanceolate, acute; scales ovate, obtuse, loose, somewhat cartilaginous, with a scarios margin; nut biconvex, very minutely roughened with dots; the apex discoloured, conical-rostrate, rather obtuse; bristles 4—6, longer than the nut.

Culm 12—15 inches high, firm and tough, distinctly compressed and deeply striate or sulcate. *Spike* 3—4 lines long, 12—15-flowered. *Scales* a little spreading by the protrusion of the ripe fruit, light brown. *Bristles* strong and conspicuously scabrous. *Stamens* 3; *filaments* as long as the nut and unusually broad; *anthers* linear-oblong. *Style* 3-cleft. *Nut* very convex in front, light brown, shining, but somewhat uneven and roughened under a lens; the apex discoloured, and at first view appearing like a tubercle.

HAB. Penn-Yan, Yates county, New-York, *Dr. Sartwell!*; South Carolina, *Dr. Walsh!*

Obs. Nearly allied to *S. multicaulis*, *Eng. bot. t. 1187*, which Smith (in *Engl. Flora*, 1. p. 64) and N. ab Esenb. (in *Linnaea*, 9. p. 294) refer to *Eleocharis*, and which some European bo-

tanists even consider a variety of *E. palustris* notwithstanding it is a genuine *Scirpus*, the tubercle being entirely wanting. Moreover the *S. multicaulis* has a 3-cleft style and a triangular nut with a long cuspidate point; which characters do not belong to *Eleocharis palustris*.

4. SCIRPUS CÆSPITOSUS, Linn.

Culms cespitose, filiform, terete; sheaths furnished with rudiments of leaves; spike ovate, few-flowered; the two lowest scales bracteiform, as long as the spike; bristles smooth; style 3-cleft; nut triquetrous.

S. cæspitosus, Linn. *sp. pl.* 71; Willd. *sp.* 1. p. 292; Vahl, *enum.* 2. p. 243; Eng. *bot.* t. 1029; Ræm. & Schult. *sys.* 2. p. 122; Spreng. *sys.* 1. p. 205; Torr. *fl.* 1. p. 47; Big. *fl. Bost.* ed. 2. p. 20; Beck! *bot.* p. 424.

Eleocharis cæspitosa, N. ab Esenb. in Linnæa, 9. p. 294.

Culms 2—10 inches high, rather rigid, finely striate, towards the base densely clothed with imbricated sheaths, of which the upper ones bear rudimentary leaves. Spikes 2 lines long, 4—5-flowered, somewhat compressed. Scales of a yellowish brown colour; the lowest one narrow and generally overtopping the spike; the next a little shorter; the others ovate, obtuse. Bristles 6, longer than the nut, quite smooth. Nut acute.

HAB. Sphagnous and boggy places. Canada! and throughout British America to the Arctic regions, Dr. Richardson; Labrador, *v. s. in herb. Le Conte!*; Sault Ste. Marie, Dr. Pitcher!; Rocky Mountains, T. Drummond!; Sitcha, Russian America, Mertens; White Hills of New Hampshire, Dr. Bigelow and Dr. Boott!—July.

§. 2. *Culm many-spiked.*†. *Spikes lateral.*5. SCIRPUS DEBILIS, *Pursh.*

Culm terete, with naked sheaths at the base, striate ; spikes 3—5, ovate, closely sessile, the culm continued far beyond them ; scales broadly ovate, obtuse, mucronulate ; style 2-cleft ; nut broadly obovate, plano-convex, slightly punctate and obscurely rugulose, (dark brown and shining,) shorter than the rigid bristles.

S. debilis, *Pursh*, *fl.* 1. p. 55 ; *Muhl.*! *gram.* p. 34 ; *Big.*! *fl. Bost.* ed. 2. p. 21 ; *Torr.*! *fl.* 1. p. 48 ; *Beck*, *bot.* p. 425 ; *Gray!* *Gram. & Cyp.* part 2. no. 135 ; *Darlingt.*! *fl. Cest.* ed. 2. p. 21 ; *Ram. & Schult. syst.* 2. p. 128 ; *Spreng. syst.* 1. p. 206.

Culms 6—18 inches high, cespitose, with a few subulate leaves at the base. *Sheaths* sometimes mucronate. *Spikes* often solitary, but generally 3, (rarely 5—6) growing from the side of the culm several inches below its summit, 3—5 lines in length. *Scales* roundish-ovate, concave, membranaceous, mostly obtuse, with a minute mucronate point, smooth, yellowish on the sides, the centre green. *Bristles* 4—6, strong, overtopping the nut, retrorsely hispid : but sometimes, instead of bristles, there are only rudimentary processes at the base of the nut. *Stamens* 3. *Style* mostly 3-cleft ; one of the divisions is sometimes forked above the trifurcation. *Nut* much compressed, very obtuse, the breadth nearly equal to the length, slightly pointed with the minute remains of the style, when mature of a dark brown or nearly black colour, and shining ; the surface, when highly magnified, appearing a little waved or rugulose.

HAB. Borders of lakes and rivulets, particularly in sandy soils, Massachusetts to North Carolina. Williamstown, Massachusetts, *Prof. Dewey!* ; near Boston, *B. D. Greene!* ; banks of the Connecticut, *Prof. Hitchcock!* ; shore of Lake Ontario, *Dr. Gray!* ; Long Island ! ; West Chester, Pennsylvania, *Dr. Darlington!* ; Lincolnton, North Carolina, *Mr. Curtis!* ; Georgia? *Dr. Baldwin.*

OBS. This species was first described by Pursh, but it is undoubtedly the *S. debilis* of Muhlenberg, and was so named by him many years before Pursh's Flora was published. Mr. Arnott in a note under *S. junciformis* of N. ab Esenbeck, (in *Wight's contrib.* p. 112) states that our *S. debilis*, which he received from B. D. Greene, Esq. and myself, is identical with the East India species; but on comparing my specimen of *S. junciformis* given to me by Mr. Arnott, and named by Nees himself, with our *S. debilis*, I observed sufficient differences to induce me to think them distinct. The former has a much larger, pale (not blackish brown) nut, and the bristles are much more slender and scarcely as long as the nut. The *S. Wallichii*, N. ab E. (l. c.), of which I also have a specimen from Mr. Arnott, seems to be scarcely distinct from *S. junciformis*.

In my southern specimens of *S. debilis* from Dr. Baldwin's herbarium, there are sometimes seven spikes in a cluster upon one culm. The spikes are longer, and the nut also blacker and with deeper punctures than in the northern plant.

6. SCIRPUS LACUSTRIS, Linn.

Culm terete, leafless; umbel compound, growing from the side of the culm near its summit; spikes ovate or ovate-oblong; scales ovate, mucronulate, ciliate; style bifid; nut obovate, plano-convex, shorter than the bristles.

S. lacustris, Linn.; Willd. *sp.* 1. p. 296; R. Brown, *prodr.* 1. p. 223; Smith, *Eng. fl.* 1. p. 56; Ræm. & Schult. *syst.* 2. p. 138; Michx.! *fl.* 1. p. 31; Pursh, *fl.* 1. p. 55; Elliott, *sk.* 1. p. 31; Muhl.! *gram.* p. 32; Torr.! *fl.* 1. p. 48; Beck, *bot.* p. 425; Gray! *Gram. & Cyp.* part 2. no. 136; Darlingt.! *fl. Cest.* ed. 2. p. 21.

S. acutus, Muhl.! *gram.* p. 33; Big. *fl. Bost.* ed. 2. p. 31; Torr.! *fl.* 1. p. 49; Beck, *bot.* p. 425.

S. validus, Vahl, *enum.* 2. p. 268; Pursh! *fl.* 1. p. 56; Ræm. & Schult. *syst.* 2. p. 138; Spreng. *syst.* 1. p. 209.

Culm 3—8 feet high, gradually tapering upward, smooth, tough, filled with a spongy pith, sometimes marked with oblong dark brown spots;

the base clothed with several sheaths which occasionally bear short leaves. *Umbel* (or rather cyme) growing from one to three inches below the summit of the culm; or the inflorescence may be regarded as terminal, with a single-leaved straight involucre or bract at its base. *Spikes* nearly one third of an inch long, mostly ovate, but sometimes oblong, aggregated in threes at the summit of the peduncles or divisions of the umbel. *Scales* broadly ovate or obovate, obtuse, and frequently emarginate, mucronate, distinctly ciliate and clothed with a minute pubescence, generally marked with two or more curved wrinkles; the sides ferruginous and dotted when young; the keel green. *Bristles* 4—6, very thick, a little longer than the nut, retrorsely hispid. *Stamens* 3. *Nut* broadly obovate, dark brown, very minutely papillose, strongly convex in front, flat on the back.

HAB. Lakes, fresh water ponds and swamps, from latitude 60° north to the Gulf of Mexico, and from the Atlantic to the Pacific Ocean.

7. SCIRPUS TRIQUETER, *Linn.*

Culm triquetrous, nearly leafless, (the base bearing one or two short leaves); spikes 1—5, aggregated, sessile, ovate-oblong; scales orbicular-ovate, mucronate; bristles slender, shorter than the nut; style 2-cleft; nut unequally doubly convex, acuminate.

S. triqueter, *Linn.*; *Willd. sp.* 1. p. 302; *R. Brown, prodr.* 1. p. 223; *Ram. & Schult. syst.* 2. p. 141; *Smith, Eng. fl.* 1. p. 60; *Kunth, syn.* 1. p. 156; *Michx. ! fl.* 1. p. 47; *Muhl. ! gram.* p. 33.

S. Americanus, *Pers. syn.* 1. p. 68; *Pursh, fl.* 1. p. 56; *Elliott, sk.* 1. p. 80; *Big. fl. Bost.* ed. 2. p. 21; *Torr. ! fl.* 1. p. 47; *Beck, bot.* p. 425; *Gray ! Gram. & Cyp.* 2. p. 135; *Ram. & Schult. syst.* 2. p. 129.

S. pungens, *Vahl, enum.* 2. p. 255; *Ram. & Schult. syst.* 2. p. 128.

S. mucronatus, *Pursh ! fl.* 1. p. 55; *Elliott, sk.* 1. p. 80.

Culm 3—5 feet high, slender, mucronate at the extremity, very acutely triangular, two of the sides concave, the other side flat; sheaths at the base often bearing one or more leaves several inches in length. *Spikes* in a dense cluster near the summit, or some distance down the culm. *Scales* often emarginate, with the midrib produced into a point nearly a line in length; the sides ferruginous; margin scarious and somewhat

pubescent. *Bristles* 3—5, slender, fragile, retrorsely scabrous. *Stamens* 3. *Nut* dark brown and rather dull, even, very convex in front, abruptly pointed.

HAB. Swamps and wet meadows, both salt and fresh; throughout North America, to the Arctic regions. A native also of South America, Europe and New Holland.

OBS. This species varies in the thickness of its culm, the size and number of the spikes, and their distance below the summit, &c. but it always preserves its essential characters. It does not appear to differ materially from the *S. triquetus* of Europe. Whether the *S. mucronatus*, *Linn.* is really a native of this country, I know not; but the plant which Pursh has described under that name is a mere variety of *S. triquetus*.

††. *Spikes terminal.*

8. SCIRPUS MARITIMUS, *Linn.*

Culm triquetrous, leafy; umbel simple or compound, often of few spikes and sessile, shorter than the involucre; spikes oblong, (large and thick, rather obtuse); scales ovate, lacerately 3-toothed, the midrib produced into a short recurved bristle; style 3-cleft; nut broadly obovate, lenticular, smooth and shining, much longer than the slender bristles.

S. maritimus, *Willd. sp.* 306; *Ræm. & Schult. syst.* 2. p. 138; *R. Brown, prodr.* 1. p. 224; *N. ab Esenb. in Wight's contrib.* p. 111; *Big. fl. Bost.* ed. 2 p. 21; *Beck! bot.* p. 426; *Gray! Gram. & Cyp.* part 1 no. 82. (in part.)

S. macrostachyos, *Muhl.! gram.* p. 45, (in part); *Torr.! fl.* 1. p. 50 (in part.)

S. maritimus, β *macrostachyos*, *Michx.! fl.* 1. p. 32. (in part.)

S. robustus, *Pursh! fl.* 1. p. 56 (in part.)

Culm 1—4 feet high, thick, smooth, leafy below. *Leaves* 2—5 lines broad, carinate, as tall as the culm, smooth. *Involucre* foliaceous, about 2-leaved, much longer than the umbel. *Spikes* 3—20, nearly an inch in length and very thick, sometimes aggregated and sessile, but generally

forming somewhat compound corymbs. *Scales* membranaceous, somewhat pubescent, chestnut coloured; the summit a little cleft each side of the midrib, which is produced into an awn-like cusp or bristle about 2 lines long and recurved so as to give the spikes a squarrose appearance. *Bristles* 3—4, very slender, about two-thirds the length of the nut, retroversely scabrous. *Nut* large, nearly orbicular, much compressed, dark brown, and polished, tipped with the minute base of the style.

HAB. Salt marshes, and ditches near salt water; not found far from the sea shore; Maine to Florida.

OBS. Mr. Arnott thinks that the *Scirpus affinis* of Roth and N. ab Esenb. (l. c.) approaches so near *S. maritimus*, that the two species cannot always be distinguished, and in this opinion I agree.

β? fluviatilis. Culm triquetrous, leafy; umbel somewhat compound, shorter than the involucre; spikes ovate, (large and thick,) acute; scales ovate, lacerately 3-toothed; the midrib produced into a bristle; nut obovate, triangular, narrowed downward, (dull,) acuminate, as long as the (6) rigid bristles.

S. maritimus, *Elliott, sk.* 1. p. 86?; *Gray! Gram. & Cyp.* part 1, no. 82, (in part).

S. macrostachyos, *Muhl.! gram.* p. 45, (in part.)

Culm 2—4 feet high, acutely triangular, smooth, leafy below. *Leaves* as tall as the culm, more than half an inch broad, smooth on the margin and keel. *Umbel* composed of 10—20 spikes; the principal rays about 5, 1—3 inches long, semiterete; the subdivisions bearing at their extremity 2—3 or more spikes in a dense cluster. *Involucre* 3—5-leaved, much longer than the umbel. *Spikes* nearly an inch long and about half an inch in diameter, rather acute even in fruit. *Scales* thin and scarious, pubescent, rarely emarginate, of a pale brown colour, lacerately 1-toothed each side of the midrib, which is produced into a flat recurved cusp or short bristle. *Bristles* mostly 6, straight and stiff, unequal; the longest somewhat exceeding the point of the nut. *Style* unequally 3-cleft, rarely 4-cleft. *Nut* more than 2 lines long, triangular with the sides equal and nearly plane, gradually narrowed downward, abruptly acuminated, of a dull grayish colour, very minutely papillose.

HAB. Swamps along the borders of rivers and lakes, always in fresh or only slightly brackish water. Common in

the western parts of the State of New York, *Dr. Gray!*; on the Missouri above St. Louis, *Dr. Baldwin!*

γ. cylindricus. Spikes cylindrical-oblong, somewhat acute; scales ovate, somewhat pubescent, aristately mucronate; bristles about 4, rigid, nearly as long as the nut; style 3-cleft; nut obovate, abruptly acuminate, narrowed below, obtusely angular in front, flat on the back, smooth.

Culm and *umbel* as in the preceding variety. *Spikes* an inch long, and only one-third of an inch in diameter.

HAB. Georgia, *Dr. Baldwin!*

OBS. The variety *β.* differs so much from the common *S. maritimus* of our salt marshes in the appearance of the ripe spike and in the form of the nut, as well as in the length of the bristles, that I should have proposed it as a distinct species, did not the succeeding variety connect the two, and seem to show that they are all forms of one species. Which of the three is the *S. maritimus* of Europe I am unable to say, as my foreign specimens are not sufficiently mature to exhibit the ripe fruit. The first variety seems by its lenticular smooth nut, to be exactly *S. maritimus* of N. ab Esenb. (l. c.); but Rœmer and Schultes, in their detailed description of the same species, state that the nut is triquetrous, and the bristles equalling it in length. Smith, (in *Eng. fl.* 1. p. 61) describes the nut as "roundish, shining brown, with 3 blunt angles, and from one to five or six rough bristles." Perhaps both varieties occur in Europe, as they do in this country; the one being confined to the neighbourhood of salt water, and the other inhabiting the borders of fresh water rivers and lakes.

9. SCIRPUS ATROVIRENS, *Muhl.*

Culm triangular, leafy; *umbel* compound, proliferous; involucre about 3-leaved; spikes ovate, acute, glomerated in dense heads of 15—20; scales ovate, mucronate, pubescent; bristles as long as the nut; style 3-cleft; nut obovate, minute, compressed-triangular, tapering towards the base, acuminate, dull.

S. atrovirens, *Muhl.!* *gram.* p. 43; *Willd. enum. hort. Ber.* 1. p. 79; *Ræm. & Schult. syst.* 2. p. 143; *Spreng. syst.* 1. p. 211; *Schult. mant.* 2. p. 80; *Link, enum.* p. 43, (fide *Schult.*); *Torr.!* *fl.* 1. p. 49; *Beck!* *bot.* 1. p. 426; *Gray!* *Gram. & Cyp.* part 2. no. 137; *Darlingt.!* *fl. Cest.* ed. 2. p. 22.

S. polyphyllus, *Vahl, enum.* 2. p. 274; *Pursh, fl.* 1. p. 57, (excl. syn.); *Spreng. syst.* 1. p. 211.

Culm obtusely triangular, about 2 feet high, leafy nearly to the summit, smooth. *Leaves* one third of an inch broad, shorter than the culm, scabrous on the margin. *Involucre* mostly of 3 unequal leaves, the two exterior a little longer than the umbel, resembling those of the culm. *Umbel* very unequal, one or more of the rays elongated and erect, the others shorter, and several so short that the heads of spikes appear almost sessile. *Spikes* aggregated into heads of about 15 or 20 each, nearly 2 lines long, many-flowered. *Scales* broadly ovate, carinate, abruptly acuminate and mucronate, at first olive-green and somewhat pubescent, but when old, fuscous and nearly smooth. *Bristles* 6, slender, retrorsely hispid, generally about as long, but sometimes one or two of them a little longer than the nut. *Stamens* 3. *Style* moderately 3-cleft. *Nut* of a whitish colour, sharply acuminate, flat on the back, very convex and obtusely angular in front.

HAB. Wet meadows and swamps. Common in New York! New Jersey! and Pennsylvania!; Kentucky, *Dr. Short!*

OBS. I have never received specimens of this plant from the Southern States, nor from any place west of the Mississippi.

10. SCIRPUS BRUNNEUS, *Muhl.*

Culm triangular, leafy; umbel decompound; involucre 3—4-leaved; spikes short-ovate and ovate-oblong, somewhat loosely clustered in heads of 5 to 8; scales broadly ovate, rather obtuse, slightly mucronate; style 3-cleft; nut minute, obovate, plano-convex, with a short acumination, dull, shorter than the tortuous bristles.

S. brunneus, *Muhl.!* *gram.* p. 43; *Torr.!* *fl.* 1. p. 49; *Beck!* *bot.* p. 426; *Darlingt.!* *fl. Cest.* ed. 2. p. 22; *Spreng. syst.* 1. p. 211.

S. exaltatus, *Pursh! fl.* 1. p. 56; *Elliott, sk.* 1. p. 87; *Ram. & Schult. syst.* 2. p. 143.

Culm 2—4 feet high, obtusely triangular below, acutely angular above. *Leaves* nearly half an inch broad, as tall as the umbel, scabrous on the margin. *Umbel* twice, and sometimes thrice, compounded; the principal rays about 5, three inches or more in length, compressed and angular, with truncate ochreæ at the base. *Spikes* rather longer than in the preceding species. *Scales* carinate, generally of a brownish colour, when old slightly acute and mucronate. *Bristles* 6, slender, flexuous and somewhat crisped, retrorsely pubescent, nearly twice as long as the nut. *Stamens* 3. *Nut* obovate, abruptly acuminate, the point very short, whitish, flat on the back, convex, or very obtusely angular in front, minutely papillose.

HAB. Swamps, and borders of ponds; mostly in shady places. Near New York, and in New Jersey!; Deerfield, Massachusetts, *Prof. Hitchcock* and *Dr. Cooley!*; Pennsylvania, *Muhlenberg!*

β. viviparus. *Culm* very tall and somewhat climbing; umbels viviparous, bearing flowers at the base of the branches.

S. exaltatus, β. viviparus, Pursh, l. c.

OBS. This variety I have not met with. *Pursh* remarks that it frequently attains the height of ten feet and upwards.

γ. crispus. *Spike* ovate; scales orbicular-ovate, with a very short and abrupt point, somewhat mucronate; bristles much crisped and contorted, but (when extended) three times as long as the nut, scabrous above, smooth below; nut obovate, short pointed, compressed, obtusely angular in front.

HAB. Near New York? (The precise locality not recorded.)

OBS. I am by no means certain that I have described the *S. atrovirens* and *S. brunneus* so accurately that they can always be distinguished; neither am I positive that they are really distinct. The former is generally known by the dark green colour of its foliage and spikes, its more simple umbel with one or two of the rays elongated and nearly erect, and its denser

heads of spikes. The latter has a larger and decomposed umbel with the spikes longer, brownish, fewer in a head and not so closely aggregated.

11. SCIRPUS LENTICULARIS.

Culm obscurely triangular, leafy; umbel doubly compound; involucre 3-leaved; spikes oblong-ovate, in heads of 5 to 8; scales ovate, scarcely mucronate, smooth; style 2-cleft; nut orbicular, lenticular, with the edges acute, shorter than the 4 straight bristles.

Culm 3 feet or more in height, smooth, very obtusely triangular below. *Leaves* 4—5 lines wide, overtopping the culm, somewhat scabrous on the margin. *Umbel* spreading, twice or even thrice compounded; principal rays 3—5, nearly as long as the involucre; secondary rays slender, about an inch long, each bearing 5 to 8 sessile, but not closely aggregated spikes. *Spikes* 3 lines long, rather acute. *Scales* broadly ovate, of a dark olive-green colour, rather obtuse: midrib somewhat prominent. *Bristles* retrorsely scabrous, one-third longer than the nut. *Stamens* constantly 2. *Nut* whitish, nearly orbicular, with a short abrupt acuminations, much compressed, the edges thin.

HAB. North-West Coast of America, near Observatory Inlet, *Dr. Scouler!*

OBS. Nearly related to *S. sylvaticus* but differs in its larger spikes, lenticular nut, diandrous flowers, and bifid style; that species having shorter spikes, a triangular nut, triandrous flowers, and a 3-cleft style.

12. SCIRPUS SYLVATICUS, Linn.

Culm triangular, leafy; umbel doubly compound; involucre many-leaved; spikes ovate, crowded; scales mucronate; stamens 3; style 3-cleft; nut triangular, compressed.

S. sylvaticus, Linn.; Willd. *sp.* 1. p. 307; Ræm. & Schult. *syst.* 2. p. 142; Michx. *fl.* 1. p. 33; Pursh, *fl.* 1. p. 56; Richardson, *app.* to Frank. *narr.* ed. 2. p. 2.

HAB. Canada, *Michaux!*; Hudson's Bay Country, *Dr. Richardson*; Island of Sitcha, Russian America, *Mertens*.

OBS. I have seen no North American specimens of this plant except those in Michaux's herbarium, which I did not examine with sufficient accuracy for determining whether they are identical with the *S. sylvaticus* of Europe.

13. SCIRPUS DIVARICATUS, *Elliott*.

Culm obtusely triangular; umbel decomposed; the rays spreading and pendulous; spikes oblong-ovate; scales ovate, rather acute, carinate; style 3-cleft; nut triquetrous, acute at each end, as long as the flexuous smoothish bristles.

S. divaricatus, *Elliott! sk.* 1. p. 88, t. 2. f. 4; *Spreng. syst.* 1. p. 213; *Schult. mant.* 2. p. 85.

S. lineatus, *Muhl.! gram.* p. 45, (excl. syn.).

S. ambiguus, *Schult. mant.* 2. p. 85.

Culm 3—4 feet high, smooth. Leaves 6—14 inches long, 3—4 lines wide, flat, smooth, scabrous on the margin. Involucre 1—2-leaved, much shorter than the rays. Umbel large, and thrice or more compound; the rays numerous, spreading, pendulous, filiform, with two or three short involuclate leaves at the base. Spikes 2—3 lines long, 10—20-flowered; the florets rather loosely imbricated. Scales broadly ovate; the sides greenish, spotted with red; margin scarious. Bristles 6, flexuous and somewhat crisped, in their natural position nearly as long as the nut, but when extended one third longer, slightly pubescent and knotted, but not retrorsely scabrous. Stamens 3. Nut acutely triangular, with the sides flat, greenish white, dull.

HAB. Pine barrens South Carolina, *Elliott!* May—June.

OBS. A well-marked species, which, however, does not appear to be widely diffused. My specimen of it was received from Mr. Elliott, who also probably supplied Dr. Muhlenberg with the plant, which he described under the name of *S. lineatus*. It has not hitherto been found except in the state of South Carolina.

SUBGENUS TRICHOPHORUM.

BRISTLES 6, much longer than the nut, capillary, tortuous, smooth or merely pubescent, (not hispid). STYLE 3-cleft, simple at the base, deciduous. NUT compressed, triangular.—Culm leafy; umbel decompound; scales of the spikes membranaceous.

Trichophorum, *Rich. in Pers. syn.* 1. p. 69; *Nees ab Esenb. in Linnæa*, 9, p. 293; *Leestib. ess. sum. Cyp.* p. 42, no. 54; *Nutt. gen.* 1. p. 36.

Species of *Scirpus*, *Vahl, Michx, &c.*

The genus *Trichophorum* of Richard differs from *Scirpus* only in its longer capillary bristles, which in the mature spikes project beyond the scales. In *S. brunneus* and *S. divaricatus*, the bristles are long, rather pubescent than scabrous, slender, but shorter than the scales; so that they connect *Scirpus* with *Trichophorum*, and show that the latter can at the most rank only as a subgenus.

14. SCIRPUS (TRICHOPHORUM) ERIOPHORUM, *Michx.*

Culm obtusely triangular; umbel terminal, much decompounded; involucre many-leaved, very long; spikes ovate; scales lanceolate, appressed; bristles much exerted and investing the mature spike; nut smooth.

S. Eriophorum, *Michx.! fl.* 1. p. 33; *Torr.! fl.* 1. p. 50; *Big.! fl. Bost.* ed. p. 22; *Darlingt.! fl. Cest.* ed. 2. p. 23.

S. eriophorus, *Vahl, enum.* 2. p. 282; *Ram. & Schult. syst.* 2. p. 147; *Schult. mant.* 2. p. 83.

S. thyrsoflorus, *Willd. enum. hort. Berol.* 1. p. 78.

Trichophorum cyperinum, *Pers. syn.* 1. p. 69; *Spreng. syst.* 1. p. 214; *Pursh, fl.* 1. p. 57; *Muhl.! gram.* p. 47; *Elliott, sk.* 1. p. 91. t. 3. f. 4; *Beck, bot.* p. 426.

Eriophorum cyperinum, *Linn. sp.* p. 77; *Willd. sp.* 313.

SCIRPUS paniculatus, foliis floralibus paniculam superantibus, *Gron. fl. Virg.* p. 12.

α. Culm 4—5 feet high, umbel very large, supradecomposed and proliferous, patulous, nodding, shorter than the involucre; spikes all pedunculate; nut white.

β. Like the preceding, but the spikes aggregated 3—5 together at the extremity of the ultimate rays.

γ. With the characters of (*α*), but the nut brown.

δ. Culm slender, 18 inches high; umbel contracted, somewhat erect.

ε. Resembling the last, with the spikes all pedicellate.

ζ. Umbel much crowded, somewhat capitate.

η. Umbel somewhat patulous, longer than the involucre, blackish at the base; spikes oblong, pedicellate.

Culm nearly terete below, obtusely triangular above, leafy nearly to the summit. *Leaves* 1—2 feet long, flat, 2—4 lines wide, scabrous on the margin; sheaths smooth, close, brownish and scarious at the throat. *Involucre* of 3—4 long leaves resembling those of the culm, and several shorter ones, their sheathing bases brownish or nearly black. *Umbel* consisting of numerous primary rays, which are many times divided. *Spikes* 2—3 lines long, obtuse. *Scales* acute, of a ferruginous colour when mature, with a green keel. *Bristles*, when extended, 8—10 times as long as the nut, brownish, completely covering the mature spike, giving it a woolly appearance. *Stamens* 3. *Nut* flat on the back, obtuse-angled in fruit, long, acuminate, dull.

HAB. Borders of swamps and wet meadows; Hudson's Bay! to the Gulf of Mexico! and west to Kentucky!

OBS. This species varies much in size and in the appearance of its umbel, but the different forms which it assumes pass into one another so gradually, that it is extremely difficult to mark their limits. Along the sea coast, and a short distance in the interior the first two varieties are almost exclusively found, but they rarely occur far inland, while the remaining forms are never seen in the neighbourhood of salt water, nor, as far as my observations have extended, south of the Hudson and west of the Alleghany mountains.

15. SCIRPUS (TRICHOPHORUM) LINEATUS, Michx.

Culm triangular; umbels terminal and lateral, decomposed, at length nodding; involucre 1—2-leaved, shorter than the umbels; spikes oblong, pedunculate; scales ovate, acuminate, somewhat patulous at the tip, carinate.

S. lineatus, Michx.! *fl.* 1. p. 32; *Vahl, enum.* 2. p. 73; *Pursh, fl.* 1. p. 56; *Elliott, sk.* 1. p. S7; *Torr. fl.* 1. p. 51.

S. pendulus, Muhl.! *gram.* p. 44.

S. brizoides, Willd. (fide Muhl.): *Schult. mant.* 2. p. S4.

Trichophorum lineatum, Pers. *syn.* 1. p. 69; *Beck! bot.* p. 427.

Isolepis lineata, Ram. & Schult. *syst.* 2. p. 117.

Culm 1—2½ feet high, very leafy, distinctly triangular. *Leaves* 2—4 lines wide, flat, scabrous on the margin; sheaths open at the throat, several of the upper ones bearing umbels. Terminal *umbel* somewhat paniculate, loose, at first erect, but at length more or less pendulous, twice or thrice compound; lateral umbels much smaller, sometimes wanting; ultimate divisions 3—6 lines long. *Involucre* of one principal leaf, which is shorter than the umbel. *Spikes* 3—4 lines in length, oblong, or ovate-oblong. *Scales* loosely imbricated at the tip so as to appear sometimes squarrose, ferruginous, with a very distinct and rather prominent keel. *Bristles* very slender, smooth, crisped and entangled, projecting a little beyond the scale in the mature spike. *Stamens* 3. *Style* somewhat unequally 3-cleft, smooth. *Nut* obovate, acuminate, obtusely angular in front, flat on the back, minutely papillose, pale brown when ripe.

HAB. Boggy places. Plainfield, Massachusetts, *Dr. Porter!*; near Poughkeepsie, New York, *Mr. Dudgeon!*; near Fort Gratiot, Michigan Territory, *Dr. Pitcher!*; Banks of the Ohio, *Dr. Baldwin!*; Kentucky, *Dr. Short!*; Pennsylvania, *Muhlenberg!*; New Orleans, *Dr. Ingalls!*; South Carolina, *Elliott!*; Texas, *T. Drummond!*

OBS. Pursh's specimens of *Scirpus lineatus* in Lambert's Herbarium agrees exactly with the plant here described, and yet he states that it is destitute of bristles; in consequence of which remark Rømer and Schultes, in their *Systema Vegetabilium*, have removed it to the genus *Isolepis*. Afterwards, as if

to increase the confusion, Schultes, finding that Muhlenberg had described a *S. lineatus* with bristles, considered it a new species, and named it *S. ambiguus*, but I have ascertained Muhlenberg's plant to be identical with the *S. divaricatus* of Elliott.

North American species of *Scirpus* which are little known.

1. *S. RETICULATUS*, *Lam. ill.* 1. p. 142; *Ræm. & Schult. syst.* 2. p. 148; *Poir. enc. meth.* 6. p. 771.

"*S. culmo gladiato nudo, aspero, umbella composita foliacea, involucri foliis reticulatis.* E Carolina, *D. Fraser.*" *Lam.* 1. c.

Obs. To this very brief and imperfect specific character of Lamark, the following description is added by Poiret: "*Culmus basi foliosus subtrigonus substriatus, angulis acutis asperis. Pedunculi inæquales rigidi angulosi; spiculæ in umbellis partialibus fasciculatæ, tenues, parvulæ oblongæ acutæ pedunculatæ, subfulvæ. Glumæ angustæ, lanceolatæ acutæ. Involucrum universale foliolis 6—8 amplis, inæqualibus, floribus multo longioribus, margine asperis; partialæ c foliolis duobus oppositis lanceolatis acutis longioribus spiculis.—S. sylvatico proximus.*" *Enc. meth.*—Even this description is insufficient for determining either the species or the proper genus of the plant, as no notice is taken of the bristles, style or nut.

2. *S. CAROLINIANUS*, *Lam. ill.* 6. p. 142.

"*S. culmo subtriquetro filiformi, umbella composita involucri 2-phyllo longuisculo.* E Carolina, *D. Fraser.*"—*Lam.* 1. c.

Obs. Vahl refers Lamark's plant to *Fimbristylis castanea*, but with some doubt whether it might not belong to *Scirpus autumnalis*. It is impossible to identify the species by the brief character here quoted.

3. *S. NITENS*, *Vahl, enum.* 2. p. 272; *Pursh, fl.* 1. p. 56; *Isolepis nitens*, *Ræm. & Schult.* 2. p. 117.

"*S. spicis ovatis pedicellatis, corymbis subcompositis axillaribus terminalibusque, culmo tereti.*

"*Culmus semipedalis, articulatis, tectis vaginis foliorum; folia radicalia culmo breviora, laxa, linearia; involucri foliola alterna subulata, inferiora vix unguicularia. Ochreæ breves, oblique truncatæ. Corymbus pedunculis 6, axillares, simplex, pedunculis 4—5 unguicularibus, totidem pedicellis 1—2-stachyis. Spicæ magnitudine seminis Coriandri, totæ fusco-ferrugineæ, squamis ovatis, acutis. Stylus bifidus basi*

dilatatus. Semen rubrotundum, transversim rugulosum. Setæ 0.—In Virginia et Carolina.”—*Vahl*, 1. c.

OBS. In consequence of the absence of bristles in this species, Rœmer and Schultes have placed it in the genus *Isolepis*. It has not been recognized by any American botanist, and I suspect it will prove to be a species of *Rhynchospora*.

11. ERIOPHORUM, *Linn.*

SCALES of the spike imbricated on all sides, mostly membranaceous, numerous. BRISTLES (hairs) of the perigynium numerous, (rarely as few as six,) capillary, flat, very long, collected in fascicles at the base of the nut and forming a silky or woolly tuft. STAMENS 3. STYLE 3-cleft, simple at the base, deciduous. — Culm generally leafy; spikes rarely solitary, growing at the summit of the culm, mostly in a more or less compound umbel or cyme; when mature, clothed with the long silky bristles.

Eriophorum, *Linn. gen.* p. 30; *Juss. gen.* p. 27; *Lam. ill.* t. 39; *Ram. & Schult. gen.* 180; *Lestib. ess. fam. Cyp.* p. 42, no. 55; *Nees ab Esenb. in Wight's contrib.* p. 110, and in *Linnaea*, 9. p. 293; *Nutt. gen.* 1. p. 36.

§. 1. *Spike solitary.*

1. ERIOPHORUM ALPINUM, *Linn.*

Culm acutely triangular, filiform, somewhat scabrous, with short subulate leaves at the base; scales somewhat coriaceous, keeled; spike oblong; hairs 6, crisped.

E. alpinum, *Linn.*; *Willd. sp.* 1. p. 314; *Vahl, enum.* 2. p. 388; *Wahl. fl. Lapp.* p. 16; *Smith, Eng. fl.* 1. p. 67; *Eng. bot.* t. 311; *Ram. & Schult. syst.* 2. p. 156; *Spreng. syst.* 1. p. 214; *Torr. ! fl.* 1. p. 65; *Big. ! fl. Bost.* ed. 2. p. 23; *Beck, bot.* p. 427; *Gray ! Gram. & Cyp.* part 1, no. 87.

E. Hudsonianum, *Michx. ! fl.* 1. p. 34.

Trichophorum alpinum, *Pursh, fl.* 1. p. 57; *Muhl. cat.* p. 7; *Link, enum. alt.* p. 47, (fide *Schult.*).

T. alpinum, *β. Hudsonianum*, *Pers. syn.* 1. p. 70.

T. Hudsonianum, *Nutt. gen.* 1. p. 36.

Rhizoma creeping. *Culms* numerous, growing in a row, 8—10 inches high, scarcely thicker than a packthread, with very acute scabrous angles and concave sides, naked except near the base. *Leaves* 3—5 lines long, pungent, erect, triangular, channelled; sheaths close, purplish; the lowest ones nearly naked, or with merely cuspidate rudimentary leaves. *Spike* 3 lines long, somewhat compressed. *Scales* oblong-lanceolate, obtuse, yellowish-brown; the lowest one bracteiform, submucronate, nearly as long as the spike. *Bristles* 4—5 times as long as the scale, constantly 6, flat and membranaceous, white, more or less crisped, fragile. *Stamens* 3!; filaments capillary, long. *Style* filiform, 3-cleft half-way down. *Nut* triangular, compressed, acuminate with the base of the style, pale brown, dull.

HAB. Sphagnous swamps, particularly on mountains. Danville, Vermont, *J. Carey, Esq!*; Stockbridge, Wenham, and other parts of Massachusetts, *Dr. Emmons!* and *W. Oakes, Esq!*; bogs on the mountains of Pennsylvania, *Pursh!*; White Hills of New Hampshire, *Dr. Bigelow!*; Northern and Western parts of the State of New York, *Dr. Gray!*—May—June.

OBS. This *Eriophorum* differs from all the other single-spiked species of the genus in the rigid scales of the spike, and in the definite crisped bristles. From the subgenus *Trichophorum* it also differs in the texture of the scales, and in the flat, less crisped and white bristles. The North American plant resembles the European *E. alpinum* in almost every respect.

2. ERIOPHORUM VAGINATUM, *Linn.*

Culm terete below, obtusely triangular above, somewhat rigid; sheaths inflated; spike oblong-ovate; scales scarious; hairs straight, dense; anthers linear, elongated.

E. vaginatum, *Linn.*; *Willd. sp.* 4. p. 312; *Vahl, enum.* 2. p. 388; *Ram. & Schult. syst.* 2. p. 157; *Wahl. fl. Lapp.* p. 17; *Spreng. syst.* 1. p. 214; *Smith, Eng. fl.* 1. p. 66; *Eng. bot.* t. 873; *Torr. fl.* 1. p. 65; *Beck! bot.* p. 427; *Gray! Gram. & Cyp.* part. 1. no. 88.

E. cespitosum, *Host. gram. t. 39; Pursh! fl. 1. p. 57.*

Rhizoma creeping. *Culms* densely cespitose, about a foot high, the lower part clothed with two or three ventricose sheaths, which are mucronate, or bear only rudimentary (and often discoloured) leaves. Radical *leaves* long, often overtopping the culm (especially when the spike is in fruit), very narrow and almost setaceous. *Spike* about three-fourths of an inch long. *Scales* ovate-lanceolate, acuminate, with a broad white scarios margin of silver-gray in the young spike, but of a dark livid colour when mature; several of the lower ones empty and at length reflexed. *Hairs* about 40 to each nut, 3—4 times the length of the scale, collected at the base in fascicles of 5—7 each, white with a tinge of yellow. *Stamens* 3; *anthers* yellow. *Style* 3-cleft. *Nut* obovate, narrowed below, brown, dull, very obtuse, flattened on the back, convex in front.

HAB. Deep sphagnous swamps. Near Quebec, Upper Canada, *Mrs. Percival!*; Arctic America and the Hudson's Bay Country, *Dr. Richardson!*; on the Rocky mountains, *T. Drummond!*; near Williams College, Massachusetts, *Prof. Dewey!*; Litchfield, Connecticut, *Mr. Brace!*; Watertown and Utica, New-York, *Dr. Gray!*

Obs. As the normal number of hypogynous processes in Cyperaceæ is six, the great number in most of the species of *Eriophorum* may be accounted for by supposing the spike to be compound, each scale covering a spikelet of several florets, only one of which arrives at perfection, the fascicles of hairs thus belonging to a number of abortive florets.

3. ERIOPHORUM CAPITATUM, *Host.*

Culm terete, soft; sheathes a little inflated; spike almost spherical; *anthers* cordate-ovate, short.

E. capitatum, *Host, gram. Aust. 1. p. 30. t. 36; Ræm. & Schult. syst. 2. p. 157; Smith, Eng. fl. 1. p. 66; Eng. bot. t. 2387; Hook.! fl. Scot. p. 20, and in app. to Parry's 2nd voy. p. 27; R. Brown, in app. to Parry's 1st voy. p. 284.*

E. Scheuchzeri, *Roth, in Sims & Kon. ann. bot. 1. p. 119; Pers. syn. 1. p. 70; Vahl, enum. 2. p. 388.*

E. callithrix, Cham. in *Mey. Cyp. nov. in Mém. Acad. St. Petersb.* (6 ser.) 1. p. 203. t. 2?

HAB. Melville Island, Arctic America, *Capt. Parry*; Kotzebue's Sound, *Capt. Beechey*; Greenland, *Capt. Sabine*. A native also of the northern parts and high mountains of Europe.

OBS. I have seen no North American specimens of this plant, which it is very difficult to distinguish from *E. vaginatum*, except by the shorter anthers and hairs.

The *E. callithrix* of Chamisso, described at full length and figured in the work quoted above, was found on the Island of St. Lawrence, near Behring's Strait. Except in the leaves being scabrous, it appears to differ so little from *E. vaginatum*, that it can hardly be regarded as a distinct species.

4. ERIOPHORUM CHAMISSONIS, C. A. Meyer.

Culms solitary, terete, smooth; leaves compressed, smooth; sheathes somewhat inflated; spike oblong; anthers linear.

E. Chamissonis, C. A. Meyer in *Mem. Acad. St. Pct.* (6. sér.) 1. p. 204. t. 3.

Root (rhizoma) creeping extensively. *Culm* 6—12 inches high, about as thick as a packthread; soft, smooth, leafy below, naked above. *Leaves* linear, channelled, obtuse, very smooth. *Spike* (without the hairs) about 6 lines long. *Scales* lanceolate, acute, blackish, with a white scarious margin. *Hairs* numerous, reddish, more than an inch long in the mature spike. *Stamens* 3; *anthers* about a line in length, yellow. *Styles* 3—4-cleft. *Nut* oblong, mucronate, compressed, quadrangular or triangular, attenuate at the base, smooth.—*Meyer*.

HAB. Unalashka; also in Kamtschatka and on the Alps of Altai, *Chamisso*.

OBS. I have not seen this plant, but it appears to be scarcely distinct from *E. vaginatum*.

§ 2. *Spikes numerous.*5. *ERIPHORUM VIRGINICUM, Linn.*

Culm nearly terete below, obtusely triangular above; leaves flat, very long; spikes clustered, erect, nearly sessile; involucre 2—3-leaved.

E. Virginicum, Linn. sp. 77; Willd. sp. 313; Vahl, enum. 2. p. 390; Rœm. & Schult. syst. 2. p. 159; Spreng. syst. 1. p. 214; Walt. fl. Car. p. 71; Michx.! fl. 1. p. 34; Pursh, fl. 1. p. 58; Elliott, sk. 1. p. 92; Muhl.! gram. p. 49; Torr.! fl. 1. p. 66; Big. fl. Bost. ed. 2. p. 24; Beck! bot. p. 437; Gray! Gram. & Cyp. part 1, no 89; Darlingt. fl. C'est. ed. 2. p. 23.

E. spica compacta erecta, &c. Gron. fl. Virg. p. 132.

Culm 2—4 feet high, leafy, smooth. Leaves 10—18 inches long, 1—3 lines wide, scabrous on the margin, somewhat triangular at the point; sheaths closely investing the culm. Involucre mostly of two unequal leaves, the longer 3—6 inches in length. Peduncles 3—4, short, somewhat umbellate, each bearing several nearly sessile crowded spikes. Spikes ovate, (when young acute,) about 3 lines long. Scales ovate, acute, striate, the inferior ones empty, the sides pale ferruginous, the keel green. Hairs 40—50 in each flower, of a reddish colour, in the mature spike 3 times as long as the scale. Stamen solitary; anther oblong. Nut oblong, triangular, compressed, attenuated downward, the summit abruptly pointed.

HAB. Swamps and bog meadows; Hudson's Bay to Florida! and west to the Mississippi!—July—August.

Obs. In shady situations this plant grows very slender, with long narrow leaves, in which state it is the *E. angustifolium*, Muhl.! gram. p. 48, but not of Roth and other botanists. The erect subsessile spikes, monandrous flowers and reddish hairs of this plant readily distinguish it from all the other North American species of *Eriophorum*.

6. ERIOPHORUM POLYSTACHYUM, *Linn.*

Culm nearly terete; leaves flat, acutely triangular at the point; involucre about 2-leaved; peduncles scabrous; spikes nodding; scales ovate, acute; nut obovate, obtuse.

E. polystachyum, *Linn.*; *Willd. sp.* 1. p. 312; *Vahl, enum.* 2. p. 390. *Walt. fl. Car.* p. 71; *Pursh, fl.* 1. p. 58; *Elliott, sk.* 1. p. 92; *Muhl. ! gram.* 1. p. 49; *Torr. ! fl.* 1. p. 66; *Big. fl. Bost.* ed. 2. p. 23; *Beck, bot.* p. 427; *Gray, ! Gram. & Cyp.* part 1. no. 90; *Hook. in app. Parry's 2nd voy.* p. 27; *Smith, Eng. fl.* 1. p. 67, and *Eng. bot.* t. 563.

E. polystachyum, β . *Michx. ! fl.* 1. p. 34.

E. latifolium, *Hoppe*; *Rœm. & Schult. syst.* 2. 149.

E. vulgare, *Pers. syn.* 1. p. 70.

Root fibrous. Culm 1—2 feet high, somewhat compressed towards the base, leafy; sheaths rather loose. Leaves 3—6 inches long, 2—4 lines wide, pale green, flat except towards the point, which is sharply triangular and generally of a dark brown colour. Involucre mostly 2-leaved, rather shorter than the umbel; the leaves channelled, and triangular at the point. Peduncles often simple, unequal, at first erect, but at length nodding, scabrous upward. Spikes 4—12, ovate, 3—4 lines long. Scales ovate, acute, scarious, of a livid green colour, at length becoming dark brown; the midrib somewhat prominent. Hairs 40—50 in each flower, three-fourths of an inch long, flat, white, with a slight reddish tinge. Stamens 3? Style 3-(rarely 4-) cleft; the divisions downy. Nut narrowed downward, obtuse, flat on the back, angular in front.

HAB. Boggy meadows; Canada! to Georgia! and west to the Rocky Mountains!

7. ERIOPHORUM ANGUSTIFOLIUM, *Reichard.*

Culm somewhat triangular; leaves triquetrous, channelled; involucre mostly 1-leaved; peduncles mostly smoothish, nodding; scales broadly ovate, somewhat obtuse, with a strong midrib; nut elliptical, narrowed at each end, acutely triangular.

E. angustifolium, *Schrad. fl.* 1. p. 153; *Smith, Eng. fl.* 1. p. 69, and *Eng. bot.* 564; *Hook. fl. Scot.* p. 21; *Willd. sp.* 1. p. 313; *Ram. & Schult. syst.* 2. p. 158; *Pursh, fl.* 1. p. 58; *Torr. ! fl.* 1. p. 67; *Big. fl. Bost.* ed. 2. p. 23; *Beck, bot.* p. 427; *R. Brown ! in app. Parry's 1st. voy.* p. 274; *Hook. in app. Parry's 2nd voy.* p. 27; *Richardson in app. Frank. 1st jour.* ed. 2. p. 2; *Darlingt. fl. Cest.* ed. 2. p. 24.

E. tenellum, *Nutt. gen. supp.*; *Schult. mant.* 2. p. 93.

E. polystachyon, var. *tenellum*, *Gray ! Gram. & Cyp.* part 1. no. 91.

E. angustifolium, *Schweinitz ! in Long's 2nd exped.* 2. p. 381.

Culm 1½ feet high, very slender, leafy; the upper part somewhat scabrous. *Leaves* scarcely a line wide, the sides folded together so as to form a triangular channel, and an inch or more of the upper extremity sharply triangular; the lowest ones 6—12 inches long; those of the culm 3—6 inches in length. *Involucre* generally of one leaf, which is scarcely longer than the shortest spike. *Spikes* 4—10, ovate, one or two nearly sessile; the rest on simple or divided peduncles, which are sometimes 2—4 inches long, not always smoothish, but sometimes rather scabrous or pubescent. *Scales* brown, obtuse at the tip, sometimes obscurely 3-nerved. *Hairs* 50—60 in each flower, scarcely flattened (narrower than in the preceding species), nearly an inch long when mature. *Stamens* 3; *anthers* linear, elongated. *Style* filiform, deeply 3-cleft; the divisions downy. *Nut* linear-elliptical, (scarcely half as broad as in *E. polystachyum*,) broadest a little above the middle.

HAB. Sphagnous swamps. Arctic America!, Canada! and the New England States; Western and Northern parts of the State of New York, *Dr. Gray!*; Danville, Vermont, *J. Carey, Esq.!*—June—July.

OBS. Easily distinguished from *E. polystachyum* by its narrow triangular leaves, one-leaved involucre, and narrow nut. Mr. Brown thinks that the Arctic plant collected in Parry's 1st voyage may prove a distinct species, between *E. angustifolium* and *E. polystachyum*. He notices two varieties of it; one with smooth, the other with *scabrous* peduncles.

β? *brevifolium*. Cauline leaves very short, triquetrous; involucre much shorter than the spikes, lanceolate, (discolored); hairs somewhat crisped.

Culm 12—18 inches high, obtusely triangular, slender, very smooth the whole length. *Leaves* acutely triangular throughout, channelled on the upper side; those of the culm very narrow, scarcely an inch long, erect and somewhat pungent; radical ones longer and broader (1—1½). *Involucre* formed of a bracteiform dark-coloured leaf 5 to 8 inches in length, and another much smaller one. *Umbel* contracted. *Peduncles* somewhat pubescent and slightly scabrous, 3—10 lines long. *Spikes* 3—6, short ovate. *Scales* ovate, of a deep livid colour, rather obtuse. *Hairs* a little more than half an inch in length, white. *Nut* as in the common variety.

HAB. Sphagnous swamps. Plainfield, Massachusetts, *Dr. Porter!*; Utica, New York, *Dr. Gray!*

OBS. This variety agrees pretty well with a plant which I received from *Dr. Hooker*, under the name of *E. triquetrum*, (*E. gracile*, *Roth*, & *Smith*, *Eng. fl.*) but I think that it cannot be separated from *E. angustifolium*.

9. ERIOPHORUM GRACILE, *Roth*.

Culm triangular; leaves triquetrous, somewhat filiform; peduncles scabrous; flowering spikes erect; nut linear.

E. gracile, *Roth*, in *Sims & König's ann. of bot.* 2. p. 150; *Smith*, *Eng. fl.* p. 69; *Eng. bot.* t. 2402; *Hook. ! fl. Scot.* p. 20, and in *app. to Parry's 2nd. voyage*, p. 27.

E. triquetrum, *Hoppe*; *Ram. & Schult. syst.* 2. p. 157; *Spreng. syst.* 1. p. 214.

HAB. Arctic America, *Capt. Parry*.

OBS. I have seen no undoubted N. American specimens of this *Eriophorum*, unless I have confounded it with my variety β . of *E. angustifolium*.

10. ERIOPHORUM STRICTUM, *R. Brown*.

Culm somewhat terete; leaves straight, flat, triquetrous at

the point; spikes pedunculate, shorter than the involucre; scales somewhat acute, very finely ciliate.

E. strictum, R. Brown in Richardson's *app. Franklin's 1st. journ.* ed. 2. p. 3.

HAB. Subarctic America, Dr. Richardson.

OBS. I am unacquainted with this plant. Mr. Brown remarks that it is a doubtful species, near *E. tenellum* of Nuttall.

11. ELYTROSPIERMUM, C. A. Meyer.

SPIKE many-flowered. SCALES imbricated on every side, all of them fertile. PERIGYNIUM consisting of two lateral, ovate, membranaceous scales. STYLE simple at the base, 2-cleft. NUT plano-convex, with a conical point, surrounded with the persistent filaments and perigynium.—Habit of *Scirpus lacustris*.

Elytrospermum, C. A. Meyer, in *Mém. imp. acad. St. Petersb.* (5 sér.) 1. p. 200. (1830.) t. 2.

Culm 3—4 feet high, about as thick as a goose quill, leafless, very obtusely triangular, attenuated upward, smooth, yellowish, green and somewhat glaucous. *Involucre* of three unequal lanceolate rigid leaves, mucronate and pungent; the largest about an inch and a half long. *Umbel* terminal, decomposed; the rays about 20, unequal, semiterete, smooth; partial umbels consisting of 2—5 spikes, which are sessile or pedunculate. *Spike* oblong, many-flowered, 2—3 lines long. *Scales* ovate, obtuse, smooth, ferruginous, scarious and obscurely lacerated on the margin, tipped with a scabrous green point. *Perigynium* compressed, linear, somewhat dilated at the base, dark purple, fimbriately ciliate, a little longer than the ovary. *Stamens* 2—3; filaments white, linear, flat, membranaceous. *Stigmas* 2. *Nut* obovate, oblong, attenuated at the base, somewhat compressed, yellowish, smooth, punctulate.

HAB. California, C. A. Meyer.

Obs. I have not had an opportunity of examining this plant. If it really belongs to the tribe Scirpeæ, its place is next to *Malachochate*, *N. ab E.*, which differs in the scales of the perigynium being 5 or 6, instead of 2. It may, however, be more nearly related to the Hypolytreæ, if not a species of *Hypolytrum** itself.

†† Without a Perigynium.

12. FIMBRISTYLIS, Vahl.

SCALES imbricated on all sides. BRISTLES 0. STYLE compressed, 2-cleft, bulbous at the base, deciduous, often ciliate on the margin.—Habit of *Scirpus*.

Fimbristylis, *Vahl, enum.* 2. p. 285; *R. Brown, prodr.* 1. p. 225; *Reem. & Schult. gen.* 175; *Lestib. ess. fam. Cyp.* p. 39. no. 45; *N. ab Esenb. in Wight's contrib.* p. 70, and in *Linnæa*, 9. p. 290; *Nutt. gen.* 1. p. 33.

*The genus *Hypolytrum*, as characterized by Richard, included also what is now called *Lipocarpha*. Indeed two of his three species belong to the latter genus; so that the name *Hypolytrum* ought to have been applied to the species in which the squamulæ are parallel to the scale. *Hypælyptum* of Vahl (*Enum.* 2. p. 283†) appears to be identical with Richard's genus, including both *Hypolytrum* and *Lipocarpha*. *Hypælyptum* of *R. Brown, prodr.* 1. p. 219, (who quotes Vahl, l. c.) is precisely *Lipocarpha* of Nees ab Esenbeck, and this most profound botanist expressly states that *Schænus nemorum*, *Vahl*, *Scirpus anomalus*, *Retz.*, *S. bromeliæfolius*, *Rudge*, and other unpublished species, having the squamulæ ("valvulæ perianthii") lateral, with a very different habit from *Hypælyptum*, constitute a proper genus. This genus is the present *Hypolytrum*, from which we must exclude, however, *S. bromeliæfolius*, *Rudge*, which is the *Diplasia Keratæfolia*, *Rich.* Beera of P. de Beavois, (in *Lestib. ess. fam. Cyp.* p. 43. no. 57) seems to be scarcely distinct from *Hypolytrum* of *N. ab Esenb.* Indeed the two genera are united by the latter botanist.

† "Hypælyptum, *Vahl*, qui in Herb. Richardiano nomen haud rectè transcripsit." *Lestib. ess.*

Species of *Isolepis*, *Vahl*.

Species of *Scirpus*, *Linm.*, *Willd.*

1. FIMBRISTYLIS BALDWINIANA.

Culm sulcate and somewhat compressed; leaves mostly radical, channelled, serrulate, nearly as long as the culm; umbel few-spiked, simple or somewhat compound, shorter than the involucre; spikes ovate, acute; scales broadly ovate, somewhat mucronate; nut marked with tuberculated ribs and transverse striae; style somewhat ciliate.

Scirpus sulcatus, *Elliott! sk.* 1. p. 86, (not of A. de P. Thouars); *Spreng. syst.* 1. p. 212.

S. Baldwinianus, *Schult. mant.* 2. p. 85; *Darlingt. ! fl. Cest.* ed. 2. p. 18.

S. ferrugineus, *Darlingt. ! fl. Cest.* ed. 2. p. 7.

Culms cespitose, deeply sulcate, 2—12 inches high, smooth. *Leaves* narrow, channelled on the upper surface, sometimes overtopping the culm, slightly ciliated with very minute teeth or serratures, sometimes hairy. *Involucre* about 3-leaved; one of the leaves longer than the umbel, all of them denticulate like those of the culm. *Umbel* mostly simple; rays 2—4, seldom more than three-fourths of an inch long, sometimes divided. *Spikes* 3 lines long, acute or somewhat acuminate. *Scales* membranaceous, with a short abrupt mucronate point; the sides yellowish brown; keel green. *Stamen* solitary. *Style* dilated at the base into a roundish bulb, the whole at length separating from the nut; the divisions spreading and recurved. *Nut* obovate, whitish, marked on each sides with 6—8 prominent ridges, sometimes with a number of warts towards the summit.

HAB. Damp clayey soils, Pennsylvania to the Gulf of Mexico, and west to the Mississippi. West Chester, Pennsylvania, *Dr. Darlington!*; near Charleston, South Carolina, *Elliott!*; Riceborough, Georgia, *L. Le Conte, Esq.!*; St. Louis and New Orleans, *T. Drummond!*

OBS. Allied to *F. laxa*, *Vahl*, and also to *F. annua*, *R. & S.* My St. Louis and New Orleans specimens have the

leaves and sheaths a little hairy. I have specimens of a *Fimbristylis* scarcely distinct from this, collected by the late Dr. Baldwin in Bahia, Brazil.

2. FIMBRISTYLIS CONGESTA.

Densely cespitose; culms and leaves setaceous, scabrous; spikes cylindrical-oblong, in a terminal head, much shorter than the 3—4-leaved involucre; scales lanceolate, very acute; stamen 1; style smooth; nut minute, lenticular, broadly obovate, longitudinally striate, and transversely rugose.

Culms forming dense tufts, 2—4 inches high, compressed, striate, with a channel on one side. *Leaves* channelled, as long as the culm; sheaths loose, naked at the throat. *Involucral leaves* unequal, 4—10 times as long as the spikes, setaceous and scabrous. *Spikes* 5—8, in a close head, 3—4 lines long, nearly cylindrical, 50—60-flowered. *Scales* of an obscure green and brown colour, slightly mucronate and subsquarrose. *Stamen* solitary. *Style* long, filiform, somewhat compressed, 2-eleft one-third of the way down; the divisions recurved, nearly smooth; the bulbous base about one fifth the diameter of the nut. *Nut* exceedingly minute, yellowish, strongly rugose transversely, and marked with several longitudinal lines on each side.

HAB. Near New Orleans, *T. Drummond!*; Wilmington, North Carolina, *Mr. Curtis?*

OBS. This species strongly resembles *F. argentea* of Vahl, and also, *N. ab Esenbeck* (*in Wight's contrib.* p. 100); but the latter differs in the ovate scales, and in the deep angular membranaceous alveolæ of the rachis. I have seen a specimen of this plant in the Herbarium of the Academy of Sciences in Philadelphia, labelled "*Scirpus minimus*, New Jersey." I am somewhat uncertain respecting the N. Carolina locality, as the plant which I supposed was received from Mr. Curtis was unfortunately placed in my herbarium before its name and station were recorded.

3. FIMBRISTYLIS SPADICEA, *Vahl.*

Culm somewhat compressed, nearly naked; leaves semiterete, filiform, naked at the throat, nearly smooth; umbel of few rays, simple or compound; spikes ovate-oblong or cylindrical; involucre of 2—3 subulate leaves; stamens 3; style broad, fimbriate, slightly bulbous at the base; nut obovate, compressed, punctato-striate.

F. spadicea, *Vahl, enum.* 2. p. 294; *Pursh, fl.* 1. p. 49; *Ræm. & Schult. syst.* 2. p. 101; *Beck, bot.* p. 423; *Spreng. syst.* 1. p. 201.

F. castanea, *Vahl, enum.* 2. p. 92; *Pursh! fl.* 1. p. 49.

Scirpus spadiceus, *Lin. sp.* p. 74; *Willd. sp.* 1. p. 305; *Walt. fl. Car.* p. 30; *Elliott, sk.* 1. p. 84; *Muhl.! gram.* p. 36; *Torr.! fl.* 1. p. 53; *Gray! Gram. & Cyp.* part 1. no. 86.

S. Carolinianus, *Lam. ill.* 1. p. 142!

S. ferrugineus, *Muhl.! gram.* p. 31, (in part).

S. castaneus, *Michx.! fl.* 1. p. 31, (not of *Muhl.*).

S. culmo triquetro nudo, panicula laxa, &c. Gron.! fl. Virg. 132.

Culms 1—2 feet high, nearly terete towards the base, compressed and striate above, strong and rigid, smooth. *Leaves* 6—8 inches high, very narrow, somewhat scabrous on the margin towards the summit, channelled; *sheaths* loose and distichously arranged, the lower ones ferruginous. *Umbel* patulous, simple, or with the rays a little divided. *Involucre* generally shorter than the umbel; leaves subulate, rather rigid, scabrous on the margin. *Spikes* 3—6 lines long, at first ovate, or ovate-oblong, but when old, often cylindrical, about two lines in diameter. *Scales* rigid, much dilated, somewhat mucronate, in the young state pale ferruginous, and minutely pubescent, but at length quite smooth and shining, and of a dark chestnut colour; many of the lower ones sterile. *Stamens* 3, (rarely 2); filaments broad. *Style* conspicuously ciliate, particularly about the bifurcation, divided about one-third of the way down, the segments recurved. *Nut* obtuse, somewhat lenticular, whitish, thin on the margin, marked with fine striæ and lines of impressed dots.

HAB. Wet meadows, generally in brackish places, but not confined to the immediate vicinity of salt water. New York! to Florida! and west to Texas! Not uncommon in the salt

marshes near New York, and along the sea-coast of New Jersey.
—August to September.

OBS. This species is somewhat variable in its appearance. When it grows in salt marshes, the scales, especially in the mature spikes, are of a dark chestnut colour and polished; while in fresh water swamps, they are much paler and more or less pubescent. Frequently the umbel is compound, and the rays elongated. In northern specimens, I always find three stamens, but in a variety from Florida the flowers seem to be diandrous.

Species of *Fimbristylis* which are little known.

1. *F. CYLINDRICA*, *Vahl*. “*F. spicis cylindricis obtusissimis, involucri submonophyllo rigido umbellam simplicem æquante. Vahl, enum. 2. p. 293, (excl. syn.); Pursh, fl. 1. p. 49; Ræm. & Schult. syst. 2. p. 101.*”

“*Culmi bipedales et ultra, apice triquetri; folia culmo breviora, convoluta-filiformia, glaucescentia; vaginis fusco-nigricantibus. Involucrum umbellâ parum brevius, lineare, planum. Umbella quinque-radiata, radiis setaceis, longior bipollicaris. Spicæ fere unguiculares, pennâ columbinâ parum crassiores, arcte imbricatæ, spadiceæ; squamæ subrotundæ; foliola duo setacea sub spiculâ longius pedunculatâ. Semen subrotundum, subcompressum, læve.*”

“*In America septentrionali.*” *Bosc.*—From the description of this plant, it appears to differ very little from *F. spadicea*.

2. *F. MUCRONATA*, *Vahl; Spreng. syst. 1. p. 199; Ræm. & Schult. syst. 2. p. 102.* Richard, the discoverer of this species, found it in the island of Mahon. According to Sprengel it is also a native of North America, but this botanist considered the *F. mucronata* and *F. cylindrica* as one species, and indeed, they appear to differ very little.

3. *F. PUBERULA*, *Vahl*. *F. spicis ovatis pubescentibus, involucri involucellisque diphyllis; umbellâ compositâ umbellulisque longioribus, Vahl, enum. 2. p. 289; Pursh, fl. 1. p. 49; Ræm. & Schult. syst. 2. p. 97; Scirpus puberulus, Michx.! fl. p. 31; S. pubescens, Pers. syn. 1. p. 68; S. ferrugineus, Elliott, sk. 1. p. 85!*

In Carolina and Georgia, *Michaux*; Virginia to Florida, *Pursh*.

OBS. The *Fimbristylis (Scirp.) puberulus* in *Michaux's* herbarium appears to be merely *F. spadiceus* in an immature state. *Scirpus ferru-*

gineus of Elliott, is probably distinct from Michaux's plant, for he describes the leaves as 3 lines wide, while in the original *S. puberulus* (which Elliott considers identical with his species) they are "*angustissimus*."

13. ISOLEPIS, *R. Brown.*

SCALES of the spike imbricated on all sides. BRISTLES 0. STYLE 2—3-cleft, simple at the base, deciduous. NUT compressed or triangular.—Habit of *Scirpus*.

Isolepis, *R. Brown, prodr.* 1. p. 221; *Lestib. ess. fam. Cyp.* p. 40. no. 49; *Nees ab Esenb. in Wight's contrib.* p. 70, and in *Linnaea*, 9. p. 291.

Species of *Isolepis*, *Kunth.*

Species of *Scirpus*, *Linn., Willd., Vahl.*

§. 1. *Flowers lateral.*

1. ISOLEPIS SUBSQUARROSA, *Schrad.*

Culm setaceous, compressed and sulcate; involucre two-leaved, very long, unequal, spikes 2—3, ovate, sessile, growing from the side of the culm near the summit; scales rhombic-ovate, with a short mucronate recurved point; style 2-cleft; nut obovate-oblong, somewhat compressed.

I. subsquarrosa, *Schrad. in Schult. mant.* 2. p. 64.

Scirpus subsquarrosus, *Muhl.! gram.* p. 39; *Torr.! fl.* p. 51; *Gray! Gram. & Cyp.* part 1. p. 83.

S. minimus, *Pursh, fl.* 1. p. 55, (excl. syn.); *Elliott, sk.* 1. p. 82.

Culms in dense tufts, almost capillary, generally about 2 inches high, but sometimes taller, leafy at the base. *Leaves* setaceous. *Involucre* of 2 leaves, one of which is short and appears like a continuation of the culm, the other much longer, setaceous. *Spikes* 2—3, or solitary, ovate, obtuse, about a line in diameter, closely sessile near the summit of the culm, many-flowered. *Scales* closely imbricate, somewhat coriaceous. *Stamens* solitary. *Style* short, 2-cleft, the divisions recurved. *Nut* obtuse, of a whitish or pale brown colour, smooth, dull, tipped with the minute base of the style.

HAB. Sandy banks of rivers, Massachusetts to Pennsylvania, and west to Kentucky. Deerfield, Massachusetts, *Prof. Hitchcock* and *Dr. Cooley!*; banks of the Connecticut, near Middletown and elsewhere!; Northern parts of the State of New York, *Dr. M. Stevenson!*; western parts of the same State, *Dr. Gray!*; Lexington, Kentucky, *Dr. Short!*

OBS. Nearly related to *I. setacea* of *R. Brown* and *N. ab Esenb.* and *I. squarrosa*, *Rœm. & Schult.*, (*Scirpus squarrosus*), but is distinguished from both by its bifid (not 3-cleft) style, as well as by other characters. It has much the habit and characters of *Lipocarpus maculata*, except that it wants the interior scales, and Vahl long ago made a similar remark of his *Scirpus squarrosus*,* now referred to *Isolepis*; and Nees ab Esenbeck seems to think that it may be a *Lipocarpus* with the interior scales abortive. According to Vahl, the *S. squarrosus* has the style 2-cleft, but *N. ab Esenb.* states distinctly that it is 3-cleft.

2. ISOLEPIS CARINATA, *Hook. & Arn.*

Culm somewhat compressed, sulcate, setaceous, with a single leaf near the base; spike ovate, solitary, growing from the side of the culm near the summit, without an involucre, few (6—8)-flowered; scales boat-shaped, carinate, abruptly acuminate; style 3-cleft; nut short, acutely triangular, roughened with papillæ.

I. carinata, *Hook. & Arn. Mss.!*

Culms cespitose, 3—4 inches high, smooth. *Leaves* setaceous, channelled, half the length of the culm, sheathed at the base. *Spike* rather obtuse, few-flowered, situated about half an inch below the summit of the culm. *Scales* remarkably concave and gibbous, with several curved narrow wrinkles on each side towards the keel. *Stamens* 2? *Style* short,

* "Facies HYPÆLYPTI, sed deficient corolla et tubercula." *Vahl, enum.* 2. p. 259. Vahl, whose *Hypælyptum* included the modern *Lipocarpus*, was incorrect, however, in stating that the nut, in his genus, is furnished with a tubercle.

deeply 3-cleft. *Nut* nearly half the length of the scale, brownish, roughened with small papillæ, very acutely triangular, the sides concave, the summit without any remains of the style.

HAB. Near New Orleans, *T. Drummond!*; on the Arkansas river, *Nuttall!*

OBS. A well-characterized species which I received (without a name) from *Mr. Nuttall*, in 1820, who collected it during his journey in Arkansas Territory.

§ 2. *Spikes terminal, umbelled.*

3. ISOLEPIS DRUMMONDII, *Torr. & Hook.*

Culm compressed and somewhat 3-sided, deeply sulcate; leaves very narrow, channelled; umbel compound; rays 4—6 longer than the involucre; spikes oblong-ovate, acute; scales coriaceous, broadly ovate, smooth, with a short abrupt acuminate point, somewhat carinate towards the summit; style two-parted, smooth; nut lenticular, acute.

Culm 3 feet high, slender but firm, very smooth, one side deeply channelled. *Leaves* half as long as the culm, scarcely a line wide, convex on the under surface, smooth. *Umbel* erect, rays 1—2 inches long. *Involucre* of 2—3 narrow-channelled leaves, all of which are shorter than the rays. *Spikes* half an inch long. *Scales* closely appressed, smooth, of a light brown colour. *Stamens* 3; filaments very broad, obtuse. *Style* deeply 2-parted, persistent. *Nut* much compressed, somewhat margined, dotted.

HAB. Texas, *T. Drummond!*

OBS. A very distinct species, with the habit of *Fimbristylis spadicca*. It is, however, a genuine *Isolepis*, as the style is formed by the gradual attenuation of the nut, without any appearance of tubercle or articulation.

4. ISOLEPIS CAPILLARIS, *Rœm. & Schult.*

Culm angular and sulcate, capillary, nearly naked; leaves setaceous, serrulate-ciliate, much shorter than the culm; spikes

about 4, ovate-oblong, one sessile, the others on short rays, 6—8-flowered; scales somewhat 4-ranked, oblong, obtuse, slightly pubescent; nut triangular, undulately corrugated transversely; stamens 2; style 3-cleft.

Isolepis capillaris, *Ram. & Schult. syst.* 2. p. 118; *Schult. mant.* 2. p. 68; *N. ab Eschb. in Linnæa*, 9. p. 291.

Scirpus capillaris, *Linn.*; *Willd. sp.* 1. p. 302; *Vahl, enum.* 2. p. 272; *Pursh, fl.* 1. p. 37; *Muhl. ! gram.* p. 36; *Torr. ! fl.* 1. p. 52, (excl. syn. *Ell.*); *Big. ! fl. Bost.* ed. 2. p. 23; *Beck, bot.* p. 426; *Gray ! Gram. & Cyp.* part 1, no. 84; *Darlingt. ! fl. Cest.* ed. 2. p. 18.

S. ciliatifolius, *Darlingt. ! fl. Cest.* ed. 1. p. 7. (not of *Elliott.*)

S. Muhlenbergii, *Spreng. syst.* 1. p. 207.

Scirpus culmo angulato, sulcato, &c. Gron. ! fl. virg. p. 11.

Root fibrous annual. *Culms* densely cespitose, very slender, 3—8 inches high, somewhat quadrangular. *Leaves* mostly radical, 2—3 inches long, channelled, minutely serrulate or denticulate towards the extremity; sheaths rather loose and membranaceous. *Involucre* 2—3-leaved, setaceous, one of the leaves a little longer than the spikes. *Rays* of the *umbel* about half an inch long. *Spikes* 2 lines long, somewhat quadrangular, rather obtuse, 1 or sometimes 2 of them sessile. *Scales* ferruginous, with a green keel, a little pubescent, especially on the margin, obtuse and often slightly emarginate. *Stamens* 2. *Style* filiform; the divisions downy. *Nut* short, acutely triangular, whitish or brown, very obtuse, but apiculate with the remains of the style, abruptly contracted at the base, the sides flat or somewhat concave, undulately rugulose.

HAB. Sandy fields; Massachusetts to North Carolina. Near Boston, *Dr. Bigelow !*; near New Haven, Connecticut, *Dr. Tully !*; abundant in the sandy districts of New Jersey !; Western parts of the State of New York, *Dr. Gray !*; Pennsylvania, *Muhlenberg ! & Dr. Darlingt. !*; Wilmington, North Carolina, *Mr. Curtis !*, and Salem, in the same State, *Schweinitz !*

5. *ISOLEPIS CILIATIFOLIA*.

Culm angular and somewhat compressed, striate; leaves setaceous, shorter than the culm, serrulate-ciliate; umbel compound, diverging; rays mostly longer than the involucre; spikes ovate, 5—6-flowered; scales ovate, somewhat acute; stamens 2; nut obovate, triangular, obtuse, roughened with minute papillæ.

Scirpus ciliatifolius, *Elliott! sk.* 1. p. 82, (excl. syn.).

Culm 6—12 inches high, very slender, a little scabrous towards the summit. *Leaves* setaceous, channelled, mostly radical, fringed with minute rigid processes. *Umbel* terminal. 3—4-rayed; the primary rays nearly an inch long; partial umbels of 3—4 spikes. *Involucre* 2—3-leaved, setaceous, one of the leaves about as long as the umbel, the others very short. *Spikes* a line in length, rather acute. *Scales* with a short abrupt point, ferruginous, ciliate towards the summit. *Stamens* 2. *Style* filiform, equally 3-cleft; the divisions glandularly pubescent. *Nut* acutely triangular, of an obscure bluish colour, roughened with minute elevated dots and very obscurely rugose transversely.

HAB. Damp soils in the Southern States. Wilmington, North Carolina, *Mr. Curtis!*; South Carolina, *Elliott!*; Alabama, *Dr. Gates!*; Middle Florida, *Dr. Chapman!*

OBS. Easily distinguished from *I. capillaris* by its larger size, compound umbel, much smaller spikes and papillose nut.

Sprengel refers, with a mark of doubt, *Scirp. ciliatifolius* of Elliott to *Fimb. pilosa*, *Vahl*, but the two plants are totally distinct.

6. *ISOLEPIS COARCTATA*.

Culm filiform, somewhat terete, nearly naked; leaves setaceous, with bearded sheaths; umbel compound, contracted, a little shorter than the longest leaf of the involucre; spikes linear-oblong, angular, 10—15-flowered; scales ovate, somewhat acute; stamens 2; nut triangular, subcompressed, depressed at the summit, obscurely papillose, shining.

Scirpus coarctatus, *Elliott! sk.* 1, p. 83.

S. castaneus, *Muhl.! gram.* p. 38, (in part).

Culm about a foot high, smooth, a little thicker than a bristle "generally bending." *Ell.* *Leaves* chiefly seated on the lower part of the culm, smooth, the orifice of the sheaths bearded with long hairs. *Umbel* consisting of from 15 to 20 spikes: the rays short and crowded, none of them more than half an inch in length. *Involucre* of many short setaceous leaves: one of the leaves somewhat longer than the umbel. *Spikes* 3 lines long, some of them sessile, or on very short peduncles. *Scales* pretty distinctly 4-ranked, ferruginous, with a narrow green keel, slightly fringed towards the summit. *Stamens* uniformly 2, of a bluish colour when ripe. *Style* 3-parted: the divisions glandularly pubescent. *Nut* unequally triangular, the back broadest, the front rather obtusely angular: the summit very obtuse and crowned with a minute dark point, which is the persistent base of the style: the sides appearing papillose under a high magnifier.

HAB. Very dry sandy soils. South Carolina, *Elliott!*; near Savannah, Georgia, *Dr. Baldwin!*

Obs. Nearly related to the two preceding species, but readily distinguished by its taller and firmer culm, smooth leaves, and dense umbels. It has a strong resemblance also to *I. gracilis*, *N. ab E.*, a native of the peninsula of India.

7. ISOLEPIS STENOPHYLLA.

Culms filiform, cespitose, angular and *subcate*; leaves *setaceous*; involucre many-leaved, 4 of the leaves very long; spikes in a terminal capitate cluster: scales strongly *carinate*: the keel prominent and *scabrous*; the summit produced into a long cuspidate point; nut *triangular*, depressed at the summit, transversely *rugulose*.

Scirpus stenophyllus, *Elliott! sk.* 1, p. 88.

Dichroma cespitosa, *Muhl.! gram.* p. 14.

Dichromena cespitosa, *Sprng. syst.* 1, p. 292.

Culms densely cespitose, dry and wiry, 3—5 inches high, *scabrous* towards the summit. *Leaves* angular, two-thirds as long as the culm, very *scabrous*: sheaths loose and bearded. *Invol.* τ . consisting of many

setaceous leaves which are much dilated at the base; 4 of them much longer than the rest. *Spikes* 4—8, in dense terminal heads, about 3 lines long, mostly 6-flowered. *Scales* loosely imbricated, gradually increasing in length from the summit down, the lowest resembling the interior leaves of the involucre, pale brown and yellow on the sides, green on the keel, the summit produced into a long cuspidate, and somewhat spreading point. *Stamen* solitary. *Style* long, 3-cleft. *Nut* equally triangular, whitish, distinctly rugulose transversely, crowned with a minute persistent tubercle.

HAB. Dry sandy soils. Wilmington, North Carolina, *Mr. Curtis!*; South Carolina, *Elliott!*; Georgia, *Muhlenberg!*;—July—September.

OBS. A very distinct species, but resembling in many respects, an unnamed East Indian *Isolepis* in my herbarium. It is a little remarkable that Muhlenberg should have referred it to *Dichromena*.

8. ISOLEPIS WAREI.

Culm somewhat terete, filiform, deeply sulcate; spikes 6—12, ovate, in a crowded terminal head; base of the involucral leaves dilated and cut into capillary segments; scales ovate, obtuse, ciliate; nut triquetrous, depressed at the summit, transversely rugose.

Culm about a foot high, very slender, leafy below, slightly compressed, smooth, dotted with red in the furrows. *Leaves* 2—3 inches long, setaceous, channelled, smooth; sheaths loose, membranaceous, pectinately fringed at the orifice. *Head* of spikes about half an inch in diameter. *Leaves* of the *involucre* 3—4, setaceous, longer than the head; the base dilated and ciliate cut nearly to the base. *Spikes* 3 lines long, many-(10—15)-flowered, obtuse. *Scales* broadly ovate or oblong, pale brown, nerved, pubescent externally and distinctly ciliate on the margin. *Stamens* constantly 3. *Style* filiform, with 3 long recurved pubescent segments. *Nut* white, very broad at the summit, crowned with a very minute black point.

HAB. West Florida, *N. A. Ware, Esq.!*

OBS. This remarkable species differs from every other North American Cyperaceous plant in its fimbriate involucre.

14. TRICHELOSTYLIS, *Lestib.*

SCALES mostly 4—S-ranked, carinate. PERIGYNIUM 0. STYLE 3-cleft, bulbous at the base, deciduous below the bulb. NUT triangular.—Culms simple, leafy at the base, often flattened; leaves mostly very narrow and channelled; spikes usually in terminal umbels or heads, rarely solitary.

Trichelostylis, *Lestib. ess. fum. Cyp.* p. 40, no 48; *N. a Esenb.* in *Wight's contrib.* p. 70, and in *Linnaea*, 9, p. 290.

Species of *Fimbristylis*, *Vahl, R. Brown.*

Species of *Scirpus*, *Linn.*

This genus includes all the species of *Fimbristylis* of Vahl which have a triangular nut and a 3-cleft style. Some of them are difficult to distinguish from *Isolepis*, except by a careful examination of the style, which in *Trichelostylis* is swollen at the base, and separates entirely from the nut; while in *Isolepis* the style is nearly equal, or only furnished with an extremely minute tubercle which remains attached to the nut after the separation of the style.

TRICHELOSTYLIS MUCRONULATUS.

Culm compressed, somewhat ancipital; umbel decomposed, divaricate; involucre two-leaved; spikes oblong-lanceolate, mostly pedicellate, acute; scales ovate-lanceolate, about four-ranked, mucronate, the point a little spreading; stamens 2; nut obtusely triangular, (white) very obtuse, tuberculate.

T. geminata, *N. ab Esenb. in Linnaea*, 9, p. 90.

Fimbristylis autumnalis, *Ræm. & Schult. syst.* 2. p. 97, (in part.) *Spreng. syst.* 1. p. 201, (in part.)

Scirpus mucronulatus, *Michx.! fl.* 1. p. 31; *Ræm. & Schult. syst.* 2, p. 145.

S. Michauxii, *Pers. syn.* 1. p. 68.

S. autumnalis, *Pursh! fl.* 1. p. 57; *Elliott, sk.* 1. p. 82; *Muhl.! gram.* p. 37; *Big.! fl. Bost.* ed. 2. p. 23; *Gray! Gram. & Cyp.* part 1. no. 85; *Beck, bot.* p. 426; *Darlingt.! fl. Cest.* ed. 2. p. 19.

Scirpus culmo ancipito, &c. *Gron.!* *fl. virg.* p. 10.

Culms vespitose, 6—12 inches high, often spreading or procumbent, much compressed, scabrous on the edges. *Leaves* flat, very acme, nearly a line in breadth, shorter than the culm, smooth; *sheaths* slightly bearded at the throat. *Umbel* mostly decomposed; the rays about an inch long, compressed; secondary rays bearing 1—3 pedunculate spikes with a sessile one in the fork. *Involucre* foliaceous, one of the leaves generally longer than the umbel, the other shorter. *Spikes* $\frac{1}{2}$ line long. *Scales* ferruginous, prominently keeled, with the mucronate point somewhat spreading. *Stamens* 2. *Style* equally 3-cleft. *Nut* minute, convex on the sides, generally covered with depressed capitate warts, especially towards the base and summit.

HAB. Bogs and low grounds, particularly along rivers; rarely in dry situations; Massachusetts to Florida. Near Boston, *Bigelow*; near the city of New York, and in New Jersey!; District of Columbia, *Dr. Baldwin!*; Kentucky, *Dr. Short!*; near St. Louis, Missouri, *T. Drummond!*; Alabama, *Dr. Gates!*

Obs. Nearly allied to *T. complanata*, *N. ab Esenb. in Wight's contrib.* p. 103 (*Scirp. complanatus*, *Vahl*.) but that species is a much larger plant, the culm is far more ancipital, the scales broader and not mucronate, and the nut triquetrous. In my specimens from New Jersey, the nut is covered with singular, somewhat stipitate tubercles, having a depression at the top. They are less conspicuous, (being chiefly situated near the base of the nut) in a dwarf autumnal form of the plant found by *Dr. Baldwin* in the district of Columbia. In some fine specimens collected in Alabama by *Dr. Gates*, they are very distinct, while in a variety for which I am indebted to *Dr. Short*, the nuts are nearly smooth. The plant here described is now regarded as a distinct species from *T. autumnalis* (*Sc. autumnalis*, *Rottb.*), as *Willdenow* long since suspected it to be, and as *Michaux* considered it: I have therefore adopted the specific name of the latter botanist, in preference to that of *N. ab Esenbeck*.

TRIBE IV. RHYNCHOSPOREÆ.

FLOWERS perfect or polygamous. SPIKES mostly few-flowered. SCALES irregularly imbricated, obscurely distichous or trifarious. PERIGYNIUM usually setiform, or cup-shaped, rarely wanting. NUT conspicuously beaked with the persistent base of the style, or crowned with an articulated tubercle, mostly corrugated or sculptured.

A. *Style 2—3-cleft.*15. DICHROMENA, *Richard.*

SPIKES compressed. SCALES irregularly imbricated on all sides, or fasciculate, many of them abortive. STAMENS 3. STYLE 2-cleft. NUT somewhat lenticular, crowned with the broad tuberculate persistent base of the style. BRISTLES 0. —Spikes sessile, aggregated in a terminal head; involucre coloured (mostly white) at the base; culm leafy.

Dichromena, *Richard in Michx. fl.* 1. p. 37; *Lestib. ess. fam. Cyp.* p. 40, no. 47; *Vahl, enum.* 2. p. 240; *N. ab Esenb. in Linnæa*, 9. p. 291.

Dichroma, *Pers. syn.* 1. p. 57; *Muhl. gram.* p. 13; *Nutt. gen.* 1. p. 31.

Species of *Schœnus*, *Linn.*, *Kunth.*

1. DICHROMENA LEUCOCEPHALA, *Michx.*

Culm triangular; leaves somewhat concave, narrow; involucre about 5-leaved, yellowish-white at the base; nut truncate at the summit, transversely rugose; tubercle compressed, conical, acute, distinct, straight at the base.

D. leucocephala, *Michx.*! *fl.* 1 p. 37; *Vahl*, *cnum.* 2. p. 240; *Pursh.*, *fl.* 1. p. 47; *Elliott!* *sk.* 1. p. 89. t. 3. f. 3; *Ram. & Schult. syst.* 2. p. 89; *Schult. mant.* 2. p. 5.

Dichroma leucocephala, *Pers. syn.* 1. p. 57; *Muhl.!* *gram.* p. 13.

Scirpus cephalotes, *Walt. fl. Car.* p. 71.

Rhynchospora ochroleuca, *Baldw.!* *Mss.*

Culm 12—18 inches high, smooth, slender. *Leaves* scarcely a line wide, 3—6 inches long, with close naked sheaths, somewhat scabrous on the margin. *Involucre* 4—7-leaved; the leaves dilated and often undulate at the base, spreading, 2—4 inches long. *Spikes* 8—20, compressed, whitish, composed of 8—12 scales, most of which are sterile or empty, seldom more than three perfecting their fruit. *Scales* lanceolate, somewhat compressed, but not carinate, rather obtuse. *Stamens* always 3; *anthers* linear, very long. *Style* filiform above the tubercle, slender, smooth, cleft about one-third of the way down. *Nut* semi-ovate, somewhat margined, distinctly rugose transversely, brown, a little shining. *Tubercle* gray or brown, compressed, covering the whole summit of the nut, but not extending down its edges.

HAB. Damp soils, North Carolina to Florida. Newbern, North Carolina, *Mr. Croom!*; Wilmington to the same State, *Mr. Curtis!*; South Carolina, *Elliott!*; Macon, Georgia, *Dr. Loomis!*; Florida, *Dr. Baldwin!*; New Orleans, *T. Drummond!*—July—October.

OBS. The *Schœnus stellatus* of Swartz (*prodr.* p. 19.) is commonly referred to this species, but it differs in the base of the involucre being white on both sides, and the tubercle straight (not concave) at the base.

2. DICHROMENA LATIFOLIA, *Baldw.*

Culm somewhat terete; leaves broadly linear, slightly concave, very long; involucre 8—10-leaved, at length of a reddish colour at the base; nut suborbicular, dull, roughened with minute oblong papillæ in interrupted lines; tubercle compressed, conical, somewhat obtuse, semilunar at the base, with the points decurrent on the margin of the nut.

D. latifolia, *Baldw.!* in *Elliott, sk.* 1. p. 90; *Schult. mant.* 2. p. 51; *Nutt. gen.* 1. p. 32.

Rhynchospora lateritia, *Baldw.!* *Mss.*

Culm 9—18 inches high, generally much thicker than in the preceding species, slightly compressed, but scarcely angular. *Leaves* often overtopping the culm; those towards the base longer than the others, 2—3 lines wide; the radical ones short, numerous. *Involucre* at first whitish, at length of a dull red colour; the leaflets 3—4 lines wide, tapering to a long sharp point. *Spikes* 8—12, in a subglobose head. *Scales* whitish, ovate, rather obtuse. *Stamens* always 3. *Style* filiform, smooth, 2-cleft one-third of the way down. *Nut* (exclusive of the tubercle) somewhat orbicular in the outline, of a pale brown colour, a little roughened with linear-oblong papillæ placed in irregular longitudinal lines, and marked also with exceedingly narrow transverse wrinkles. *Tubercle* blackish, with a broad concave base, its horns embracing the edges of the nut and extending downward.

HAB. Margin of ponds in low pine barrens of the Southern States. Wilmington, North Carolina, *Delile!*, *Nuttall*; common in Mackintosh county, Georgia, and in East Florida, *Dr. Baldwin!*

OBS. Easily distinguished from the preceding species by its thicker culm and numerous involucreal leaves which turn reddish when old, or in drying.

D. ciliata is said by Vahl and Pursh to be a native of Florida and Georgia, but I have never seen a North American *Dichromena* with the leaves ciliate at the base, and I greatly doubt whether the species has been found in this country. No such plant is noticed by Elliott, Muhlenberg or Baldwin.

16. PSILOCARYA.

FLOWERS perfect. **SPIKES** many-flowered. **SCALES** imbricated on all sides, membranaceous or chartaceous, all fertile. **PERIGYNIUM** 0. **STAMENS** 2; filaments long and per-

sistent. STYLE 2-cleft, compressed, dilated or tuberculate at the base. NUT biconvex, crowned with the broad persistent tubercle, or rostrate with the persistent style.—Culms leafy; spikes in lateral and terminal compound cymes; rays and peduncles alternate, with leafy sheaths at the base.

1. PSILOCARYA SCIRPOIDES.

Spikes oblong-ovate, many-flowered; scales lanceolate-ovate, acute, membranaceous; nut tumid, obscurely rugose; style long, rostrate, persistent, much dilated at the base, and decurrent at the edges of the nut.

Culm obtusely triangular, leafy, smooth. *Leaves* gramineous, 6—8 inches long, 1—1½ line wide, smooth; *sheaths* naked at the throat. *Cymes* pedunculate, one terminal and one from the sheath of each leaf, spreading; rays 1—2 inches long, alternate, diverging, with loose, somewhat foliaceous sheaths, dividing towards the summit into 3 or 4 short branches, or compoundly branched; all the subdivisions alternate and sheathed at the base. *Spikes* 3—4 lines long, 20—30-flowered, somewhat acute, equally imbricated on every side. *Scales* very thin, chestnut-coloured, marked with a narrow central nerve, all bearing fertile flowers. *Bristles* entirely wanting. *Stamens* constantly 2; *filaments* slender, firmly attached one on each side of the base of the torus. *Ovary* oblong, attenuated above into a flat smooth ensiform style, which is 2-cleft one-third of the way down. *Nut* very tumid and somewhat hemispherical on each side, dark brown, obscurely rugose transversely; the base abruptly contracted, and surrounded with a short torus; the summit crowned with a large, flat, rostrate, persistent style, which is much dilated at the base, and decurrent at the edges of the nut, so as nearly to surround it with a pale narrow margin.

HAB. Borders of a pond near North Providence, Rhode Island, *T. A. Greene, Esq.!*; Massachusetts (the precise locality not recorded), collected by the late *Dr. H. Little* of Boston; *v. s.* in Herb. Acad. Nat. Sc. of Philadelphia.

Obs. I received specimens of this rare and interesting plant about six years ago, from my intelligent friend Mr. Greene of New Bedford, who has shown much zeal in examining the

vegetable productions of Massachusetts. In the form and structure of its spikes it resembles a *Scirpus*, but it differs from any of the *Scirpeæ* in habit, and is undoubtedly nearly related to the *Rhynchosporææ*. The flowers are frequently affected with a species of *Uredo*, insomuch that during one season Mr. Greene was unable to find a single specimen that was not diseased.

2. *PSILOCARYA RHYNCHOSPOROIDES*.

Spikes ovate, 8—10-flowered; scales membranaceous, roundish-ovate; nut lenticular, suborbicular, strongly rugose transversely; tubercle distinct, short, dilated, obtuse.

Culm about a foot high. *Leaves* two lines broad, overtopping the culm. *Cyme* few-flowered. *Spikes* 2—3 lines long, all of them pedunculate. *Scales* pale brown, one-nerved, mostly very obtuse. *Nut* a little convex on each side, whitish, margined. *Tubercle* gray, somewhat 2-lobed at the base, but not decurrent on the sides of the nut. *Style* separating at the summit of the tubercle.

HAB. Quincy, Gadsden County, Middle Florida, *Dr. Chapman!*

OBS. This species is very distinct from the last, although entirely similar in habit.

3. *PSILOCARYA TEXENSIS*, *Torr. & Hook.*

Cymes decomposed; spikes ovate, acute, many-flowered; scales roundish-ovate, rather acute and mucronulate, somewhat coriaceous, with a prominent midrib; nut suborbicular, lenticular, strongly rugose transversely; tubercle distinct, short, dilated, very obtuse.

Culm 2 feet high, obtusely triangular. *Leaves* shorter than the culm, about 2 lines long, slightly scabrous on the margin. *Cymes* axillary and terminal; the terminal one decomposed. *Primary rays* about five, 3—4 inches long, nearly erect, with long foliaceous bracts at the base, semiterete; ultimate divisions bearing 2—3 approximated spikes. *Spikes*

about 3 lines long, ovate, terete, 16—20-flowered. *Scales* ferruginous, of a pretty firm and somewhat coriaceous texture, minutely and pulverulently pubescent, strongly 1-nerved so as to appear almost carinate. *Stamens* constantly 2. *Style* (above the tubercle) filiform, equal, 2-cleft half-way down, separating early and completely from the tubercle. *Nut* orbicular, moderately convex on each side, marked with strong undulate transverse wrinkles, of a light brown colour, margined. *Tubercle* gray, much dilated, closely sessile, somewhat 2-lobed at the base; the apex very blunt.

HAB. Texas, *T. Drummond!*

OBS. This species resembles the preceding, but it differs in its much larger size, decomposed cyme, many-flowered spikes, subcoriaceous scales, and in some other respects. It was distributed in the first collection of Mr. Drummond's Texian plants, under the No. 279. The last two species differ so much from *P. scirpoides*, that they might almost be referred to a separate genus. They are nearly related to *Rhynchospora*, but want the hypogynous bristles, and bear the same relation to that genus that *Isolepis* bears to *Scirpus*. In *P. scirpoides* the style is almost wholly persistent, compressed and subulate, without any distinct tubercle; while in *P. rhynchosporoides* and *P. Texensis* it is very caducous, with the exception of the base, which is enlarged into a tubercle of an entirely different texture from the nut. To the latter section belongs another species of which I have had two varieties in my herbarium; one from St. Vincent, sent to me without a name by Dr. Lindley, the other received from Mr. Arnott, under the name of *Schœnus Teneriffæ*, *Vent. Mss.* The culm is very slender, the branches of the cyme filiform and divaricate; the spike 2—3-flowered, minute; the nut lenticular, corrugated, and crowned with a short apiculate tubercle.

The following revision of the North American species of *Rhynchospora* and *Ceratoschœnus* was prepared by Dr. Gray. His valuable Monograph contained in the present volume of

the Annals, is so full that it was quite unnecessary to describe the plants anew: I have therefore merely given his list of the species with some alterations, which he has thought it advisable to make, together with some valuable additional matter which has been received since his monograph was written.

17. RHYNCHOSPORA, Vahl.

FLOWERS perfect or polygamous. SPIKELETS few-flowered. SCALES loosely imbricated, or obscurely bi-trifarious; the lowermost smaller and empty; one, two, or three of the others bearing a perfect flower; the remainder being staminate or empty, or sometimes (as in *R. miliacca* & *caduca*,) all except the outermost scales fertile. PERIGYNIUM composed of 6 (sometimes 10 or 12) plumose or naked, retrorsely or antrorsely denticulate or scabrous bristles. STAMENS 3 (rarely 2, 6, or 12). STYLE bifid. NUT crustaceous, lenticular or subglobose, smooth or transversely rugose, crowned with the dilated, persistent and distinct base of the style.—Culms more or less triangular, simple, leafy; inflorescence terminal and axillary, corymbose, paniculate or fascicled, loosely or densely clustered.

Rhynchospora, *Vahl, enum.* 2, p. 229; *R. Brown, prodr.* 1. p. 229; *Nutt. gen.* 1. p. 33; *Lestib. ess. fam. Cyp.* p. 37; *Elliott, sk.* 1. p. 57; *Gray, monogr. in ann. lyc. nat. hist. New York*, 3. p. 191. (excl. *R. corniculata* & *macrostachya*); *Nees ab Esenb. in Wight's contrib.* p. 71. and in *Linnaea*, 9. p. 297.

Species of Schœnus, *Linn.*, *Lam'k.*, *Michx.*, *Muhl.*, &c.

Chætospora (partly), *Humb. Bonpl. and Kunth, syn. pl. equinoc. orb. nov.* 1. p. 157.

§ 1. Nut subglobose-ovate; bristles of the perigynium densely woolly.—ERIOCHÆTE.

OBS. The species of this section are allied to *Chætospora*, *R. Brown*, from which they are distinguished by their bifid

styles, and distinct persistent tubercles. They are distinguished from *Cyperus*, *R. Brown*, by the distinct tubercle and globose nut.

1. *R. PLUMOSA*, *Elliott! sk.* 1. p. 58; *Spreng. syst.* 1. p. 195; *Gray! monogr. l. c.* p. 203.

Schœnus ciliaris, *Muhl. gram.* (not of *Michx.*)

2. *R. SEMIPLUMOSA*, *Gray! monogr. l. c.* p. 213.

Specimens of this plant collected near New Orleans by Mr. Drummond, have recently been received, exactly resembling those formerly sent by Dr. Ingalls. They are, however, not sufficiently mature to enable us to pronounce with certainty that the plant is not a variety of the preceding species.

3. *R. OLIGANTHA*, *Gray! monogr. l. c.* p. 212.

R. triflora, *Curtis! in Bost. jour. nat. hist.* 1. p. 140. (not of *Vahl.*)

Fine specimens of this interesting species were collected in Texas by the late Mr. Drummond (Texas collection I. no. 282). The leaves are mostly radical, almost capillary, and equalling or overtopping the filiform culms. The bristles are a little shorter than the nut; but on referring to the description of Mr. Curtis, the same is found to be the case in the North Carolina plant. The specimens on which the species was originally founded were not, perhaps, sufficiently mature.

§ 2. *Nut lenticular, or more or less compressed; bristles of the perigynium naked, scabrous or denticulate-hispid.—*

TRUE RHYNCHOSPORÆ.

A. *Nut rugose.*

4. *R. CYMOSA*, *Nutt. gen.* 1. p. 33, (not of *Elliott*); *Torr.! fl.* 1. p. 56, (excl. syn. *Elliott* & *Pursh*); *Gray! monogr. l. c.* p. 196.

Schœnus cymosus, *Willd. sp.* 1. p. 265; *Muhl.! gram.* p. 9.

5. *R. TORREYANA*, *Gray! monogr. l. c.* p. 197.

R. micrantha, *Gray! Gram. & Cyp. part 1. no. 96.* (excl. syn.)

6. *R. RARIFLORA*, *Elliott, sk.* 1. p. 58, (excl. syn.); *Gray! monogr. l. c.* p. 197.

Schœnus rariflorus, *Michx.! fl.* 1. p. 36; *Muhl. gram.* p. 10.

7. *R. MILIACEA*, *Gray! monogr. l. c.* p. 198.

R. sparsa, *Vahl, enum.* 2. p. 230; *Pursh! fl.* 1. p. 48; *Elliott, sk.*

1. p. 62, t. 2; *Torr.! fl.* 1. p. 56.

Schœnus miliaceus, *Lamarck, ill. gen.* 1. p. 137.

S. sparsus, *Michx.! fl.* 1. p. 35; *Muhl.! gram.* p. 7.

Nearly all the florets of this species are perfect, and each spikelet frequently perfects as many as 8 or 10 nuts; which, being persistent long after the scales have fallen, present a remarkable appearance.

8. *R. CADUCA*, *Elliott! sk.* 1. p. 52; *Gray! monogr. l. c.* p. 199.

This species also perfects a greater number of nuts in each spikelet than is usual in the genus.

9. *R. MULTIFLORA*, *Gray, monogr. l. c.* p. 200.

Scirpus schœnoides, *Elliott! sk.* 1. p. 89.

10. *R. PATULA*, *Gray! monogr. l. c.* p. 201.

11. *R. INEXPANSA*, *Vahl, enum.* 2. p. 233; *Elliott! sk.* 1. p. 61; *Gray! monogr. l. c.* p. 200.

Schœnus inexpansus, *Michx.! fl.* 1. p. 35; *Muhl.! gram.* 1. p. 9.

12. *R. MICROCARPA*, *Baldwin!; Gray! monogr. l. c.* p. 202.

13. *R. PUNCTATA*, *Elliott! sk.* 1. p. 60; *Gray! monogr. l. c.* p. 203.

14. *R. ELLIOTII*, *Gray! monogr. l. c.* p. 204.

R. distans, *Elliott, sk.* 1. p. 49. (not of *Vahl.*)

Schænus distans, *Muhl.!* *gram.* p. 10.

S. fuscus, *Muhl. gram.* p. 6.

B. Nut smooth, mostly lenticular.

15. R. ALBA, *Vahl, enum.* 2. p. 236; *Elliott, sk.* 1. p. 57; *Torr.!* *fl.* 1. p. 54; *Gray!* *Gram. & Cyp.* part 1. no. 92, and *monogr. l. c.* p. 213.

Schænus albus, *Linn.*

This species was collected by Drummond in Texas.

16. R. CAPILLACEA, *Torr.!* *fl.* 1. p. 55; *Gray!* *Gram. & Cyp.* part 1. no. 95, and *monogr. l. c.* p. 214.

Schænus setaceus, *Muhl. gram.* p. 6.

17. R. FUSCA, *Ræm. & Schult. syst.* 2. p. 81; *Gray!* *monogr. l. c.* p. 215.

R. alba. var. fusca, *Vahl, enum.* 2. p. 236.

Schænus fuscus, *Linn.*

Massachusetts, *W. Oakes!* and *B. D. Greene!* Esqrs. Those European authors who still consider this species as a variety of *R. alba*, cannot have examined the plant with sufficient care. As regards the English plants, Mr. W. A. Leighton has well indicated their characteristic differences in the London and Edinb. Jour. Science for Dec. 1835.

18. R. FILIFOLIA.

Culm very slender; leaves filiform or capillary; corymbs very small, rather crowded; spikelets (minute) ovate-oblong; nut smooth, ovate-orbicular, lenticular, crowned with a lenticular, much compressed, hispid-scabrous tubercle; bristles antrorsely scabrous-hispid, as long as the nut and tubercle.

Culm 6—12 inches high, obscurely trigonous. *Leaves* numerous, shorter than the culm. *Corymbs*, or *fascicles*, few-flowered, clustered; the lateral ones on short exsert peduncles. *Scales* mucronate, fuscous.

Bristles 6, slender. *Nut* much compressed, as in *R. gracilentata*, but smaller; the whole surface of the tubercle minutely hispid-scabrous upward. *Style* 2-parted quite to the place where it separates in falling.

HAB. North Carolina, *Mr. Curtis!*; Middle Florida, *Dr. Chapman!*

OBS. In the *Monograph of N. American Rhynchosporæ*, no. 26, this plant is referred to as having been sent to us by Mr. Curtis. More perfect specimens recently received from Dr. Chapman satisfactorily prove that this plant, although allied to *R. fusca* and *R. gracilentata*, is distinct from either. The capillary leaves (like those of *Scirpus capillaris*), and the roughened tubercle, are characteristic of our plant. It is much more delicate and smaller in all its parts than *R. fusca*, and the nut is more flat, in which particular it nearly agrees with *R. gracilentata*. The smaller spikelets, the form of the nut, and the direction and degree of the hispidness of the bristles at once distinguish this species from *R. capillacea*.

19. *R. GRACILENTA*, *Gray! monogr. l. c. p. 216.*

R. fusca, *Gray! Gram. & Cyp. part 1. no. 93. (excl. syn.)*

Mr. Drummond collected this species in Texas.

20. *R. DISTANS*, *Nutt. gen. 1. p. 93, (not of Vahl?); Gray! monogr. l. c. p. 216.*

Schœnus distans, *Michx.! fl. 1. p. 36.*

A variety of this species with a single terminal fascicle, and with bristles longer than the nut, occurs among the plants collected in Texas by the late Mr. Drummond.

21. *R. GLOMERATA*, *Vahl, enum. 2. p. 234; Gray! Gram. & Cyp. part 1. no. 94, and monogr. l. c. 1. p. 217.*

R. capitellata, *Vahl, l. c.*

Schœnus glomeratus, *Linn.*

S. capitellatus, *Michx.! fl. 1. p. 36.*

22. *R. CEPHALANTHA*, Gray! *monogr. l. c.* p. 218.
23. *R. PANICULATA*, Gray! *monogr. l. c.* p. 211.
24. *R. FASCICULARIS*, Nutt. *gen.* 1. p. 23; Vahl, *enum.* 2. p. 224?; Gray! *monogr. l. c.* p. 210.
R. cymosa, Ell. *sk.* 1. p. 58!
Schœnus fascicularis, Michx.! *fl.* 1. p. 37.
25. *R. BALDWINII*, Gray! *monogr. l. c.* p. 210.
26. *R. CILIATA*, Vahl, *enum.* p. 238; Gray! *monogr. l. c.* p. 209.
Schœnus ciliaris, Michx.! *fl.* 1. p. 36.

27. *R. MEGALOCARPA.*

Corymbs (3—6) few and loosely flowered; spikelets large, ovate, turgid; nut smooth, somewhat tumid, flattened toward the base, broad and thickened at the summit, crowned with a very broad, short and conical tubercle; stamens usually 12; bristles 6—10, nearly as long as the nut.

R. megalocarpa, Gray! *monogr. l. c.* p. 208, and *R. pycnocarpa*, Gray, *l. c.*

More perfect specimens, communicated by Mr. Curtis and Dr. Chapman, have enabled us satisfactorily to ascertain that *R. megalocarpa* and *R. pycnocarpa* of the *Monograph of North American Rhynchosporæ* are different states of the same species. The nut becomes dark-coloured with age, when the tubercle appears to be confluent with the body of the nut. It approaches *R. dodecandra*, with which it also agrees in the prevalent number of its stamens. This species has a somewhat extensive range, being found from Wilmington in N. Carolina to Apalachicola.

28. *R. DODECANDRA*, Baldw.! *Mss. & herb*; Gray! *monogr. l. c.* p. 207.

The mature fruit of this rare and interesting species has not yet come under our notice. The number of its stamens is very

remarkable, as also its somewhat peculiar habit. Each spikelet, as in the preceding species, produces a single perfect flower at the summit, and all the scales are empty except the uppermost. Were it not for its distinctly bifid style, this plant might perhaps be properly referred to *Cephaloschænus* of Nees ab Esenbeck.

18. CERATOSCHÆNUS, *N. ab E.*

SPIKELETS producing a single perfect, and 1—4 staminate flowers. SCALES loosely and somewhat bifariously imbricated, the lower ones empty, the uppermost staminate or abortive. PERIGYNIUM composed of 5 or 6 compressed, rigid or cartilaginous, antrorsely hispid or scabrous bristles, which are dilated and somewhat connate at the base. STAMENS 3. STYLE simple, or minutely bidentate. NUT coriaceous, compressed, smooth, crowned with the very long, distinct, indurated and persistent, upwardly scabrous style.—Culms triangular, leafy; corymbs mostly compound or decompound; spikelets large, clustered.

1. *C. LONGIROSTRIS.*

Schœnus longirostris, *Michx.! fl.* 1. p. 87; *Muhl.! gram.* p. 7.

S. corniculatus, *Lam'k. ill. gen.* 1. p. 137.

Rhynchospora laxa, *Vahl, enum.* 2. p. 231; *Torr.! fl.* 1. p. 58.

R. longirostris, *Ell. sk.* 1. p. 59.

R. corniculata, *Gray! monogr. l. c.* p. 205.

2. *C. MACROSTACHYS.*

Rhynchospora macrostachya, *Torr.! in Gray, monogr. l. c.* p. 206.

OBS. These two plants, in accordance with the views now generally adopted in the construction of genera in Cyperaceæ, cannot be allowed to remain in the genus *Rhynchospora*, from which they also differ remarkably in habit. It was suggested in the Monograph of N. American *Rhynchosporæ*, that they

might possibly be referred to *Cephaloschœnus*, with some modification of the generic character; but the habit of several species of that genus is very different from our plants. Since the publication of that paper, we have received the *Uebersicht der Cyperaceengattungen* of Nees ab Esenbeck, published in the 9th volume of the *Linnæa*, and are surprised to find that the common *Schœnus corniculatus* of *Lamarck* appears not to have come under his observation. He has, however, established the genus *Ceratoschœnus* upon a new plant (the country it inhabits is not mentioned), which, although differing in some respects, exhibits a striking accordance with these plants. It has therefore been thought proper to modify the character of *Ceratoschœnus*, *N. ab. E.** so as to include our two species, rather than to propose a new genus for their reception, especially as it is not unlikely that the species comprised in *Cephaloschœnus* and *Ceratoschœnus*, with our two species, will ultimately be referred to a single genus. Nees having already employed the specific name *corniculatus*, that of our *Rhynchospora corniculata* (*Schœnus corniculatus*, *Lamarck*) must be changed: we therefore adopt that of Michaux, which has the priority over that of Vahl.

The attenuated beak of the fruit in these plants is formed by the induration of nearly the whole style: it is not, however, incurved as in *C. corniculatus*, *N. ab. E.* In our species the lowest flower is perfect, the inferior scales being wholly empty: in *C. longirostris* each spikelet is terminated by 3 or 4 staminate flowers, while in *C. macrostachys* only a single abortive staminate flower is usually found.

Should future examination prove our species to be wholly distinct from *Ceratoschœnus* as originally established, the name *LONCHOSTYLIS* might be applied to them.

* *CERATOSCHÆNUS*, *N. ab. E.* Spiculæ hermaphroditæ, basi apice-que steriles. Stylus simplex. Perigynii squamæ quinque, cartilagineæ, angustæ, fructui appressæ, basi connatæ. Caryopsis compressa, basi styli articulo insertâ, prælongâ, incurvâque coronata.—*Ueber. Cyperac. in Linnæa*, 9. p. 296.

Rhynchosporæ inquirendæ.

1. *SCHÆNUS HISPIDULUS*, Lam.: Vahl, *enum.* 2. p. 220; Ram. & Schult. *syst.* 2. p. 69; Pursh, *fl.* 1. p. 47.

“S. pedunculis axillaribus et terminalibus tristachyis, spicis subglobosis, pedicellatis, foliis filiformibus, hispidulis.

“Culmi palmares, spithamæi, angulata. Folia distantia 2—4 in culmo, superiora culmo longiora. Pedunculi axillares solitarii, ut terminales interdum, qui gemini plerumque, pollicares vel minores, monostachyi laxi. Spicæ magnitudinæ seminis Coriandri, squamis subrotundis fuscis. Flosculi 3. Stylus bifidus, purpureus. Semem globosum undulato-rugosum.—In Carolina? *Herb. Lamarck.*”—Vahl.

OBS. This plant has not been found by any N. American botanist, and it is somewhat doubtful whether Lamarck's specimen was received from this country. It cannot be a *Schœnus*, as that genus is now restricted, but is rather a species of *Rhynchospora*, or perhaps of *Psilocarya*.

2. *SCHÆNUS SETACEUS*, Vahl, *enum.* 2. p. 219? (not of Muhl.); Pursh, *fl.* 1. p. 46.

“S. pedunculis axillaribus terminalibusque subtrifloris, culmo trigono foliisque setaceis.

“Culmi pedales, vel minores, 1—2-nodosi. Folia 2—3, culmo breviora remotissima. Pedunculis ex axilla superiore solitarii, terminalis plerumque gemini cum folio setaceo. Spicæ 2—6, subulatæ pallide fuscæ, squamis infimis ovatis mucronatis. Stamina 2. Stylus bifidus. Semina subrotunda, rugosa, bidentata.—In Surinamo, Caribæis, Carolina.”—Vahl.

OBS. This species was introduced into the North American Flora by Pursh, on the authority of Vahl, but none of our botanists have found the plant. The description here quoted was probably taken from West Indian or Surinam specimens. *Schœnus setaceus* is the type of the genus *Spermodon* of P. de Beauvois and N. ab Esenbeck, the character of which is thus given by the latter writer: “Spiculæ polygamæ aut hermaphroditæ, plurifloræ. Stylus bifidus, basi bulbosus. Perigynium tubulosum, truncatum, cum basi fructus concreescens.

Caryopsis apice bidentata, inter dentes bulbo styli sutura recta discreto brevirostris.”* This genus was, however, long since pointed out by Richard under the name of Triodont†, although he described the “seed” (nut) as 3-toothed. It is probable that he considered the persistent bulb of the style as one of the teeth.—*Schænus setaceus* of Muhlenberg is *Rhynchospora capillacea*, Torr.

TRIBE V. CLADIEÆ.

FLOWERS perfect (rarely declinous). SCALES of the spikes imbricated in a trifarious or quadrifarious order, one or few-flowered; the inferior scales sterile. PERIGYNIUM 0, or cup-shaped, or in the form of bristles. NUT with a hard thick shell, smooth or irregularly wrinkled, pointless or attenuated into a beak.

19. CLADIUM, Browne.

SPIKES few-flowered; flowers polygamous. SCALES imbricated in a somewhat trifarious order; the lower ones empty. BRISTLES 0. STAMENS 2. STYLE 2—3-cleft, deciduous; the divisions often bifid or trifid. NUT subglobose; the pericarp thickened and corky towards the summit. SEED smooth.—Culm leafy; spikes mostly in compound axillary and terminal panicles or corymbs.

Cladium, *Browne, Jam.* p. 114; *R. Brown, prodr.* 1. p. 236; *Lestib. ess. fam. Cyp.* p. 35; *Ræm. & Schult. gen.* 114; *N. ab Esenb. in Linnæa*, 9. p. 301.

Species of *Schænus*, *Linn.*, *Muhl.*, *Nutt.*, &c.

1. CLADIUM MARISCOIDES.

Culm somewhat terete; leaves nearly smooth on the margin; corymb compound, 2—4-rayed, nearly naked; rays elongated;

* *Linnæa*, 9. p. 296.

† *Pers. syn.* 1. p. 60.

spikelets aggregated in heads of 3—8 together; style 3-cleft, the divisions entire.

Schœnus mariscoides, *Muhl.!* *gram.* p. 5; *Torr.!* *fl.* 1. p. 54; *Big.!* *fl. Bost.* ed. 2. p. 17; *Beck, bot.* p. 428; *Gray!* *Gram. and Cyp.* part 1. no. 97.

Culm about 2 feet high, scarcely angular, nearly smooth, about a line and a half in diameter towards the base. *Leaves* very narrow, concave, with a long compressed point. *Umbels* 2—3, erect; the lateral ones on long exserted peduncles; primary rays 2—4, with several shorter ones. *Spikes* about 3 lines long, ovate-oblong when mature. *Scales* about 6, chestnut colour, the 4 lower ones usually empty, the fifth bearing two stamens and an abortive ovary, the uppermost hermaphrodite, diandrous. *Style* filiform, 3-cleft, deciduous; the divisions mostly equal, but sometimes two of them are united towards the base. *Nut* about one line in length, ovate, with a short abrupt acute point somewhat wrinkled longitudinally; the upper half of the pericarp much thickened and of a corky texture.

HAB. Bog meadows and borders of ponds, Canada to Pennsylvania. Near Montreal, Lower Canada, *Dr. Holmes!*; near Boston, *Dr. Bigelow!* & *B. D. Greene, Esq.!*; Litchfield, Connecticut, *Mr. Brace!* Highlands of New York, *Dr. Barratt!*; Western parts of the State of New York, *Dr. Gray!* near New York, and in many parts of the State of New Jersey, particularly in the Newark meadows, and in the pine barrens!; Pennsylvania, *Muhlenberg!*

OBS. Although this species deviates from the character of *Cladium* as laid down by N. ab Esenbeck, there can be no doubt of its being a congener of *C. Mariscus* of R. Brown, as was long ago shown by Muhlenberg. It differs from that species in its much more slender habit, nearly smooth and narrow leaves, less crowded umbel with elongated rays, a nut of one half the size, and a 3-cleft style. I have not received specimens from any place south of Pennsylvania or West of the Alleghany mountains. The specific name of Muhlenberg is retained, although not altogether appropriate.

2. CLADIUM EFFUSUM.

Culm obtusely triangular; leaves sharply serrate upward; corymbs numerous, decomposed, diffuse, approximated and forming an elongated panicle; style 3—4-cleft.

Schœnus effusus, Swartz, *prodr.* p. 19!; *Muhl.*! *gram.* p. 13; *Elliott*, *sk.* 1. p. 57.

S. Mariscus, β . *effusus*, *Pers. syn.* 1. p. 58.

Culm 6—10 feet high. *Leaves* 1—3 feet long, 4—10 lines wide, smooth, except on the margin and midrib which are very acutely serrate upward, the extremity tapering to a long triangular point. *Corymbs* proceeding from the sheaths of the leaves on the upper part of the culm, forming a large oblong panicle. *Spikes* 3—4 together, about two lines long, ovate, acute. *Scales* about 6, brown, the uppermost only producing a perfect flower, the one below it bearing only stamens; in both the number of stamens constantly 2. *Nut* ovate, abruptly pointed, finely wrinkled longitudinally, upper part of the pericarp corky.

HAB. Ponds and fresh marshes. Wilmington and Newbern, North Carolina, *Mr. Curtis!* & *Mr. Croom!*; South Carolina, *Elliott*; New Orleans and Texas, *T. Drummond!*—Aug.—September.

OBS. A tall rank sedge, known at the South by the name of *Saw-grass*. R. Brown (*prodr.* p. 236) refers to his *C. Mariscus*, *Schœnus Mariscus*, *Linn.*, *S. Cladium* and *S. effusus*, *Swartz*, and if his plant is identical with *C. Germanicum*, *Schrad.*, (to which *Schœnus Mariscus*, *Linn.* is generally referred) it must be distinct from ours. The description of *S. effusus* in the *Prodromus* of Swartz is so brief that we cannot satisfactorily determine whether it is the same as our *C. effusum*. Sprengel refers it to *C. occidentale*, *Schrad.*, but that is described as having bristles at the base of the nut, a character which does not belong to any genuine *Cladium*.

TRIBE VI. SCLERIEÆ.

FLOWERS declinuous. FERTILE SPIKELETS 1-flowered. SCALES fasciculate; the lower ones empty. NUT with a thick bony shell, naked, or seated in a cup-shaped lobed perigynium.

20. SCLERIA, *Bergius*.

NUT globose, ovate, or triangular; the base surrounded with a lobed, repand, or annular perigynium. STYLE 3-cleft, deciduous.—Culms leafy; spikelets fasciculate, racemose, paniculate, or verticellately spiked.

Scleria, *Berg. act. Holm.* 1765, p. 144; *Schreb. gen. pl.* no. 1408; *Kunth, syn.* 1. p. 160; *N. ab Esenb. in Wight's contrib.* p. 116, and in *Linnaea*, 9. p. 302.

1. SCLERIA RETICULARIS, *Michx.*

Culm erect, retrorsely scabrous on the angles towards the base; fascicles lateral and terminal, very remote, sessile, somewhat branched, loosely flowered; scales and bracts smooth; nut globose, conspicuously reticulated with elevated lines, deeply pitted between the lines; perigynium 3-lobed; the lobes ovate, appressed.

S. reticularis, *Michx. fl.* 2. p. 167, (not of *Pursh*, *Elliott*, and *Muhl.*); *Willd.* p. 4. p. 314.

Culm 2 feet high, triangular, somewhat compressed and slender. Leaves $1\frac{1}{2}$ line wide, smooth, flat. Fascicles of spikelets about an inch long, the lateral ones 2 or 3 in number, and very remote, standing on short nearly included peduncles. Spikelets in pairs: the sterile lanceolate, on a short stipe at the base of the fertile spikelet, many-flowered; the scales somewhat distichously arranged, lanceolate, each bearing two stamens, the filaments of which project a little beyond the scale: fertile spikelets mostly of 3 ovate, mucronate and carinate scales; the two interior embracing the nut at its base. Style 3-cleft nearly

to the base. *Nut* exactly globose, whitish, dull; the surface strongly reticulated; the interstices oblong and deeply pitted. *Perigynium* conspicuous and resembling a calyx, of a pale greenish colour, equally 3-lobed, closely appressed, and partly adnate; the lobes rather acute.

HAB. South Carolina, *Michaux*; Middle Florida, *Dr. Chapman!*

OBS. This plant, which seems to be nearly related to *S. tessellata*, *Willd.* agrees so minutely with *Michaux's S. reticularis*, with the exception of the roughness on the lower part of the culm, that I have no doubt of its identity with that species. It is the only N. American *Scleria* in which I have found the nut truly reticulated. The species described under the same name by *Muhlenberg* and others is my *S. laxa*, a very distinct plant.

2. SCLERIA LAXA.

Culm weak, diffuse, nearly smooth; fascicles lateral and terminal, very remote, on long slender peduncles, somewhat branched, loosely flowered; scales and bracts smooth; nut globose, pitted, and marked in a somewhat spiral manner with transverse hairy rugæ; perigynium 3-lobed; the lobes ovate, appressed.

S. reticularis *Muhl.!* *gram.* p. 266; *Pursh!* *fl.* 1. p. 45; *Elliott, sk.* 2. p. 601?; *Gray!* *Gram. & Cyp.* part 1. no. 99.

Culm 12—18 inches high, slender, acutely triangular, with the angles somewhat winged and slightly scabrous. *Leaves* 2 lines broad, flat, smooth. *Fascicles* usually 3, one of which is terminal, the others lateral and very remote. *Peduncles* 2—6 inches long, compressed, slender, and often recurved. *Spikelets* distant, in pairs, disposed as in the preceding species. *Stamens* 2. *Nut* about a line in diameter, whitish, with narrow, brown wrinkles, which are more or less hairy, pitted in an obscurely reticulate manner. *Perigynium* deeply 3-lobed; the lobes rather acute.

3. SCLERIA OLIGANTHA.

Culm erect, smooth, the angles somewhat winged; leaves flat, smooth; fascicles 2, one lateral on a long exerted peduncle, the other terminal; sterile spikelets elongated, sessile; bracts somewhat ciliate; nut ovate, smooth and polished; perigynium a narrow ring, bearing 8 minute tubercles.

S. oligantha, *Michx. fl.* 2. p. 167!; *Elliott, sk.* p. 557.

Culm about 2 feet high, slender, triquetrous. *Leaves* 2 lines wide, smooth, except on the margin near the summit. *Fascicles* of spikes scarcely an inch long; the lateral one often barren, remote, supported on a slender peduncle about 6 inches in length. *Spikelets* in 3—4 pairs; the *sterile* one-third of an inch long; scales lanceolate, somewhat rigid, dark purple. *Stamens* 3. *Style* deeply 3-parted. *Nut* a line and a half in length, exactly ovate, obtuse, white. *Perigynium* consisting of 8 small white cellular processes, approximated in pairs, and forming a circle under the base of the nut.

HAB. Wet pastures and pine barrens. South Carolina, *Elliott*; Middle Florida, *Dr. Chapman!*

DES. I am not quite satisfied respecting the synonyms quoted under this species. The specimens in Michaux's herbarium are without fruit, and Elliott, who quotes Michaux with a mark of doubt, describes the leaves as narrow; whereas in our plant, they are broader than in many other species. Willdenow (and Pursh copying him) referred *S. oligantha* to the succeeding species, which is, however, a totally distinct plant.

4. SCLERIA PAUCIFLORA, *Muhl.*

Culm slender, smoothish; leaves narrow, with pubescent sheaths; fascicles lateral and terminal, few-flowered; the lateral ones remote, on long peduncles; bracts ciliate; nut globose-ovate, verrucose; the warts at the base stipitate; perigynium a narrow ring supporting 6 minute tubercles.

S. pauciflora, *Muhl!* *gram.* p. 267, (in part); *Willd. sp.* 4. p. 318,

(excl. syn. *Michx.*); *Pursh*, *fl.* 1. p. 46. (excl. syn. *Michx.*); *Elliott*, *sk.* 2. p. 559; *Darlingt!* *fl. Cest.* ed. 2. p. 26; *Beck.* *bot.* p. 430.

Culm erect, 9—18 inches high, triquetrous, striate, slightly scabrous toward the summit. *Leaves* scarcely a line wide, nearly smooth; the sheaths clothed with a short pubescence. *Fascicles* 2—3, composed of about three pairs of spikelets; the lateral ones on long slender peduncles. *Bracts* foliaceous; the inner ones ciliate. *Spikelets* in pairs; the *sterile* few-flowered, sessile in the second scale of the fertile spikelet; the scales membranaceous, acute, each covering three filaments: *fertile spikelet* of 3 coriaceous, ovate, mucronate scales, which are somewhat ciliate on the keel. Between the sterile spikelet and the fertile scale which embraces it is a filiform process, or abortive pedicel. *Style* 3-cleft. *Nut* white, shining, roughened with minute prominences. At the base there are a number of capitate stipitate warts, or processes, projecting downward; the little heads appearing pulverulent under a strong lens. *Perigynium* a narrow somewhat undulate ring, upon which, and between it and the base of the nut, are 6 roundish cellular bodies like those of *S. oligantha*.

HAB. Serpentine hills, near west Chester, Pennsylvania, *Dr. Darlington!*; swamps, in the same state, *Muhlenberg!*; Walpole, New Hampshire, *J. Carey, Esq.!*; damp pastures and pine barrens, South Carolina, *Elliott*.

Obs. In my New Hampshire specimens, the little rounded bodies of the perigynium are closely approximated in pairs, so that they seem to be 2-lobed.

β . *Leaves*, sheaths and bracts smooth; nut somewhat wrinkled transversely, faintly marked with longitudinal lines; processes of the perigynium 3, dilated, obscurely 2-lobed.

HAB. Southern States, *Dr. Baldwin!*; North Carolina, *Mr. Curtis!*

5. SCLERIA CILIATA, *Michx.*

Culm erect, nearly naked; leaves channelled, pubescent above; fascicle subsolitary, terminal; bracts and scales ciliate; nut subglobose, verrucose; the warts at the base stipitate; perigynium a narrow ring supporting 3 tubercles.

S. ciliata, Michx. ! *fl.* 2. p. 167; Willd. *sp.* 4. p. 318; Pursh, *fl.* 1. p. 46; Elliott, *sk.* 2. p. 559.

Culm 1—2 feet high, acutely triangular; the angles scabrous toward the summit. *Leaves* about a line in breadth, hairy, scabrous on the margin, strongly channelled; sheaths retrosely pubescent, particularly on the angles. *Fascicle* of spikes mostly solitary at the summit of the culm; sometimes there is a remote abortive cluster on a long peduncle. *Bracts* fringed with long whitish hairs; the terminal fascicle consists of about 5 pairs of spikelets: *sterile spikelet* large, many-flowered, sessile within the superior fertile scale; *stamens* 3. *Nut* obscurely 3-sided, somewhat shining, white, roughened with remote warts, not wrinkled or pitted; stipitate prominences at the base very few. *Perigynium* a thickened obtusely triangular border, supporting 3 hemispherical cellular bodies, like those in the two preceding species.

HAB. Damp soils. South Carolina, Elliott; Southern States, Dr. Baldwin!; Georgia, Le Conte!

OBS. Darlington refers *S. ciliata* to his *S. pauciflora*; but the plant described above is quite distinct from the latter species, which I received from the author himself.

6. SCLERIA CAROLINIANA, Willd.

“Culm erect, slender, and with the leaves and bracts slightly hairy; fascicles terminal and axillary; scales pubescent; nut transversely wrinkled.”

S. Caroliniana, Willd., *sp.* 4. p. 318.

S. hirtella, Michx. *fl.* 2. p. 168, (not of Swartz); Elliott, *sk.* 2. p. 560, (excl. syn. Pursh & Willd.).

Culm about 18 inches high, triquetrous, hairy, particularly along the margins. *Leaves* narrow, channelled, shorter than the culms, hairy. *Spikelets* 2—3, near the summit of the culm, distinct, not fasciculated; sometimes a small axillary spike near the base of the culm. *Bracteal leaves* much longer than the spikes, hairy, and conspicuously fringed. *Scales* ovate, acuminate, unequal, pubescent. *Nut* globular, roughened chiefly by irregular transverse elevated lines.—Elliott.

HAB. Damp soils. South Carolina, Elliott.

OBS. I have not been able to identify this plant among my

numerous specimens of *Scleria*. Michaux does not notice the fruit, and I did not particularly examine his specimens. He states that it grows in the woods of Carolina. Elliott has a variety of this species, which he calls *strigosa*, and which differs from the ordinary form in being "less hairy, excepting along the angles of the culm and margin and midrib of the leaves; its spikes also are larger and more numerous; its glumes fringed, of a light chestnut colour; and the nut rather roughened by distinct tubercles than by transverse lines." It was collected by Dr. Baldwin on the confines of Georgia and Florida; and Mr. Elliptt thinks it may be a distinct species.

7. SCLERIA TRIGLOMERATA, Michx.

Culm scabrous; leaves broadly linear, smoothish, sometimes a little hairy; fascicles lateral and terminal, triglomerate; the lateral one remote, pedunculate; bracts slightly ciliate; scales cuspidate; nut ovate-globose, smooth and polished; perigynium annular, whitish, invested with a cellular crust.

S. triglomerata, Michx.! *fl.* 2. p. 168; Muhl.! *gram.* p. 260; Elliott, *sk.* 2. p. 558; Beck, *bot.* p. 430; Darlingt.! *fl. Cest.* ed. 2. p. 26; Gray! *Gram. & Cyp.* part 1, no. 98.

Culm about 3 feet high, leafy, triquetrous, with the angles almost winged. Leaves 2—4 lines wide, scabrous on the margin, the under surface a little hairy. Terminal fascicle consisting of three distinct clusters of spikelets, each with a foliaceous bract at the base; lateral fascicle composed of few spikelets, remote, usually supported on a long peduncle; sometimes it is wanting. Sterile spikelet seated within the upper fertile scale, many-flowered; the scales lanceolate, purplish, and marked with deeper lines. Stamens 3. Nut bluish when young, at length nearly two lines in diameter, sometimes a little uneven. Perigynium annular, or rather obtusely triangular, entire, covered with a cellular, or minutely vesicular, whitish crust.

HAB. Low grounds and moist thickets. Vermont! to Florida! and west to Arkansas!

OBS. N. ab Esenbeck (in *Linnaea* 9. 301.) refers *S. tri-*

glomerata, Michx. to Cladium; but he surely must have mistaken some other plant for ours. I suspect he meant *Schaenus mariscoides* of Muhlenberg.

21. HYPOPORUM, *N. ab Esenb.*

PERIGYNIUM O. NUT naked, triangular at the base; the sides porous, punctate, or sulcate.—Habit of *Scleria*.

Hypoporum, *N. ab Esenb. in Wigh's contrib.* p. 70, and in *Linnæa* 9. p. 303.

Species of *Scleria*, *Willd.*, *Nutt.*, *Muhl.*, &c.

1. HYPOPORUM GRACILE.

Culm filiform, and with the leaves, smooth; spikelets few, in a terminal fascicle; bracts and scales glabrous; nut ovate, obtuse, obscurely triangular, smooth, indistinctly ribbed, with two pores on each side of the triangular base.

Scleria gracilis, *Elliott! sk.* 2. p. 557.

Culm 1—2 feet high, very slender, triquetrous, nearly naked. *Leaves* scarcely half a line wide, 2—4 inches long. *Spikelets* 3—5 pairs, closely aggregated, subtended by an erect bracteal leaf 3—4 inches long, appearing like a continuation of the culm. *Sterile spikelet*, sessile within the fertile scales. *Stamens* 3. *Nut* about a line and a half long, white, dull; the sides marked with obtuse longitudinal ribs (which are sometimes rather obscure) and two oblong pits or pores on each side near the base.

HAB. Middle Florida, *Dr. Chapman!*; near St. Mary's, Georgia, *Dr. Baldwin!*; Texas, *T. Drummond!*

OBS. Mr. Elliott remarks that the nut is polished, and showing in "some specimens" slight longitudinal ribs; but I find it to be dull, and almost always distinctly ribbed; and yet the plant which I have described must be identical with his, since it agrees with specimens collected by Dr. Baldwin himself.

HYPOPORUM BALDWINII.

Culm triquetrous, smooth ; leaves linear, carinate ; spikelets about 3, in a terminal fascicle ; bracts and scales glabrous ; nut ovate, obscurely 3-sided, smooth, apiculate ; the base triangular, destitute of pores.

Culm 2—3 feet high, smooth, or slightly scabrous on the angles towards the summit. *Leaves* long, narrowly linear, smooth and rather rigid ; the margins minutely scabrous upward. *Spikelets* about 3, sessile, glomerate in a terminal fascicle, each subtended by a foliaceous bract. *Sterile spikelet* sessile in the upper fertile scale, many-flowered. *Stamens* 3. *Nut* (larger than in *Scleria triglomerata*) white, smooth but dull, obscurely 3-angled, conspicuously apiculate, raised on a very short triangular base.

HAB. Georgia, *Dr. Baldwin!*

OBS. This species has the habit and general appearance of *Scleria triglomerata* ; from which, however, it is at once distinguished by its apiculate nut with a dull white surface, the absence of a hypogynium, narrower leaves, fewer and larger spikelets, &c. The particular locality in which *Dr. Baldwin* found this species is not recorded. It seems to have been confounded with *Scleria triglomerata*.

HYPOPORUM INTERRUPTUM, *N. ab E.*

Culm triquetrous, and with the leaves, sparsely and minutely hirsute ; fascicles 4—6, alternate, sessile, and somewhat distant so as to form an interrupted spike ; scales of the fertile flowers oval or lanceolate, cuspidate, hispid ; nut smooth, subglobose, triangular below, each side furnished with a row of very minute pores.

H. interruptum, *N. ab Esenb. in Linnæa* 9. p. 303.

Scleria interrupta, *Michx. ! fl.* 2. p. 167, (not of *Willd.?*) ; *Richard in act. soc. nat. hist. Paris* (1792), 1. p. 113.

Whole plant pale green, minutely and sparsely hairy. *Culm* 10—20 inches high, slender. *Leaves* linear, flat, subacute. *Fascicles* closely sessile, somewhat remotely and alternately disposed at the summit of the culm, reflexed when old. *Bracts* minute and setaceous, sometimes none; that of the lowest fascicle occasionally somewhat foliaceous. *Spikelets* 4—6 in each fascicle, staminiferous above. *Scales* of the fertile flowers hispid, scarious, tawny or purplish, with a green keel, which is produced into a long and firm cusp; those of the staminate flowers fascicled, lanceolate or linear, obtuse and pointless, glabrous. *Stamens* 3. *Nut* about half a line in diameter, smooth and shining, minutely apiculate with the base of the style, slightly raised upon a 3-sided base, each side furnished at its junction with the spherical portion with about 7 very minute pores or dots.

HAB. Carolina to Florida, *Michaux*; New Orleans, *T. Drummond!* and *Dr. Ingalls!*; Middle Florida, *Dr. Chapman!*

OBS. There is some confusion about the synonymy of this plant, which I have not the means of reconciling. Our plant is the *S. interrupta* of Michaux, as I have ascertained by examining the specimens in his herbarium; and in a note appended to the specific character, that author states his plant to be identical with a species collected in French Guyana by L. C. Richard. He does not, however, quote Richard's paper in the Transactions of the Nat. Hist. Society of Paris, where *S. interrupta* was originally established (which I regret that I am unable to consult); but inasmuch as it is well known that the collections of Michaux were studied, and in a good degree described, by Richard himself, who may be supposed to know his own species, we might rest satisfied of the identity of the North American and the Guyana plant, were it not that Willdenow, who seems to know the latter plant, describes it as having a transversely rugose-verrucose nut, and as very closely resembling *S. verticillata*. It is possible, therefore, that Michaux may have been mistaken, and that our plant is not the original *S. interrupta*. Pursh and Elliott both copy the

specific phrase of Willdenow unaltered, neither of them having seen the plant.

HYPOPORUM VERTICILLATUM, *N. ab E.*

Culm filiform, triquetrous, and, with the leaves, glabrous; fascicles 4—6, alternate, sessile, rather distant, forming an interrupted spike; bracts minute, setaceous; nut globose, with a somewhat triangular base, rugose-verrucose, abruptly apiculate.

H. verticillatum, *N. ab Esenb. in Linnæa*, 9. p. 303

Scleria verticillata, *Muhl. in Willd. sp.* 4. p. 317. (excl. syn.) and *gram.*! p. 266. (excl. syn.); *Elliott, sk.* 2. p. 261; *Gray! Gram. & Cyp.* part 2. no. 100.

Culm 6—8 inches high, very slender. *Leaves* linear, very narrow, flat, shorter than the culm. *Fascicles* composed of 4—5 very few-flowered, sessile spikelets, rather distant, alternate, sometimes appearing as if verticillate. *Bracts* setaceous, about as long as the fascicles, minutely scabrous upward. *Scales* of the fertile flowers ovate, glabrous, purple, with a strong, upwardly scabrous, green keel, which is produced into a short cusp. *Nut* a little more than half a line in diameter, strongly and somewhat rugosely papillose, with a short abrupt mucronation, and an indistinctly 3-sided base, destitute of pores.

HAB. Pennsylvania and Carolina, *Muhlenberg* and *Elliott*; Penn-Yan, New York, *Dr. Sartwell!*

OBS. This beautiful little species resembles *H. pergracile*, *N. ab E.*, an East Indian species, but is distinguished by its setaceous bracts, &c.

TRIBE VII. ELYNEÆ.

FLOWERS diclinous. SPIKES compound; scales distichously or every way imbricated, each covering a single unisexual or two diclinous florets. No proper PERIGYNIUM. NUT commonly rostrate. STYLE 3-cleft.

ELYNA, *Schrader*.

SPIKE solitary, terminal. SCALES two-flowered, androgynous. SCALES of the FLORETS (*squamulæ*) one to each; the lower or pistillate one next the scale of the spike, enclosing the base of the narrow and oblique staminate squamula.—Habit of *Carex*. Leaves radical, setaceous.

Elyna, *Schrader*, *fl. Germ.* 1. p. 155; *Lestib. ess. fam. Cyp.* p. 25, no. 10; *N. ab Esenb. in Linnæa*, 9. p. 304.

Species of *Kobresia*, *Willd.*, *Persoon*, *Schkuhr*, &c.

ELYNA SPICATA, *Schrader*, *l. c.*

Kobresia scirpina, *Willd. sp.* 4. p. 205; *Schkuhr, car.* 2. p. 1; *Pers. syn.* 2. p. 534; *Wahl. fl. Suec.* 2. p. 583; *Rich. app. Frankl. journ.* ed. 2. p. 34.

K. filiformis, *Dewey!* in *Sill. jour.* 19, p. 253.

Carex Bellardi, *Schkuhr, car.* 1. p. 12. t. D. f. 16; *Wahl, act. Holm.* (1803), p. 141.

Cespitose. *Stems* 4 to 12 inches high, erect, smooth. *Leaves* mostly radical, scarcely as long as the culm, setaceous. *Spike* from half an inch to an inch long, cylindrical, rather loosely flowered below. *Scales of the spike* ovate, fuscous; the lowest one usually produced into a short cusp. *Scale of the pistillate* floret ovate-lanceolate, loosely enclosing the nut and the base of the linear-lanceolate staminate scale. *Stamens* 3. *Style* 3-cleft. *Nut* ovate-oblong, obscurely trigonous, somewhat flattened on one side and angular on the other, abruptly acuminate into the style.

HAB. Rocky mountains, and barren grounds between lat. 64° and the Arctic sea, *Dr. Richardson!*

OBS. I can perceive no essential difference between European specimens of *E. spicata* and those from the Rocky Mountains, from which Prof. Dewey drew his description of *Kobresia filiformis*, except that in very mature specimens of the American plant the spike is somewhat more loosely flowered. The name under which the plant is described in Silliman's Journal is credited to Dr. Torrey by some mistake.

TRIBE VIII. CARICEÆ.

FLOWERS declinuous. SCALES of the spikes imbricated on all sides. NUT wholly enclosed in an urceolate or bottle-shaped perigynium.*

CAREX, *Linn.*

SPIKES one or several, androgynous or unisexual, rarely diœcious. *Stam. Fl.* STAMENS 3. *Pist. Fl.* PERIGYNIUM bidentate, emarginate or truncate at the apex. STYLE 2 or 3-cleft. NUT lenticular, plano-convex, or triangular, crowned with the lower portion of the persistent and continuous, or rarely articulated, style.—Culms triangular, leafy throughout, or only at the base; spikes terminal or axillary, distant or approximate, or variously aggregated.

Carex, *Linn. gen. pl.* no. 1946; *Juss. gen.* p. 36; *Lam'k. ill.* t. 752; *Schkuhr, car.* 1. p. 1. *et tab. mult.*; *R. Brown,*

* The urceolate perigynium of *Carex*, *Uncinia*, &c. is considered as resulting from the union of two scales, like those which enclose the flowers of *Elyna* and *Kobresia*, and not as analogous to the setiform perigynium of *Scirpeæ* and *Rhynchosporeæ*. In the former case it represents bracts of the second order; in the latter it may be viewed as a rudimentary perianth.

prodr. 1. p. 203; *Schw. & Torr. car. in ann. lyc. nat. hist. New York*, 1. p. 284; *Dewey, car. in Sill. jour.* 7, et seq.; *N. ab Esenb. in Linnæa*, 9. p. 305.

Carex & Vignea P. de Beauv.; *Lestib. ess. fam. Cyp.* p. 22, no. 1. and 2.

A. *Style 2-cleft; nut lenticular, or more or less compressed.*
—VIGNEA, P. de Beauv.

1. *Spike single.*

* Mostly diœcious.

1. *C. DIOICA*, *Linn.*; *Schkuhr, car.* 1. p. 5; *Fl. Dan.* t. 369.

C. Linnæana, *Schkuhr, car.* 2. p. 3. f. 1.

C. parallela, *Læstæd.*

C. Redowskiana, *Meyer? Cyp. nov. in mem. acad. St. Petersb.* (6. ser.) 1. p. 207. t. 4; *Dewey! in Sill. jour.* 29. p. 260.

C. nigricans, *Dewey! l. c.* p. 249, not of *Meyer.*

HAB. Cumberland House, and Rocky Mountains, *Dr. Richardson!*—The form of the fruit varies from ovate to lanceolate, and the hispidness of the margins of the beak is sometimes very slight.

2. *C. EXILIS*, *Dewey! car. l. c.* 14. p. 351. f. 53, and β . *squamacea*, *l. c.*

HAB. Massachusetts! and New Jersey!

3. *C. LEIOCARPA*, *Meyer, l. c.* p. 208, t. 5; *Bongard! veg. Sitcha, in mem. acad. St. Petersb. l. c.* 2. p. 168.

HAB. Unalaschka, *Meyer*; *Sitcha, Bongard!*—A 3-cleft style is observed in some of our specimens.

** Androgynous.

4. *C. CAPITATA*, *Linn.*; *Schkuhr, car.* f. 80.

HAB. Rocky mountains and Hudson's Bay, *Dr. Richardson!*

5. *C. MICROPODA*, Meyer, *l. c.* p. 210. t. 6.

HAB. Unalashka, Meyer.—Allied to *C. pulicaris*, and also to *C. Pyrenaica* and *nigricans*, from which it differs in the 3-cleft style, &c.—Meyer.

2. *Spikes two or more.*

* All androgynous.

† *Staminiferous at the summit.*

6. *C. CHORDORRHIZA*, Ehrhart; Schkuhr, *car. f.* 31; Gray! *Gram. & Cyp.* part 2. no. 143.

HAB. British America! Southern shore of Lake Superior! and western part of the State of New York!

7. *C. FULVICOMA*, Dewey! *car. l. c.* 29. p. 249.

HAB. Sea coast of Arctic America, Dr. Richardson!—The specimen in my possession from which Prof. Dewey's description was drawn does not exhibit the fruit. It appears very like *C. incurva* in a young state.

8. *C. STENOPHYLLA*, Wahl. *act. Holm.*; Schkuhr, *car. f.* 32; Dewey! *car. l. c.* 29. p. 249.

HAB. British America! and Rocky Mountains!—Our specimens are too young for determining this species satisfactorily.

9. *C. INCURVA*, Lightfoot, *fl. Scot.* t. 24; Schkuhr, *car. f.* 95; Dewey! *car. l. c.* 26, p. 276.

HAB. Rocky Mountains, T. Drummond!

10. *C. DISPERMA*, Dewey! *car. l. c.* 8. p. 266. f. 3; Schw. & Torr.! *car. l. c.* p. 303.

HAB. Massachusetts! and middle parts of the State of New York! to sub-Arctic America! and the Rocky Mountains!

11. *C. ROSEA*, Schkuhr, *car.* 2. p. 15. f. 179.

β. retroflexa.

C. retroflexa, Muhl. in Willd. *sp.* 4. p. 235; Schkuhr, *car.* f. 140.
? *γ. Texensis.*

HAB. *α* and *β.* Throughout the United States and British America! *γ.* Texas, *T. Drummond!*

12. *C. CEPHALOPHORA*, Muhl. in Willd. *sp.* 4. p. 220; Schkuhr, *car.* f. 133.

? *β.* Spikes 4—8, aggregated into an oblong or cylindrical head; scales muticous.

C. muricata β. cephaloidea, Dewey! *car. l. c.* 11. p. 308.

HAB. Northern and Middle States! *β.* abounds in New York and Massachusetts!—The plant here placed with some hesitation as a variety of *C. cephalophora*, is apparently intermediate between that species and *C. sparganioides*, and is perhaps a distinct species. It certainly is not *C. muricata*.

13. *C. MURICATA*, Linn., Schkuhr, *car.* f. 22; Willd. *sp.* 4. p. 234.

C. Hookeriana, Dewey! *car. l. c.* 29. p. 248.

HAB. Near Boston, *B. D. Greene, Esq.!*; Carlton House, *Dr. Richardson!*—This species is by no means common in North America, although *C. muricata*, *β. cephaloidea* (here referred to *C. cephalophora*) is abundant in the Northern States. *C. divulsa*, Good. seems, as remarked by Wahlenberg and Hooker, to be a mere variety of the present species, differing in having its spikelets more remote. *C. Hookeriana*, Dewey, although a more slender plant, seems not to be a distinct species.

14. *C. SPARGANIOIDES*, Muhl. in Willd. *sp.* 4. p. 237; Schkuhr, *car.* f. 142.

C. Boeckii, Spreng. *system.* 3. p. 812.

HAB. Throughout the United States.

15. *C. MUHLENBERGII*, *Schkuhr*, *car. f.* 178; *Willd. sp.* 4. p. 231.

HAB. Hudson's Bay to Kentucky!; also in Texas, *T. Drummond!*

16. *C. VULPINOIDEA*, *Michx.!* *fl.* 2. p. 169.

C. stipata, *Muhl. in Willd.*, *sp.* 4. p. 533; *Schkuhr*, *car. f.* 132.

HAB. Throughout the United States and British America! —The specific name of Michaux, being first published, must of necessity be restored to this species.

17. *C. SETACEA*, *Dewey!* *car. l. c.* p. 61; t. 2. f. 5. (bad).

HAB. Massachusetts! and New York! —Nearly resembling *C. multiflora*, from which it differs in its rigid and setaceous bracts, and ovate-lanceolate fruit, with very strongly serrulate-ciliate margins.

18. *C. MULTIFLORA*, *Muhl. in Willd. sp.* 4. p. 243; *Schkuhr*, *car. f.* 144.

C. bracteosa and *polymorpha*, *Schw.!* *anal. tab. car. in ann. lyc. nat. hist. New-York.*

C. microsperma, *Wahl.*

HAB. Throughout the United States.

19. *C. PANICULATA*, *Linn.*; *Schkuhr*, *car. f.* 20.

β. teretiuscula, *Wahl.*; *Hook. fl. Scot.* p. 263; *Gray!* *Gram. & Cyp.* part 2. no. 150.

C. teretiuscula, *Good.*

? *γ. decomposita*, *Dewey!* *car.* 10. p. 276.

C. decomposita, *Muhl.!* *gram.* p. 264; *Dewey!* *car. l. c.* 25. p. 140. t. S. f. 58.

HAB. β . throughout the Northern and Middle States! and British America! γ . Cherokee country, *Muhlenberg*; Michigan, *Dr. Folwell*!—The var. β . is by far the most common form in this country; and we have ever met with no specimens exactly corresponding with *C. paniculata* of Europe. Our specimens of the var. γ . are not mature; but it seems hardly to be a distinct species.

†† *Staminate and pistillate flowers variously situated.*

20. *C. SICCATA*, *Dewey!* *car. l. c. 10. p. 268; t. F. f. 18.*

HAB. Connecticut! Massachusetts! Columbia river! and Cumberland House!—Near *C. intermedia*, *Good.*, but distinct. The nut of this species is flat on one side, and obtusely angled on the other.

21. *C. BROMOIDES*, *Schkuhr, car. 2. p. 8. f. 176.*

HAB. Throughout the United States and British America! west to the Rocky Mountains!—Nut flat on one side, obscurely angled on the other.

††† *Pistilliferous at the summit.*

22. *C. LOLIACEA*, *Linn.; Willd. sp. 4. p. 337.*

C. tenella Schkuhr, car. f. 104.

HAB. British America!

23. *C. TRISPERMA*, *Dewey!* *car. l. c. 9. p. 63. t. f. 12.*

C. quaternaria, Spreng. syst. 3. p. 330.

HAB. Northern States and British America! Rocky Mountains!

24. *C. DEWEYANA*, Schw! anal. tab. l. c.; Schw. & Torr.! car. l. c. p. 310.

C. remota, Richardson, in app. Frankl. journ. ed. 2. p. 35.

HAB. Northern States and British America! ; west to the Rocky Mountains!

25. *C. TENUIFLORA*, Wahl.; Schukhr, car. f. 187; Dewey! car. l. c. 28. p. 273.

HAB. British America!

26. *C. ELONGATA*, Linn.; Schukhr, car. f. 25; Bongard! veg. Sitcha, l. c. p. 168.

HAB. Sitcha, Bongard!

27. *C. STELLULATA*, Good.; Schukhr, car. f. 14.

β. Inflorescence more or less diœcious; the pistillate spikes bearing very few staminate flowers, the staminate spikes more or less pistilliferous.

C. sterilis, Willd. sp. 4. p. 208; Schkuhr, car. f. 146.; Muhl.! gram. p. 217.

γ. Somewhat smaller; spikes (especially the uppermost) with numerous staminate flowers, thus becoming clavate.

C. scirpoides, Schkuhr, car. f. 180; Muhl.! gram. p. 225.

HAB. Northern and Middle States! to Arctic America! west to the Rocky Mountains! ; Sitcha, Bongard!—*C. stellulata*, *sterilis* and *scirpoides* are not distinguished from each other by any essential and constant characters; numerous intermediate forms being every where found. *C. sterilis* certainly differs from the others in its prevailing diœcious habit, or rather in its tendency to become diœcious; but the pistillate specimens usually bear more or less staminate flowers at the base

of the spikelets, and agree very well with the European *C. stellulata*.

28. *C. CANESCENS*, *Linn. fl. Succ.* (fide *Wahl.*); *Fl. Dan.* t. 285.

C. curta, *Good.*; *Schkuhr, car.* f. 13.

C. Richardi, *Michx.*! *fl.* 2. p. 170.

α. Spikes large; the whole plant silvery-glaucous when young.

β. Spikes small, few-flowered; culm and leaves slender.

HAB. Northern States and British America!; west to the Rocky Mountains!

29. *C. MARINA*, *Dewey!* *car. l. c.* 29. p. 248.

HAB. Sea coast of the Arctic Regions, *Dr. Richardson!* Very near *C. lagopina*, *Wahl.*; but the fruit is not acuminate.

30. *C. CARLTONIA*, *Dewey!* *car. l. c.* 56. p. 239.

HAB. British America near Carlton House!—This species is characterised by Prof. Dewey as tristigmatic, with the upper spike only androgynous, and is accordingly referred to the same section with *C. hirsuta*, &c.: we find, however, only two stigmas, a lenticular nut, and staminate flowers at the base of at least two of the spikelets. The habit of the plant, moreover, is entirely that of the present group; and indeed though a taller plant, it is exceedingly near *C. marina*. The fruit of *C. Carltonia* is, however, somewhat broader and minutely striolate.

31. *C. LAGOPINA*, *Wahl. fl. Lapp., & fl. Succ.* 2. p. 591.

C. leporina, *Willd.* (not of *Linn.*).

C. Lachenalii, *Schkuhr, car.* f. 79.

HAB. Rocky Mountains, *T. Drummond!*—This species, not previously known as a native of North America, occurs in

my set of the Carices collected in the several expeditions in British America. The specimens are mixed with *C. petasata*, *Dewey*, and were apparently obtained at the same locality.

32. *C. PETASATA*, *Dewey*, *car. l. c.* 29. p. 246.

HAB. Rocky Mountains and sub-Arctic America! *Dr. Richardson!*

33. *C. FESTIVA*, *Dewey*, *car. l. c.* 29; p. 246.

HAB. Rocky Mountains and sub-Arctic America, *Dr. Richardson!*

34. *C. LEPORINA*, *Linn. fl. Succ.*, not of *Michx. & Pursh*, nor of the *flora Danica*.

C. ovalis, *Good.*; *Schkuhr*, *car. f.* 8.

HAB. Rocky Mountains and sub-Arctic America!

35. *C. SCOPARIA*, *Schkuhr*, *car. f.* 175; *Willd. sp.* 4. p. 230.

C. leporina, *Michx.!* *fl.* 2. p. 170.

C. Muskingumensis, *Schw.!* *anal. tab. l. c.*

C. arida, *Schw. & Torr.!* *car. l. c.* p. 312; t. 24. f. 2.

β . *lagopodioides*; spikes 10—15, crowded; the lowest usually subtended by a long setaceous or foliaceous bract.

C. lagopodioides, *Schkuhr*, *car. f.* 177.

HAB. Throughout the United States and British America! The lanceolate fruit characterizes all the forms of this species.

36. *C. FESTUCACEA*, *Schkuhr*, *car. f.* 173; *Willd. sp.* 4. p. 242.

HAB. Throughout the United States and British America! —*C. miralibis*, *Dewey*, *car. l. c.* 30. p. 63. seems to differ from *C. festucea* chiefly in the spikelets not being club-shaped, or in other words, in having very few staminate flowers

at the base of the spikes; a character which we fear cannot be implicitly trusted in this group of Carices, since we observe considerable diversity in this respect. We have at present no specimens of *C. mirabilis* from the author, and therefore are unable to decide whether it be entitled to rank as a species. We have, however, several specimens which correspond with Prof. Dewey's description; but they appear to connect *C. festucacea* with the succeeding species.

37. *C. CRISTATA*, Schw.! *anal. tab. l. c. Schw. & Torr.!*
car. l. c. p. 315. t. 25. f. 1.

HAB. Northern and Middle States, and British America!

38. *C. STRAMINEA*, Schkuhr, *car. 1. p. 49, f. 34. & 157; Dewey, car. l. c. 11. p. 157.*

β. minor; slender; spikes smaller; fruit with an ovate circumscription, narrowly winged.

C. straminea β. minor, Dewey! l. c.

C. tenera, Dewey! car. l. c. 8. p. 97; & 9, t. C. f. 9.

γ. fœnea; spikes more or less approximate (green); fruit broadly ovate, with a somewhat narrower wing.

C. fœnea, Muhl.! *gram. p. 227; Schw. & Torr.!* *car. l. c. p. 318; Dewey! car. l. c. 36, p. 142.*

HAB. United States and British America. *β.* Northern States and British America! *γ.* New Jersey! Pennsylvania and Southern States!—We are not wholly satisfied with the present arrangement of the perplexing group which comprises this and the 3 preceding species. The number should, perhaps, be still further diminished, since, notwithstanding, the apparent distinctness of these several forms, a suite of intermediate specimens may readily be collected so as to exhibit a regular gradation from the narrow fruit of *C. scoparia* to the almost orbicular and broadly-winged fruit of *C. straminea*. No dependence can be placed on the presence or

absence of a foliaceous bract at the base of the lowest spike, since both forms are frequently met with in the same clump.

The following species, although nearly allied to *C. straminea*, seems wholly distinct. It is singular that it has been so long overlooked.

39. CAREX ALATA.

Spikes (large) 4—7, somewhat globose-ovate, approximate, many (50—100) flowered; fruit suborbicular, with a short abrupt acumination, very broadly winged, minutely serrulate-ciliate on the margin, one-third longer than the lanceolate mucronate scale; nut oval, acute at each end, long stipitate.

Culm 3—4 feet high, stout, glabrous. *Leaves* dark green, flat, 2—3 lines wide. *Spikes* light green, nearly three-fourths of an inch long, thick, ovate or subglobose, somewhat attenuate or turbinate at the base owing to the rather numerous staminate flowers. *Fruit* nearly 2 lines broad. *Nut* elevated on a distinct slender stipe.

HAB. Newbern, North Carolina, *Mr. Croom!*; Macon, Georgia, *Dr. Loomis!*

40. *C. BICOLOR*, *Allioni*; *Schukhr. car. f. 181*; *Schw. & Torr.!* *car. l. c. p. 311.*

HAB. Labrador, *Schweinitz!*

** Terminal spike androgynous, the others wholly pistillate.

41. *C. GLAREOSA*, *Wahl.*; *Schukhr. car. f. 97.*

HAB. Greenland, *Prof. Hornemann!*

*** Stamiferous and pistilliferous spikes distinct.

† *Staminate spike mostly single.*

42. *C. AUREA*, *Nutt. gen. 2. p. 205*; *Schw. & Torr.!* *car. l. c. p. 238, t. 25. f. 2.*

C. pyriformis, *Schw.!* *anal. tab. l. c.*

HAB. Northern States and British America! W. to the Rocky Mountains!

43. *C. SAXATILIS*, Linn. *fl. Succ.*; *fl. Dan.* t. 159; *Schkuhr, car.* f. 40.

β . Fertile spikes 2—4, approximate or somewhat remote, rather loosely flowered; stigmas sometimes 3.

C. Bigelowii, *Torrey!* in *Schw. anal. tab. l. c.*

C. Washingtoniana, *Dewey!* *car. l. c.* 10. p. 272.

C. saxatilis, *Pursh, fl.* 1. p. 38.

C. nigra, *Schw. & Torr.!* *car. l. c.* p. 336.

HAB. Arctic America!; Kotzebue's Sound! β . in hemlock woods of Vermont and New Hampshire, *Pursh*; on Mount Washington, New Hampshire, *Bigelow* and *Dr. Barratt!*—After a most careful examination, we find but two stigmas in all the flowers of our fine suite of specimens of *C. Washingtoniana*, collected by Dr. Barratt, on whose specimens the species was founded. The fruit seems to us rather obtuse than acute; and the scales, although somewhat variable, are mostly as obtuse as in our European forms of *C. saxatilis*. We do not hesitate, therefore, to consider the plant a variety of *C. saxatilis*. This view is wholly confirmed by an examination of our numerous specimens of that species from the North of Europe: those from Norway, Silesia, &c.; so closely resemble the plant from Mount Washington that they can scarcely be distinguished; while, on the other hand, specimens from Lapland, &c., which differ in being somewhat smaller, in their shorter and more clustered spikes and dark-coloured fruit, are in all respects similar to those from Arctic America. These last have much of the aspect of *C. nigra*. It cannot now be doubted that our β of this species was really seen by Pursh, and correctly referred to *C. saxatilis*; and it is highly probable that it will hereafter be found in other localities in the northern portion of New England besides Mount Washington.

On account of its immaturity, little dependence can be placed on the single specimen upon which *C. Bigelowii* was originally established. It was collected many years since by Dr. Bigelow upon the same mountain, and seems to be a more slender form of the same plant.

44. *C. COMPACTA*, *R. Brown in Ross. voy. ; Rich. app. Frankl. journ. ed. 2. p. 35 ; Dewey! car. l. c. 27. p. 237. t. 5. f. 63.*

HAB. Arctic America and Rocky Mountains!—We have never met with the original description of this species.

45. *C. MUTICA*, *R. Brown in Rich. app, Frankl. journ. ed. 2. p. 35.*

HAB. Arctic America, *Dr. Richardson!*—We have seen no original specimen of this species. The plant which Prof. Dewey refers to *C. mutica* has 3 stigmas in one flower at least, and appears to us to be *C. limosa* var. *rariflora*.

46. CAREX JAMESII.

Staminate spikes 2, approximate; the lower one much smaller; fertile spikes 3, thick, oblong-cylindrical, densely flowered; the two upper approximate, on short peduncles not sheathed at the base; the lowest one arising near the base of the culm, long peduncled; fruit about 8-rowed; perigynium ovate, inflated, with a very short, abrupt, bidentate beak, somewhat exceeding the ovate acute scale.

Whole plant glabrous. *Culm* about 6 inches high, stout, obtusely angled. *Leaves* rigid, broadly linear, shorter than the culm. *Stam. spikes* thick; the upper nearly an inch long, densely flowered, the lower closely sessile at its base; scales oblong, mostly rather obtuse, reddish brown, with a whitish midrib. *Pist. spikes* about an inch in length, very thick, densely flowered. *Perigynium* light brown, globose-ovate, smooth, indistinctly ribbed, much larger than the obovate, lenticular nut. *Scales* brown, with a pale keel.

HAB. Rocky Mountains, *Dr. James!* collected in Long's first expedition. This species, which is somewhat related to *C. pulla*, is very different from every other with which we are acquainted; and we have therefore given it the present name in honour of its discoverer, Dr. Edwin James. The stigmas have wholly fallen in the single specimen collected by Dr. James; but the lenticular nut indicates it to belong to the distigmatic section. It should be observed here, that we have not been able to consult the description of *C. compacta* of R. Brown, which is placed in this group. The *C. Jamesii* in the analytical table of Schweinitz, is *C. Willdenovii*.

47. CAREX SCOULERI.

Spikes all on filiform peduncles destitute of sheaths; fertile ones 3, oblong-cylindrical; staminate ones 2, short, attenuate at each extremity; fruit exactly orbicular, plano-convex or lenticular, regularly and minutely striate, erostrate, minutely apiculate, broader and a little shorter than the dark purple, ovate scale; orifice minute, entire.

Whole plant smooth and glabrous. *Culm* slender, about 18 inches high. *Cauline leaves* 2—4 inches long, and scarcely a line wide. *Spikes* all somewhat approximate. *Bracts* setaceous, about the length of the spikes, not sheathing at the base. *Peduncles* of the staminate and upper pistillate spikes about an inch long; the lower one longer. *Stam. spikes* 6—8 lines long; scales obtuse, tawny, with a whitish keel. *Pist. spikes* about an inch long, rather densely flowered; the uppermost bearing a few staminate flowers at the summit. *Scales* ovate, acute. *Fruit* light brown, about a line in diameter, very lightly and regularly striate longitudinally, convex on one side, nearly flat on the other. *Nut* roundish, flat. *Stigmas* 2.

HAB. Observatory Inlet, on the western shore of America, *Dr. Scouler!* (under the name of *C. frigida*).

OBS. A very distinct species from every other of this group, and manifestly allied to *C. limosa*, from which it is clearly distinguished by the characters given above.

48. *C. CONCOLOR*, *R. Brown, app. Parry's 1st voy.* p. 284 & 309; *Hook. app. Parry's 2nd voy.* p. 26.

HAB. Arctic America! and White Mountains, New Hampshire, *Dr. Boott.* (fide *Hook.*)—Our specimens, collected at Bear Lake and Norway House by Dr. Richardson, pertain to the variety thus noticed by Brown on page 209 of the work above cited.—“Specimina proceriora, spicis femineis longioribus, axi squamarum pallido, ad *C. cæspitosam* proprius accedunt, et culmo lævi præcipue distingui possunt.” The plant certainly appears to be only a variety of *C. cæspitosa*.

†† *Staminate spikes commonly two or more.*

49. *C. CÆSPITOSA*, *Linn. ; Schkuhr, car.* f. 85.

HAB. Northern and Middle States to Arctic America!; Kotzebue's Sound, *Capt. Beechey!*; Sitcha, *Bongard!*

50. *C. ACUTA*, *Linn. ; Schkuhr, car.* f. 92.

HAB. Georgia to Arctic America! W. to Columbia river! A polymorphous plant. *C. verrucosa* of *Schweinitz* (but not of *Muhlenberg*) is a variety of this species. See *C. glaucescens*.

51. *C. STRICTA*, *Good. ; Schkuhr, car.* f. 73; *Dewey! car. l. c.* 10. p. 269.

HAB. Northern States!—We cannot scarcely distinguish our specimens from *C. acuta*.

52. *C. AQUATILIS*, *Wahl. ; Willd. sp.* 4. p. 304; *Dewey! car. l. c.* 10. p. 207.

HAB. Northern States to sub-Arctic America!

53. *C. CRINITA*, *Lamarck ; Schkuhr, car.* f. 135 & 164; *Muhl.! gram.* p. 229.

β. gynandra, Schw. & Torr. ! *car. l. c.* p. 360.

C. gynandra, Schw. ! *anal. tab. l. c.*

γ. paleacea, Dewey ! *car. l. c.* 10. p. 270.

C. paleacea, Wahlenberg.

HAB. Hudson's Bay ! to Georgia !

54. *C. MARITIMA*, Muller, *fl. Dan.* 4. t. 703 ; *Schkuhr*, *car. f.* 74 ; *Wahl. fl. Succ.* 2. p. 612.

HAB. Hudson's Bay, *Dr. Richardson* !—It strongly resembles the form of *C. crinita* with very long cuspidate scales ; but is quite distinct.

55. *C. SITCHENSIS*, Prescott ! in *Bongard, veg. Sitcha*, *l. c.* p. 169.

C. cryptocarpa, Dewey ! *car. l. c.* 29. p. 243, not of Meyer.

HAB. Sitcha, *Bongard* ! ; Columbia river, *Dr. Scouler* !

56. *C. CRYPTOCARPA*, Meyer, in *mem. acad. St. Petersb.* *l. c.* p. 226. t. 14 ; *Bongard* ! *veg. Sitcha*, *l. c.* p. 160.

HAB. Unalashka, Meyer ; Sitcha, *Bongard* !—This species nearly resembles the preceding ; but the two are nevertheless distinct. The specimen from which Prof. Dewey drew the description of his *C. cryptocarpa* approaches this species in form of its scales, and in the somewhat shorter fertile spikes ; but wholly accords with *C. Sitchensis* in the rough leaves and culm, and in the fruit having a short but distinct beak ; whereas *C. cryptocarpa* has perfectly smooth leaves and culms, and the much broader fruit is somewhat acuminate, but not distinctly beaked.

B. *Style 3-cleft; nut trigonous.*—CAREX, P. de Beauv.

1. *Spike single.*

* Mostly dioecious.

57. C. SCIRPOIDEA, *Michx.! fl. 2.* p. 171.

C. Wormskioldiana, *Hornemann! fl. Dan. t. 1528; Schw. & Torr.! car. l. c. p. 294.*

C. Michauxii, *Schw.! anal. tab. l. c.*

HAB. Arctic America! Greenland, *Prof. Hornemann!*; Rocky Mountains, *Dr. Richardson!*; on the White Mountains of New Hampshire, *Mr. Oakes!*—All our specimens, even the Greenland one from Hornemann, have a 3-cleft style. The name given by Michaux to this species has been dropped on account of its too great resemblance to *C. scirpoides*; but the latter should have been changed, since *C. scirpoidea* of Michaux was first published. *C. scirpoides*, *Schkuhr*, moreover, is only a variety of *C. stellulata*.

58. C. DRUMMONDIANA, *Dewey! car. l. c. 29.* p. 251, (excl. syn.)

HAB. Arctic America! and Rocky Mountains!

** Androgynous.

† *Stamiferous at the summit.*

59. C. NIGRICANS, *Meyer, in mem. acad. St. Petersburg. l. c.* p. 211. t. 7.

C. Backana, *Dewey! car. l. c. 29.* p. 250.

HAB. Unalashka, *Meyer*; Arctic America! and Rocky Mountains!

60. *C. PYRENAICA*, *Wahl, act. Holm.* 1803. p. 139 ;
Meyer, in mem. acad. St. Petersb. l. c. p. 212. t. 7.

C. Davalliana, *Dewey! car. l. c.* 28. p. 271.

HAB. Rocky Mountains, *T. Drummond!*—A little larger than the specimens from the Pyrenees.

61. *C. CIRCINATA*, *Meyer! in mem. acad. St. Petersb. l. c.*
p. 209. t. 6.

HAB. Unalashka, *Meyer!*; Sitcha, *Bongard!*—Stigmas 2 or 3. This plant bears no resemblance to *C. polytrichoides*, with which Meyer contrasts it.

61. *C. AFFINIS*, *R. Brown! in Rich. app. Frankl. journ.*
2. p. 35, not of *Dewey*.

HAB. Sub-Arctic America, *Dr. Richardson!*—This plant has probably never been collected in fruit, since the fruit is not described by Brown in Richardson's appendix: the specimen from Dr. Richardson is very immature. The observation, "Prope *C. polytrichoidi*," subjoined to the character of this species in the work above referred to, seems to have been misplaced. Was it not intended to follow the succeeding species? viz: *C. attenuata*, which is *C. polytrichoides*.

62. *C. OBTUSATA*, *Liljeb. ; Willd. sp. 4.* p. 12; *Schkuhr,*
car. f. 149.

C. affinis, *Dewey! car. l. c.* 28. p. 273, not of *R. Brown*.

HAB. Carlton House, *Dr. Richardson!*

62. *C. GYNOCRATES*, *Wormskiöld.*

HAB. Greenland, *Prof. Hornemann!*—We have a single immature specimen with this name from Prof. Hornemann: we know not where the species is described.

63. *C. LEUCOGLOCHIN*, Ehrhart; *Linn. supp.* p. 413; *Dewey! car. l. c.* 10. p. 42.

C. pauciflora, Willd. *sp.* 4. p. 211; Schw. & Torr. *! car. l. c.* p. 298.

HAB. Northern States to Arctic America!; Sitcha, *Bongard!*

64. *C. POLYTRICHOIDES*, Muhl. in Willd. *sp.* 4. p. 223; *Schkuhr, car. f.* 139.

C. microstachya, Michx. *! fl.* 2. p. 169.

C. attenuata, R. Brown! in Rich. *app. Frankl. journ.* ed. 2. p. 35.

HAB. North Carolina! to Arctic America!—Prof. Dewey in his critical catalogue of the Carices of the Northern regions of America, in Silliman's journal, vol. 28, pronounces *C. attenuata* of R. Brown to be a distinct species. We know not on what specimens this opinion is founded; but a specimen from Dr. Richardson under this name, collected at Mackenzie river, is certainly *C. polytrichoides*.

66. *C. WILLDENOVII*, Schkuhr, *car.* 2. p. 33. f. 145.

C. Jamesii, Schw. *! anal. tab. l. c.*

HAB. Northern and Western States! to sub-Arctic America! and the Rocky Mountains!—This species is remarkable for its peculiar habit, its foliaceous scales, and the distinctly articulated base of the style; it should, perhaps, be placed in a separate genus, to which the name *Phyllostachys* would be appropriate. In its foliaceous scales it agrees with *C. phyllostachys* of C. A. Meyer, a native of the country adjacent to the Caspian sea. The latter species, however, has a continuous style, not separating by an articulation from the summit of the nut; and, moreover, we find in our specimen some remarkable peculiarities not noticed by the founder of the species, viz: the perigynium of the lowest flower encloses the peduncle of a separate staminate spike, and the two remaining pistillate flowers have within the perigynium, in place of a staminate spike, a

green squamaceous rudiment about the length of the nut. This curious plant, therefore, seems in a manner to connect *Schænoxyphium*, *N. ab E.* with *Uncinia*, and to explain the nature of the setaceous body in the latter genus.

67. *C. FRASERI*, *Sims, bot. mag.* t. 1391; *Pursh, fl.* 1. p. 39.

C. Lagopus, *Muhl.! gram.* p. 265.

HAB. On mountains of North Carolina, *Fraser*. This is the only locality which is certainly known. Muhlenberg's specimens were obtained from a German travelling collector of plants, and are merely labelled—" *Deigher walli in der wilternus.*"

68. *C. FILIFOLIA*, *Nuttall, gen.* 2. p. 204; *Dewey! car.* l. c. 12. p. 106, t. P. f. 50, not of *Richardson, Schw. & Torr., &c.*

HAB. Banks of the Missouri, *Nuttall*.—This species we have never seen.

†† *Pistilliferous at the summit.*

69. *C. URSINA*, *Dewey! car.* l. c. 27. p. 241, t. 5. f. 8. (excl. syn. *C. filifolia*, *Richardson.*)

HAB. Sea coast of Arctic America, *Dr. Richardson!*—The stigmas have fallen in our specimen; but from the lenticular fruit it may be inferred that it had only 2 stigmas. Prof. Dewey, however, describes the plant as tristigmatic. It is not *C. filifolia* of Richardson, as Prof. Dewey supposes. See *Uncinia*.

2. *Spikes two or more.*

* All androgynous.

† *Staminiferous at the summit.*

70. *C. PEDUNCULATA*, *Muhl. in Willd. sp.* 4. p. 222; *Schkuhr, car.* f. 131.

HAB. Pennsylvania to Arctic America! and Rocky Mountains!

71. *C. OVATA*, *Rudge*, in *Linn. trans.* 8. p. 96. t. g. f. 1; *Dewey!* *car. l. c.* 28. p. 273.

HAB. Newfoundland, *Rudge*; Rocky Mountains, *T. Drummond!*

†† *Pistilliferous at the summit.*

72. *C. SQUARROSA*, *Linn.*; *Willd. sp.* 4. p. 215; *Schw. & Torr.!* *car. l. c.* p. 209. t. 24. f. 2.

C. typhina, *Michx.!* *fl.* 2. p. 169.

HAB. Canada? to Georgia!—This species frequently occurs with a single spike.

73. *C. ATRATA*, *Linn.*; *Schkuhr*, *car.* f. 77; *Schw. & Torr.!* *car. l. c.* p. 320.

HAB. Rocky Mountains, *Dr. James!* & *T. Drummond!*; Arctic America, *Capt. Parry*; White Mountains of New Hampshire, *Nuttall.*—The specimens from the Rocky Mountains differ slightly from the European plant in having a more distinct beak to the fruit, with a more evidently bidentate orifice. They approach *C. Magellanica*, but seem to be only a variety of the former species.

74. *C. MEDIA*, *R. Brown*, in *Rich. app. to Frankl. journ.* ed. 2. p. 35.

HAB. Woody region of Arctic America, *Dr. Richardson.*—This species we have not seen.

75. *C. MERTENSII*, *Prescott!* in *Bongard, veg. Sitcha*, in *mem. acad. St. Petersb. l. c.* p. 168; *Dewey!* *car. l. c.* 30. p. 62.

C. Columbiana, *Dewey!* *car. l. c.*

HAB. Sitcha. *Bongard!*; Columbia river, *Dr. Scouler!*—Having had the good fortune to receive an original specimen of *C. Mertensii*, we are enabled to satisfy ourselves of its identity with *C. Columbiana*. We find, indeed, that although *C. Mertensii* is described as distigmatic, at least half the fertile flowers in our specimen are furnished with 3 stigmas.

76. *C. SHORTII*, *Torr. Mss.*; *Dewey! car. l. c.* 30. p. 60.

HAB. Lexington, Kentucky, *Dr. Short!*; Columbus, Ohio, *Mr. J. A. Lapham!*—A very distinct and beautiful species, belonging to the same group as the preceding.

* * Terminal spikes androgynous (staminate below); the others wholly pistillate.

77. *C. VAHLII*, *Schkuhr, car. l.* p. 87. f. 94.

C. alpina, *Vahl, fl. Dan. t.* 403.

HAB. Arctic America! and Rocky Mountains!

78. *C. BUXBAUMII*, *Wahl. fl. Lapp.*; *Willd. sp. 4.* p. 252.

HAB. Sitcha! and N. W. coast of America! to South Carolina.

79. *C. GMELINI*, *Hook. & Arn. bot. Beechey's voy.* p. 118 & 131. t. 27.

HAB. Kotzebue's Sound, *Capt. Beechey.*

80. *C. FULIGINOSA*, *Sternb. & Hopp. in act. bot. soc. Ratisbon*, 1. p. 162. t. 3; *Rich. app. Frankl. journ. ed. 2.* p. 35.

C. misandra, *R. Brown, app. Parry's 1st voy.* p. 283 & 309.

HAB. Arctic America!—Stigmas 2 or 3.

81. *C. HIRSUTA*, Willd. *sp.* 4. p. 252; *Schkuhr*, *car.* f. 172; *Schw. & Torr.!* *car. l. c.* p. 322.

C. triceps, *Michx.!* *fl.* 2. p. 170; *Elliott*, *sk.* 2. p. 538!

C. viridula, *Schw. & Torr.!* *car. l. c.* p. 320. (excl. syn. *Michx.*)

β . *pedunculata*, *Schw. & Torr.!* *l. c.*

HAB. Canada to Florida! β . near Philipstown, New York, *Dr. Barratt!*

82. *CAREX COMPLANATA*, *Torr. & Hook.*

Spikes 3—4, sessile, approximated towards the summit of the culm, thick, oblong, the terminal one staminate below; fruit lenticular, obtuse, smooth, with an entire orifice, about the length of the broadly ovate, rather acute scale.

Culm about 18 inches high, very slender, triquetrous, with the angles scabrous and very acute. *Leaves* narrow, channelled. *Spikes* 6—8 lines long, and 3 lines in diameter, greenish; the terminal one largest, somewhat obovate, flowers crowded. *Fruit* broadly oblong, much compressed, not striate; orifice minute, entire. *Stigmas* 3. *Scales* as broad as the fruit, and somewhat exceeding it in length in the lower part of the spike.

HAB. Texas, *T. Drummond!* (Texan collection III. no. 424.)—This species has at first sight the appearance of *C. virescens*.

83. *C. VIRESCENS*, *Muhl. in Willd. sp.* 4. p. 251; *Schkuhr*, *car.* f. 147; *Schw. & Torr.!* *car. l. c.* 321. & β . *costata*, *l. c.*

HAB. Canada? to North Carolina!

84. *C. GRACILLIMA*, *Schw.!* *anal. tab. l. c.*; *Dewey!* *car. l. c.* 8. p. 98.

C. digitalis, *Schw. & Torr.!* *car. l. c.* p. 324. t. 26. f. 1. not of *Muhl.*

HAB. Sub-Arctic America to Kentucky!

85. CAREX OXYLEPIS, Torr. & Hook.

Spikes 4, slender, rather loosely flowered, subdistant, on filiform peduncles; the terminal one staminate below; fruit oblong, acute at each end, subtrigonus, smooth, with a membranaceous and minutely 2-lobed orifice, somewhat exceeding the lanceolate cuspidate scale.

Culm 12—18 inches high. *Leaves* narrow, flat, pungently acute, nearly as long as the culm, the midrib and margins sparsely hairy, especially on the lower surface. *Peduncles* filiform, nearly erect; the lowest about 2 inches long, included in the sheath for the greatest part of its length; the upper ones shorter, scarcely sheathed. *Spikes* about an inch in length, 15—30-flowered; the terminal one staminate for more than half its length. *Scales* lanceolate, scarios, with a green keel, gradually attenuate into a scabrous cusp, which is longest in the lowest flowers. *Fruit* pale green, obscurely nerved. *Stigmas* 3. *Nut* triquetrous.

HAB. Texas, *T. Drummond!* (Texan collection III. no. 436.) This species is intermediate between *C. gracillima* & *C. formosa*; it more nearly resembles the former, but is quite distinct from either.

86. *C. FORMOSA*, Dewey! *car. l. c.* 8. p. 98. t. 2. f. 6; *Schw. & Torr.!* *car. l. c.* p. 325.

HAB. Massachusetts! and the Western part of the State of New York!

87. *C. DAVISII*, Schw. & Torr.!

C. aristata, Dewey! *car. l. c.* 7. p. 277, & 9. t. 1. f. 1, not of *R. Brown.*

C. Torreyana, Dewey! *car. l. c.* 10. p. 47.

HAB. Massachusetts! and the Western part of the State of New York! to Kentucky!; Cherokee, *Muhlenberg* (Herb.

no. 273).—A rare species, but one of the handsomest of the genus. The name originally given by Prof. Dewey had been previously applied by Brown to another species. The one given by Schweinitz & Torrey being older than the one subsequently given by Prof. Dewey, must consequently be retained.

*** Staminate and pistillate spikes distinct.

† *Pistillate spikes either sessile or on peduncles more or less sheathed at the base.*

88. *C. FILIFORMIS*, Linn. ; *Schkuhr, car. f. 45.*

C. striata, Michx. fl. 2, p. 174?

HAB. Sub-Arctic America ! to South Carolina !

89. *C. LANGUINOSA*, Michx. ! *fl. 2. p. 175.*

C. pellita, Muhl. ! in Willd. sp. 4. p. 302 ; Schkuhr, car. f. 149 & 150.

HAB. Hudson's Bay to Pennsylvania ! ; west to Columbia river !—The name of Michaux is restored to this species on account of its priority.

90. *C. VESTITA*, Willd. *sp. 4. p. 263 ; Schkuhr, car. f. 182.*

HAB. Massachusetts ! to Georgia.

91. *C. PENNSYLVANICA*, Lamarck, *enc. meth. 3. p. 388 ; Gray ! Gram. & Cyp. part 2. no. 162.*

C. marginata, Muhl. in Willd. sp. 4. p. 261 ; Schkuhr, car. f. 143.

β. Muhlenbergii, Gray ! Gram. & Cyp. part 2. no. 163.

C. varia, Muhl. in Willd. sp. 4. p. 259 ; Schkuhr, car. f. 167.

92. *C. EMMONSI*, *Dewey!* in litt.

C. alpestris. Schw. & Torr.! *car. l. c.* p. 341, not of *Allioni*.

C. Davisii, *Dewey!* *car. l. c.* 10. p. 279, & 11. t. H. f. 25. (bad), not of Schw. & Torr.

HAB. Massachusetts!—Certainly very different from the European *C. alpestris*. The so-called radical peduncles sometimes observed in this species, are culms bearing a small staminate, and one or two few-flowered pistillate spikes, all aggregated at the summit so as readily to be mistaken for a single spike. The same thing is observed in *C. Floridana* & *C. nigromarginata*.

Another species having been previously dedicated to Mr. Davis, it becomes necessary to provide a new appellation for this plant; and we cheerfully accord with the wishes of Prof. Dewey, that it should bear the name of Prof. Emmons of Williams' College, a zealous and successful cultivator of natural history.

93. *C. NOVÆ ANGLIÆ*, Schw. *anal. tab. l. c.*; *Dewey!* *car. l. c.* 11. p. 314. t. 7.

C. collecta, *Dewey!* *car. l. c.* 11. p. 314, t. 7. f. 44.

HAB. Massachusetts, *Dewey!*—This species has been thought to have but 2 stigmas, but by careful management we have no difficulty in finding 3 in our specimens; and the nut, moreover, is constantly triangular. We therefore place the plant along with the closely allied species, *C. Pennsylvanica*, and *Emmonsii*. We perceive no essential difference between this species and *C. collecta*, *Dewey*.

94. *C. FLORIDANA*, Schw.! *anal. tab. l. c.*; Schw.! & Torr.! *car. l. c.* p. 306 (very badly described), t. 28. f. 1.

C. albicans, *Spreng. syst.* 3. p. 818!

HAB. Florida, *Le Conte!* and *Dr. Chapman!*; Louisiana, *Dr. Ingalls!*—This species has no resemblance whatever to

C. Muhlenbergii and *C. sparganioides*, with which it is placed in the monograph of North America Carices, and is very properly referred to the same group with *C. Novæ Angliæ* by Prof. Dewey. It has three stigmas almost uniformly in our specimens.

95. *C. NIGROMARGINATA*, Schw. anal. tab. l. c.; Dewey! car. t. c. 10. p. 282, & 11. t. 1. f. 27, (very bad).

HAB. Salem, North Carolina, Schweinitz!—Wholly distinct from *C. pedunculata*, and belonging to the same group with the preceding.

96. *C. RICHARDSONII*, R. Brown! in Rich. app. Frankl. journ. ed. 2. p. 35; Schw. ♂ Torr! car. l. c. p. 330.

HAB. Northern regions of British America, Dr. Richardson!

97. *C. ORNITHOPODA*, Willd. sp. 4. p. 255; Schkuhr, car. 1. p. 57, t. 37.

C. concinna, R. Brown! in Rich. app. Frankl. journ. ed. 2. p. 35.

HAB. Arctic America, Dr. Richardson!—We agree with Prof. Dewey in referring *C. concinna* of R. Brown to this species.

98. *C. PRÆCOX*, Jacquin; Willd. sp. 4. p. 262; Schkuhr, car. f. 27; Dewey! car. l. c. 11. p. 324.

C. verna, Vill., not of Schkuhr.

HAB. Salem, Massachusetts, Dr. Pickering!—Said to be introduced.

99. *C. SUPINA*, Wahl. act. Holm, 1303, p. 258; Willd. 4. 265; Schkuhr, car. f. 41; Dewey! car. l. c. 26. p. 376.

C. Schkuhrii, Willd. sp. 4. p. 264?; Schkuhr, car. f. 158?; Dewey! car. l. c. 27, p. 238.

HAB. British America!—We here unite these two species, because Sprengel considers them the same, and our American specimens seem to differ but slightly; and moreover the specimens labelled *C. supina* by Prof. Dewey accord in every respect with a specimen of *C. Schkuhrii* from Russia. The plant called *C. Schkuhrii* by Prof. Dewey agrees with the figure in Schkuhr; but is not sufficiently mature for perfect determination.

100. *C. PUBESCENS*, *Muhl. in Willd. sp. 4. p. 281; Schkuhr, car. f. 226.*

HAB. Canada! to Pennsylvania!

101. *C. DASYCARPA*, *Muhl. ! gram. p. 236; Elliott, sk. 2. p. 541. t. 12. f. 4.*

HAB. North Carolina to Florida!

102. *C. HOUGHTONII*, *Torrey; Dewey! car. l. c. 30. p. 63.*

HAB. Lake La Biche, N. W. Territory, *Dr. Houghton!*—This species is most nearly allied to *C. polymorpha*, *Muhl.* It is hardly necessary to remark that in accordance with well established rules of botanical nomenclature, and the uniform practice of the most accomplished naturalists, we adopt the genitive termination wherever a species is named after its discoverer.

103. *C. POLYMORPHA*, *Muhl. ! gram. p. 239.*

C. Halseyana, *Dewey! car. l. c. 11. p. 313. t. 7. f. 43. (bad)*

HAB. Massachusetts! to Georgia!

104. *C. HITCHCOCKIANA*, *Dewey! car. 10. p. 274. t. 3, f. 17.*

HAB. Northern States to Kentucky!—We have a variety of this plant, much smaller in all its parts, both from Kentucky and the Western part of the State of New York.

105. *C. LAXIFLORA*, *Lamarck, enc. 3. p. 378*; *Schkuhr, car. f. 141.*

? *β. mutica*; scales scarcely cuspidate; leaves slightly glaucous.

HAB. Canada! to Georgia and Texas! *β. Texas, T. Drummond!* (Texan collection III. no. 442.) It is by no means improbable that the plant here doubtfully referred to *C. laxiflora* is a distinct species.

106. *C. GRANULARIS*, *Muhl.! in Willd. sp. 4. p. 279*; *Schkuhr, car. f. 169.*

HAB. Northern and Middle States!

107. *C. CONOIDEA*, *Schkuhr, car. f. 168*; *Dewey! car. 10. p. 47*, not of *Muhl.* or *Schw. & Torr.*

C. tetanica, Schw. & Torr.! car. l. c. p. 347, (excl. syn. *Schkuhr, &c.*)
C. granularioides, Schw. anal. tab. l. c.

HAB. Canada to North Carolina!

108. *C. TETANICA*, *Schkuhr, car. 2. p. 68. f. 100 & 207*; *Dewey! car. l. c. 11. p. 312*, not of *Schw. & Torr.*

HAB. Northern and Middle States!—A somewhat rare species.

109. *C. ANCEPS*, *Muhl.! in Willd. sp. 4. p. 278*; *Schkuhr, car. f. 128.*

C. plantaginea, Muhl.! gram. p. 235; *Schkuhr, car. f. 128*, not of *Lamarck.*

C. striatula, Michx.! fl. 2. p. 173.

C. conoidea, Muhl.! gram. p. 248; *Schw. & Torr.! car. l. c. p. 346.*

C. blanda, Dewey! car. l. c. 20. p. 45.

HAB. Carlton House in British America! to Florida! west to Arkansas and the Rocky Mountains!—The three synonyms last quoted belong to the slender and narrow-leaved

varieties of *C. anceps*. In different states and situations the leaves of this species are found from an inch and a half to a line in width; and the form of the fruit and scales is also quite variable: we are, however, unable to distinguish any one of the narrow-leaved varieties as a distinct species.

110. *C. PLANTAGINEA*, *Lamarck, enc. 3. p. 398; Michx.! fl. 2. p. 103.*

C. latifolia, *Wahl. act. Holm. 1800, p. 156.*

HAB. Northern States and British America!

111. *C. CAREYANA*, *Dewey! car. l. c. 30. p. 61.*

HAB. Woods near Auburn, New York, *J. Carey, Esq.*!—This interesting and beautiful species, which has only been found at the above specified locality, is, as our esteemed friend the discoverer informs us, in imminent danger of annihilation from the destruction of the wood in which it grows.

112. *C. OLIGOCARPA*, *Schkuhr, car. f. 170; Willd. sp. 4. p. 270; Muhl.! gram. p. 242.*

C. digitalis, *Willd. sp. 4. p. 298?*

C. Van Vleckii, *Schw.! anal. tab. l. c.*

HAB. Canada! to Louisiana!—This species, like *C. anceps*, sometimes occurs with broad leaves; and in this variety (*C. oligocarpa* var. *latifolia*, *Gray, Gram. & Cyp. part 2. no. 175*) the leaves are usually glaucous, the spikes more densely flowered, and the fruit usually somewhat larger. The figure of *Schkuhr* represents the plant with fewer flowers than is usual, but is obviously-intended to represent this species.

113. *C. PAUPERCULA*, *Michx.! fl. 2. p. 172.*

C. alba, *Dewey! car. l. c. 7. p. 266; Schw. & Torr.! car. l. c. p. 341, not of Henke.*

C. alba, var. *setifolia*, *Dewey! car. l. c. 14. p. 216, t. 1. f. 26.*

HAB. - Arctic America to Kentucky! west to Missouri! and the Rocky Mountains!—Resembles the European *C. alba* in many respects, but certainly a distinct species.

114. *C. CAPILLARIS*, *Linn.*; *Schkuhr*, *car. f.* 56; *Schw.* & *Torr.*! *car. l. c.* p. 250.

HAB. Arctic America, from Greenland to the Rocky Mountains!

116. *C. SYLVATICA*, *Hudson*, *fl. Angl.* p. 411; *Schkuhr*, *car. f.* 101.

C. Drimeja, *Linn. f. supp.*; *Willd. sp.* 4. p. 296.

HAB. Canada! and the Northern States!

116. *C. DEBILIS*, *Michx.*! *fl.* 2. p. 172.

C. tenuis, *Rudge*, in *Linn. trans.* 7. p. 96. t. 9. f. 2.

C. flexuosa, *Muhl.* in *Willd. sp.* 4. p. 296; *Schkuhr*, *car. f.* 124.

HAB. British America! to Louisiana!—The name of Michaux having been first published, must be restored to this species.

117. *C. VENUSTA*, *Dewey!* *car. l. c.* 26. p. 107; t. T. f. 62.

HAB. S. Carolina! to Florida!

118. *C. PANICEA*, *Linn.*; *Schkuhr*, *car. f.* 100; *Dewey!* *car. l. c.* 25. p. 140.

HAB. Massachusetts! Supposed to be introduced from Europe.

119. *C. PETRICOSA*, *Dewey!* *car. l. c.* 29. p. 246.

HAB. Summit of the Rocky Mountains, *T. Drummond!*—We are inclined to consider the few pistillate flowers at the base of the upper spike as an accidental occurrence, and accordingly place the species in the present section. The specimens are too young for satisfactory determination.

120. *C. LANCEATA*, *Dewey!* *car. l. c.* 29. p. 249.

HAB. British America, *Dr. Richardson!*—Habit of *C. livida*. The specimens do not exhibit the full grown fruit.

121. *C. LIVIDA*, *Willd. sp. 4.* p. 601; *Schkuhr, car. f.* 211; *Gray!* in *ann. lyc. nat. hist. New York*, 3. p. 235.

C. limosa, var. livida, Wahl. act. Holm. 1803. p. 162.

C. Grayana, Dewey! *car. l. c.* 25, p. 141, t. S. f. 49.

HAB. Hudson's Bay! to New Jersey!; also on the Rocky Mountains, *T. Drummond!*; Sitcha, *Bongard!*—We have in one or two instances observed a distant and long peduncled fertile spike as depicted by Schkuhr; but this is not uniformly present in the European plant.

122. *C. USTULATA*, *Wahl.; Willd. sp. 4.* p. 293; *Schw. & Torr.!* *car. l. c.* p. 349.

C. atrofusca, Schkuhr, car. f. 82.

HAB. Labrador, *Herb. Schweinitz!*

123. *C. NIGRA*, *Allioni; Willd. sp. 4.* p. 166; *Schkuhr, car. f.* 115.

HAB. Labrador, fide *Schweinitz.*

124. *C. MEMBRANACEA*, *Hook.!* *app. Parry's 2d voy.* p. 23; *Hook. & Arn.!* *bot. Beechey's voy.* p. 131.

HAB. Arctic America! Kotzebue's Sound.

125. *C. CÆDERI*, *Ehrhart; Michx.!* *fl. 1.* p. 175; *Schkuhr, car. f.* 26.

C. flava, var. patula, Host, gram. 1. p. 48, t. 64.

C. viridula, Michx.! *fl. 2.* p. 170.

HAB. Northern States to Hudson's Bay!—*C. irregularis, Schw. anal. tab. l. c.* is an unusual form of this species.

126. *C. FLAYA*, Linn.; Michx.! fl. 2. 171; Schkuhr, car. f. 36.

HAB. Canada! and Northern States! west to Arkansas.

127. *C. ELLIOTTII*, Schw. & Torr.! car. l. c. p. 357.

C. fulva! Muhl.! gran. p. 216, not of Goodenough.

C. castanea, Elliott. sk. 2. p. 516, not of Wahlenberg.

C. lonchocarpa, Spreng. syst. 3. p. 817, (fide Dewey).

C. Baldwinia, Dewey! car. l. c. 26. p. 107, t. T. f. 61.

HAB. North Carolina, Mr. Croom! and Mr. Curtis! Georgia, Elliott; Florida, Dr. Baldwin!—We are confident that we have at length settled the synonymy of this species, which one or two mistakes had involved in almost inextricable confusion. The description in Dewey's Caricography corresponds in a good degree with the true plant, being chiefly derived from that of Elliott and of Muhlenberg; but his figure represents a different plant, which agrees neither with Elliott's description nor with his own. Prof. Dewey does not state from whence his specimen was obtained; we suspect it to be *C. oligosperma*, since we have a specimen of that plant which Prof. Dewey has named *C. Elliottii*. On the other hand, our plant agrees minutely with the description of Elliott, who states his plant to be the *C. fulva* of Muhlenberg; and, to make assurance doubly sure, we find a specimen from Elliott himself with the *C. fulva* in Muhlenberg's herbarium. Elliott, perceiving that the plant was not the *C. fulva* of Europe, changed the name to *C. castanea*, which unfortunately had been previously applied to a different species, and the name of its estimable discoverer was therefore given, it appears, both in the monograph of North American Cariceæ, and by Prof. Dewey. The latter being somehow misled by the specimen figured in his Caricography, afterwards dedicated the real *C. Elliottii* to Dr. Baldwin. The distant and long pedunculate fertile spike seems to be only of occasional occurrence, since it is not observed in the eight specimens now before us.

128. *C. FOLLICULATA*, Linn. *sp.* 4. no. 1387; Rudge, in Linn. *trans.* 7, p. 98, t. 9. l. 4; Gray! in *ann. lyc. nat. hist. New-York*, 4. p. 235, not of Schkuhr, Wahl., &c.

C. rostrata, Michx.! *fl.* 2. p. 173.

C. folliculata, *β. xanthophysa*, Muhl.! *gram.* p. 244.

C. xanthophysa, Wahl. *car.* no. 73; Schw. & Torr.! *car. l. c.* p. 320, &c.

HAB. British America! to S. Carolina. For remarks upon this species see Gray, in the *Annals of the Lyceum*, 3. p. 235.

The *C. folliculata* of Elliott is certainly not *C. intumescens*; but his description does not agree in every respect with the genuine species.

129. *C. SUBULATA*, Michx.! *fl.* 2. p. 173; Schw. & Torr.! *car. l. c.* p. 340. t. 27. f. 1.

C. Collinsii, Nutt. *gen.* 2. p. 208.

C. Michauxii, Dewey! *car. l. c.* 10. p. 27.

HAB. Canada, Michaux; and cedar swamps of New Jersey!

130. *CAREX TURDESCENS.*

Fertile spikes about 3, few-flowered, distant; the uppermost nearly sessile at the base of the elongated, short-pedunculate staminate spike; the second on a nearly included peduncle; the lowest remote, very long peduncled; fruit expanding horizontally; perigynium ovate, conspicuously and evenly marked with numerous salient striæ, acuminate into a slender straight beak, with a bifid orifice, about twice the length of the ovate scale; leaves and sheaths minutely scabrous.

C. folliculata, Elliott, *sk.* 2. p. 545?

Culm 2—3 feet high, slender, and, with the leaves and sheaths, striate and minutely punctulate. *Cauline leaves* linear, narrow, shorter than the culm. *Fertile spikes* 8—14-flowered; the uppermost nearly sessile

in the axil of a setaceous bract; the others on partially enclosed peduncles. *Fruit* ovate, inflated, gradually tapering into a beak, beautifully striate. *Nut* triquetrous, with very concave sides.

OBS. This species has the habit and general aspect of *C. folliculata*, *Linn.*, from which it seems well distinguished by the inflated fruit with regular and prominent striæ; the narrower more rigid and scabrous leaves, &c. We suspect that it will prove to be the *C. folliculata* of Elliott.

HAB. New Orleans, *Dr. T. Ingalls!*

131. *C. INTUMESCENS*, *Rudge*, in *Linn. trans.* 7. p. 97. t. 9. f. 3; *Gray!* in *ann. lyc. nat. hist. New-York*, 3. p. 236.

C. folliculata, *Schkuhr*, *car.* f. 52; *Michx.!* *fl.* 2. p. 172, not of *Linnaeus*.

β. globularis, *Gray, l. c., and Gram. & Cyp.* part 2. no. 173.

HAB. Canada to S. Carolina! west to Arkansas.

132. *C. LUPULINA*, *Muhl.!* in *Willd. sp.* 4. p. 266; *Schkuhr, car.* f. 123 & 194.

β. polystachya, *Schw. & Torr. car. l. c.* p. 337.

C. gigantea, *Rudge*, in *Linn. trans.* 7. p. 98. t. 10. f. 2.

HAB. Hudson's Bay to Georgia! west to Arkansas.

133. *C. TENTACULATA*, *Muhl. in Willd. sp.* 4. p. 266; *Schkuhr, car.* f. 131.

C. rostrata, *Schkuhr, car.* f. 134.

HAB. Canada to Georgia, west to Arkansas.

134. *C. STENOLEPIS*, *Torr.!* in *Dewey, car. l. c.* 30. p. 59.

HAB. Kentucky, *Drs. Short and Peter!*—Related to *C. tentaculata* and *C. retrorsa*.—On examining a pretty extensive suite of specimens of this interesting species, received from

our valued correspondent, Dr. Short, we find several deviations from the form described by Prof. Dewey, which seem to require a notice. In a hundred specimens, about thirty or forty have the terminal spike androgynous, the pistillate flowers occupying the summit; and, in some specimens, more than half of the spike is pistilliferous. In other cases, the staminate spike is inconspicuous, or even reduced to a mere rudiment, and the fertile spikes are smaller and shorter, so as to be ovate or subglobose. Specimens of this latter form occur among the plants collected in Texas by the late Mr. Drummond (Texan collection, III. no. 432,) in which there is even no vestige of a staminate spike.

135. *C. RETRORSA*, Schw. anal. tab. l. c.; Schw. & Torr. car. l. c. p. 366. t. 28. f. 2.

C. reversa, Spreng. syst. 3. p. 827.

HAB. Northern States and British America!; west to the Rocky Mountains!

136. *C. OLIGOSPERMA*, Michx. ! fl. 2. p. 174.

C. Oakesiana, Dewey! car. l. c. 14. p. 251,

HAB. Massachusetts! and British America!

137. *C. MILIARIS*, Michx. ! fl. 2. p. 174.

HAB. Canada, near Lake Mistassins, Michaux.—This species seems not to have been met with since the time of Michaux.

138. *C. BULLATA*, Schkuhr, car. f. 166; Willd. sp. 4. p. 309.

C. cylindrica, Schw. ! anal. tab. l. c.

HAB. Canada and Northern States!

? β . fertile spikes cylindrical, elongated, rather slender; fruit somewhat smaller, with a shorter beak.

C. vesicaria, *Dewey! car. l. c.* 10. p. 272.

C. vesicaria, β . *cylindracea*, *Dewey! l. c.* 30. p. 273.

HAB. Northern States! and British America!—Perhaps a distinct species, yet we can scarcely find characters to distinguish it.

139. *C. VESICARIA*, *Linn. sp.* 4. no. 1388; *Schkuhr, car. f.* 106; *Schw. & Torr.! car. l. c.* p. 365.

C. ampullacea, *Dewey! car. l. c.* 7. p. 266.

HAB. Northern States! to sub-Arctic America!—We find no constant characters by which to distinguish *C. vesicaria* and *ampullacea* of American authors; and we refer all our specimens to *C. vesicaria*, merely because that is the oldest name. If the European *C. ampullacea* be distinct from *C. vesicaria*, the two plants are certainly not generally understood nor readily discriminated.

140. *C. SCHWEINITZII*, *Dewey! car. l. c.* 9. p. 68. t. B. f. 8; *Schw. & Torr.! car. l. c.* p. 367.

HAB. Canada to New Jersey!

141. *C. CHEROKEENSIS*, *Schw.! anal. tab. l. c.*; *Schw. & Torr.! car. l. c.* p. 369. t. 25. f. 1.

C. no. 46. *Muhl.! gram.* p. 254.

HAB. Georgia, Florida! and Louisiana!

142. *C. ARISTATA*, *R. Brown, in Rich. app. Frankl. journ.* ed. 2. p. 36; *Gray! in ann. lyc. nat. hist. New-York,* 3. p. 237; *Dewey! car. l. c.* 27. p. 240. t. 5. f. 57.

C. atherodes, *Spreng. syst.* 3. p. 828.

HAB. Watertown, New-York! and sub-Arctic America! Very nearly related to *C. trichocarpa*:

143. *C. TRICHOCARPA*, Muhl.! in Willd. sp. 4. p. 302; Schkuhr, car. f. 148.

HAB. British America! to Georgia!

144. *C. LACUSTRIS*, Willd. sp. 4. p. 306; Schkuhr, car. f. 182.

C. riparia, Muhl.! gram. p. 259.

HAB. Canada to South Carolina!—Distinguished from *C. riparia* by its strongly nerved fruit with a more acutely bifid mouth.

145. *CAREX MICRODONTA*, Torr. & Hook.

Staminate spikes 3; fertile spikes about 4, exsertly pedunculate, erect, cylindrical, attenuate and more or less stamiferous at the summit; fruit ovate, compressed, obscurely striate, acute, with a minutely bidentate orifice, scarcely exceeding the broadly ovate, acuminate, somewhat cuspidate scale.

Culm ? feet high, slender. *Leaves* 2—3 lines wide. *Fertile spikes* an inch and a half long, about 3 lines in diameter, gradually attenuate into a point; peduncles as long as the spikes. *Fruit* 2 lines long, acute but scarcely acuminate, the orifice almost entire. *Scales* of the staminate spike ovate, acuminate.

HAB. Texas, *T. Drummond!* (Texas collection, III. no. 439.)

OBS. This species seems to be allied to *C. paludosa*, but is much smaller in all its parts; its fruit is very distinct.

146. *C. BINERVIS*, Smith, Eng. bot. t. 1099; Hook. Eng. flora, p. 396; Dewey! car. l. c. 30. p. 61.

HAB. Boston, *B. D. Greene, Esq.!*—Agrees very nearly with the European plant. Introduced?

147. *C. GREENIANA*, *Dewey!* *car. l. c.* 30. p. 61.

HAB. Near Boston, *B. D. Greene, Esq.!*—Differs from the preceding chiefly in its rather longer and cuspidate scales, and the less strongly nerved fruit with a longer beak.

†† Pistillate spikes mostly on peduncles which are not sheathed at the base.

148. *C. SCABRATA*, *Schw.!* *anal. tab. l. c.*; *Schw. & Torr.!* *car. l. c.* p. 345. t. 26. f. 2.

HAB. New Hampshire! to New York!

149. *C. HYSTERICINA*, *Muhl.!* in *Willd. sp.* 4. p. 232; *Schkuhr, car. f.* 127.

HAB. Canada! to Georgia!

150. *C. PSEUDO-CYPERUS*, *Linn.;* *Schkuhr, car. f.* 102.
C. furcata, *Elliott, sk.* 2. p. 552.

HAB. British America! and throughout the United States east of the Mississippi.

151. *C. MACROCHÆTA*, *Meyer, in mem. acad. St. Petersb. l. c.* p. 224. t. 13; *Bongard!* *veg. Sitcha, l. c.* p. 169.

HAB. Unalashka, *Meyer;* Sitcha, *Bongard!*

152. *C. LONGIROSTRIS*, *Torr.!* in *Schw. anal. tab. l. c.*; *Schw. & Torr.!* *car. l. c.* p. 170.

C. Sprengelii, *Dewey, in Spreng. syst.* 3. p. 827.

HAB. New York! and Michigan! to British America; west to the Rocky Mountains!

C. longirostrata of C. A. Meyer, in the *mem. St. Petersb. acad. l. c.*, collected in Kamtschatka, is very near the present species, but is not the same.

153. *C. GLAUDESCENS*, *Elliott, sk.* 2. p. 553; *Schw. & Torr.!* *car. l. c.* p. 356.

C. verrucosa, *Muhl.!* *gram.* p. 201, not of *Dewey* or *Schw. & Torrey*.
C. sempervirens, *Schw.!* *anal. tab. l. c.*

HAB. North Carolina! to Florida! and New Orleans!—The examination of Muhlenberg's herbarium proves this species to be the original *C. verrucosa* of that author. This name, being the oldest, should, in strictness, be retained; but inasmuch as the fruit is not in the slightest degree verrucose, this name would lead to error, while that of Elliott is remarkably appropriate. Much confusion has also been caused by the name *verrucosa* having been subsequently applied to another species. We have therefore concluded not to restore the original appellation of Muhlenberg to the present plant.

C. verrucosa of *Schweinitz*, of the monograph of N. American Carices, and of *Dewey's* Caricography, is a variety of *C. acuta* collected by *Schweinitz* in North Carolina. We know not what species *Elliott* has included under this name.

154. *C. BARRATTII*, *Schw. & Torr.!* *car. l. c.* p. 362; *Dewey!* *car. l. c.* 11. p. 162, & 12. t. P. f. 51.

C. littoralis, *Schw.!* *anal. tab l. c.*

HAB. Cape May, New Jersey, *Mr. Collins!*—A doubtful species established upon an immature specimen, which seems to us exceedingly near *C. recurva*, *Good.* (*C. flacca*, *Schkuhr.*) It has been seen in no other locality.

155. *C. LIMOSA*, *Linn.;* *Schkuhr, car. f.* 78; *Schw. & Torr.!* *car. l. c.* p. 358. (excl. syn. *C. lenticularis.*)

C. laxa, *Willd. sp.* 4. p. 204; *Dewey!* *car. l. c.* 30. p. 275.

β. irrigua, *Wahl. act. Holm.* 1803, p. 162.

C. lenticularis, *Dewey!* *car. l. c.* 7. p. 273.

γ. rariflora, *Wahl. l. c.*

C. rariflora, *Smith, Eng. bot. t. 2516.*

HAB. *α* & *β*. Northern States! and Arctic America! *γ*. Greenland! and Arctic America!—The variety *rariflora* is considered by Smith and Hooker, and perhaps correctly, as a distinct species. The specimen referred by Prof. Dewey to *C. mutica* of R. Brown, seems to us to be this variety of *C. limosa*. See p. 398.

156. *C. SUBSPATHACEA*, *Wormskiold, fl. Dan. t.*

HAB. Greenland, *Prof. Hornemann!*—Referred by Sprengel to *C. tetanica*, to which it has little resemblance.

157. *C. PODOCARPA*, *R. Brown, in Rich. app. Frankl. journ. ed. 2. p. 36; Dewey! car. l. c. 29. 251.*

HAB. Arctic America; Fort Vancouver!—Resembles in many respects *C. limosa*, var. *rariflora*.

158. *C. SPECTABILIS*, *Dewey! car. l. c. 29. p. 248.*

HAB. British America!—The fruit is not sufficiently mature for satisfactory determination.

159. *C. STYLOSA*, *Meyer, in mem. acad. St. Petersb. l. c. p. 222. t. 13; Bongard! veg. Sitcha, l. c. p. 169.*

HAB. Unalashka, *Meyer*; Sitcha, *Bongard!*—The reference of *C. Carltonia* to this species made by Prof. Dewey (*Sill. journ. 29, p. 252*) was a mistake. *C. Parryana* is the plant intended; but *C. stylosa* proves, now that we have the means of comparison, wholly distinct.

160. *C. PARRYANA*, *Dewey! car. l. c. 27. p. 239. t. 5. f. 56.*

? *β*. staminate spike somewhat pistilliferous near the summit.

C. arctica, *Dewey! car. l. c. 27. p. 239. t. 5, f. 66.*

HAB. Hudson's Bay, *Dr. Richardson!* β . Carlton House, *Dr. Richardson!*—We are inclined to think that the terminal spike is not constantly androgynous in the *C. arctica* of Dewey; and, although the specimen is immature, we see no other important difference between it and *C. Parryana*.

161. *C. BLEPHAROPHORA*, *Gray!* in *ann. lyc. nat. hist. New York*, 3. p. 235, & *Gram. & Cyp.* part 2. no. 185; *Dewey! car. l. c.* 30. p. 59.

HAB. Oneida County, New York, *Dr. Gray!*

162. *C. MILIACEA*, *Muhl. in Willd. sp.* 4. p. 290; *Schkuhr, car. f.* 151.

HAB. Canada! to Georgia!

163. *C. PALLESCENS*, *Linn.*; *Schkuhr, car. f.* 90.

HAB. British America! and Northern States!

164. *C. UMBELLATA*, *Schkuhr, car. f.* 171; *Dewey! car. l. c.* 10. p. 31. & (*var. vicina*) 11. p. 317, & 10. t. 1. f. 13.

HAB. Pennsylvania! to British America! and Rocky Mountains!

22. UNCINIA, *Persoon.*

SPIKES solitary or several, pistillate below. STAMENS 3. PISTILLATE FLOWERS solitary in the axil of each scale. STYLE 3-cleft. NUT trigonous, furnished with a hypogynous, usually exerted and hook-shaped seta; the whole invested with a membranaceous perigynium.—Habit of *Carex*.

Uncinia, *Pers. syn.* 2. p. 534; *R. Brown, prodr.* 1. p. 241; *Lestib. ess. fam. Cyp.* p. 22. no. 3; *N. ab Esenb. in Wight's contrib.* p. 72; and in *Linnæa*, 9. p. 20. & 10. p. 206.

Species of *Carex*, *Linn. Schkuhr, &c.*

The genus *Uncinia* differs from *Carex* only in having a hypogynous seta within the perigynium. The nature of this body seems to be explained by the structure of *Schœnoxyphium*, *N. ab E.* (and the same thing we observe in a single specimen of *Carex phyllostachys*, *Meyer*) in which the perigynium includes the peduncle of a staminate spikelet as well as the nut; and moreover, in *U. Nepalensis*, *N. ab E. in Wight's contrib.* p. 129, the seta is said to bear on its summit an imperfect rudiment of a flower or spikelet.

UNCINIA BREVISETA.

Spike solitary, simple, attenuate above; scales of the pistillate flowers suborbicular, scarious, amplexicaul, a little shorter than the fruit; nut ovate, obtusely 3—(or 4—) angled, apiculate; seta straight, smooth, flattened, mostly shorter than the nut.

Carex filifolia, *R. Brown!* in *Rich. app. Frankl. journ.* ed. 2. p. 35; *Schw. & Torr.!* *car. l. c.* p. 298, not of *Nutt.*

Kobresia globularis, *Dewey!* *car. l. c.* 29, p. 253.

Cespitose. *Culm* 6—10 inches high, smooth, slender, clothed at the base with numerous brown sheaths. *Leaves* setaceous, slightly scabrous, nearly as long as the culm. *Spike* about an inch long, pistilliferous, and rather loosely flowered below, staminiferous, attenuate, and densely flowered above. *Scales* of the pistillate flowers 6—8, ovate-orbicular scarious and silvery, ferruginous in the centre. *Perigynium* minutely puberulent, scarious, white and somewhat mottled with ferruginous; orifice entire or slightly lacerate. *Nut* completely filling the perigynium, obtusely tri, or quadrigonous, glabrous, with a short abrupt acumination. *Style* 3-parted. *Seta* included or exerted (fide *Brown*), in our specimens shorter than the nut.

HAB. In the woody country of Arctic America, *Dr. Richardson*; also near Carlton House!

Obs. This plant was incorrectly referred by R. Brown to *C. filifolia* of Nuttall, a species which has only been found on the banks of the Missouri. Prof. Dewey, who mistook another species for the *C. filifolia* of R. Brown, has recently described the present plant under the name of *Kobresia globularis*. It is somewhat strange that it should be placed in the latter genus, since, although the perigynium is unusually thin and membranaceous, the plant only differs from *Carex* in the presence of a seta, which Prof. Dewey happened not to observe. As the most accomplished botanists now include in *Uncinia* species with a straight and an included seta, it seems advisable to remove this plant to that genus.

SUPPLEMENT.

CYPERUS DIANDRUS, p. 252. Burke County, North Carolina, *Mr. Curtis!*

C. FLAVICOMUS, p. 253. The rays of the umbel are sometimes branched at the summit, the divisions bearing spikelets in a distichous order throughout their whole length. One or two setaceous bracts at the base of the partial rays. Spikelets 9—30-flowered. v. s. *in herb. Le Conte.*

C. MICRODONTUS, p. 255. β . *Texensis*: Culm slender, obtusely triangular; leaves very narrow; umbel simple; rays 3—4; involucre 3-leaved, very long; spikelets linear, many-flowered, inserted on all sides of the common rachis, somewhat fasciculate; scales lanceolate, appressed, mucronulate; stamens 2; nut linear-oblong, obtuse; style deeply 3-cleft; rachis denticulated with the inner scales.

Culms cespitose, almost filiform. *Leaves* shorter than the culm. *Rays* of the umbel 1—2 inches long, each bearing towards its summit about 30 somewhat spreading spikelets. *Involucels* 0. *Spikelets* three-fourths of an inch long, much compressed, narrow, pointed. *Scales* closely appressed, ferruginous, dull, with a green keel. *Nut* dark purplish-brown, convex on both sides.

HAB. Texas, *T. Drummond!* (Coll. III. no. 454.)

Obs. Very near *C. microdontus*; but the culm is taller, the leaves much narrower, the spikelets more slender, the scales lanceolate, &c.

C. GATESII, p. 255. Middle Florida, *Dr. Chapman!*; Wilmington, North Carolina, *Mr. Curtis!* I have also what appears to be the same plant collected near New Orleans, by the late Mr. Drummond, and numbered 388.

After *C. occidentalis*, p. 259, insert the two following new species :

CYPERUS CEPHALANTHUS, *Torr. & Hook.*

Culm tall, triquetrous, umbel somewhat simple ; rays 3—4, somewhat erect ; involucre 2—3-leaved ; one of the leaves very long, the other about the length of the umbel ; spikes ovate, capitate, with short setaceous involucels ; spikelets 50—80 in each head, linear, about 10-flowered ; the lowest ones fasciculate ; scales lanceolate, remote, pointless, 7-nerved ; interior scales narrow, scarious, minute ; nut obovate-oblong, with a short abrupt point.

Culm 4 feet high, concave on the sides ; the angles scabrous and very acute. *Leaves* 2 lines wide, flat. *Umbel* rather small for the size of the plant ; rays 2—3 inches long. *Ochreæ* 2-awned. *Spikes* or heads an inch and a half in length, and an inch in diameter, of an ovate form, with one or two setaceous bracts at the base ; the spikelets inserted on all sides of a common rachis. *Spikelets* half an inch long ; the florets quite distinct. *Scales* rather acute, ferruginous, with a pale green keel ; the sides strongly nerved. Interior scales narrow-lanceolate, adnate. *Stamens* 3. *Nut* brownish, dull, two-thirds the length of the keel.

HAB. Texas, *T. Drummond.* (Coll. III. no. 445.)

OBS. The spikelets in this very distinct species are somewhat capitate ; but they are inserted on an elongated common axis, and not aggregated at the summit of the rays, as in *C. filiculmis* and its allies.

CYPERUS UNIFLORUS, *Torr. & Hook.*

Culm filiform, triangular, smooth, leaves very narrow ; umbel simple, 4—5-rayed, erect ; involucre 3-leaved ; the leaves

much longer than the umbel; spikes ovate; spikelets approximated, spreading on all sides, subulate, somewhat quadrangular, 2—3-flowered, only the lower floret fertile; scales linear-lanceolate, slightly mucronate; nut oblong-linear, nearly covered with the inner scales.

Culm 12—14 inches high, very slender, wiry. *Leaves* scarcely half a line wide, shorter than the culm. *Ochreæ* truncate, entire. *Spikes* about three-fourths of an inch long, composed of about 25 spikelets, which spread irregularly in all directions. *Spikelets* 4—5 lines long, attenuated, curved, composed of about 5 scales, the two lowest of which are very short and empty; the third linear-lanceolate, fertile; and the fourth abortive, but containing stamens and ovary; the uppermost very slender, empty. *Rachis* broad, margined with persistent inner scales. *Stamens* 4. *Style* 3-cleft. *Nut* light brown, dull, partly imbedded in the broad rachis, and covered with the inflexed margin or inner scales.

HAB. Texas, *T. Drummond!* (Coll. I. no. 287.)

OBS. In the structure of the spikelets this species strongly resembles *Mariscus retrofractus*; yet the plant has the habit of *Cyperus*.

C. MICHAUXIANUS, p. 259. $\beta?$ *elongatus*. *Culm* tall and slender; rays elongated; spikelets subulate, obtusely quadrangular; scales lanceolate, acute.

Culm 3 feet high, triquetrous. *Leaves* 3—4 lines wide, shorter than the culm. *Umbel* somewhat compound, 6—8-rayed; the rays rather erect, 3—5 inches long. *Ochreæ* 2-toothed. *Involucre* 6—8-leaved; several of the leaves nearly as long as the umbel. *Involucels* short, setaceous. *Spikelets* much crowded on the rays, forming an ovate spike, slender, somewhat curved, 6—8-flowered, very acute, quadrangular when mature; the lower ones somewhat fasciculate or compound. *Scales* somewhat distinct and rather loose towards the summit, striate, slightly mucronate. *Rachis* nearly as broad as the spikelet, winged with the ovate, firm interior scales. *Stamens* 3. *Style* 3-cleft. *Nut* oblong, unequally triangular, rather acute, dull.

HAB. Texas, *T. Drummond!* (Coll. I. no. 337.)

OBS. This plant much resembles *C. strigosus* in its tall slender culm, and in the elongated rays of the umbel; but in the structure of the spikelets, it is nearer *C. Michauxianus*; yet it may prove to be distinct from either.

C. STENOLEPIS, p. 363. Texas. *T. Drummond!*

C. REPENS, p. 264. Martha's Vineyard, and Nantucket, Massachusetts, *Mr. Oakes!*; West Haven, Connecticut, *Dr. Robbins!*

After this species insert the following:

CYPERUS LUTESCENS, *Torr. & Hook.*

Umbel simple, 5—6-rayed; involucre 3-leaved, about as long as the umbel; spikelets 15—20 on each ray, somewhat distichously inserted, spreading horizontally, linear, 30—40-flowered; scales oblong, mucronulate, rounded on the back, strongly nerved, closely imbricated, but free at the apex; interior scales narrow, adnate; nut obovate-oblong.

Culm 18 inches high, triquetrous, smooth, firm. *Leaves* 3 lines wide, very smooth, becoming yellowish in drying. *Umbel* large, the rays 2—3 inches long, erect. *Ochrea* short, loose, bidentate. *Spikelets* more than an inch in length, one line broad: upper ones alternate; the lower ones somewhat fasciculate. *Scales* light brown, closely appressed, except near the summit which is very slightly turned outward, so that the spikelets have a serrated appearance. *Stamens* 3. *Style* 3-cleft. *Nut* triquetrous.

HAB. Texas, *T. Drummond!* (Coll. III. no. 452.)

OBS. Resembles *C. repens*; but the spikelets are much longer and broader, and the flowers much more numerous; the scales are also narrower, and the involucre much shorter.

C. HYDRA, p. 365. Newbern, North Carolina, *Mr. Croom!*; Macon, Georgia, *Dr. Loomis!*; near New Orleans, *T. Drummond!* (N. Orl. Coll. no. 309, bis.)

Some of the specimens from Macon are two feet high!

CYPERUS SETIGERUS, Torr. & Hook.

Culm triquetrous above, firm; umbel compound, 7—9-rayed; the primary rays elongated, erect; secondary spreading widely; involucre 3-leaved, very long; involucels setaceous, shorter than the secondary rays; spikes composed of 12—16 spikelets distichously arranged; spikelets lanceolate, about 10-flowered; scales lanceolate, mucronulate, appressed, 3-nerved; interior scales adnate, conspicuous; stamens 3; nut linear-oblong.

Culm 4 feet high, acutely triangular, smooth. *Leaves* nearly as long as the culm, about 3 lines wide, flat. *Umbel* erect. *Primary rays* 3—6 inches long. *Ochreae* entire. *Involucre* 4 times as long as the umbel. *Involucels* very slender, tortuous. *Spikelets* inserted in a distichous order along the upper part of the secondary rays, compressed, acute. *Scales* tinged with brownish red, somewhat carinate, the tip pointed with a very short straight mucro. *Interior scales* membranaceous. Mature *nut* not seen.

HAB. Texas, *T. Drummond!* (Coll. I. no. 315, and Coll. III. no. 453.)

OBS. This is quite distinct from any other *Cyperus* in my herbarium, and appears to have been hitherto undescribed. It has some resemblance to *C. longus* of Europe.

C. DISSITIFLORUS, p. 266. New Orleans (no. 389) and Texas, (Coll. III. without a number.) *T. Drummond!*

C. FILICULMIS, p. 267. Texas, *T. Drummond!* (Coll. I. no. 347.)

C. GRAYII, p. 268. Martha's Vineyard, and Nantucket, Massachussets, abundant, *Mr. Oakes!*

C. BALDWINII, p. 270. New Orleans, (no. 292, & 286) and Texas, *T. Drummond!* The ticket belonging to the Texan specimen was misplaced; but I believe it was no. 346 of the first collection.

C. LEPTOS, p. 273. New Orleans, (no. 385.) *T. Drummond!*

C. INFLEXUS, p. 273. Texas, (without a number,) *T. Drummond!*

CYPERUS ACUMINATUS, *Torr. & Hook.*

Umbel 1—2-rayed; the rays very short; involucre about 3-leaved, very long; spikelets collected into ovate heads, oblong-linear, 16—20-flowered; rachis nearly naked; scales oblong, acute, obscurely 3-nerved, reticulated, somewhat squarrose; stamen 1; nut oblong, triquetrous, acuminate at each end.

Root fibrous, annual. *Culms* cespitose, 3—4 inches high, leafy at the base. *Leaves* narrow, as tall as the culm. *Umbel* with scarcely distinct rays, appearing almost like an aggregated head of spikelets. *Involucre* 5—6 times as long as the umbel. *Spikelets* in heads of 10—15. *Scales* greenish, appearing reticulated, under a lens, the point acute and recurved. *Stamen* always solitary. *Style* 3-cleft. *Nut* gray, dull acutely triangular.

HAB. Near St. Louis, Missouri, *T. Drummond!* (v. s. in herb. *Greene.*)

OBS. This species has much the appearance of *C. inflexus*, but it is easily distinguished by the greater number of florets in the spikelet, and by the form of the scales. In the latter they are cuspidate, much more squarrose, and strongly nerved. I am inclined to think it is the *C. filicinus* of N. ab Esenbeck, who gave this name to a *Cyperus* in Mr. Drummond's St. Louis collection, and placed it in the same section with *C. aristatus*. It is doubtless a very distinct species from *C. filicinus* of Vahl.

C. VIRENS, p. 275. New Orleans, *T. Drummond!* (no. 384.)

CYPERUS RUFESCENS, Torr. & Hook.

Culm obtusely triangular, smooth, slender; leaves very narrow; umbel simple or somewhat compound, 4—5-rayed; involucre about 3-leaved, the longer leaves twice the length of the umbel; heads composed of 40—50 spikelets, subglobose, dense; spikelets ovate, 12—16-flowered; scales ovate-lanceolate, closely imbricated, acute, straight; stamens 1—3; nut ovate, triquetrous, acuminate at each end.

Rhizoma short, tuberous. *Culm* about 18 inches high, less than a line in thickness, the sides concave. *Umbel* small; rays somewhat erect, sometimes a little divided at the summit. *Ochreae* entire. *Heads* about half an inch in diameter; the spikelets much crowded. *Spikelets* much compressed, somewhat acute, 2—3 inches long. *Scales* carinate, with a nerve on each side near the keel, somewhat coriaceous, tinged of a bright brownish red colour. *Stamens* never more than 2, and often solitary. *Style* 3-cleft. *Nut* sharply triangular, dull, not half the length of the scale.

HAB. Texas, *T. Drummond!* (Coll. I. the specimens not numbered.)

OBS. Resembles *C. virens*, but is much more slender; the leaves are also narrower, and the culm is smooth.

CYPERUS CYRTOLEPIS, Torr. & Hook.

Culms cespitose, slender, wiry; umbel 3—5-rayed; rays very unequal, erect; involucre 3—4-leaved, setaceous, much longer than the umbel; heads dense, subglobose; spikelets broadly ovate, much compressed, 9—12-flowered, the florets distant; scales lanceolate, acute, recurved and spreading, without nerves; interior scales 0; stamen solitary; nut oblong, acute at each end, smooth, dull.

Culm a foot or more in height, strong and wiry, sulcate. *Leaves* very narrow, nearly as tall as the umbel, channelled. *Umbel* simple, rays

1—2 inches long. *Heads* half an inch in diameter. *Spikelets* of a dull greenish white colour, mixed with yellow. *Scales* quite distinct, spreading almost horizontally; the upper half distinctly recurved. *Stamens* always solitary. *Nut* greenish, somewhat obovate.

HAB. Texas, *T. Drummond!* (Coll. III. no. 450.)

OBS. Allied to *C. virans*, but easily distinguished from the other species of the section to which it belongs by its slender culms, narrow leaves, and distinct scales.

CAREX DRUMMONDII, Torr. & Hook.

Culm tall and very slender, very acutely triangular, the sides concave; umbel simple, 5—6-rayed; rays very short; heads subglobose, composed of many crowded spikelets; involucre 2-leaved, longer than the umbel; spikes 20—30-flowered, much compressed; scales lanceolate, strongly appressed, acute, slightly spreading at the tip; interior scales 0; stamen solitary; nut oblong, acute at each end, papillose in lines.

Culm 3—4 feet high; the angles almost winged, sharp, and scabrous. *Leaves* much shorter than the culm, 2—3 lines wide. *Rays* of the umbel very short, so that the heads appear almost sessile. *Heads* nearly an inch in diameter, composed of about 40—50 radiating spikelets. *Spikelets* ovate-lanceolate, nearly one-third of an inch long, rather obtuse, of a pale yellowish colour. *Scales* somewhat coriaceous, very closely imbricated, with 3 obscure nerves, the points slightly bent outwards. *Interior scales* indistinct, forming a mere zig-zag line on the rachis. *Stamen* always solitary. *Nut* with 3 nearly flat sides, contracted at the base into a sort of pedicel; the surface roughened with minute papillæ arranged in lines.

HAB. Texas, *T. Drummond!* (Coll. I. without a number.)

OBS. The spikes have a very neat appearance, much like those of some species of *Eragrostis*. It is nearly allied to *C. aureus*, *H. B. & K.*

C. OVULARIS, γ . *cylindricus*, p. 279. No. 348 of Mr. Drummond's first Texan Collection scarcely differs from this plant.

C. ERYTHORRHIZOS, p. 280. Near St. Louis, Missouri, *T. Drummond!*; Kentucky. *Dr. Short!* I have specimens of this plant collected near Havanna by my friend, *B. D. Greene. Esq.* Among the plants collected by Dr. Baldwin in the Southern States, is a variety of *C. erythrorhizos* with the umbel decomposed, and with the secondary rays shorter than their foliaceous involucels.

KYLLINGIA SESQUIFLORA, p. 287. New Orleans, *Dr. Ingalls!*

LIPOCARPHA, *R. Brown*, pp. 283 & 243. This genus, I find, was first proposed in Captain Tuckey's Expedition to Congo; Appendix, p. 459, (1818). The *Hypolytrum* of Richard, which was first published in Persoon's Synop. 1. p. 70, (1805) included three species, two of which belong to Brown's *Lipocarpha*, and one to his *Hypœlyptum*. Vahl*, who adopted the genus from Richards' Herbarium, but transcribed the name incorrectly, likewise constructed his character so as to include both genera, but nearly all his species belong to *Lipocarpha* as defined by Brown; so that I am still of the opinion that the name *Hypolytrum* should have been retained for the present *Lipocarpha*, and another name provided for the species now referred to *Hypolytrum*. Indeed this view of the subject appear to have been taken by the late P. de Beauvois, as appear from the *Essai sur la Fam. des Cyper.* of Lestiboudois (1819); for the *Beera* of P. de B. must be identical with the modern *Hypolytrum*, while *Hypolytrum* of P. de B. is Brown's *Lipocarpha*. Still I have fol-

* *Enum.* p. 283 (1806.)

lowed N. ab Esenbeck in adopting the names employed by the illustrious English botanist.

FUIRENA SQUAEROSA, β . p. 291; *Curtis!* in *cat. pl. Wilmingt.* p. 139.

F. SCIRPOIDEA, p. 293. Apalachicola, *Dr. Chapman!*

ELEOCHARIS EQUISETOIDES, p. 296; add *Scirpus obtusus*, *Spreng. syst.* 1. p. 204, (not of *Willd.*)

E. OBTUSA, p. 302. New Orleans, *T. Drummond!* (no. 405. and also no. 408.)

E. SIMPLEX, p. 306. The specimens numbered 410 of Drummond's New Orleans collection seem to belong to this species; but they are too young to be determined satisfactorily.

E. TENUIS, p. 309. Mr. Arnott, in a very recent letter, informs me that the printer of Nees' Cyperaceæ, made a mistake respecting *Scirpidium tenuc.* According to the Mst. the synonym ought to be, "*S. tenuis*, Muhl. ex parte, nec *S. tenuis*, Willd. et Link." It is also "*S. tenuis*, herb. Endlich. é Connecticut." The specimens which Nees examined are immature, and he remarks of the species "Fructus deest. Specimena non sufficient." So that his plant may still be identical with his *Eleocharis tenuis*. Nees was probably led into error by Muhlenberg's inaccurate description of this species.

E. MELANOCARPA, p. 311. I have received specimens of this rare species from Mr. Croom, who collected them on a journey from Middle Florida to Georgia. On carefully examining the style, I find that it is two-cleft, and remarkably hairy, particularly about the bifurcation. The culm is rather striate than sulcate, and the nut is blackish when mature. The spikes are somewhat acute in many of Mr. Croom's specimens.

E. PYGMÆA, p. 313. β .? *anuchæta*; nut without bristles at the base.

HAB. Near New Orleans, *T. Drummond!*

DES. This plant greatly resembles the ordinary form of *E. pygmæa*, but the flowers are entirely destitute of bristles.

E. PROLIFERA, p. 316. I have received specimens of this plant, with mature fruit, collected by Dr. Chapman in Middle Florida. It is a distinct species allied to *E. microcarpa*. The spike is 4—6-flowered; the nut triangular, with the sides convex; the tubercle is broad, depressed, apiculate in the centre. The bristles are about 4 in number, and scarcely one-third the length of the nut.

SCIRPUS PLANIFOLIUS, p. 316. Ogdensburgh, St. Lawrence County, New-York, *Dr. Craue!*

β. brevifolius. Leaves much shorter than the culm, very narrow, canaliculate, triquetrous towards the summit; scales shorter and scarcely acuminate.

Culm a foot long, very slender. *Leaves* scarcely half a line wide, 1—3 inches long, almost subulate. *Spike* broadly ovate.

HAB. Ogdensburgh, N. York, *Dr. Craue.!*

SCIRPUS LENTICULARIS, p. 328. *S. sylvaticus*, *Bong.!* *veg. Sitcha*, in *mém. acad. St. Petersb.* 6 ser. 2. p. 169. The specimen is young, but it agrees very well with Dr. Scouler's plant.

S. LINEATUS, p. 332. District of Columbia, *Dr. Crandall!*

RHYNCHOSPORA ALBA, p. 366. The Texan specimens of Mr. Drummond, (Coll. II. no. 281,) are immature, and though greatly resembling this species, may prove to be distinct; since the hypogynous bristles are very numerous. I counted 19 in some florets, and Mr. Arnott informs me that he has seen as many as 24. The character of *Rhynchospora* must therefore be slightly altered, so as to include this plant.

CLADIUM EFFUSUM, p. 374. According to Mr. Nuttall, this plant extends a considerable distance northward beyond Wilmington, North Carolina, often occupying, almost exclusively, considerable ponds.

CAREX TENUIFLORA, p. 392. Tackmahack Swamp, Southampton, Massachusetts, *Dr. Chapman!*; Ogdensburgh, St. Lawrence Co.; New-York, *Dr. Cruve!*

C. SUBULATA, p. 419. Near Fayetteville, North Carolina, *Mr. Curtis!*

SCLERIA RETICULARIS, p. 375. Wet sandy places, near the sea coast, Suffolk County, Long Island! September.

S. LAXA, p. 376. Add, HAB. New Jersey to Florida; not found far from the sea coast! September.

Note. Mr. Arnott states, in a letter received since the foregoing sheets were printed, that he has examined the specimen on which *Ceratoschænus corniculatus* of Nees ab Esenbeck was founded. The plant is, in his opinion, nothing more than *Schænus corniculatus*, *Lam'k.* (*Rhynchospora corniculata*, *Gray*) in which, contrary to the usual state, the beak is somewhat curved. The reader will perceive that the character of this well-marked genus has been amended in the present monograph so as to apply to the normal form of *C. corniculatus*, and also to include a new species. The specific name of *Lamarck* must, of course, be retained.

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TO THE

MONOGRAPH OF NORTH AMERICAN CYPERACEÆ.

N. B. Synonyms of Genera, Sub-Genera, &c. are printed in small capitals, with the sign (+) prefixed. Synonyms of Species, and also the Names of Species when incidentally mentioned, are italicised.

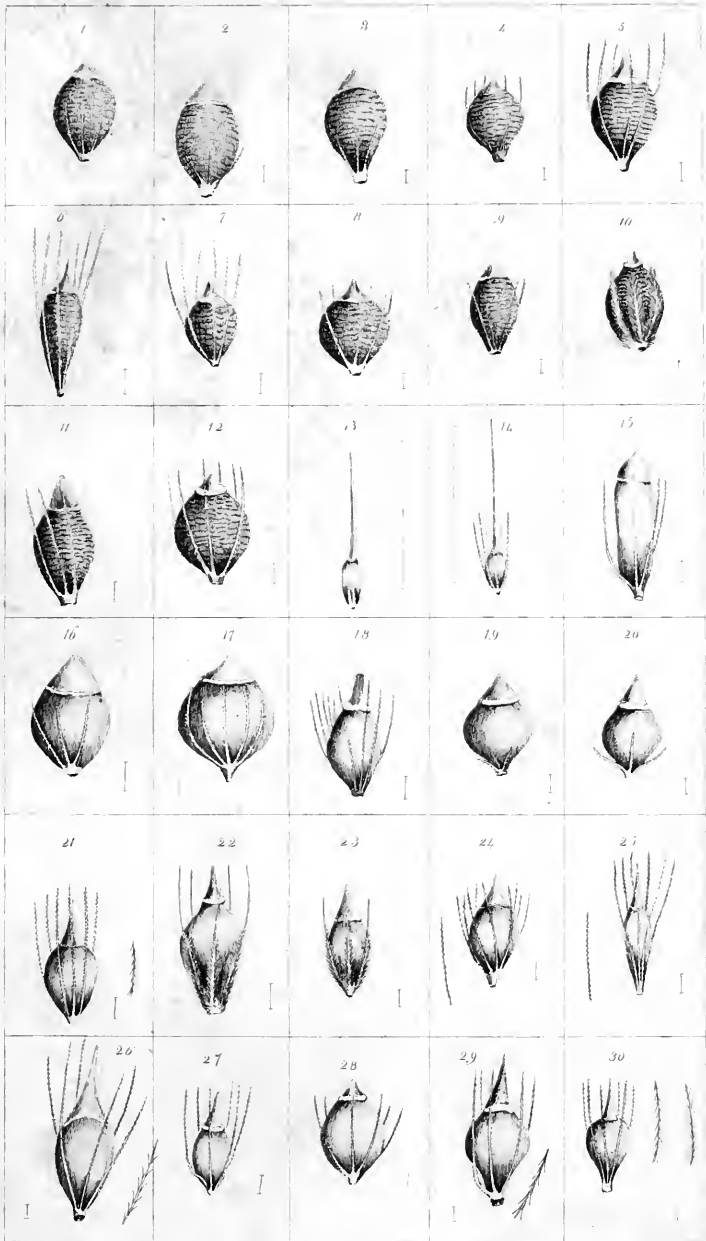
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Rhynchospira

Alfred Warner Sc



CORRECTIONS.

- PAGE 248, line 5 from bottom, for the "spikelets long," read "also of the spikelets."
- " 257, after line 7, insert "b. *Culm triangular; spikelet solitary.*"
- " 258, line 4 from bottom, for "b," read "c."
- " 281, line 20 and 21, for "belong to a species of &c." read "belong to *Trichelostylis (T. complanata N. ab E. and T. mucronulata, Torr.)*"
- " 287, line 14, for "KILLINGIA," read "KYLINGIA."
- " 288, line 16, dele "*Kunth, Vahl and others,*" and add "*Hypælyptum, R. Br. prod. 1, p. 219. Species of Hypælyptum, Vahl. Hypælyptum, Kunth, syn. 1, p. 149. Lestib. ess. fam. cyp. p. 29, no. 20.*" (badly described.)
- " 304, line 14, for "ALBIDUS," read "ALBIDA."
- " 304, line 3, after "slender," add "or rarely o."
- " 332, line 5 from bottom, for "specimens" read "specimen."
- " 242, line 15, after "ELYTOSPERMUM," add "CALIFORNICUM."
- " 244, line 15, for "ed. 2," read "ed. 1."
- " 352, top line, for "CILIATIFOLIUS," read "CILIATIFOLIA."
- " 355, line 15, for "MUCRONULATUS," read "MUCRONULATA."
- " 379, line 17, for "*ciliate,*" read "*ciliata.*"
- " 383, line 5 and 8 from bottom, for "to know," read "have known."
- " 391, line 4, dele "even."
- " 392, line 6, and elsewhere, for "*Schukhr,*" read "*Schkuhr.*"
- " 394, line 3, from bottom, for "*miralibis,*" read "*mirabilis.*"
- " 400, line 22, for "cannot," read "can."
- " 403, line 19, dele "the succeeding species, viz."
- " 410, line 13, for "LANGUINOSA," read "LANUGINOSA."
- " 423, line 10, for "MICRODONTUS," read "MICRODONTA."
- " 437, line 9, for "CAREX," read "CYPERUS."
- " 438, line 18, for "*Hypælyprum,*" read "*Hypælytrum.*"
- " " line 5 from bottom, for "appear," read "seems."
- " " line 4 from bottom, for "appear," read "appears."



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