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CONSPECTUS CARICUM JAPONICARUM

A General View of Japanese Carices including those from Saghalien, the Kuriles, Hokkaido, Honshiu, Shikoku, Kiushiu and the Riukius, with Special Reference to Utricles in Female Flowers

By

SHIGEO AKIYAMA

(with 2 Plates and 172 Text Figures)

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I. INTRODUCTION

Since the establishment of the genus *Carex*, by the great LINNAEUS¹⁾ in 1737, the Japanese *Carices* have often been studied and revised by several scholars both at home and abroad. Among the latter, THUNBERG²⁾ is perhaps to be mentioned as the first, who in 1784 gives an account of the following species indigenous to Japan:—*Carex vulpina* (non L.) THUNB., *C. remota* (non L.) THUNB., *C. brunnea* THUNB., *C. tristachya* THUNB., *C. japonica* THUNB., *C. caespitosa* (non L.) THUNB. and

1) LINNAEUS, A.—Genera Plantarum, 1. ed. p. 280 (1737).

2) THUNBERG, C. P.—Flora Japonica (1784).

C. pumila THUNB. Then follows STEUDEL¹⁾ in 1855, among many investigators, who mentions many more species than those given by THUNBERG. They are:—*Carex brunnea* THUNB., *C. gibba* WAHL., *C. remota* THUNB., *C. ischnantha* STEUDEL, *C. Rafflesiana* BOOTT, *C. dimorpholepis* STEUD., *C. nemostachys* STEUD., *C. Zollingeri* KUNTZE, *C. Thunbergii* STEUD., *C. ischnostachya* STEUD., *C. consocialis* STEUD., *C. japonica* THUNB., *C. Langsdorffii* BOOTT, *C. tristachya* THUNB. and *C. pleroloma* KUNTZE.

Since that time, many other Japanese species have from time to time been added by BOOTT, MAXIMOWICZ,²⁾ FRANCHET and LÉVEILLÉ & VANIOT. Of the contributions made by the latter scholars, BOOTT³⁾ and FRANCHET⁴⁾ may be mentioned as the most important. Yet the most nearly perfect work on the genus under consideration was published by the indefatigable effort of KÜKENTHAL, who in 1909 wrote an admirable work on the Cyperaceae-Caricoideae in Pflanzenreich IV.-20, where nearly all the Japanese species are given and his system is formulated. The latter system is perhaps the best of those appearing in recent times.

In addition to the above mentioned foreign investigators, there have appeared many Japanese scholars, such as MAKINO, HAYATA, NAKAI, KOIDZUMI, HONDA, MIYABE & KUDO, OHWI and others, who have made many contributions to the knowledge of the Caricology of Japan. Thus the total sum of the species, so far recorded from Japan, amounts to as many 285 as is enumerated in the present work.

The genus *Carex* includes a vast number of species covering the widest range of distribution from the arctic zone down to the tropical, some occurring in lowlands and others on high mountains. Moreover, endemic species are rather many, as has already been noticed with great interest by several scholars. This is mainly due to the fact that the flowers are without exception unisexual and occasionally even dioecious.

1) STEUDEL, E. G.—Synopsis Plantarum Cyperacearum (1855).

2) MAXIMOWICZ, C. J.—Mélanges Biologiques, XII. (1887).

3) BOOTT, F.—Illustration of the Genus *Carex*, I-IV. (1858-67).

4) FRANCHET, A.—Nouvelles Archives du Muséum, Paris 3. sér. VIII-X. (1896-98).

Some of the species resemble one another in their appearance, and many puzzling cases are frequently met with, where it is difficult to distinguish one species from another by mere external features. But peculiar characteristics observable in the forms and structures of utricles are, among others, as is suggested by Prof. B. HAYATA, to be taken into consideration as important criteria for the determination of species. This is the reason why the present author has given stress to the forms of utricles in the present conspectus.

Regarding the distribution of species, as is shown in tables given in the end of this work, it is to be mentioned that northward in Saghalien, the Kuriles, Hokkaido and northern part of Honshiu many species belonging to the flora of Siberia are found and also a few to that of North America. On the contrary, southward in the Riukius and in Formosa there exist, besides many endemic species, mostly on the high mountains, some species of tropical nature. In the central and southern parts of Honshiu, endemic species are comparatively numerous intermixed with northern and southern elements, while in Corea, endemic species are rather few and all the other species resemble continental ones such as those of Manchuria, North China and so on. Tables showing the geographical distribution of species are annexed to the end of this work (pp. 237-250), in order to facilitate the readers efforts to see which species are dispersed within and without the limits of the Japanese Empire.

Thus it is quite clear that the investigation of this genus in Japan is by far the most interesting, as has been noticed by former scholars. It is truly regrettable that no one has ever undertaken the work of a monograph on the Japanese *Carices* which affords students so many interesting cases as are seen in endemic species mentioned in this work. To meet this want, if possible, it is the author's desire to offer this Conspectus to the public. The present work was executed from April, 1929, to March, 1930, as a graduation thesis under the supervision of Professor B. HAYATA, in the Botanical Institute of the Imperial University of Tokyo, and afterwards the manuscript of the thesis was submitted to some corrections while working here in the Department of Botany of the Hokkaido Imperial University.

In conclusion, the author desires to offer his sincere thanks to Professor BUNZO HAYATA of the Botanical Institute of Tokyo for his painstaking revision of this manuscript and also to Professor YUKIO YAMADA for his kindness in giving many facilities for the work. Thanks are also due to many others to whom the author is greatly indebted for their kind advice in many ways.

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II. KEY TO SUBGENERA, SECTIONS AND SPECIES,
KÜKENTHAL'S SYSTEM IN PFLANZENREICH
IV.-20 BEING HERE ADOPTED IN
THE FOLLOWING CASES

Clavis subgenerum

- A. Spicula unica terminalis Subgen. I. *Primocarex* pp. 5-7
- B. Spiculae plures.
 - a. Spiculae bisexuales sessiles. Cladoprophyllum plerumque non evolutum Subgen. II. *Vignea* pp. 8-13
 - b. Spiculae bisexuales vel unisexuales saepius pedunculatae. Cladoprophyllum semper evolutum.
 - I. Spiculae semper bisexuales. Cladoprophyllum in spiculis omnibus utriculiforme Subgen. III. *Indocarex* pp. 13-14
 - II. Spiculae plerumque sexu distinctae. Cladoprophyllum (saltem in spiculis inferioribus semper) ocreaeforme . . . Subgen. IV. *Eucarex* pp. 14-47

Subgen. I. *Primocarex* KÜKENTHAL (pp. 5-7)

Clavis sectionum

- A. Stigmata 2. Sect. 1. *Dioicae* p. 5
- B. Stigmata 3 (sed in *C. pyrenaica* raro 2).
 - a. Squamae femineae persistentes. Utriculi erecti vel suberecti.
 - I. Pars feminea spiculae $\pm$ densiflora. Utriculi subturgido-trigoni rostro brevi recto apiculati Sect. 2. *Petraeae* p. 6
 - II. Pars feminea spiculae $\pm$ laxiflora. Utriculi non turgidi in rostrum excurvum apiculati.
 - 1. Spicula pauciflora. Utriculi erecti ovato-ellipsoidei brevirostrati. . . Sect. 3. *Grallatoriae* p. 6
 - 2. Spicula pluriflora. Utriculi suberecti lanceolati longerostrati. . . Sect. 4. *Circinatae* p. 6
 - b. Squamae femineae mox caducae. Utriculi primo erecti demum divaricati vel reflexi . Sect. 5. *Unciniaeformes* pp. 6-7

Sect. 1. *Dioicae* TUCKERMAN (p. 5 et p. 48)

- Species unica 1. *Carex gynocrates* WORMSKJ
(p. 48)

Sect. 2. *Petraeae* O. F. LANG (p. 5 et p. 48)Species unica. 2. *C. rupestris* ALL. (p. 48)Sect. 3. *Grallatoriae* KÜKENTHAL (p. 5 et pp. 48-49)Species unica. 3. *C. grallatoria* MAXIMOWICZ
(p. 48, Fig. 1, 2.)Sect. 4. *Circinatae* MEINSHAUSEN (p. 5 et pp. 49-51)*Clavis specierum*

- A. Squamae femineae oblongae mucronatae castaneae. Utriculi anguste lanceolati longe stipitati 4. *C. hakkodensis* FRANCHET
(p. 49, Fig. 3.)
- B. Squamae femineae acutae pallidae. Utriculi lanceolati breve stipitati 5. *C. rhizopoda* MAXIMOWICZ
(p. 51, Fig. 4, 5.)

Sect. 5. *Unciniaeformes* KÜKENTHAL (p. 5 et pp. 52-59)*Clavis subsectionum*

- A. Utriculi basi rotundati brevissime stipitati brevirostrati Subsect. 1. *Capitellatae* pp. 6-7
- B. Utriculi basi angustati plerumque longirostrati.
- a. Spicula multi- et densiflora. Utriculi lanceolato-elliptici obsolete trigoni vel biconvexi longe stipitati nonnisi inferiores demum reflexi Subsect. 2. *Callistachys* p. 7
- b. Spicula laxi- et pauciflora. Utriculi anguste lanceolati obsolete trigoni breviter stipitati demum omnes reflexi. Subsect. 3. *Pauciflorae* p. 7

Subsect. 1. *Capitellatae* MEINSHAUSEN (p. 6 et pp. 52-57)*Clavis specierum*

- A. Spicula parvula pauciflora. Culmus capillaris scaber vel fere laevis. Squamae femineae subacutae vel vix obtusae.
- a. Squamae ovatae subacutae. Utriculi ovati vel lanceolato-ovati in rostrum evidentius bidentati 6. *C. Onoei* FRANCH. et SAV.
(p. 52, Fig. 6.)
- b. Squamae latiores. Utriculi ovati in rostrum vix bidentulati.

- I. Planta elata. Squamae acutae vel subobtusae. 7. *C. Krameri* FRANCH. et SAV. (p. 53, Fig. 7)
- II. Planta humilis. Squamae obtusae . . . 8. *C. hakonensis* FRANCH. et SAV. (p. 53)
- B. Spicula longior pluriflora.
 - a. Culmus triqueter vel capillaris laevis vel vix scaber.
 - I. Spicula 1.5-3 cm longa fere 3 mm lata pars feminea multi- et subdensiflora.
 - 1. Culmus 20-40 cm altus. Utriculi vix 2 mm longi 9. *C. rara* BOOTT var. *biwensis* KÜKENTH. (p. 54)
 - 2. Culmus 50-60 cm altus. Utriculi perparvi 10. *C. Oldhamii* C. B. CLARKE (p. 54)
 - II. Spicula 6-8 mm longa 4 mm lata pars feminea pauciflora.
 - 1. Culmus capillaris. Utriculi 2 mm longi obsoletius nervosi. 11. *C. capillacea* BOOTT (p. 54)
 - 2. Culmus strictior. Utriculi 3.5 mm longi in utroque latere nervo valido percursi caeterum obsolete nervosi. 12. *C. nana* BOOTT (p. 55, Fig. 8)
 - b. Culmus compressus. Squamae femineae acutae.
 - I. Culmus scaberrimus. Spicula 5-6 mm longa, pars feminea densiflora. Utriculi ovati. 13. *C. fulva* FRANCHET (p. 56, Fig. 9)
 - II. Culmus laevis. Spicula 8-10 mm longa, pars feminea subclaxiflora. Utriculi lanceolati 14. *C. uda* MAXIMOWICZ (p. 57, Fig. 10)

Subsect. 2. *Callistachys* (HEUFF.) ASCHERSON
et GRAEBNER (p. 6 et pp. 57-58)

- Species unica. 15. *C. pyrenaica* WAHLENBERG (p. 57, Fig. 11).

Subsect. 3. *Pauciflorae* TUCKERMAN (p. 6 et pp. 58-59)

Clavis specierum

- A. Culmus plurifolius. Utriculi brunneo-virentes. 16. *C. microglochin* WAHL. (p. 58)
- B. Culmus paucifolius. Utriculi stramineo-virentes 17. *C. pauciflora* LIGHTFOOT (p. 59, Fig. 12)

Subgen. II. *Vignea* (PALISOT de BEAUVOIS)

C. F. NEES von ESENBECK (p. 5 et pp. 8-13)

Clavis sectionum

- A. Spiculae apice masculinae rarius dioicae
(vide tamen *Siccatas*).
- a. Stigmata 2.
- I. Rhizoma longe repens.
1. Utriculi marginibus nunquam alati, rostrum oblique sectum vel demum bidentulum.
* Spiculae in capitulum ovatum dense congestae. Utriculi membranacei obsolete nervosi Sect. 6. *Foetidae* p. 9
**Spiculae in capitulum oblongo-ovatum vel oblongum subdense congestae. Utriculi coriacei valde nervosi marginibus incrassati Sect. 7. *Divisae* p. 9
2. Utriculi marginibus alati, rostrum acute bidentatum. Sect. 8. *Arenariae* p. 10
- II. Rhizoma caespitosum vel subrepens. Utriculi demum plerumque squarrosi marginati.
1. Utriculi plano-convexi membranacei virides vel demum brunnei marginibus superne scabri vel laeves.
* Spiculae numerosissimae parvulae plerumque simplices spicam elongato-cylindricam continuam formantes Sect. 9. *Multiflorae* p. 10
**Spiculae majores sive haud numerosae spicam brevem sive numerosiores paniculam elongatam contractam formantes Sect. 10. *Stenorhynchae* p. 10
2. Utriculi dorso tuberoso-convexi ventre subconvexi coriacei demum castanei marginibus e medio dense ciliato-scabri Sect. 11. *Paniculatae* p. 10
- b. Stigmata 3.
- I. Rhizoma elongatum descendens. Flores dioici rarius androgynae Sect. 12. *Macrocephalae* p. 10
- II. Rhizoma repens subtenue. Flores monoici Sect. 13. *Digamae* p. 11

B. Spiculae basi masculinae, rarius laterales mere femineae (vide tamen *C. tenellam*).

a. Stigmata 2.

I. Utriculi marginibus alati.

1. Spiculae in capitulum lobatum involucratum dense congestae. Squamae albae. Utriculi oblongo-lanceolati compressi basi conspicue stipitati Sect. 14. *Schellhammeria* p. 11

2. Spiculae approximatae ebracteatae raro capitulatae bracteatae. Squamae coloratae. Utriculi latiores concavo-convexi basi nonnisi brevissime stipitati. Sect. 15. *Ovales* p. 11

II. Utriculi marginibus non alati turgidi vel plano-convexi.

1. Utriculi suberecti ovati dense albo-punctulati in rostrum breve ore subintegrum desinentes.
* Rhizoma laxae caespitosum. Spiculae plures densiflorae Sect. 16. *Canescentes* pp. 11-12

**Rhizoma laxae caespitosum et stolones tenues emittens. Spiculae paucae subaxilliflorae Sect. 17. *Tenuiflorae* pp. 12-13

2. Utriculi suberecti vel demum squarrosi ovati vel lanceolati epunctulati in rostrum longum ore bidentatum desinentes Sect. 18. *Elongatae* p. 13

b. Stigmata 3. Sect. 19. *Gibbae* p. 13

Sect. 6. *Foetidae* TUCKERMAN (p. 8 et pp. 59-60)

Species unica. 18. *C. arenicola* F. SCHMIDT
(p. 59, Fig. 13)

Sect. 7. *Divisae* CHRIST (p. 8 et pp. 60-61)

Clavis specierum

A. Rhizoma horizontaliter repens fasciculos foliorum sterilium et culmos florentes in sinu recto agens. Spiculae spicam subaxillam formantes. Utriculi ovati marginibus e medio scabri 19. *C. curaica* KUNTH (p. 60)

B. Rhizoma oblique repens e nodis inferioribus surculos steriles et apice culmum florentem adscendentem oblique emittens. Spiculae spicam subdensam formantes. Utriculi ovato-elliptici marginibus valde incrassati 20. *C. pseudo-curaica* F. SCHMIDT
(p. 61)

Sect. 8. *Arenariae* KUNTH (p. 8 et pp. 61–62)*Clavis specierum*

- A. Spiculae 3–8 Squamae fulvae.
- a. Folia 2–3 mm lata. Spiculae oblongo-ovatae contiguae. Squamae fulvae. Utriculi glaberrimi anguste alati subabrupte longe rostrati. 21. *C. siccata* DEWEY (p. 61)
 - b. Folia 4 mm lata. Spiculae ovatae inferiores remotiusculae. Squamae pallide fulvae. Utriculi utrinque parce pubescentes latius alati sensim mediocriter rostrati 22. *C. accrescens* OHWI
(p. 61, Fig. 14)
- B. Spiculae numerosae. Squamae rufescentes. (Folia 2–4 mm lata. Spiculae ovatae vel oblongae contiguae. Utriculi marginibus infra medium ad apicem anguste viridi-alati et serrulati mediocriter rostrati) 23. *C. disticha* HUDS. (p. 62)

Sect. 9. *Multiflorae* KUNTH (p. 8 et pp. 62–65)*Clavis specierum*

- A. Spica cylindrica. Utriculi ovati marginibus alati 24. *C. neurocarpa* MAXIMOWICZ
(p. 62, Fig. 15)
- B. Spica oblonga vel oblongo-ovata. Utriculi lanceolati.
- a. Utriculi membranacei marginibus anguste alati 25. *C. albata* BOOTT (p. 63, Fig. 16)
 - b. Utriculi subcoriacei marginibus haud non alati 26. *C. succedanea* NAKAI
(p. 65, Fig. 17)

Sect. 10. *Stenorhynchae* TH. HOLM. (p. 8 et pp. 65–66)

- Species unica 27. *C. stipata* MUEHLENBERG
(p. 65, Fig. 18)

Sect. 11. *Paniculatae* KUNTH (p. 8 et pp. 66–67)

- Species unica 28. *C. diandra* SCHRANK forma major KOCH (p. 66)

Sect. 12. *Macrocephalae* KÜKENTHAL (p. 8 et pp. 67–68)

- Species unica 29. *C. macrocephala* WILLD.
(p. 67, Fig. 19)

Sect. 13. Digamae NAKAI (p. 8 et p. 68)

- Species unica 30. *C. digama* NAKAI
(p. 68, Fig. 20)

Sect. 14. Schellhammeria (MOENCH.) KUNTH (p. 9 et p. 69)

- Species unica 31. *C. cyperoides* LINNAEUS
(p. 69, Fig. 21)

Sect. 15. Ovaes KUNTH (p. 9 et pp. 69-72)

Clavis specierum

- A. Spiculae in capitulum ovatum dense congestae. 32. *C. macloviana* D'URV.
(p. 69)
- B. Spiculae nonnisi contiguae.
- a. Spiculae nonnisi contiguae. Utriculi lanceolato-ovati marginibus peranguste alati. Styli basis fere aequalis. 33. *C. Maackii* MAXIMOWICZ
(p. 70, Fig. 22)
- b. Spiculae inferiores remotae omnes longissime bracteatae. Utriculi late ellipsoidei marginibus 3/4 late viridi-alati. Styli basis incrassata 34. *C. planata* FRANCHET et SAVATIER (p. 71, Fig. 23)

Sect. 16. Canescentes FRIES (p. 9 et pp. 72-76)

Clavis specierum

- A. Spiculae 2-4 approximatae. Squamae castaneae vel rufae obtusae.
- a. Folia 2 mm lata plana graminea. Squamae profunde castaneae. Utriculi ovati straminei superne castanei 35. *C. lagopina* WAHLENBERG
(p. 72, Fig. 24)
- b. Folia peranguste complicata vel canaliculata. Squamae dilute castaneae. Utriculi elliptici cinerei 36. *C. glareosa* WAHLENBERG
(p. 72)
- B. Spiculae 4-8 inferiores remotae.
- a. Spiculae ovatae multiflorae. Utriculi 3-3.5 mm longi.
- I. Culmus faciebus planis. Spiculae canescentes vel fulvae. Utriculi ovati ore antice integri.

1. Culmus laevis. Folia flavo-viridia. Spiculae terminalis subclavato-oblonga dimidiatum masculina laterales saepe mere femineae oblongae 10–15 mm longae. Squamae obtusae involventes fulvo-ferrugineae. Utriculi squamas aequantes subcoriacei 37. *C. norvegica* WILLD. (p. 73)
2. Culmus sursum scabriusculus. Folia cinereo-viridia. Spiculae omnes gynaeandreae ovaes 5–8 mm longae. Squamae cuspidatae albob-stramineae. Utriculi squamas superantes membranacei 38. *C. canescens* L. (p. 73, Fig. 25)
- II. Culmus faciebus concaviusculus. Spiculae castaneae. Utriculi lanceolato-ovati ore antice fissi 39. *C. traiziscana* FR. SCHM. (p. 74, Fig. 26)
- b. Spiculae subglobosae pauciflorae. Utriculi ovati plano-convexi parvuli nonnisi 2 mm longi squamas superantes ore antice fissi. (Culmus elongatus tenuis sursum scaber. Squamae brunneae acutae) 40. *C. brunnescens* (PERS.) POIRET, var. *sphaerostachya* (DEW.) KÜKENTHAL (p. 75, Fig. 27)

Sect. 17. Tenuiflorae KUNTH (p. 9 et pp. 76–79)

Clavis specierum

- A. Spiculae androgynae remotae. Squamae acutae. Utriculi turgidi subcoriacei oblongo-ovati utrinque tenuiter nervosi rostro brevissimo apiculati. 41. *C. tenella* SCHKUHR. (p. 76, Fig. 28)
- B. Spiculae gynaeandreae. Utriculi plano-convexi. Squamae subacutae vel obtusae.
 - a. Spiculae in capitulum ovatum subdense congestae.
 - I. Folia 1–1.5 mm lata. Squamae obtusae. Utriculi subcoriacei oblongi tenuiter nervosi suberostres.
 1. Culmus 15–35 cm altus. Folia 1–1.5 mm lata. Utriculi 3 mm longi . . . 42. *C. tenuiflora* WAHLB. (p. 77, Fig. 29)
 2. Culmus elatior ad 80 cm altus. Folia canaliculata. Utriculi squamaeque longiores 43. *C. arrhyncha* FRANCHET (p. 78, Fig. 30)

- II. Folia 2-2.5 mm lata. Squamae sub-
acutae. Utriculi membranacei lanceo-
lato-ovati multicostati brevirostrati. . . 44. *C. pseudo-loliacea* FR. SCHM.
(p. 79)

- b. Spiculae remotae. Folia 1-2 mm lata.
Squamae obtusae. Utriculi subcoriacei
utrinque multicostati 45. *C. loliacea* L. (p. 79)

Sect. 18. *Elongatae* KUNTH (p. 9 et pp. 79-83)

Clavis specierum

- A. Folia canaliculato-plana rigida. Utriculi squar-
rosi basi rotundati. Spiculae 3-5 parum re-
motiusculae ebracteatae.
a. Utriculi ovati tenuiter nervosi. 46. *C. stellulata* GOODEN.
(p. 79, Fig. 31)
b. Utriculi lanceolati valde nervosi 47. *C. omiana* FRANCH. et
SAV. (p. 80, Fig. 32)
- B. Folia flaccida. Utriculi suberecti basi plerum-
que contracti.
a. Spiculae 3-8 inferiores 1-2 remotae bracteis
brevibus suffultae.
I. Spiculae parvulae subglobosae pauci-
florae. Utriculi demum subexcurvi
ovati 2.5 mm longi utrinque pluriner-
vosi basi subrotundati 48. *C. laeviculmis* MEINSH. (p. 81)
II. Spiculae ovatae. Utriculi suberecti
lanceolato-ovati 4 mm longi subnervii
basi attenuati.
1. Bractee breves 49. *C. senanensis* OHWI (p. 81)
2. Spiculae fere ebracteatae 50. *C. Hondae* AKIYAMA
(p. 81, Fig. 33)
b. Spiculae 6-10 inferiores 3-4 valde remotae,
bracteis longissimis suffultae 51. *C. Rochebrunii* FRANCH.
et SAV. (p. 82, Fig. 34)

Sect. 19. *Gibbae* KÜKENTHAL (p. 9 et pp. 83-84)

- Species unica. 52. *C. gibba* WAHLENB.
(p. 83, Fig. 35)

Subgen. III. *Indocarex* BAILLON (p. 5 et pp. 13-14)

Clavis sectionum

- A. Spiculae numerosae oblongo-ovatae 8-12 mm
longae breves simplices omnes ex utriculo
rameali fertili enatae. Bractee deficientes. . Sect. 20. *Japonicae* p. 14

- B. Spiculae 4-7 terminalis ex utriculo rameali fertili laterales ex ocrea vacua ortae, omnes lineari-cylindricae laxiflorae. Bracteae longe vaginantes Sect. 21. *Mundae* p. 14
- C. Spiculae omnes ex utriculo rameali sterili ortae Sect. 22. *Indicae* p. 14

Sect. 20. *Japonicae* KÜKENTHAL (p. 13 et pp. 84-85)

- Species unica 53. *C. satsumensis* FRANCHET et SAVATIER (p. 84, Fig. 36)

Sect. 21. *Mundae* KÜKENTHAL (p. 14 et p. 85)

- Species unica 54. *C. dissitiflora* FRANCHET (p. 85, Fig. 37)

Sect. 22. *Indicae* TUCKERM. (p. 14 et pp. 85-86)

- Species unica 55. *C. filicina* NEES. (p. 85)

Subgen. IV. *Eucarex* COSS. et GERM. (p. 5 et pp. 14-47)

Clavis sectionum

- A. Utriculi erostrati vel brevirostres raro longirostres, rostrum ore truncatum vel emarginatum raro leviter bidentatum.
- a. Spiculae femineae densiflorae. Bracteae evaginantibus raro vaginantibus (*Maximae*).
- I. Utriculi plano-convexi vel biconvexi. Stigmata 2 Sect. 23. *Acutae* (pp. 17-23)
- II. Utriculi trigoni. Stigmata 3 (in *C. angustisquama* et *C. pseudo-sadoensis* 2).
1. Spiculae femineae approximatae sessiles vel breviter pedunculatae (rarius inferiores subradicales pedunculatae).
- * Bracteae ima ± foliaceae (sed vide *C. Meyerianam*). Spicula terminalis saepius gynaeandra.
- § Squamae femineae atro-fuscae. Utriculi semper glabri. Stylus haud crassus Sect. 24. *Atratae* (pp. 23-24)
- §§ Squamae femineae pallide ferrugineae vel fuscae. Utriculi glabri vel hirti. Stylus crassus. Sect. 27. *Pachystylae* (p. 25)
- ** Bracteae omnes squamiformes amplexicaules rarius ima breviter setaceae. Spicula terminalis semper masculina.

- § Squamae femineae fuscae vel pallidae. Utriculi membranacei pubescentes, rostrum conicum ore emarginato-bidentulum . . Sect. 28. **Montanae** p. 25
- §§ Squamae femineae rufae. Utriculi coriacei glabri nitidi, rostrum cylindricum ore hyalino oblique sectum Sect. 29. **Lamprochlaenae** p. 25
2. Spiculae femineae remotae pedunculatae.
- * Bractee inflorescentiam non superantes semper evaginant. Squamae femineae atro-fuscae . Sect. 25. **Scitae** p. 24
- ** Bractee inflorescentiam superantes interdum vaginantes. Squamae femineae dilutiores. (Utriculi glabri.) Sect. 26. **Maximae** p. 25
- b. Spiculae femineae laxiores. Bractee semper vaginantes.
- I. Utriculi pubescentes vel hirti vel glabri.
1. Bractee brachyphyllae. Nux apice mitrata. Sect. 30. **Mitratae** pp. 26-31
2. Bractee plerumque spathaceae aphyllae. Nux apice nunquam mitrata. Sect. 31. **Digitatae** pp. 31-32
- II. Utriculi glabri vel minute asperuli.
1. Squamae femineae cupreae. Utriculi coesii.
- * Spiculae femineae subdensiflorae pendulae. Bractee breviter vaginantes (in *C. laxa* longe vaginantes). Utriculi subtrigido-trigoni vel compresso-trigoni. Stylus exertus. Sect. 32. **Limosae** p. 32
- ** Spiculae femineae laxiflorae erectae. Bractee longe vaginantes. Utriculi subinflato-trigoni. Stylus haud exertus Sect. 33. **Paniceae** p. 33
2. Squamae femineae pallide ferrugineae vel omnino pallidae. Utriculi stramineo- vel brunneo-virides vere trigoni.
- * Caules centrales. Spiculae femineae oblongo-cylindricae subdensiflorae. Bractee culmum superantes. Utriculi subinflato-trigoni Sect. 34. **Griseae** p. 33

- ** Caules laterales. Spiculae femineae anguste cylindricae laxiflorae. Bracteeae brachyphyllae vel aphyllae. Utriculi vere trigoni Sect. 35. **Careyanae** p. 33
- B. Utriculi longius vel brevius rostrati, rostrum ore bidentatum raro integrum.
- a. Folia plerumque non septato-nodosa. Utriculi textis tenuiori.
- I. Squamae femineae atro-purpureae vel fuscae. Utriculi (ellipsoidei vel oblongo-lanceolati) compresso trigoni, (glabri vel adpresso-hispidi). Sect. 36. **Frigidae** pp. 33-36
- II. Squamae femineae ferrugineae vel pallidae raro fuscae. Utriculi vere trigoni vel inflato-trigoni, sed nunquam compressi.
1. Rostrum utriculi leviter bidentatum vel integrum.
- * Spiculae femineae plerumque pluri-et laxi-florae. Bracteeae plerumque vaginantes. Utriculi suberecti ovato-elliptici vel angustiores pallide-virides obsolete nervosi. Sect. 37. **Hymenochlaenae** pp. 36-39
- ** Spiculae femineae densiflorae. Bracteeae plerumque evaginantes. Utriculi demum divaricati (sed cf. *C. ischnostachya*) ovati brunneo- vel atro-virides plurinervi. Sect. 38. **Tumidae** pp. 39-41
2. Rostrum utriculi conspicue bidentatum.
- * Caules saepe laterales. Bracteeae plerumque brachyphyllae. Utriculi rhomboidales vel ovati turgido-trigoni multinervi. Styli basis incrassata persistens Sect. 39. **Rhomboidales** pp. 41-44
- ** Caules semper centrales. Bracteeae plerumque laminatae. Utriculi ovati obtuse vel subinflato-trigoni pluricostati. Styli basis aequalis Sect. 40. **Spirostachyae** p. 44
- b. Folia septato-nodosa. Utriculi textis crassiori.
- I. Utriculi glabri.
1. Utriculi membranacei longe rostrati.

- * Utriculi obtuse trigoni vix inflati.
Stylus tenuis Sect. 41. *Pseudo-cypereae* p. 44
- ** Utriculi valde inflati. Stylus
validus tortuosus Sect. 42. *Physocarpae* p. 45
- 2. Utriculi subcoriacei vel suberosi
breviter rostrati Sect. 43. *Paludosae* p. 46
- II. Utriculi ± hirti Sect. 44. *Hirtae* pp. 46-47

Sect. 23. *Acutae* FRIES (p. 14 et pp. 86-111)

Clavis subsectionum

- A. Rhizoma laxe caespitosum. Caules humiles debiles. Spiculae oblongae paucae (terminalis gynaecandra). Utriculi brevissime rostrati . . Subsect. 1. *Bicolores* p. 18
- B. Rhizoma aut dense caespitosum aut longe stoloniferum. Caules elatiores stricti. Spiculae plures plerumque cylindricae. Utriculi breviter rostrati.
 - a. Culmi phyllopodi i.e. basi vaginis foliiferis efibrillosis obtecti.
 - I. Culmi rigidi. Folia breviter acuminata rigida. Bractee squamiformes vix ima foliaceae. Utriculi enervii saepe turgiduli Subs. 2. *Rigidae* p. 18
 - II. Culmi graciliores. Folia longe acuminata flaccidiora. Bractee foliaceae. Utriculi ± nervosi haud turgidi Subs. 3. *Vulgares* p. 18
 - b. Culmi aphyllipodi i.e. basi vaginis aphyllis ± reticulatim fissis obtecti.
 - I. Spiculae femineae sessiles vel ima breviter pedunculata erectae (sed cf. *C. Otayai*). Squamae femineae muticae rarius mucronatae.
 - 1. Rhizoma caespites densos formans. Spiculae femineae breviter cylindricae. Bractee breves Subs. 4. *Caespitosae* pp. 18-19
 - 2. Rhizoma plerumque stolones longos emittens. Spiculae femineae cylindricae. Bractee magis conspicue culmo breviores longioresve. Subs. 5. *Forficulae* pp. 19-20
 - II. Spiculae femineae elongatae ± pedunculatae demum cernuae vel pendulae. Squamae femineae e dorso valide trinervi plerumque aristatae. (Utriculi saepe textis intimis cellulis grandibus constructi.)

1. Spiculae 3-6, femineae haud longe pedunculatae semper singulae. Nex medio non constricta. Subs. 6. *Praelongae* pp. 20-22
2. Spiculae saepe numerosae binae ternaeve longe pedunculatae pendulae. Nux medio plerumque profunde constricta Subs. 7. *Cryptocarpae* pp. 22-23

Subsect. 1. *Bicolores* TUCKERMAN (p. 17 et pp. 86-87)

Species unica. 56. *C. eleusinoides* TURCZANIMOW (p. 86)

Subsect. 2. *Rigidae* FRIES (p. 17 et p. 87)

Clavis specierum

- A. Utriculi turgido-biconvexi 2.5 mm longi glabri brevirostrati 57. *C. orbicularis* BOOT. var. *brachylepis* (REGEL) KÜ-KENTHAL (p. 87)
- B. Utriculi globoso-trigoni 1 mm longi glandulosi erostrati 58. *C. microsaccus* C. B. CLARKE (p. 87)

Subsect. 3. *Vulgares* ASCHERSON (p. 17 et pp. 87-88)

Clavis specierum

- A. Culmus gracilis et tunc obtuse triqueter. Folia angusta marginibus involuta vel complicata.
 - a. Squamae angustae hyalinae 59. *C. jizogatakensis* LÉVEILLÉ et VANIOT (p. 87)
 - b. Squamae obtusae fuscae 60. *C. Thunbergii* STEUDEL (p. 87, Fig. 38)
- B. Culmus validus acutangulus. Folia lata marginibus revoluta. Squamae femineae plerumque acutae 61. *C. aperta* BOOTT (p. 88)

Subsect. 4. *Caespitosae* FRIES (p. 17 et pp. 89-92)

Clavis specierum

- A. Utriculi stramineo- vel flavo-virentes.
 - a. Folia perangusta canaliculato-plana. Bractea inflorescentiam subaequans ima foliacea. Utriculi ovati compressi 62. *C. wiluica* MEINSHAUSEN (p. 89, Fig. 39)
 - b. Folia pro minimo 2 mm lata marginibus revoluta. Bractee inflorescentiam superantes vel breviores.

- I. Utriculi squamas plus duplo superantes oblongi 5 mm longi tenuiter nervosi 63. *C. descendens* KÜKENTHAL (p. 89)
- II. Utriculi squamas minus longe superantes ovati non supra 3 mm longi.
 - 1. Spiculae breviter cylindricae.
 - * Bracteae ima foliaceae. Squamae femineae lanceolatae subacutae fuscae. Utriculi turgido-biconvexi. 64. *C. Schmidtii* MEINSHAUSEN (p. 89)
 - **Spiculae femineae approximatae. Bracteae omnes squamiformes. Squamae femineae oblongae obtusae nigr cantes. Utriculi compresso-biconvexi 65. *C. caespitosa* L. (p. 90, Fig. 40, 41)
 - 2. Spiculae longiores 66. *C. vulpi-caudata* AKIYAMA (p. 91, Fig. 42)
- B. Utriculi rubescentes 67. *C. Kinashii* LÉV. et VAN. (p. 92)

Subsect. 5. *Forficulae* FRANCHET (p. 17 et pp. 92-97)

Clavis specierum

- A. Squamae femineae obtusae vel subacutae muticae dorso uninerviae.
 - a. Utriculi plano-convexi vel biconvexi nonnisi obsolete nervosi 68. *C. appendiculata* KÜKENTH. (p. 92)
 - b. Utriculi concavo-convexi pluricostati . . . 69. *C. semiplena* KÜKENTH. (p. 92)
- B. Squamae femineae acutiusculae vel acuminatae e dorso viridi trinervi plerumque mucronatae.
 - a. Utriculi in rostrum breve contracti.
 - I. Culmus basi vaginis aphyllis longe vestitus. Spiculae femineae basi laxiflorae.
 - 1. Spiculae brevipedunculatae. Utriculi plano-convexi in rostrum ore integrum. 70. *C. aphyllopus* KÜKENTH. (p. 93, Fig. 93)
 - 2. Spiculae longe pedunculatae. Utriculi turgido-biconvexi in rostrum ore emarginatum 71. *C. Otayai* OHWI (p. 94)

- II. Culmus basi vaginis aphyllis haud longe obtectus. Spiculae femineae etiam basi densiflorae.
1. Squamae femineae ovato- vel oblongo - lanceolatae. Utriculi concavo-convexi.
 * Utriculi undique membranacei cinerei enerves suberostres . . . 72. *C. cinerascens* KÜKENTH. (p. 94)
 **Utriculi basi et marginibus incrassati brunneo-virides obsolete nervosi breviter sed distincte rostrati 73. *C. leiogona* FRANCHET (p. 94)
 2. Squamae femineae ovato-oblongae. Utriculi plano-convexi membranacei brunneo-olivacei obtusissime nervosi vel enervii.
 * Utriculi minute papilloso 74. *C. heterolepis* BUNGE (p. 94)
 **Utriculi superne glanduloso-puberuli 75. *C. chilosaccus* C. B. CLARKE (p. 94)
- b. Utriculi in rostrum mediocre vel longum ore emarginato-bidentulum vel integrum contracti vel abeuntes.
- I. Os rostri utriculi integri 76. *C. impura* OHWI (p. 94)
- II. Os rostri utriculi emarginato-bidentuli.
1. Squamae femineae pallide rufae vel omnino pallidae. Rostrum utriculi oblique tortum 77. *C. otaruensis* FRANCH. (p. 95)
 2. Squamae femineae ovato-sanguineae. Rostrum utriculi rectum.
 * Utriculi squamis longiores stramineo-virides in rostrum longum marginibus serratum contracti. Stigmata mediocriter longa. . . 78. *C. forficula* FRANCH. et SAV. (p. 95, Fig. 44, 45)
 **Utriculi squamis breviores demum cinnamomei in rostrum marginibus laeve contracti. Stigmata longissima 79. *C. sadoensis* FRANCHET (p. 96, Fig. 46)

Subsect. 6. *Praelongae* KÜKENTHAL (p. 18 et pp. 98-108)

Clavis specierum

- A. Rhizoma stoloniferum. Spiculae femineae anguste cylindricae basi laxiores subcernuae. Utriculi nec papilloso nec turgidi.

- a. Folia 3–5 mm lata. Spiculae femineae longe pedunculatae 80. *C. incisa* BOOTT (p. 98)
- b. Folia 5–8 mm lata. Spiculae sessiles . . . 81. *C. Tobae* HONDA (p. 98)
- B. Rhizoma stoloniferum vel caespitosum. Spiculae femineae vere cylindricae basi vix laxiores.
 - a. Utriculi compresso-biconvexi dense elevato-papilloso.
 - I. Spicula terminalis masculina; spiculae femineae 4–5 mm latae, pedunculi parce scabri.
 - 1. Utriculi atro-fusci purpureo-glandulosi cinereo-marginati . . . 82. *C. phacota* SPRENG. (p. 98, Fig. 47)
 - 2. Utriculi griseo-purpurei vel cinnamomei albo-glandulosi.
 - * Squamae femineae acuminato-mucronulatae. 83. *C. Maximowiczii* MIQ. (p. 99, Fig. 48–50)
 - ** Squamae femineae apice obtusae valde aristatae.
 - § Spiculae femineae 2–3 cm longae subfastigiatae erectae. Utriculi 2.5 mm longi 84. *C. cincta* FRANCHET (p. 101, Fig. 51, 52)
 - §§ Spiculae femineae longiores (ad 6 cm) non fastigiatae cernuae. Utriculi 3 mm longi. 85. *C. subphacota* NAKAI (p. 103, Fig. 53)
 - II. Spiculae terminalis gynaeandra laterales basi saepe masculinae, pedunculis scabris. Utriculi brunneo-virides. . . 86. *C. subcernua* OHWI (p. 103)
 - III. Spiculae superiores 3 gynaeandrae femineae 5–6 mm latae, pedunculi spinulosi. Utriculi cinnamomei 87. *C. cernua* BOOTT (p. 103, Fig. 54)
 - b. Utriculi turgido-biconvexi non elevato-papilloso.
 - I. Culmus basi vaginis aphyllis breviter obtectus. Spicula terminalis masculina. Utriculi rugosi, rostrum rectum.
 - 1. Spiculae 3–4 fastigiatae, laterales sublaxiflorae erectae. Squamae femineae obtusae. Utriculi fusci plurinervi 88. *C. aequialta* KÜKENTH. (p. 104, Fig. 55)

2. Spiculae 4-6 densiflorae demum cernuae. Squamae femineae emarginatae. Utriculi ferrugineo-vir-
entes paucistriati.
*Squamae emarginatae.
§ Spiculae pedunculatae.
° Culmus laevis 89. *C. Prescottiana* BOOTT (p. 105)
°° Culmus scaberrimus 90. *C. kiotensis* FRANCH. et SAV.
(p. 106, Fig. 56)
§§ Spiculae sessiles 91. *C. periculosa* HONDA (p. 107)
**Squamae apice truncatae acutae 92. *C. shinanoana* NAKAI (p. 107)
- II. Culmus basi vaginis aphyllis longe ob-
tectus. Spicula terminalis gynae-
candra. Utriculi ovati minus turgidi,
rostrum oblique tortum 93. *C. shimidzensis* FRANCHET
(p. 107, Fig. 57)
- III. Culmus nuda. Spicula terminalis sem-
per masculina 94. *C. mitoensis* OHWI (p. 108)

Subsect. 7. *Cryptocarpae* TUCKERMAN (p. 18 et pp. 108-111)

Clavis specierum

- A. Spiculae singulae haud numerosae. Squamae
femineae atro-purpureae vel rufae acuminatae
muticae vel breviter aristatae. Utriculi ci-
nereo-virides opaci non turgidi.
- a. Culmus humilis. Folia angusta marginibus
involuta. Spiculae femineae breves pauci-
florae subsessiles. Bractae subspath-
aceae.
- I. Squamae mucronatae. 95. *C. subspathacea* WORMSKJ
(p. 108)
- II. Squamae obtusae 96. *C. Ramenskii* KOMAROV
(p. 109)
- b. Culmus elatior. Folia latiora marginibus
revoluta. Spiculae femineae multiflorae
longe pedunculatae. Bractae haud spa-
thaceae.
- I. Rhizoma stoloniferum. Culmus basi
vaginis purpureis cinctus. Spiculae
femineae oblongo-cylindricae 2-8 cm
longae. Bractae culmum superantes.
Squamae femineae acuminatae. Utri-
culi biconvexi.
1. Utriculi ovales marginibus laeves . 97. *C. Lyngbyei* HORNEM. Ssp.
cryptocarpa HULTÉN (p. 109, Fig. 58)

2. Utriculi oblongo-ovati marginibus
parce scabri 98. *C. prinocarpa* FRANCHET
(p. 110, Fig. 59)
- II. Rhizoma oblique descendens. Culmus
basi vaginis testaceis obtectus. Spi-
culae femineae ovatae vel oblongae
1-2 cm longae. Bractae culmo bre-
viores. Squamae femineae subob-
tusae. Utriculi concavo-convexi . . . 99. *C. Middendorffii* FR. SCHM.
(p. 110, Fig. 60)
- B. Spiculae plerumque numerosae 2-6-nae. Squ-
amae femineae cupreae dorso late virides
subacutae. Utriculi membranacei cinereo-
virides. (Culmus 60-90 cm altus viridis.) . . . 100. *C. tuminensis* KOMAROV
(p. 111)

Sect. 24. *Atratae* KUNTH (p. 14 et pp. 112-118)

Clavis specierum

- A. Squamae femineae parvulae acutiusculae vel
subobtusae. Utriculi parvuli 2-3 mm longi
plerumque subinflato-trigoni basi cuneati.
- a. Culmus compresso-triqueter laevis. Spi-
cula terminalis gynaeandra, parte mas-
culina inconspicua. Utriculi elliptici . . . 101. *C. Hidewoi* OHWI (p. 112)
- b. Culmus compresso-triqueter sursum sca-
ber. Spicula terminalis gynaeandra.
Utriculi ovati 102. *C. soyaensis* KÜKENTHAL
(p. 112, Fig. 61)
- c. Culmus acutangulus ex toto scaberrimus.
Spicula terminalis mere masculina vel
gynaeandra. Utriculi ovato-elliptici . . . 103. *C. Augustinowiczii* MEINSH.
(p. 113, Fig. 62)
- B. Squamae femineae majusculae saepe acumi-
natae. Utriculi plerumque longiores quam 3mm.
- a. Culmus rigidus. Spiculae omnes sessiles.
Utriculi plurinervi.
- I. Rhizoma caespitosum. Spiculae 2-3
terminalis masculina. Squamae femi-
neae obtusae muticae. Rostrum utri-
culi integrum. 104. *C. Meyeriana* KUNTH
(p. 114, Fig. 63)
- II. Rhizoma stoloniferum. Spiculae 3-4
terminalis gynaeandra. Squamae
femineae cuspidato-aristatae. Rostrum
leviter bidentatum 105. *C. Buxbaumii* WAHLENBERG
(p. 115)

- b. Culmus saepe gracilior apice cernuus. Spiculae inferiores $\pm$ pedunculatae.
 - I. Culmus laevis vel apice scabriusculus. Spiculae 3-5 oblongae. Utriculi squamis paullo breviores vel longiores.
 - 1. Squamae femineae in aristam longam scabram excurrentes. Utriculi basi conspicue obconico-stipitati 106. *C. Gmelinii* HOOK. et ARN. (p. 115, Fig. 64)
 - 2. Squamae femineae acutae vel acuminatae sed nunquam aristatae. Utriculi basi breviter contracti . . 107. *C. atrata* LINNAEUS (p. 116, Fig. 65)
 - II. Culmus angulis subalatis scaberrimus. Spiculae 6-10 cylindricae. Utriculi squamis multo longiores latioresque papyracei 5 mm longi tenuiter trinerves . 108. *C. Mertensii* PRESC. var. *urostachys* (FRANCH.) KÜKENTH. (p. 117, Fig. 66)

Sect. 25. Scitae KÜKENTHAL (p. 15 et pp. 118-124)

Clavis specierum

- A. Utriculi ovati plano-convexi compressi. Stigmata 2.
 - a. Spiculae femineae oblongae ad 3 cm longae. Utriculi 4.5 mm longi squamas subsuperantes, rostris brevissimis. Stigmata brevia . 109. *C. angustisquama* FRANCHET (p. 118, Fig. 67)
 - b. Spiculae femineae angustiores longioresque. Utriculi 3-3.5 mm longi squamas subaequant, breve rostrati. Stigmata 5-6 mm longa. 110. *C. pseudo-sadoensis* AKIYAMA (p. 119, Pt. I & Fig. 68)
- B. Utriculi elliptici vel oblongi compressi trigoni tenuiter nervosi. Stigmata 3.
 - a. Squamae femineae ovatae mucronatae. Utriculi praeter nervos 2 marginales prominentes obsolete tantum nervosi 111. *C. Tolmiei* BOOTT (p. 120)
 - b. Squamae femineae oblongo-lanceolatae longe aristatae. Utriculi tenuiter nervosi.
 - I. Utriculi glaberrimi. Nux ovato-oblonga.
 - 1. Culmus scaber. Folia 2-4 mm lata rigida. Utriculi 4-5 mm longi. . 112. *C. macrochaeta* C. A. MEYER (p. 120)

2. Culmus laevis. Folia 4-5 mm lata
flaccida. Utriculi 5-6 mm longi . . . 113. *C. flavocuspis* FRANCHET et
SAVATIER (p. 120, Fig. 69-71)
- II. Utriculi in nervis parce ad margines
dense spinulosi. Nux oblonga.
1. Squamae aristatae 114. *C. scita* MAXIMOWICZ
(p. 123, Fig. 72)
2. Squamae non aristatae 115. *C. koraginensis* MEINSH.
(p. 124)

Sect. 26. *Maximae* ASCHERSON (p. 15 et pp. 125-126)

- Species unica 116. *C. maculata* BOOTT
(p. 125, Fig. 73)

Sect. 27. *Pachystylae* KÜKENTHAL (p. 14 et p. 126)

Clavis specierum

- A. Spiulae femineae 1-1.5 cm longae. Utriculi
coriacei 117. *C. mandshurica* MEINSHAU-
SEN (p. 126)
- B. Spiculae femineae 3-4 cm longae. Utriculi
membranacei 118. *C. globularis* LINNAEUS
(p. 126)

Sect. 28. *Montanae* FRIES (p. 15 et pp. 126-129)

Clavis specierum

- A. Squamae femineae atro-fuscae. Utriculi ob-
ovato-oblongi vel elliptici trigoni non inflati
plerumque hirtuli.
- a. Folia saltem juniora subtus pilosa. Squamae
femineae apice emarginatae fuscae mucro-
natae. Utriculi pallide virides pluricostati 119. *C. gifuensis* FRANCHET
(p. 126)
- b. Folia semper glaberrima. Squamae femi-
neae apice integrae acutae atro-fuscae.
Utriculi vix obsolete nervosi stramineo-
virides 120. *C. oxyandra* KUDO
(p. 127, Fig. 74, 75)
- B. Squamae femineae fuscae vel pallidiores. Utri-
culi orbiculato-ovati vel -obovati inflato-trigoni
pubescentes 121. *C. amblyolepis* TRAUTV. et
MEY. (p. 129)

Sect. 29. *Lamprochlaenae* DREJER (p. 15 et p. 129)

- Species unica 122. *C. pseudo-Wrightii* HONDA
(p. 129, Fig. 76)

Sect. 30. *Mitratae* KÜKENTHAL (p. 15 et pp. 129-155)*Clavis specierum*

- A. Bractea ima breviter vaginans. Spiculae oblongo-ovatae vel oblongae plerumque subdensiflorae.
- a. Squamae femineae cupreae vel ferrugineae. Utriculi plerumque praeter carinas prominentes nonnisi obsolete nervosi.
- I. Rhizoma stolones longos tenues emittens. Folia culmo breviora longe attenuata, vaginae inferiores brunneae subintegrae. Utriculi squamas subsuperantes parce pubescentes breviter rostrati, rostrum conspicuum.
1. Utriculi praeter carinas obsolete nervosi. 123. *C. caryophyllea* LATOURETTE (p. 129)
2. Utriculi plurinervi.
- * Spiculae femineae oblongae densiflorae approximatae vel ima remota. Utriculi obovati.
- § Folia erecta. Spiculae 3-4, femineae 6-10 mm longae. Utriculi subinflat. 124. *C. nervata* FRANCH. et SAV. (p. 130, Fig. 77, 78)
- §§ Folia recurva. Spiculae 2-3, femineae 1-2 cm longae. Utriculi inflati.
- ° Utriculi parce pubescentes. Culmus elata 126. *C. squamoidea* AKIYAMA (p. 132, Fig. 80)
- °° Utriculi dense puberuli. Culmus ad 25 cm altus 127. *C. yesoensis* KOIDZUMI (p. 132)
- ** Spiculae femineae cylindricae subtaxiflorae remotiusculae. Utriculi ovato-fusiformes 125. *C. microtricha* FRANCHET (p. 131, Fig. 79)
- II. Rhizoma vix caespitosum stolones satis longos agens. Folia culmo valde breviora, vaginae brunneae subintegrae. Rostrum utriculi breviorum 128. *C. praestabilis* OHWI (p. 133)
- III. Rhizoma caespites densos formans. Folia demum valde elongata breviter acuminata, vaginae inferiores atrobunneae comose dissolutae. Utriculi squamas superantes hirtelli distinctius rostrati.

1. Spiculae femineae oblongo-ovatae sessiles vel breviter pedunculatae. Bractee superiores squamiformes. Utriculi obovati 2.5-3 mm longi evidenter nervosi. 129. *C. sabynensis* LESSING (p. 133, Fig. 81)
2. Spiculae femineae oblongae exsertae pedunculatae. Bractee omnes spathaceae. Utriculi obovato-oblongi 4-5 mm longi 130. *C. blepharicarpa* FRANCH. (p. 134, Fig. 82)
- b. Squamae femineae pallide lutescentes (vide tamen *C. subumbellatam*) Utriculi plerumque nervis pluribus conspicuis percursi.
- I. Spiculae femineae cum spiculam masculinam non valde distantes.
1. Squamae femineae longius aristatae. Utriculi plerumque pubescentes.
- * Squamae femineae pallide lutescentes.
- § Vaginae foliorum marcidiae.
- Culmus tenuis. Spiculae obovatae subaxilliflorae.
- × Folia longe attenuata 2-4 mm lata (saepe angustioris). Utriculi grandiores.
- △ Spicula masculina linearis 131. *C. Royleana* NEES. (p. 135, Fig. 83)
- △△ Spicula masculina inconspicua 132. *C. aphanandra* FRANCH. et SAV. (p. 136)
- ×× Folia angustior. Utriculi minores.
- △ Bractea ima culmum vaginans 133. *C. filiculmis* FRANCH. et SAV. (p. 136)
- △△ Bractee omnes evaginantes 134. *C. discoidea* BOOTT (p. 137, Fig. 84)
- Culmus firmior basi vaginis valde fibrillosis obtectus. Spiculae ovatae densiflorae . 135. *C. fibrillosa* FRANCH. et SAV. (p. 137, Fig. 85)
- §§ Vaginae foliorum integrae . . 141. *C. lonchophora* OHWI (p. 139)

- ** Squamae femineae fusco-ferrugineae 136. *C. subumbellata* MEINSH.
(p. 138)
2. Squamae femineae mucronulatae. Utriculi glabri.
- * Spiculae femineae subdensiflorae.
- § Rhizoma stoloniferum. Spicula infima non subradicalis.
- Spiculae globoso-ovatae pauciflorae subsessiles. Planta humilis. 137. *C. perangusta* OHWI (p. 139)
- Spiculae oblongo-ovatae incluse pedunculatae. Planta elatioris 138. *C. Kingiana* LÉV. et VNT.
(p. 139)
- §§ Rhizoma caespitosum. Spicula infima subradicalis brevipedunculata 139. *C. geantha* OHWI (p. 139)
- ** Spiculae femineae laxi- et pauciflorae 140. *C. jacens* C. B. CLARKE
(p. 139)
- II. Spiculae femineae cum spiculam masculinam valde distantes. 142. *C. pudica* HONDA
(p. 139, Fig. 86)
- B. Bractea ima longe vaginans. Spiculae femineae plerumque anguste cylindricae subtaxiflorae. Utriculi squamas superantes vel aequantes plerumque multinervi.
- a. Squamae femineae sordide-luteae apice repando-denticulatae.
- I. Spiculae sexu distinctae.
1. Utriculi fusiformes. Culmus centralis.
- * Spiculae nunquam fastigiatae. Filamenta libera.
- § Rostrum utriculi et carinae squamae non conspicue hispidum. Nux evidentius mitrata.
- Utriculi squamas longe superantes 143. *C. mitrata* FRANCHET
(p. 140, Fig. 87)
- Utriculi squamis aequilongi. 144. *C. Mariesii* C. B. CLARKE
(p. 141)
- §§ Rostrum utriculi et carinae squamae conspicue hispidum . 145. *C. scabro-aristata* AKIYAMA
(p. 141, Fig. 88)

- ** Spiculae saltem superiores fastigiatae. Filamenta basi connata.
 § Squamae masculinae non pocilliformes, femineae apice rotundatae, fimbriatae 146. *C. tristachya* THUNBERG
 (p. 141, Fig. 89, 1)
- §§ Squamae masculinae pocilliformes, femineae apice truncatae 147. *C. pocilliformis* BOOTT
 (p. 142, Fig. 89, 2-8)
- 2. Utriculi lageniformes. Culmus lateralis.
 * Bracteae vaginiformes. Squamae masculinae cucullatae . . . 149. *C. cucullata* (KÜKENTH.)
 OHWI (p. 142, Fig. 90)
- ** Bracteae foliaceae inflorescentiam subaequantes vel superantes. Squamae masculinae non cucullatae.
 § Bractea ima inflorescentiam subaequans 150. *C. formosensis* LÉV. et VNT.
 (p. 143)
- §§ Bractea ima inflorescentiam multo superans 151. *C. lutchensis* OHWI (p. 144)
- II. Spiculae omnino androgynae 148. *C. tumidula* OHWI (p. 142)
- b. Squamae femineae fulvae vel pallide rufae vel omnino pallidae apice truncatae mucronatae. Utriculi ovato- vel obovato-elliptici.
 I. Rhizoma tenue plerumque stoloniferum. Folia 1-3 mm lata. (Spiculae superiores ± approximatae. Bracteae tubuloso-vaginant.)
 1. Vaginae inferiores clare brunneae.
 * Folia villosa et supra stellato-floccosa. Utriculi breviter rostrati virides striati pubescentes . 152. *C. hololasius* LÉV. et VNT.
 (p. 144)
- ** Folia glabra vel villosa sed nunquam stellato-floccosa. Utriculi mediocriter longe rostrati pallidi.
 § Culmus 15-20 cm altus. Folia perangusta saepe canaliculata. Spicula masculina linearis, femineae 0.5-1 cm longae . . . 153. *C. tenuissima* BOOTT
 (p. 144, Fig. 91)
- §§ Culmus 15-50 cm altus. Folia 1.5-2 mm lata. Spicula masculina subclavato-cylindrica, femineae 2-3 cm longae.

- °Culmus laevis. Folia glabra. 154. *C. sikokiana* FRANCH. et SAV. (p. 145, Fig. 92)
- °°Culmus pilosus. Folia villosula. 155. *C. Duvaliana* FRANCH. et SAV. (p. 147, Fig. 93)
2. Vaginae inferiores fusco-brunneae.
- * Spiculae subsessiles ima remota pedunculata. Squamae femineae fulvo-ferrugineae vel pallescentes. Utriculi breviter hirtelli.
- § Rhizoma caespites parvos formans.
- ° Utriculi obovato-elliptici.
- × Culmus 30–40 cm altus. Squamae femineae fulvo-ferrugineae 156. *C. pisiformis* BOOTT (p. 147, Fig. 94)
- ×× Culmus 50 cm altus. Squamae femineae pallescentes. 158. *C. polyschoena* LÉV. et VNT. (p. 148)
- °° Utriculi late ovati basi cuneati 157. *C. cuneata* OHWI (p. 148)
- §§ Rhizoma caespites densos formans. 159. *C. stenostachys* FRANCH. et SAV. (p. 148)
- ** Spiculae omnes remotae longe exertae pedunculatae. Squamae femineae saepe pallidae. Utriculi glabrescentes nitidi 160. *C. sachalinensis* FR. SCHM. (p. 148, Fig. 95)
- II. Rhizoma crassum vel stoloniferum. Folia latiora.
1. Rhizoma caespitosum. Folia 4–6 mm lata. Spiculae fere approximatae. Bractaeae longe vaginantes. 161. *C. oshimensis* NAKAI (p. 149, Fig. 96)
2. Rhizoma crassum oblique elongatum vel caespitosum. Spiculae omnes remotae.
- * Spiculae omnes vel laterales omnes androgynae. (Folia 2–4 mm lata.)
- § Squamae castaneae fuscaeve. Utriculi 5 mm longi. 162. *C. Reinii* FRANCH. et SAV. (p. 150, Fig. 97)
- §§ Squamae albo-stramineae. Utriculi 2–2.5 mm longi. (Nux evidenter mitrata.) 170. *C. Doiana* AKIYAMA (p. 155, Fig. 102)

- ** Spiculae sexu distinctae. Vaginae inferiorum foliorum fuscae.
- § Folia 3-8 mm lata breviter acuminatae. Spiculae femineae anguste cylindricae laxiflorae. Utriculi trigoni. Nux annulo dilatato coronata.
- Utriculi squamas vix superantes in rostrum breve vel mediocre marginibus laeve abeuntes.
- × Culmus 15-30 cm altus. Utriculi subovato-elliptici.
- △ Utriculi pubescentes . . . 163. *C. multifolia* OHWI (p. 151, Fig. 98)
- △△ Utriculi glabri 164. *C. atroviridis* OHWI (p. 152)
- ×× Culmus elatior. Utriculi oblongo-lanceolati 165. *C. shimotsukensis* HONDA (p. 152)
- Utriculi squamis minores in rostrum sublongum marginibus scabrum abeuntes . . . 166. *C. temnolepis* FRANCH. (p. 152)
- §§ Folia 1-2-4 mm lata longe attenuata. Spiculae femineae breviter cylindricae sublaxiflorae. Utriculi subinflato-trigoni. Nux annulo brevi non dilatato coronata.
- Squamae femineae hyalinae vel pallidae. Utriculi apice bifidi.
- × Utriculi oblongo-ovati 3 mm longi 167. *C. conicoides* HONDA (p. 152, Fig. 99)
- ×× Utriculi late obovati 2 mm longi 168. *C. Tashiroana* OHWI (p. 153)
- Squamae femineae pallide rufae vel rubescentes. Utriculi apice integri 169. *C. conica* BOOTT (p. 153, Fig. 100, 101)

Sect. 31. Digitatae FRIES (p. 15 et pp. 155-158)

Clavis specierum

- A. Squamae aristatae vel mucronatae.
- a. Folia 3-4 mm lata. Spiculae femineae densiores inferiores vel omnes subradicales in-

- aequaliter longe pedunculatae, oblongo-ovatae parvulae. Utriculi 4 mm longi stramineo-virides. 171. *C. lasiolepis* FRANCHET (p. 155, Fig. 103)
- b. Folia 1-3 mm lata. Spiculae femineae laxi- et pauciflorae breviter vel mediocriter pedunculatae erectae, approximatae vel remotae sed nunquam subradicales. Utriculi 3 mm longi pallide virides.
- I. Spiculae 1 cm longae pauciflorae. . . . 172. *C. lanceolata* BOOTT (p. 156, Fig. 104)
- II. Spiculae brevissimae 1-2-florae 173. *C. humilis* LEYSSER (p. 158)
- c. Spiculae femineae subdensiflorae subsessiles vel breve pedunculatae cylindricae ad 2 cm longae. Utriculi 2.5 mm longi pallide virides 174. *C. Yoshinoi* OHWI (p. 158)
- B. Squamae muticae. 175. *C. delicatula* C. B. CLARKE (p. 158)

Sect. 32. Limosae TUCKERMAN (p. 15 et pp. 158-163)

Clavis specierum

- A. Bracteae breviter vaginantes.
- a. Culmus rigidulus obtusangulus laevis. Folia plana. Spiculae femineae pauci- et laxiflorae. Squamae femineae late ovatae obtusae involventes. Utriculi ellipsoidei subinflato-trigoni erostrati 176. *C. rariflora* (WAHL.) SMITH. (p. 158)
- b. Culmus rigidus vel gracilis triqueter superne scaber. Spiculae femineae subdensiflorae. Squamae femineae angustiores cuspidatae vel mucronatae. Utriculi ovati compresso-trigoni.
- I. Culmus rigidus acutangulus. Folia 3-5 mm lata. Spiculae femineae 2-3 cm longae. Utriculi 5-6 mm longi 177. *C. grandilimosa* AKIYAMA (p. 159, Fig. 105)
- II. Culmus gracilis. Folia canaliculata vel ad 3 mm lata. Spiculae femineae 5-20 mm longae. Utriculi 3-4 mm longi.
1. Rhizoma longe stoloniferum. Folia canaliculata. Spiculae femineae 1-2 pluriflorae. Squamae femineae cuspidato-mucronatae cupreae persistentes. Utriculi coesii plurinervi brevis rostrati 178. *C. limosa* LINNAEUS (p. 160, Fig. 106)

2. Rhizoma breviter stoloniferum.

Folia plana. Spiculae femineae 2-3
subpauciflorae. Squamae femineae
longe acuminatae atro-purpureae
mox deciduae. Utriculi pallide
coesii obsolete striati suberostres.

* Culmus elatus 179. *C. magellanica* LAM.
(p. 161, Fig. 107)

** Culmus nonnisi 10 cm longus . . 180. *C. Fujitae* KUDO (p. 162)

B. Bracteeae longe vaginantes 181. *C. laxa* WAHLENB.
(p. 162, Fig. 108)

Sect. 33. Paniceae TUCKERMAN (p. 15 et p. 163)

Species unica 182. *C. sparsiflora* (WAHL.)
STEUDEL (p. 163)

Sect. 34. Griseae BAILEY (p. 15 et p. 163)

Species unica 183. *C. kamikochiana* NAKAI
(p. 163)

Sect. 35. Careyanae TUCKERMAN (p. 16 et pp. 163-165)

Clavis specierum

A. Spiculae cylindricae exerte pedunculatae,
pedunculi compressi, pars feminea laxiflora.
Stigmata tenuis. Utriculi 4 mm longi, apice
obtusos suberostres vel in rostrum brevissimum
integrum contracti.

a. Folia marginibus ciliato-barbata. Utriculi
dense pubescentes 184. *C. ciliato-marginata* NAKAI
(p. 163, Fig. 109)

b. Folia mollia. Utriculi glabri 185. *C. siderosticta* HANCE
(p. 164)

B. Spiculae parvulae globosae, pars feminea sub-
densiflora. Stigmata breviter crassa. Utriculi

2.5 mm longi apice obtuso erostrati 186. *C. pachygyna* FRANCH. et
SAV. (p. 165)

Sect. 36. Frigidae FRIES (p. 16 et pp. 165-178)

Clavis subsectionum

A. Spiculae 2-3 approximatae sessiles oblongo-
ovatae pauciflorae. Bracteeae vix vaginantes . . Subsect. 1. *Mucronatae* p. 34

B. Spiculae plures plus vel minus remotae pedun-
culatae oblongae vel cylindricae pluriflorae.

- a. Bracteae evaginantes.
 - I. Utriculi vix obsolete nervosi, rostrum rectum. Stigmata 2. (in *C. tenuiseta* 3.). Subsect. 2. *Podogynae* pp. 34-35
 - II. Utriculi conspicue nervosi, rostrum demum incurvum. Stigmata 3 Subsect. 3. *Curvicolles* p. 35
- b. Bracteae vaginantes. Stigmata 3.
 - I. Spiculae omnes androgynae numerosas plurinae Subsect. 4. *Decorae* p. 36
 - II. Spiculae laterales mere femineae haud numerosas singulae.
 - 1. Folia lata. Spicula terminalis saepe gynaecandra, laterales femineae subclavato-oblongae vel latiores densiflorae subcrassae. Squamae femineae atro-fuscae. Utriculi glabri enerves Subsect. 5. *Fuliginosae* p. 36
 - 2. Folia augusta. Spicula terminalis masculina, laterales femineae cylindricae laxiores. Squamae femineae fuscae vel rufae. Utriculi adpresso-hispidi obsolete nervosi . Subsect. 6. *Ferrugineae* p. 36

Subsect. 1. *Mucronatae* NYMAN. (p. 33 et p. 165)

Species unica 187. *C. mira* KÜKENTHAL (p. 165)

Subsect. 2. *Podogynae* TH. HOLM. (p. 34 et pp. 165-171)

Clavis specierum

- A. Stigmata 2.
 - a. Culmus gracilis triqueter. Folia 2-4 mm lata. Rostrum utriculi bifurcatum, crura patentia. Stigmata perlonga.
 - I. Utriculi adpresso-hirti epapilloso vel papilloso marginibus hispiduli, rostrum longum profunde bifurcatum.
 - 1. Vaginae culmi integrae. Utriculi longe rostrati.
 - * Spiculae 1-1.5 cm longae approximatae breviter pedunculatae. Utriculi oblongo-ovati 3-4 mm longi. 188. *C. Doenitzii* BOECK. (p. 165, Fig. 110)
 - ** Spiculae 2-3 cm longae contiguae sessiles. Utriculi angustiores 5-6 mm longi. 189. *C. Okuboi* FRANCHET (p. 166, Fig. 111)

2. Vaginae culmi reticulatae. Utriculi breviter rostrati 190. *C. shakushizawaensis* AKIYAMA (p. 168, Fig. 112)
- II. Utriculi papillosoi glabri marginibus laeves vel parce scabri, rostrum breve breviter bifurcatum.
 1. Utriculi dense papillosoi marginibus laeves 191. *C. kattaiana* KÜKENTHAL (p. 168)
 2. Utriculi minute papillosoi marginibus parce scabri 192. *C. levicuspis* OHWI (p. 168)
- b. Culmus subvalidus compresso-triqueter. Folia ad 11 mm lata. Rostrum utriculi leviter bidentatum. Stigmata mediocriter longa.
 - I. Spiculae femineae oblongo-cylindricae. Utriculi oblongo-lanceolati 5 mm longi parce pilosi breviter stipitati.
 1. Squamae femineae apice mucronatae. 193. *C. uzenensis* KOIDZUMI (p. 168, Fig. 113)
 2. Squamae femineae longe aristatae. 194. *C. scitaeformis* KÜKENTH. (p. 169)
 - II. Spiculae femineae ovatae vel obovatae percrassae. Utriculi lineari-lanceolati 10-20 mm longi glabri, in stipitem perlongum hirto-pilosum abeuntes 195. *C. podogyna* FRANCHET (p. 169, Fig. 114)
- B. Stigmata 3 196. *C. tenuiseta* FRANCHET (p. 170, Fig. 115)

Subsect. 3. *Curvicolles* KÜKENTHAL (p. 34 et pp. 171-172)

Clavis specierum

- A. Culmus acutangulus superne scaber. Utriculi squamas paullo superantes oblongo-lanceolati basi attenuati.
 - a. Utriculi 4 mm longi. 197. *C. sharensis* FRANCHET (p. 171)
 - b. Utriculi 2 mm longi. 198. *C. infirma* C. B. CLARKE (p. 171)
- B. Culmus compressus laevis. Utriculi squamas valde superantes lanceolati basi rotundati.
 - a. Spiculae femineae 3, sessiles 1-2.5 cm longae. Squamae marginibus albo-hyalinae. Utriculi ore oblique truncati 199. *C. Savatieri* FRANCHET (p. 171, Fig. 116)
 - b. Spiculae femineae 4-5, omnes sessiles vel paullo pedunculatae 3-5 cm longae. Squamae marginibus rufae. Utriculi ore curvati. 200. *C. curvicollis* FRANCH. et SAV. (p. 172, Fig. 117)

Subsect. 4. *Decorae* KÜKENTHAL (p. 34 et pp. 172-173)

- Species unica. 201. *C. Ogawai* AKIYAMA
(p. 172, Fig. 118)

Subsect. 5. *Fuliginosae* TUCKERMAN (p. 34 et pp. 173-174)

- Species unica. 202. *C. siroumensis* KOIDZUMI
(p. 173, Fig. 119)

Subsect. 6. *Ferrugineae* TUCKERMAN (p. 34 et pp. 174-178)*Clavis specierum*

- A. Spicula masculina cylindrica 4-7 cm longa, femineae 2-4 cm longae. Utriculi 3.5 mm longi. 203. *C. chrysolepis* FRANCH. et SAV. (p. 174, Fig. 120)
- B. Spicula masculina linearis non super 2 cm longa.
- a. Utriculi oblongo-fusiformes 6-8 mm longi glabri. (Spiculae femineae 3-4 cm longae) 204. *C. stenantha* FRANCH. et SAV. (p. 175, Fig. 121, 122)
- b. Utriculi oblongo-elliptici vel obovato-oblongi hirti.
- I. Spiculae parum remotae multiflorae. Utriculi oblongo-elliptici parce hirti.
1. Bracteae breviter laminatae. Utriculi 4-5 mm longi nonnisi rostrum versus parce adpresso-hirti, rostrum perlongum ore profunde bidentatum 205. *C. tenuiformis* LÉV. et VNT. (p. 177)
2. Bracteae vix laminatae. Utriculi 6-7 mm longi (sed in var. 4.5-5 mm longi) per totam faciem adpresso-hirti, rostrum perlongum ore profunde-bidentatum 206. *C. odontostoma* KÜKENTHAL (p. 177)
- II. Spiculae pauci-et laxiflorae, ima subradicalis. Utriculi obovato-oblongi dense hirti. 207. *C. hirtifructus* KÜKENTHAL (p. 177, Fig. 123)

Sect. 37. *Hymenochlaenae* DREJER (p. 16 et pp. 178-188)*Clavis subsectionum*

- A. Utriculi subinflato-trigoni plerumque breviter rostrati, rostrum ore truncatum vel emarginatum. (Spiculae terminalis masculina, late-

- rales femineae oblongae pauci- et laxi-florae.
 Bractae brachyphyllae. Squamae femineae
 obtusae mox deciduae.) Subsect. 1. *Capillares* p. 37
- B. Utriculi plerumque longe rostrati rostrum
 demum bidentulum.
- a. Utriculi plano-convexi. Stigmata 2. . . . Subsect. 3. *Graciles* p. 38
- b. Utriculi trigoni. Stigmata 3.
- I. Spiculae laterales lineari-cylindricae
 laxiflorae. Utriculi oblongo-lanceolati
 obsolete trigoni, rostrum sublongum
 ore oblique sectum demum grosse
 bidentatum (vide tamen *C. nagasa-*
kensis) Subsect. 2. *Debiles* pp. 37-38
- II. Spiculae laterales cylindricae apice
 densiflorae. Utriculi ovato-lanceolati
 subinflato-trigoni, rostrum perlongum
 ore leviter bidentulum Subsect. 4. *Longirostres* pp. 38-39

Subsect. 1. *Capillares* ASCHERSON

et GRAEBNER (p. 37 et pp. 178-180)

Clavis specierum

- A. Folia canaliculata. Spiculae femineae parvulae.
 Utriculi 2.5 mm longi breviter rostrati. 208. *C. Sedakowii* C. A. MEYER
 (p. 178)
- B. Folia plana. Spiculae femineae longiores.
 Utriculi 3 mm longi longius rostrati.
- a. Culmus obtusangulus. Folia 1.5-2 mm lata
 rigidula. Spiculae femineae laxiores cer-
 nuae. Squamae femineae fulvae vel cas-
 taneae marginibus latissime albo-hyalinae.
 Utriculi in rostrum medioere rectum de-
 sinentes 209. *C. capillaris* LINNAEUS
 (p. 179, Fig. 124)
- b. Culmus compresso-triqueter. Folia 3 mm
 lata mollia. Spiculae femineae cupreae
 marginibus anguste hyalinae. Utriculi in
 rostrum longum marginibus scabrum ex-
 curvum abeuntes 210. *C. koreana* KOMAROV
 (p. 179, Fig. 125)

Subsect. 2. *Debiles* CAREY (p. 37 et pp. 180-181)

Clavis specierum

- A. Spiculae 6-8. Squamae lanceolatae. Utriculi
 anguste lanceolati in rostrum demum grosse
 bidentati 211. *C. bostrychostigma* MAXIM.
 (p. 180, Fig. 126)

- B. Spiculae 3-6. Squamae ovatae. Utriculi ellipsoidei in rostrum subintegrum.
- a. Bracteae culmum superantes 212. *C. nagasakensis*
C. B. CLARKE (p. 181)
- b. Bracteae culmo breviores 213. *C. niko-montana* AKIYAMA
(p. 181, Fig. 127)

Subsect. 3. *Graciles* TUCKERMAN (p. 37 et pp. 182-186)

Clavis specierum

- A. Spiculae 1-3 cm longae. Squamae acuminatae. Utriculi 3-5 mm longi.
- a. Utriculi ovaes basi cuneatim attenuati. Stylus longus.
- I. Spicula terminalis gynaeandra.
1. Utriculi pubescentes 214. *C. brunnea* THUNBERG
(p. 182, Fig. 128)
2. Utriculi nonnisi marginibus scabri ceterum glabri. Planta humilis . 216. *C. sendaica* FRANCH. (p. 183)
- II. Spicula terminalis masculina 215. *C. autumnalis* OHWI (p. 183)
- b. Utriculi elliptici basi longe stipitati. Stylus longissimus.
- I. Culmus 30-50 cm altus gracilis. Stigmata utriculis subduplo longiores . . . 217. *C. teiogyna* BOOTT var. *scaberriculmis* KÜK.
(p. 183, Fig. 129)
- II. Culmus ad 35 cm altus filiformis gracilimus. Stigmata utriculis parum minores.
1. Utriculi 4.5 mm longi oblongo-ovati. 218. *C. kasugayamensis*
AKIYAMA (p. 184, Fig. 130)
2. Utriculi 3.5 mm longi angustiores . 219. *C. sacrosancta* HONDA
(p. 185, Fig. 131)
- B. Spiculae 6-10 mm longae. Squamae obtusae. Utriculi ovaes 2 mm longi 220. *C. amami-oshimensis* AKIYAMA (p. 186, Fig. 132)

Subsect. 4. *Longirostres* KÜKENTHAL (p. 37 et pp. 186-188)

Clavis specierum

- A. Bracteae longiore vaginantes. Utriculi obtuse trigoni 221. *C. metallica* LÉVEILLÉ
(p. 186)
- B. Bracteae breviter vaginantes. Utriculi subinflato-trigoni.
- a. Spiculae femineae remotae longe pedunculatae. Nux utriculum laxè inclusa . . . 222. *C. Arnellii* CHRIST. (p. 187)

- b. Spiculae femineae approximatae breviter pedunculatae. Nux utriculorum explens . . 223. *C. hondoensis* OHWI (p. 187, Fig. 133)

Sect. 38. *Tumidae* KÜKENTHAL (p. 16 et pp. 188-198)

Clavis specierum

- A. Rhizoma caespitosum.
- a. Spicula masculina lineari-cylindrica, femineae oblongo-cylindricae 2-3 cm longae. Utriculi squamas parum superantes patentes, brunneo-virides, rostrum ore bidentatum.
- I. Utriculi late ovati 3 mm longi brevirostrati 224. *C. Brownii* TUCKERM. (p. 188)
- II. Utriculi ovati 5-6 mm longi longirostrati.
1. Spiculae sexu distinctae 225. *C. transversa* BOOTT (p. 188)
- ? 2. Spiculae laterales androgynae. 238. *C. macromollicula* NAKAI (p. 189)
- b. Spicula masculina filiformis, femineae anguste cylindricae ad 6 cm longae. Utriculi squamas 3-4-plo superantes suberecti, brunneo-olivacei, rostrum longum ore hyalino emarginatum 226. *C. ischnostachya* STEUDEL (p. 189, Fig. 134)
- B. Rhizoma stoloniferum. Rostrum utriculi longum.
- a. Rhizoma stolones validos agens. Utriculi plerumque brunneo-virides. Spicula masculina lineari-cylindrica. Rostrum non tumidum. Styli basis aequalis.
- I. Utriculi scabri, ovati vix inflati 3 mm longi brunneo-olivacei 227. *C. nemostachys* STEUDEL (p. 190, Fig. 135)
- II. Utriculi glabri.
1. Utriculi brunneo-virides rugulosi.
- * Culmus basi vaginis aphyllis rubentibus valde reticulatim fissis obtectus. Utriculi subinflato-trigoni tenuiter striati rostrati 228. *C. dispalata* BOOTT (p. 190, Fig. 136)
- ** Culmus basi vaginis brunneis vel purpureis foliiferis integris obtectus. Utriculi magis inflati, plurinervi, breviter vel medio-criter rostrati 229. *C. confertiflora* BOOTT (p. 191, Fig. 137)

2. Utriculi lutescentes 230. *C. persistens* OHWI (p. 193)
- b. Rhizoma stolones tenues agens. Utriculi stramineo-virides.
- I. Culmus obtuse triqueter. Spiculae superiores 1-2 masculinae laterales femineae basi floribus paucis masculinis praeditae. Bractee longe vaginantes. Squamae femineae fusco-rubentes 231. *C. alliiformis* C. B. CLARKE (p. 193, Fig. 138)
- II. Culmus compresso-triqueter. Spiculae terminalis masculina laterales mere femineae. Bractee evaginant. Squamae femineae pallide fulvae vel sordide stramineae.
1. Spiculae inferiores remotae plerumque pedunculatae. Bractee omnes foliaceae erectae. Utriculi hexastichi oblique patentes.
- * Culmus compresso-triqueter. Utriculi stramineo-virides, rostrum medio subtumens. Stylus in collo insidens basi incrassatus.
- § Folia 3-4 mm lata. Spiculae femineae oblongo-ovatae vel oblongo-cylindricae 1-3 cm longae.
- ° Spiculae femineae omnes pedunculatae 232. *C. japonica* THUNB. (p. 194, Fig. 139)
- °° Spiculae femineae sessiles.
- × Rostrum utriculi emarginatum 233. *C. aphanolepis* FRANCH. et SAV. (p. 195, Fig. 140)
- ×× Rostrum utriculi bidentatum 234. *C. japonicaeformis* NAKAI (p. 196)
- §§ Folia 6-12 mm lata. Spiculae femineae cylindricae 3-6 cm longae subsessiles 235. *C. Doniana* SPRENG. (p. 196, Fig. 141)
- ** Culmus anceps. Utriculi pallide virides, rostrum in medio nullo modo tumens. Stylus basi aequalis 236. *C. planiculmis* KOMAROV (p. 197, Fig. 142)

2. Spiculae approximatae sessiles.
 Bractea ima foliacea divaricata.
 Utriculi subdistichi demum sub-
 reflexi 237. *C. mollicula* BOOTT
 (p. 197, Fig. 143)

Sect. 39. Rhomboidales KÜKENTHAL (p. 16 et pp. 198-216)

Clavis specierum

- A. Spicula masculina lineari-cylindrica. Spiculae
 femineae cylindricae.
- a. Utriculi compressi marginibus et basi
 versus stipitem alati. Nux apice mitrata.
 Stigmata 2 239. *C. Matsumurae* FRANCHET
 (p. 198, Fig. 144)
- b. Utriculi ventricosi nunquam alati. Stig-
 mata 3.
- I. Spiculae femineae subdensiflorae vel
 laxiores. Utriculi 3-3.5 mm longi de-
 mum divaricati. Nux breviter rostrata
 apice hastata.
1. Rhizoma oblique caespitosum. Cul-
 mus centralis. Spiculae femineae
 basi breviter masculinae vel sexu
 distinctae. Squamae femineae
 longe aristatae.
- * Spiculae remotae ima longe
 pedunculata. Bractee breves.
 § Culmus vix 15 cm altus 241. *C. sociata* BOOTT
 (p. 200, Fig. 146)
 §§ Culmus 30-45 cm altus 240. *C. chinensis* RETZ.
 (p. 199, Fig. 145)
- ** Spiculae apice congestae ima
 incluse pedunculata. Bractee
 inferiores inflorescentiam supe-
 rantes 242. *C. uber* OHWI (p. 201)
2. Rhizoma dense caespitosum et
 stoloniferum. Culmus lateralis.
 Spiculae femineae apice breviter
 masculinae. Squamae femineae
 mucronatae. Utriculi plurinervi.
- * Folia rigida. Utriculi squamas
 superantes in rostrum recurvi-
 divaricati 243. *C. Morrowii* BOOTT
 (p. 201, Fig. 147)

- ** Folia mollior. Utriculi squamis
plerumque minores in rostrum
non recurvi-divaricati 244. *C. foliosissima* FR. SCHM.
(p. 203)
- II. Spiculae femineae oblongo-cylindricae
perdensiflorae. Utriculi 5-6 mm longi.
Nux nonnisi styli basi incrassata coro-
nata 245. *C. oahuensis* var. *Boottiana*
KÜKENTH. (p. 204) et var.
robusta FRANCH. et SAV.
(p. 204, Fig. 148)
- B. Spicula masculina saepe subclavata. Spiculae
femineae oblongae vel ovatae, omnes laterales.
- a. Nux medio excavatula oblique stipitata
apice hastata.
- I. Folia 6-12 mm lata. Utriculi longe-
rostrati. 246. *C. insaniae* KOIDZ.
(p. 204, Fig. 149)
- II. Folia angustiora. Utriculi longiore
rostrati 247. *C. papillaticulmis* OHWI
(p. 205)
- b. Nux lateribus inferne concavis apice
nonnisi styli basi incrassata persistente
coronata.
- I. Nux medio constricta.
1. Spiculae femineae 2-3 cm longae
subdensiflorae 249. *C. laticeps* C. B. CLARKE
(p. 206)
2. Spiculae femineae 8 mm longae
2-5-florae. 252. *C. nankaiensis* HONDA
(p. 207)
- II. Nux lateribus inferne concavis medio
non constricta.
1. Spicula masculina subclavata. Spi-
culae femineae omnes remotae.
Nux epapillosa.
- * Spiculae femineae subdensiflorae.
Caules foliaque glabri.
- § (Culmus centralis.) Spicula
feminea 1. Squamae femineae
castaneae. Rostrum utriculi
profunde bidentatum 248. *C. longerostrata* C. A. MEY.
(p. 205, Fig. 150)
- §§ (Culmus lateralis vel centralis
?) Spiculae femineae 1-2. Squ-
amae femineae hyalinae vel
virentes. Rostrum utriculi
grosse bidentatum.

- ° Culmus centralis? Squamae
femineae hyalinae.
- × Nux fusca apice breviter
rostrata.
- △ Vagina non pubescentes. 250. *C. subdita* OHWI (p. 206)
- △△ Vagina pubescentes. . . 251. *C. Mayebarana* OHWI
(p. 207)
- ×× Nux straminea apice dis-
cigerum dilatatum con-
tracta 253. *C. kiyozumiensis* AKIYAMA
(p. 207, Fig. 151)
- °° Culmus lateralis. Squamae
femineae virentes 254. *C. macrandrolepis*
LEVEILLÉ et VANIOT
(p. 208, Fig. 152)
- ** Spiculae femineae laxiflorae.
Caules foliaque pilosa. 255. *C. pilosa* SCOPOLI (p. 208)
- 2. Spicula masculina lineari-cylin-
drica. Spicula feminea ima saepe
longe pedunculata. Nux dense albo-
papillosa.
- * Tota planta papillosa. Spiculae
femineae omnes remotae longe
pedunculatae subnutantes . . . 256. *C. papulosa* BOOTT
(p. 209, Fig. 153)
- ** Praeter nucem epapillosa. Spi-
culae femineae superiores minus
vel plus approximatae sessiles vel
breviter pedunculatae erectae.
- § Vaginae basin cingentes brun-
neae dissolutae. (Culmus cen-
tralis. Folia lata. Utriculi fusi-
formes brunneo-virides glabri).
- ° Culmus 60-90 cm altus. Folia
4-10 mm lata. Spiculae femi-
neae pluriflorae. 257. *C. parviflora* BOOTT (p. 211)
- °° Culmus 12-13 cm altus. Folia
saepe nonnisi 2-4 mm lata.
Spiculae pauciflorae.
- × Utriculi fusiformi-elliptici. 258. *C. macroglossa* FRANCH. et
SAVAT. (p. 211, Fig. 154)
- ×× Utriculi angustiores. Squ-
amae latae albo-margi-
natae. 259. *C. gagaensis* AKIYAMA
(p. 212, Fig. 155)
- §§ Vaginae inferiores aphyllae
purpureae integrae.
- ° Spiculae femineae dissitiflo-
rae. Utriculi 4-5 mm longi.

- × Bractea ima culmo breviora. 260. *C. filipes* FRANCH. et SAV.
(p. 213, Fig. 156)
- ×× Bractea ima culmo longiora. Spicula ima subradicalis 261. *C. arisanensis* HAYATA var.
tremula OHWI (p. 215)
- ∞ Spiculae femineae densiores. Utriculi 5-6 mm longi. (Culmus superne parce pilosus. Folia pilosa. Bracteae culmo breviores) 262. *C. villosa* BOOTT
(p. 215, Fig. 157)

Sect. 40. Spirostachyae DREJER (p. 16 et pp. 217-218)

Clavis specierum

- A. Culmus 40 cm altus gracillimus. Utriculi 7 mm longi ovati apice bidentati.
- a. Utriculi profunde bidentati 263. *C. tenuistachya* NAKAI
(p. 217, Fig. 158)
- b. Utriculi vix bidentati 264. *C. daisenensis* NAKAI
(p. 217, Fig. 159)
- B. Culmus 5-15 cm altus laevis. Utriculi 2-3 mm longi orbiculato-ovati, apice in rostrum integrum.
- a. Rhizoma caespitosum 265. *C. Oederi* RETZ. var. *viridula* (MICHX.) KÜKENTH.
(p. 217, Fig. 160)
- b. Rhizoma stoloniferum 266. *C. vernicosa* FRANCHET
(p. 218)

Sect. 41. Pseudo-cypereae TUCKERMAN (p. 17 et pp. 218-219)

Clavis specierum

- A. Spiculae femineae longe pedunculatae demum pendulae. Utriculi coriacei demum reflexi ovato-lanceolati vel ellipsoidei multicostati longe rostrati. 267. *C. pseudo-cyperus* LINNAEUS
(p. 218)
- B. Spiculae femineae subsessiles vel ima tantum pedunculata erectae. Utriculi membranacei subulato-lanceolati compresso-trigoni longissime rostrati pluricostati 268. *C. brachystachya* AKIYAMA
(p. 219, Fig. 161)

Sect. 42. *Physocarpae* DREJER (p. 17 et pp. 220-226)

Clavis subsectionum

- A. Utriculi 9-13 mm longi multicostati sensim longe rostrati. Styli basis incrassata Subsect. 1. *Lupulinae* p. 45
- B. Utriculi 6-10 mm longi paucinervi. Styli basis subincrassata.
 - a. Utriculi in rostrum longum tenue contracti. Subsect. 2. *Tentaculatae* p. 45
 - b. Utriculi in rostrum mediocri vel breve conicum desinentes Subsect. 3. *Vesicariae* p. 45

Subsect. 1. *Lupulinae* TUCKERMAN (p. 45 et pp. 220-222)

Clavis specierum

- A. Rhizoma caespitosum. Culmus obtuse triqueter. Spiculae femineae subglobosae subaxilliflorae. Bractee vaginantes. Utriculi lineari-oblongi minus inflati basi spongiosa contracti 269. *C. Michauxiana* BOECK. (p. 220, Fig. 162)
- B. Rhizoma stoloniferum. Culmus acute triqueter. Bractee evaginantes. Utriculi ovato-conici valde inflati basi rotundati 270. *C. Idzuroei* FRANCH. et SAV. (p. 221, Fig. 163)

Subsect. 2. *Tentaculatae* TUCKERMAN (p. 45 et pp. 222-223)

- Species unica 271. *C. Dickinsonii* FRANCH. et SAV. (p. 222, Fig. 164)

Subsect. 3. *Vesicariae* TUCKERMAN (p. 45 et pp. 223-226)

Clavis specierum

- A. Culmus obtusangulus vel magis triqueter. Utriculi demum divaricati abrupte rostrati.
 - a. Culmus magis triqueter. Folia 8-15 mm lata plana. Spiculae femineae crassae . . 272. *C. laevirostris* BLYTT. (p. 223, Fig. 165)
 - b. Culmus obtusangulus. Folia 2-3 mm lata canaliculata. Spiculae femineae graciliores. 273. *C. rotundata* WAHLENB. (p. 224)
- B. Culmus acutangulus. Folia ad 5 mm lata plana. Utriculi oblique patentibus subsensim rostrati.
 - a. Utriculi 6-8 mm longi 274. *C. vesicaria* L. (p. 224, Fig. 166)
 - b. Utriculi 3-3.5 mm longi 275. *C. saxatilis* L. (p. 226)

Sect. 43. Paludosae FRIES (p. 17 et pp. 226-230)

Clavis specierum

- A. Spiculae femineae cylindricae. Utriculi subcoriacei. 276. *C. riparia* CURT. var. *rugulosa* KÜKENTH. (p. 226)
- B. Spiculae femineae globoso-ovatae vel oblongo-cylindricae. Utriculi coriacei vel suberosi.
- a. Folia subcanaliculata. Spiculae femineae 1-2 globoso- vel oblongo-ovatae.
- I. Squamae femineae clare brunneae. Utriculi oblongo-ellipsoidei 277. *C. scabrifolia* STEUDEL (p. 226, Fig. 167)
- II. Squamae femineae castaneae. Utriculi late ovati. 278. *C. tsuishikarensis* KOIDZ. et OHWI (p. 228)
- b. Folia plana. Spiculae femineae 2-4 oblongae vel oblongo-cylindricae. Squamae femineae castaneae. Utriculi ovato-conici.
- I. Folia coriacea. Squamae femineae castaneae. Utriculi 5-8 mm longi aurantiacei. 279. *C. pumila* THUNBERG (p. 228, Fig. 168)
- II. Folia subrigida. Squamae femineae sanguineae pallidiores. Utriculi 4-5 mm longi brunneo-olivacei. (Spiculae femineae 3-5 cm longae. Squamae femineae 3-5-nervosae). 280. *C. nutans* HOST. var. *platyrhyncha* FRANCH. et SAV. (p. 230)

Sect. 44. Hirtae TUCKERMAN (p. 17 et pp. 230-236)

Clavis specierum

- A. Utriculi plerumque dense hirti indeque nervi inconspicui, rostrum demum conspicue bifurcatum, dentes rostri breves rigidi.
- a. Culmus ad apicem usque foliatus. Bractaeae omnes longe vaginantes. 281. *C. hebecarpa* C. A. MEY. (p. 230, Fig. 169)
- b. Culmus nonnisi inferne foliatus. Bractaeae ima tantum ± vaginantes.
- I. Utriculi oblongo-ovati dense hirti.
1. Utriculi squamas subsuperantes 4-5 mm longi griseo-hirto-tomentosi stramineo-virides. 282. *C. lasiocarpa* EHRHAUT var. *occultans* FRANCHET (p. 232, Fig. 170)

2. Utriculi squamas superantes 3.5-4 mm longi breviter hispidi non tomentosi, cinereo-brunnei.
 - * Utriculi densissime hispidi . . . 283. *C. Myabei* FRANCHET (p. 233, Fig. 171)
 - ** Utriculi parce pubescentes . . . 285. *C. glabrescens* (KÜKENTH.) OHWI (p. 235)
- II. Utriculi ovati ± pubescentes 284. *C. Koidzumii* HONDA (p. 234, Fig. 172)
- B. Utriculi minus dense hirti nervis conspicuis percursi. Dentes rostri elongati.
 - a. Spiculae femineae densiflorae crassae. Squamae femineae haud divaricatae. Utriculi subcoriacei obtuse trigoni 6 mm longi sensim rostrati; os rostri acuti bidentatum. 286. *C. orthostachys* C. A. MEYER (p. 235)
 - b. Spiculae femineae laxiores graciliores. Squamae femineae haud divaricatae. Utriculi submembranacei inflato-trigoni 4-6 mm longi abrupte rostrati; os rostri grosse bifurcatum. 287. *C. drymophila* TURCZANIMOW (p. 235)

III. ENUMERATION OF SPECIES WITH DESCRIPTIONS OF UTRICLES

Subgen. I. *Primocarex* KÜKENTHAL (pp. 5-7)Sect. 1. *Dioicae* TUCKERMAN (p. 5)

1. *Carex gynocrates* WORMSKJ, apud DREJER, Rev. Crit. (1841) 16; KÜKENTHAL in ENGLER, Pflanzenreich IV. 20 (1909) 79; MIYABE & KUDO, Fl. of Hokkaido & Saghalien II. (1931) 214.

C. circinata KUDO, Fl. Paramushir. (1922) 77, non C. A. MEYER.

Nom. Jap. Kanchi-suge.

Hab. Kuriles.

Distrib. Kamtchatka, Ochotsk, Amur, Siberia, Europe and North America.

Sect. 2. *Petraeae* O. F. LANG (p. 6)

2. *Carex rupestris* ALL. Fl. Pedem. II. (1785) 264 t. 92 fig. 1; KÜKENTHAL in ENGLER, Pflanzenreich IV. 20 (1909) 86; TATEWAKI, in Journ. Jap. Bot. V. (1928) 37; MIYABE & KUDO, Fl. of Hokkaido & Saghalien II. (1931) 214; MAKINO & NEMOTO, Fl. of Japan 2.-ed. (1931) 1450.

Nom. Jap. Karafuto-iwa-suge.

Hab. Saghalien.

Distrib. Manchuria, Dahuria, Siberia, Caucasus, Europe and North America.

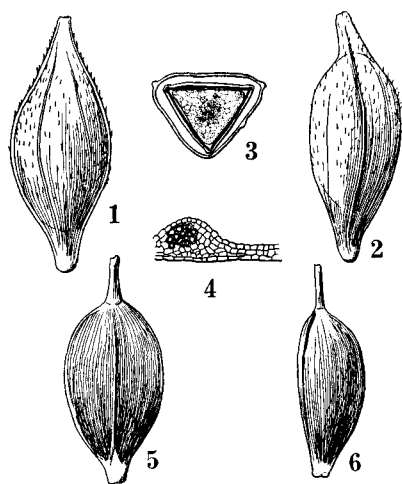


Fig. 1. *Carex grallatoria*
MAXIMOWICZ

1. Utricle seen from dorsal side, $\times 14$.
2. The same, from ventral side, $\times 14$.
3. The same with nut, transversely cut, $\times 14$.
4. Portion of the wall of the utricle, transversely cut, showing its structure, $\times$ ca. 100.
5. Nut seen from ventral side, $\times 14$.
6. The same, from lateral side, $\times 14$.

Sect. 3. *Grallatoriae* KÜKENTHAL (p. 6)

3. *Carex grallatoria* MAXIMOWICZ (Fig. 1), Mélang. biolog. XII. (1887) 560; FRANCHET in Nouv. Arch. Mus. Paris 3. sér. VIII. (1896) 194; LÉVEILLÉ et VANIOT, in Bull. Acad. intern. Géogr. bot. 3. sér. X. (1901) 51; MATSUMURA, Index plant. Japon. II. 1. (1905) 112; KÜKENTH.

in ENGL. Pflanzenreich IV. 20 (1909) 89, fig. 17 P-S; MAKINO & NEMOTO, Fl. of Japan 1.-ed. (1925) 1344.

Utriculi squamas in longitudine aequantes erecti membranacei, textis e 2-3 stratis cellularum compositis, obovato-ellipsoidei trigoni vix 3 mm longi 1 mm lati pallidi pubescentes demum glabrescentes, in latere utroque nervo superne scabro et raro in ventris 1-2 nervo percursi basi stipitati, stipitibus 0.4 mm longis, apice in rostrum breve conicum excurvum margine scabrum ore integrum subabrupte attenuati. Nux subobovata.

Nom. Jap. Hina-suge.

Hab. Honshiu, Shikoku and Kiushiu.

var. *heteroclita* (FRANCHET) KÜKENTHAL (Fig. 2), apud MATSUMURA, Index pl. Jap. II. 1. (1905) 113 et in ENGL. Pflanzenr. IV. 20 (1909) 89; MAKINO & NEMOTO, Fl. of Jap. 1.-ed. (1925) 1344.

C. heteroclita FRANCHET in Bull. Soc. philom. Paris 8. sér. VII. (1895) 28 et in Nouv. Arch. Mus. Paris 3. sér. VIII. (1896) 195 t. 3, fig. 4; LÉVEILLÉ et VANIOT in Bull. Acad. intern. Géogr. bot. 3. sér. X. (1901) 52.

Differt a typo spiculis androgynis. Utriculi fere ut forma typica.

Nom. Jap. Sanagi-suge.

Hab. Honshiu, Shikoku and Kiushiu (Insl. Tsushima).

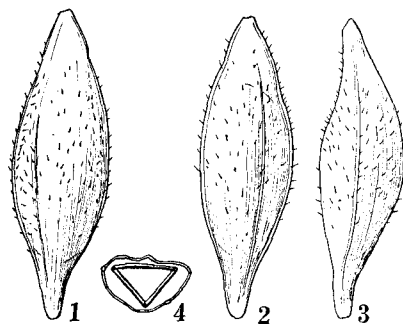


Fig. 2. *Carex grallatoria* var. *heteroclita* KÜKENTH.

1. Utricle seen from dorsal side, $\times 14$.
2. The same, from ventral side, $\times 14$.
3. The same, from lateral side, $\times 14$.
4. The same with nut, transversely cut, $\times 14$.

Sect. 4. Circinatae MEINSHAUSEN (p. 6)

4. *Carex hakkodensis* FRANCHET (Fig. 3), in Bull. Soc. philom. Paris, 8. sér. VII. (1895) 28, et in Nouv. Arch. Mus. Paris. 3. sér. VIII. (1896) 204, t. 3, fig. 2; MATSUMURA, Ind. pl. Jap. II. 1. (1905) 113; KÜKENTHAL in ENGLER, Pflanzenreich IV. 20 (1909) 98; KUDO, Fl. Paramushir. (1922) 78; MAKINO & NEMOTO, Fl. of Jap. 1.-ed. (1925) 1344; MIYABE et KUDO, in Trans. Sapporo Nat. Hist. Soc. V. (1915) 150 et Fl. of Hokkaido & Saghalien II. (1931) 214.

Utriculi squamas duplo superantes suberecti membranacei, textis e 1-2 (raro 3) stratis cellularum constantibus, anguste lanceolati trigoni 6-7 mm longi vix 1 mm lati pallide virentes demum straminei plurinervi (2-nervi marginales conspicui), basi attenuati evidenter 1.5-2.5 mm longe stipitati, apice in rostrum longum ferrugineum ore oblique sectum demum bidentulum sensim attenuati.

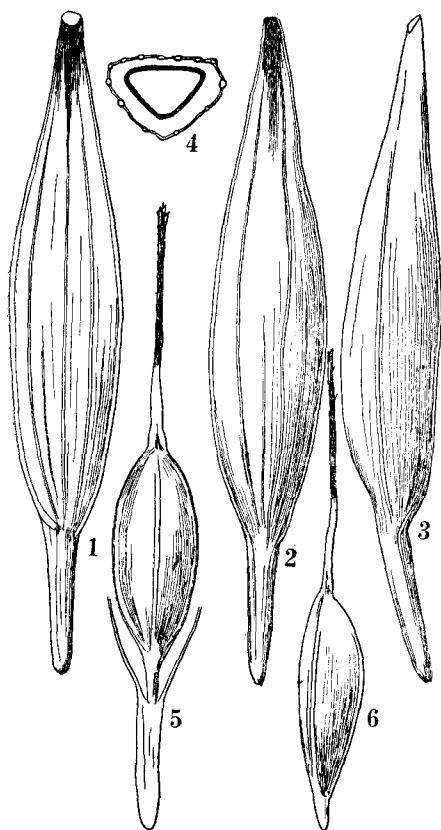


Fig. 3. *Carex hakkodensis* FRANCH.

1. Utricle seen from dorsal side, ×14.
2. The same, from ventral side, ×14.
3. The same, from lateral side, ×14.
4. The same with nut, transversely cut, ×14.
5. Nut seen from ventral side, ×14.
6. The same, from lateral side, ×14.

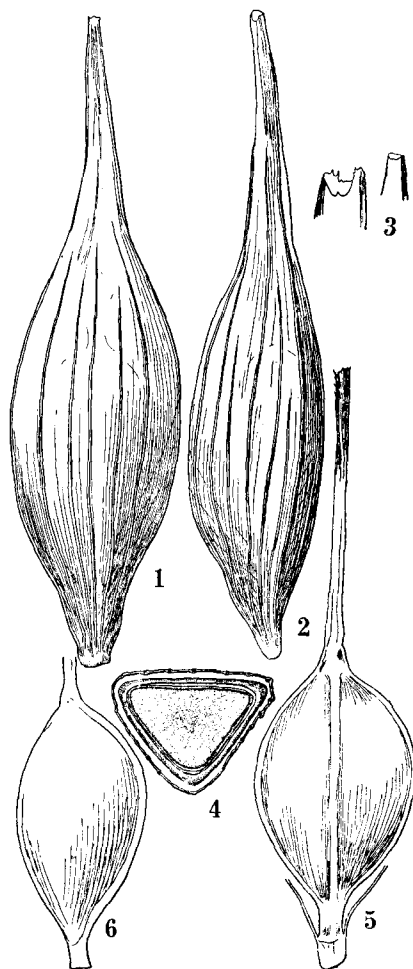


Fig. 4. *Carex rhizopoda* MAXIM.

1. Utricle seen from dorsal side, ×14.
2. The same, from lateral side, ×14.
3. Apical portion of the utricle, ×14.
4. Utricle with nut, transversely cut, ×14.
5. Nut seen from ventral side, ×14.
6. The same, from lateral side, ×14.

Nom. Jap. Ito-kin-suge.

Hab. Kuriles, Hokkaido and Honshiu.

Distrib. Kamtchatka.

5. *Carex rhizopoda* MAXIMOWICZ (Fig. 4), in Mélang. biolog. XII. (1887) 561; FRANCH. in Nouv. Arch. Mus. Paris 3. sér. VIII. (1896) 203, t. 3, fig. 3; MATSUMURA, Index pl. Jap. II. 1 (1905) 131; KÜKENTH. in ENGL. Pflanzenr. IV. 20 (1909) 98; MAKINO & NEMOTO, Fl. of Jap. 1.-ed. (1925) 1365; MIYABE & KUDO, Fl. of Hokkaido & Saghalien II. (1931) 215.

Utriculi squamas subduplo superantes suberecti membranacei, textis e fere 2-stratis cellularum compositis, lanceolati vix lageniformi trigoni 6-7 mm longi ad 2 mm lati virentes plurinervi nervis 15-25 (nervis duobus marginalibus ad apicem utriculi attingentibus), glabri, basi attenuati brevissime stipitati, apice in rostrum longum (vix 2 mm) subconicum ore hyalino demum bidentatum subsensim desinentes.

Nom. Jap. Shirako-suge.

Hab. Kuriles, Hokkaido, Honshiu, Shikoku and Kiushiu.

var. *longior* MAXIMOWICZ (Fig. 5) l. c. 562.

C. rhizopoda forma *longior* KÜKENTHAL l. c. 98; MAKINO & NEMOTO, l. c. 1365; MIYABE & KUDO, Fl. Hokkaido & Saghalien II. (1931) 215.

Differt a typo spiculis laxifloris, squamis lanceolatis acuminate. Utriculi ut forma typica.

Nom. Jap. Hoso-shirako-suge.

Hab. Hokkaido, Honshiu and Shikoku.

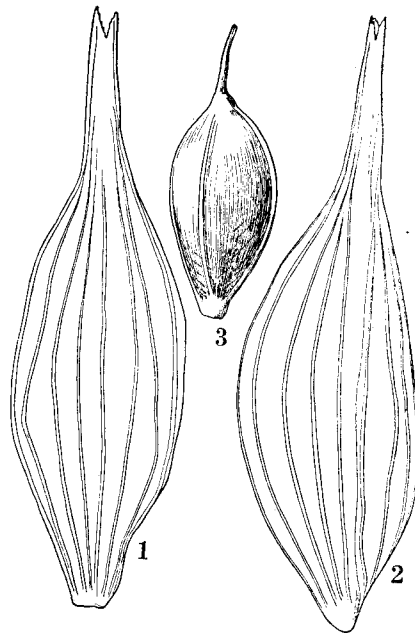


Fig. 5. *Carex rhizopoda* var. *longior* MAXIM.

1. Utricle seen from ventral side, $\times 14$.
2. The same, from lateral side, $\times 14$.
3. Nut, $\times 14$.

Sect. 5. *Unciniaeformes* KÜKENTHAL (p. 6)Subsect. 1. *Capitellatae* MEINSHAUSEN (p. 6)

6. *Carex Onoei* FRANCHET et SAVATIER (Fig. 6), Enum. pl. Jap. II. (1879) 551; FRANCH. in Nouv. Arch. Mus. Paris 3. sér. VIII. (1896) 200, t. 2, fig. 5; MATSUM. Ind. pl. Jap. II. 1. (1905) 124; KÜKENTH. in ENGL. Pflanzenr. IV. 20 (1909) 101; NAKAI, Fl. Korean. II. (1911) 302; MAKINO & NEMOTO, Fl. of Jap. 1.-ed. (1925) 1358.

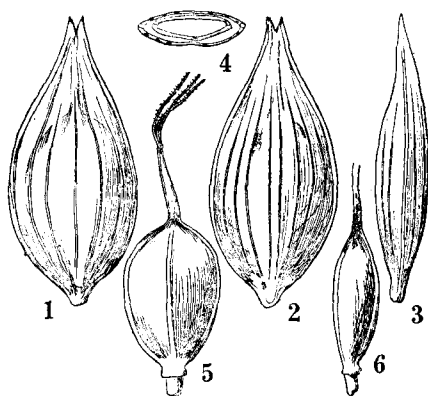


Fig. 6. *Carex Onoei* FRANCH. et SAV.

1. Utricle seen from dorsal side, ×14.
2. The same, from ventral side, ×14.
3. The same, from lateral side, ×14.
4. The same with nut, transversely cut, ×14.
5. Nut seen from ventral side, ×14.
6. The same, from lateral side, ×14.

C. hakonensis var. *Onoei* OHWI in Mem. Coll. Sci. Kyoto Imp. Univ. Ser. B. V. 3 (1930) 285; MIYABE & KUDO, Fl. of Hokkaido & Saghalien II. (1931) 215.

Utriculi squamas paullo superantes demum divaricati membranacei, textis e 1-2 stratis cellularum concretis, ovati obsolete compresso-trigoni 2.5 mm longi (saepe longiores) 1.3 mm lati pallide virentes glabri pluristriati (striis vix 15), 2-nervis marginalibus conspicuis, basi vix rotundati breviter stipitati, apice in rostrum mediocre conicum ore hyalino distincte bidentatum intus nonnisi serratum subsensim attenuati.

Nom. Jap. Hari-suge.

Hab. Hokkaido, Honshiu, Shikoku and Kiushiu.

Distrib. Corea, Manchuria, Amur and Ussuri.

forma *latifolia* KÜKENTHAL in ENGL. Pflanzenr. IV. 20 (1909) 101.

Differt a typo foliis 2-3 mm latis.

Nom. Jap. Hiroba-no-hari-suge.

Hab. Honshiu (Northern and Central Districts).

7. *Carex Krameri* FRANCHET et SAVATIER (Fig. 7), Enum. pl. Jap. II. (1879) 124 et 550; FRANCH. in Nouv. Arch. Mus. Paris 3. sér. VIII. (1896) 200, t. 2, fig. 4.

C. Onoei var. *Krameri* KÜKENTH. apud MATSUMURA, Ind. pl. Jap. II. 1. (1905) 124 et in ENGL. Pflanzenr. IV. 20 (1909) 101; MAKINO & NEMOTO, Fl. of Jap. 1.-ed. (1925) 1358.

C. hakonensis OHWI in Mem. Coll. Sci. Kyoto Imp. Univ. Ser. B. V. 3 (1930) 285 p.p.; MIYABE & KUDO, Fl. of Hokkaido & Saghal. II. (1931) 215 p.p.

C. heleochariformis LÉVEILLÉ et VANIOT in Bull. Soc. Géogr. bot. X. (1901) 53 et Bull. Soc. Bot. France LI. (1904) 202.

Utriculi squamas paullo superantes demum patentes membranacei, textis e 1-2 stratis cellularum compositis, ovati obsolete trigoni compressi 2.0-2.5 mm longi 1.1 mm lati pallide virentes parce castaneo-maculati fere enervii praeter 2-nervos marginales conspicuos, basi vix rotundati brevissime stipitati, apice in rostrum brevem antice fissum ore vix bidentulum subsensim attenuati.

Nom. Jap. Ko-hari-suge.

Hab. Hokkaido, Honshiu and Kiushiu.

8. *Carex hakonensis* FRANCHET et SAVATIER, Enum. pl. Japon. II. (1879) 123 et 550; FRANCH. in Nouv. Arch. Mus. Paris 3. sér. VIII. (1896) 199, t. 2, fig. 3; OHWI in Mem. Coll. Sci. Kyoto Imp. Univ. Ser. B. V. 3 (1930) 285; MIYABE & KUDO, Fl. of Hokkaido & Saghal. II. (1931) 215.

C. Onoei var. *Krameri* forma *hakonensis* KÜKENTH. l. c. 102; MAKINO & NEMOTO, Fl. of Jap. 1.-ed. (1925) 1358.

Nom. Jap. Koke-suge.

Hab. Hokkaido and Honshiu.

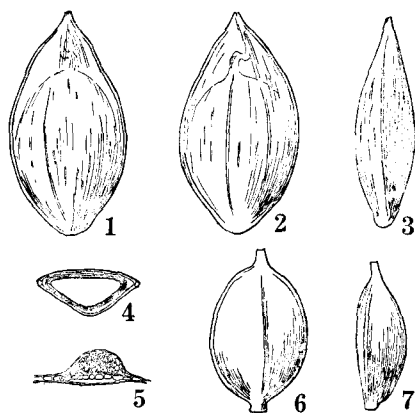


Fig. 7. *Carex Krameri* FRANCH. et SAV.

1. Utricle seen from dorsal side, $\times 14$.
2. The same, from ventral side, $\times 14$.
3. The same, from lateral side, $\times 14$.
4. The same with nut, transversely cut, $\times 14$.
5. Margin of the same, $\times$ ca. 100.
6. Nut seen from ventral side, $\times 14$.
7. The same, from lateral side, $\times 14$.

var. *capituliformis* (MEINSH.) OHWI in Mem. Coll. Sci. Kyoto Imp. Univ. Ser. B. VI. 5. (1931) 242.

C. capituliformis MEINSH. in MAXIM. Mèlang. biolog. XII. (1887) 563 et in Acta Horti petropolitani XVIII. (1901) 310.

C. Onoei (non FRANCH. et SAV.) KÜKENTH. in ENGL. Pflanzenr. IV. 20 (1909) 101 p.p.

Nom. Jap. Hikage-hari-suge.

Hab. Honshiu.

Distrib. Corea and Manchuria.

9. *Carex rara* BOOTT in Proc. Linn. Soc. I. (1845) 284 et Trans. Linn. Soc. XX. (1846) 139 et Illustr. I. (1858) 44 t. 109.

var. *biwensis* (FRANCHET) KÜKENTHAL, apud MATSUMURA, Ind. pl. Japon. II. 1. (1905) 130 et in ENGL. Pflanzenr. IV. 20 (1909) 102; NAKAI, Fl. Korean. II. (1911) 302; MAKINO & NEMOTO, Fl. of Jap. 1.-ed. (1925) 1364.

C. biwensis FRANCHET in Bull. Soc. philom. Paris 8. sér. VII. (1895) 28 et Nouv. Arch. Mus. Paris 3. sér. VIII. (1896) 197 t. 2. fig. 2.

Nom. Jap. Matsuba-suge.

Hab. Honshiu and Kiushiu.

Distrib. Corea and Central China.

10. *Carex Oldhamii* C. B. CLARKE in Kew Bull. Addit. Ser. VIII. (1908) 71.

Nom. Jap. Oldham-suge.

Hab. Kiushiu.

11. *Carex capillacea* BOOTT, in Illustr. Car. I. (1858) 44 t. 110; FRANCH. in Nouv. Arch. Mus. Paris 3. sér. VIII. (1896) 197; KOMAROV, Fl. Manshur. I. (1901) 353.

C. uda var. *sachalinensis* FR. SCHM. Reis. Amurl. (1868) 191 p.p.; MAKINO in Botan. Magaz. Tokyo IX. (1895) 72.

C. ontakensis FRANCH. et SAV. Enum. pl. Jap. II. (1879) 123 et 550.

C. rara Subsp. *capillacea* KÜKENTH. l. c. 102; NAKAI, Fl. Korean. II. (1911) 302; MAKINO & NEMOTO, Fl. of Jap. 1.-ed. (1925) 1364; MIYABE & KUDO, Fl. of Hokkaido & Saghalien II. (1931) 216.

Nom. Jap. Yezo-matsuba-suge; Harigane-suge.

Hab. Saghalien, Hokkaido and Honshiu.

Distrib. Corea, Manchuria, China, Himalaya and Australia.

var. *macrolepis* FRANCHET in Nouv. Arch. Mus. Paris 3. sér. VIII. (1896) 198.

C. rara Subsp. *capillacea* var. *macrolepis* MATSUMURA, Ind. pl. Jap. II. 1. (1905) 130.

C. rara Subsp. *capillacea* forma *macrolepis* KÜKENTH. l. c. 103; MAKINO & NEMOTO, Fl. of Japan l. c. 1364; MIYABE & KUDO l. c. 216.

Nom. Jap. Kakuremi-suge.

Hab. Hokkaido, Saghalien, Honshiu and Kiushiu.

12. *Carex nana* BOOTT (Fig. 8), in Mem. Amer. Acad. (n. s.) VI. (1858-59) 418 et Illustr. IV. (1867) 139 t. 449, fig. 2; FRANCH. et SAV. Enum. pl. Japon. II. (1879) 123.

C. rara Subsp. *capillacea* var. *nana* KÜKENTH. in MATSUMURA, Ind. pl. Jap. II. 1. (1905) 130 et in ENGL. Pflanzenr. IV. 20 (1909) 103; MAKINO & NEMOTO, Fl. of Jap. 1.-ed. (1925) 1364; MIYABE & KUDO, Fl. of Hokkaido & Saghal. II. (1931) 216.

Utriculi squamas subduplo superantes divaricati membranacei, textis e 2-3 (-4) stratis cellularum concretis, ovati subinflato-trigoni pallide virentes pauce purpureo-puncticulati 3.5 mm longi 2 mm lati, nervis marginalibus crassis, juxta-marginalibus 2-3 conspicuis ceteris obsoletis pluribus, basi rotundati breve stipitati, apice in rostrum breve conicum ore integrum abrupte attenuati.

Nom. Jap. Harigane-suge; Michinoku-hari-suge; Aomori-hari-suge.

Hab. Saghalien, Hokkaido, Honshiu and Kiushiu.

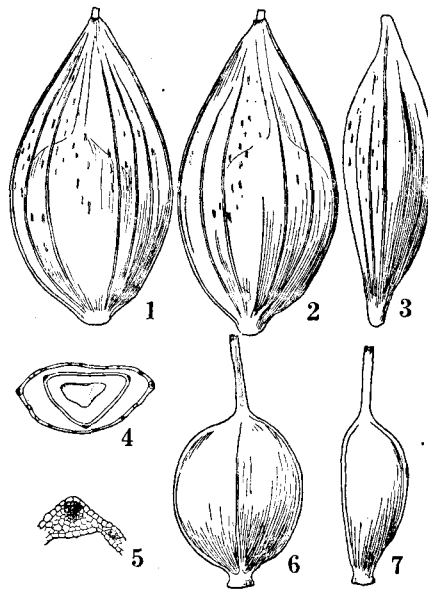


Fig. 8. *Carex nana* BOOTT

1. Utricle seen from dorsal side, $\times 14$.
2. The same, from ventral side, $\times 14$.
3. The same, from lateral side, $\times 14$.
4. The same with nut, transversely cut, $\times 14$.
5. Portion of the wall of the utricle, transversely cut, $\times ca. 75$.
6. Nut seen from ventral side, $\times 14$.
7. The same, from lateral side, $\times 14$.

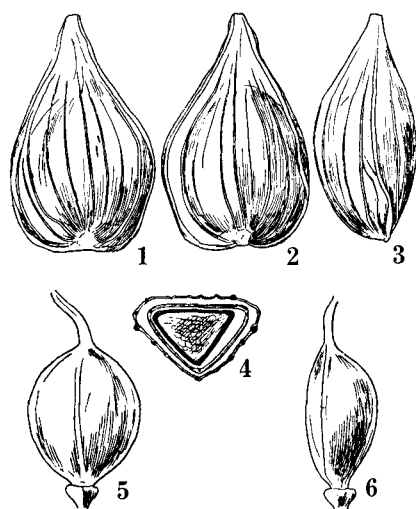


Fig. 9. *Carex fulta* FRANCH.

1. Utricle seen from dorsal side, $\times 14$.
2. The same, from ventral side, $\times 14$.
3. The same, from lateral side, $\times 14$.
4. The same with nut, transversely cut, $\times 14$.
5. Nut seen from ventral side, $\times 14$.
6. The same, from lateral side, $\times 14$.

Utriculi squamas superantes patentes demum reflexi membranacei, textis e 2-3 stratis cellularum constantibus, ovati subinflato-trigoni 2.5 mm longi 1.2 mm lati virides purpureo-maculati plurinervi (nervis 15-20), nervis marginalibus prominentibus, glabri basi rotundati brevissime stipitati, apice in rostrum breve conicum ore hyalino subemarginatum abrupte contracti.

Nom. Jap. Nikkô-hari-suge.

Hab. Honshiu.

13. *Carex fulta* FRANCHET (Fig. 9) in Bull. Soc. philom. Paris 8. sér. VII. (1895) 28 et in Nouv. Arch. Mus. Paris 3. sér. VIII. (1896) 202 t. 3, fig. 1; MATSUM. Ind. pl. Jap. II. 1. (1905) 110; KÜKENTH. in ENGL. Pflanzenr. IV. 20 (1909) 103; MAKINO & NEMOTO, Fl. of Jap. 1.-ed. (1925) 1342.

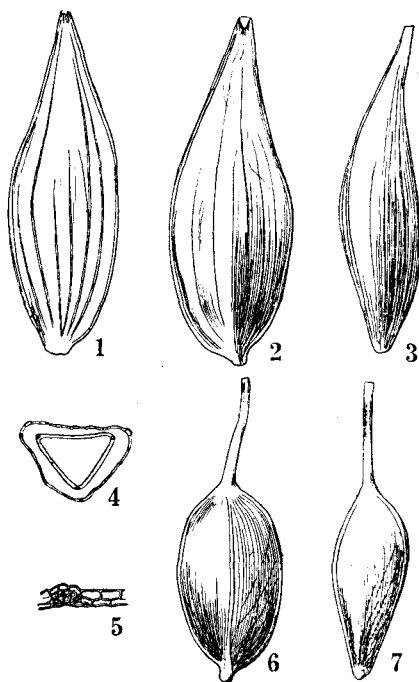


Fig. 10. *Carex uda* MAXIM.

1. Utricle seen from dorsal side, $\times 14$.
2. The same, from ventral side, $\times 14$.
3. The same, from lateral side, $\times 14$.
4. The same with nut, transversely cut, $\times 14$.
5. Portion of the wall of the utricle, transversely cut, $\times ca. 75$.
6. Nut seen from ventral side, $\times 14$.
7. The same, from lateral side, $\times 14$.

14. *Carex uda* MAXIMOWICZ (Fig. 10), Primit. Fl. amur. (1859) 303; FRANCH. in Nouv. Arch. Mus. Paris 3. sér. VIII. (1896) 201; KOMAROV, Fl. Manshur. I. (1901) 353; MATSUM. Ind. pl. Jap. II. 1. (1905) 136; KÜKENTH. in ENGL. Pflanzenr. IV. 20 (1909) 103; NAKAI, Fl. Korean. II. (1911) 303; MAKINO & NEMOTO, Fl. of Jap. 1.-ed. (1925) 1374; MIYABE & KUDO, Fl. of Hokkaido & Saghal. II. (1931) 217.

Utriculi squamas superantes primo suberecti tum divaricati demum reflexi membranacei, textis e 2-3 stratis cellularum compositis, ovato-lanceolati obsolete trigoni vix 3.5 mm longi virentes glabri plurinervi, nervis obsolete vix 12, et 2 marginalibus conspicuis, basi fere attenuati brevissime stipitati, apice in rostrum 0.5 mm longum conicum ore hyalino submarginatum sensim attenuati.

Nom. Jap. Ô-hari-suge.

Hab. Hokkaido.

Distrib. Corea, Manchuria, Amur and Ussuri.

Subsect. 2. *Callistachys*
(HEUFF.) ASCHERSON
et GRAEBNER
(p. 7)

15. *Carex pyrenaica* WAHLENBERG (Fig. 11, 1-2), in Vet.-Acad. Handl. Stockholm XXIV. (1803) 139; FRANCH. in Nouv. Arch. Mus. Paris 3. sér. VIII. (1896) 205; MATSUM. Ind. pl. Jap. II. 1. (1905) 129; KÜKENTH. in ENGL. Pflanzenr. IV. 20 (1909) 104, fig. 21, L-M;

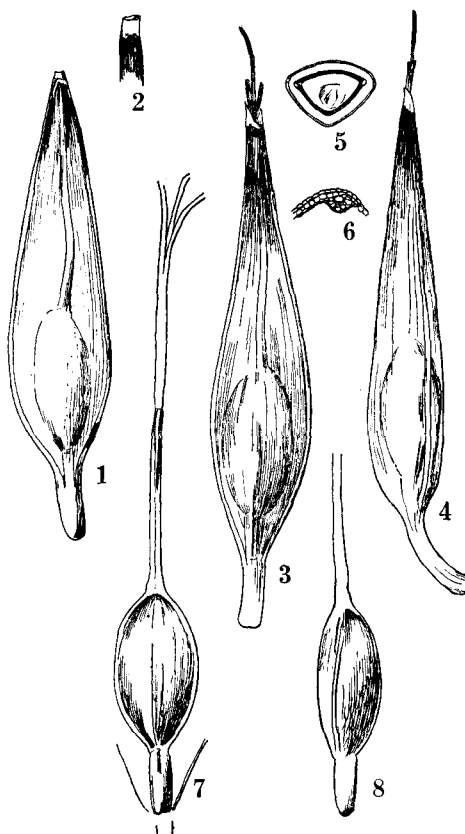


Fig. 11. 1-2. *Carex pyrenaica* WAHL.

1. Utricle seen from dorsal side, $\times 14$.
2. Apical portion of the utricle, $\times 14$.

3-8. *Carex pyrenaica* var. *altior* KÜK.

3. Utricle seen from ventral side, $\times 14$.
4. The same, from lateral side, $\times 14$.
5. The same with nut, transversely cut, $\times 14$.
6. Portion of the wall of the utricle, transversely cut, $\times$ ca. 100.
7. Nut seen from dorsal side, $\times 14$.
8. The same, from lateral side, $\times 14$.

KUDO, Fl. Paramushir. (1922) 78; MAKINO & NEMOTO, Fl. of Jap. 1.-ed. (1925) 1363; MIYABE & KUDO, Fl. of Hokkaido & Saghal. II. (1931) 217.

Utriculi squamas superantes primo erecti dein divaricati membranacei, textis e 2-3-4 stratis cellularum compositis, lanceolato-elliptici obsolete trigoni vel biconvexi 3-4 mm longi 1 mm lati primo brunneo-virides demum castanei nitidi glabri enervii, basi attenuati 0.7 mm longe stipitati, marginati, apice in rostrum longum antice sulcatum ore hyalino oblique sectum demum bidentulum sensim desinentes.

Nom. Jap. Kin-suge.

Hab. Kuriles, Hokkaido and Honshiu.

Distrib. Europe, West Asia, Subarctic and Pacific North America, Kamtchatka, Bering and New Zealand.

var. *altior* KÜKENTHAL (Fig. 11, 3-8), in ENGL. Pflanzenr. IV. 20 (1909) 106; MAKINO & NEMOTO, Fl. of Jap. 1.-ed. (1925) 1363; MIYABE & KUDO, Fl. of Hokkaido & Saghal. II. (1931) 217.

Utriculi anguste lanceolati 5 mm longi 1 mm lati basi 0.8 mm longe stipitati, apice longissime rostrati; ceterae ut forma typica.

Nom. Jap. Seitaka-kin-suge; Ô-kin-suge.

Hab. Hokkaido and Honshiu.

Subsect. 3. *Pauciflorae*
TUCKERMAN (p. 7)

16. *Carex microglochin* WAHLENBERG, in Vet.-Handl. Stockh. XXIV. (1803) 140; KÜKENTH. in ENGL. Pflanzenr. IV. 20 (1909) 108, fig. 14, D; MAKINO & NEMOTO, Fl. of Jap. 1.-ed. (1925) 1354.



Fig. 12. *Carex pauciflora* LIGHTF.

1. Utricle seen from dorsal side, $\times 14$.
2. The same, from ventral side, $\times 14$.
3. The same, from lateral side, $\times 14$.
4. The nut of the same species in the utricle, transversely cut, $\times 14$.
5. Nut seen from dorsal side, $\times 14$.
6. The same, from lateral side, $\times 14$.

Nom. Jap. Ko-jiku-suge.

Hab. Kuriles.

Distrib. Arctic Alpine of Europe, Eastern Caucasus, Altai, Dahuria, Central China, Himalaya, Greenland and Canada.

17. *Carex pauciflora* LIGHTF. (Fig. 12), Fl. scot. II. (1777) 543 t. 6, fig. 2; KÜKENTH. l. c. 110; MAKINO & NEMOTO, l. c. 1360; MIYABE & KUDO, Fl. of Hokkaido & Saghal. II. (1931) 217.

C. pulicaris L. Spec. pl. ed. 1. 972 ex p.

C. patula HUDS. Fl. angl. ed. 2. II. (1778) 402.

C. leucoglochis EHRH. in L. f., Suppl. (1781) 413.

C. microglochis MIYABE, Fl. Kuril. 267; KUDO, Fl. Paramushir. 78, non WAHLENB.

Utriculi squamas superantes, primo suberecti tum divaricati demum reflexi tenuiter membranacei, textis e 1-2 stratis cellularum constantibus, anguste oblongi obsolete trigoni 6 mm longi 1.2 mm lati stramineo-virentes pauce fusco-puncticulati obsolete striati et nervis 2 vel 3 evidentiis percursi glabri basi spongiosi in stipitem brevem demum arcuatim deflexum, apice in rostrum longissimum fusco-coloratum subulatum ore truncatum sensim attenuati.

Nom. Jap. Takane-hari-suge; Migaeri-suge.

Hab. Saghalien, Kuriles, Hokkaido and Honshiu.

Distrib. Kamtchatka, Siberia, Asia Minor, Europe and North America.

Subgen. II. *Vignea* (PALISOT de BEAUVOIS)

C. F. NEES von ESENBECK (pp. 8-13)

Sect. 6. *Foetidae* TUCKERMAN (p. 9)

18. *Carex arenicola* FR. SCHMIDT (Fig. 13), Reisen Amurl. (1868) 191 t. VI, fig. 18-24; FRANCH. in Nouv. Arch. Mus. Paris 3. sér. VIII. (1896) 221; LÉVEILLÉ et VANIOT in Bull. Soc. Géogr. bot. X. (1901) 107; MATSUM. Ind. pl. Jap. II. 1. (1905) 99; KÜKENTH. in ENGL. Pflanzenr. IV. 20 (1909) 118; NAKAI, Fl. Korean. II. (1911) 303; MAKINO & NEMOTO, Fl. of Jap. 1.-ed. (1925) 1330; MIYABE & KUDO, Fl. of Hokkaido & Saghal. II. (1931) 218.

C. muricata BOOTT in Mem. Amer. Acad. (n. s.) VI. (1859) 417 in obs., non L.

C. curaica FRANCH. et SAV. Enum. pl. Jap. II. (1879) 124, non KUNTH.

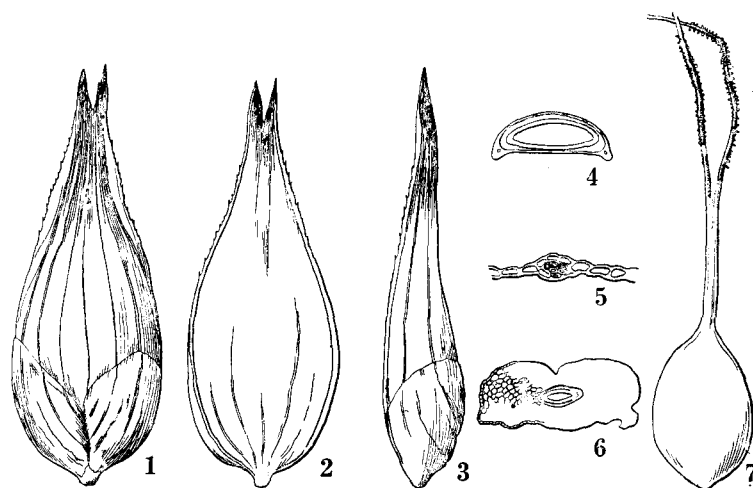


Fig. 13. *Carex arenicola* FR. SCHM.

1. Utricle seen from dorsal side, $\times 14$. 2. The same, from ventral side, $\times 14$. 3. The same, from lateral side, $\times 14$. 4. The same with nut, transversely cut, $\times 14$. 5. Portion of the wall of the utricule, transversely cut, $\times$ ca. 100. 6. Basal portion of the utricule, transversely cut, $\times 21$. 7. Nut, $\times 14$.

C. chaetorrhiza FRANCH. et SAV. l. c. 552 (incl. var. *stenostachys* excl. synonym. *C. chordorrhiza* β . *major* BOECK.).

Utriculi squamas paullo superantes demum subpatuli membranacei, textis ex 1 strato cellularum compositis, lanceolato-ovati plano-convexi 4-4.5 mm longi stramineo-ferruginei glabri nitidi utrinque plurinervi, marginibus scabri, apice in rostrum longum ferrugineum utroque latere alatum ore oblique sectum et demum bidentulum subsensim attenuati.

Nom. Jap. Kuro-kawazu-suge.

Hab. Saghalien, Hokkaido and Honshiu.

Distrib. Corea and Northern parts of Central China.

Sect. 7. *Divisae* CHRIST. (p. 9)

19. *Carex curaica* KUNTH, Enum. pl. II. (1837) 375; MATSUM. Ind. pl. Japon. II. 1. (1905) 106; KÜKENTH. in ENGL. Pflanzenr. IV. 20 (1909) 124; MAKINO & NEMOTO, Fl. of Jap. 1.-ed. (1925) 1338.

Nom. Jap. Hosoba-no-kuro-kawazu-suge.

Hab. Honshiu.

Distrib. Central Asia and Eastern Siberia.

20. *Carex pseudo-curaica* FR. SCHMIDT, Reisen Amurl. (1868) 67 t. V, fig. 8-14; FRANCH. in Nouv. Arch. Mus. Paris 3. sér. VIII. (1896) 220; MATSUM. Ind. pl. Jap. II. 1. (1905) 138; KÜKENTH. l. c. 128; MAK. & NEM. Fl. of Jap. 1.-ed. (1925) 1362; MIYABE & KUDO, Fl. of Hokkaido & Saghal. II. (1931) 218.

Nom. Jap. Tsuru-suge; Tsuru-kawazu-suge.

Hab. Saghalien, Kuriles and Hokkaido.

Distrib. Eastern Siberia, Amur, Ussuri and Baical.

Sect. 8. *Arenariae* KUNTH (p. 10)

21. *Carex siccata* DEWEY, in Amer. Journ. of Sc. 1. ser. X. (1826) 278, t. 7, fig. 18; KÜKENTH. in ENGL. Pflanzenr. IV. 20 (1909) 133.

Nom. Jap.

Hoso-kawazu-suge.

Hab. Honshiu.

Distrib. North America.

22. *Carex accrescens* OHWI (Fig. 14), in Mem. Coll. Sci. Kyoto Imp. Univ. Ser. B. VI. 5 (1931) 255.

C. pallida C. A. MEYER, in Mém. Acad. St.-Petersbourg I. (1832) 215, t. VIII; FR. SCHM. Reis. Amurl. (1868) 67 et 192; KÜKENTH. in ENGL. Pflanzenr. IV. 20 (1909) 134; MAKINO & NEMOTO, Fl. of Jap. (1925) 1359 et 2.-ed. (1931) 1443, non SALISB.

C. siccata BOOTT, Illustr. I. (1858) 19 et t. 52 ex p.; MATSUM. Ind. pl. Jap. II. 1. (1905) 132; MAK. & NEM. l. c. 1369, non DEWEY.

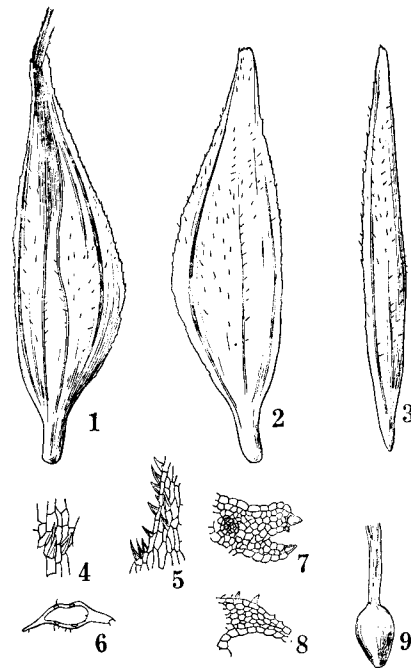


Fig. 14. *Carex accrescens* OHWI (Specimen immature)

1. Utricle seen from dorsal side, ×14.
2. The same, from ventral side, ×14.
3. The same, from lateral side, ×14.
4. and 5. Portions of the utricle, ×ca. 50.
6. Utricle transversely cut, ×14.
7. and 8. Portions of the wall of the utricle, transversely cut, ×ca. 75.
9. Nut, ×14.

Utriculi squamas superantes erecti coriacei, textis e 3-4 stratis cellularum constantibus, lanceolato-ovati plano-convexi 4.5 mm longi 1.1 mm lati virentes utrinque parce pubescentes demum glabrescentes dorso pluri- ventre obsolete-nervosi, basi spongiosi in stipitem 0.5 mm longum contracti, margine fere ad basi conspicue alati et nonnisi spongiosi dense scabri, apice in rostrum sublongum fusco-coloratum ore antice fissum vel bidentulum sensim attenuati.

Nom. Jap. Yezo-kawazu-suge; Usuiro-suge.

Hab. Saghalien and Hokkaido.

Distrib. Corea, Manchuria, Kamtchatka and Eastern Siberia.

23. *Carex disticha* HUDS. Fl. Angl. (1762) 403; FRANCH. in Nouv. Arch. Mus. Paris 3. sér. VIII. (1896) 210; MATSUM. Ind. pl. Japon. II. 1. (1905) 107; MAKINO & NEMOTO, Fl. of Jap. 1.-ed. (1925) 1339.

C. intermedia GOOD. in Trans. Linn. Soc. II. (1794) 154; MAK. & NEM. l. c. 1347.

Nom. Jap. Asama-suge.

Hab. Honshiu.

Distrib. Manchuria, Northern China and Siberia.

Sect. 9. Multiflorae KUNTH (p. 10)

24. *Carex neurocarpa* MAXIMOWICZ (Fig. 15), Primit. Fl. amur. (1859) 306; FRANCH. et SAV. Enum. pl. Jap. II. (1879) 125; FRANCH. in

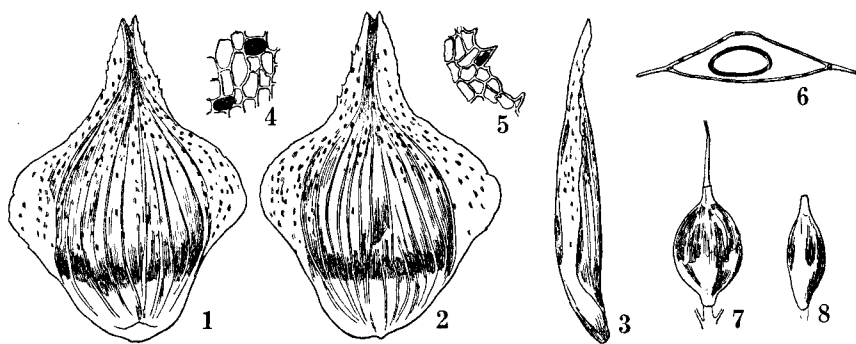


Fig. 15. *Carex neurocarpa* MAXIM.

1. Utricle seen from dorsal side, $\times 14$. 2. The same, from ventral side, $\times 14$. 3. The same, from lateral side, $\times 14$. 4. and 5. Portions of the utricle, $\times 50$. 6. Utricle with nut, transversely cut, $\times 14$. 7. Nut seen from dorsal side, $\times 14$. 8. The same, from lateral side, $\times 14$.

Nouv. Arch. Mus. Paris 3. sér. VIII. (1896) 215; KOMAROV, Fl. Manshur. I. (1901) 357; MATSUM. Ind. pl. Jap. II. 1. (1905) 122; KÜKENTH. in ENGL. Pflanzenr. IV. 20 (1909) 143; NAKAI, Fl. Korean. II. (1911) 304; MAK. & NEM. Fl. of Jap. 1.-ed. (1925) 1356.

Utriculi squamis longiores (excl. arista squamae) latioresque imbricati demum patentes membranacei, textis ex 1-2 stratis cellularum concretis, ovati compresso-plano-convexi 3.5-4 mm longi 2.4 mm lati 0.5 mm alti brunnei purpureo-puncticulati glabri utrinque plurinervi, nervis vix 20, basi stramineo-brunnei spongiosi rotundati breviter stipitati, fere e basi conspicue marginato-alati, alis 0.5 mm latis, eroso-dentati, apice in rostrum sublongum antice fissum margine late alatum purpureo-brunneum ore bidentatum abrupte contracti.

Nom. Jap. Mikoshi-gaya.

Hab. Honshiu.

Distrib. Corea, Amur, Manchuria and Northern China.

25. *Carex albata* BOOTT (Fig. 16), apud MIQUEL in Ann. Mus. lugd. batav. III. (1867) 193; FRANCH. et SAV. Enum. pl. Japon. II. (1879) 553; FRANCH. in Nouv. Arch. Mus. Paris 3. sér. VIII. (1896) 216; KAWAKAMI in Botan. Magaz. Tokyo XI. (1897) 52.

C. nubigena var. *albata* KÜKENTH. apud MATSUM. Ind. pl. Jap. II. 1. (1905) 123 et in ENGL. Pflanzenr. IV. 20 (1909) 146; MAK. & NEM. Fl. of Jap. 1.-ed. (1925) 1356; MIYABE & KUDO, Fl. of Hok. & Sagh. II. (1931) 219.

Utriculi squamas superantes oblique patentes membranacei, textis e 2 stratis cellularum compositis, lanceolati vel ovato-lanceolati plano-convexi 5-5.5 mm longi 1.5-2 mm lati pallide virides glabri plurinervi, nervis vix 25 nonnihil et pauce reticulatis castaneis, basi subspongiosi contracti breviter stipitati, anguste marginato-alati, alis superne parce et minute scabri, apice in rostrum longum gracile margine scabrum ore bidentatum subsensim attenuati.

Nom. Jap. Chabo-minoboro-suge; Hosoba-minoboro-suge.

Hab. Hokkaido, Honshiu and Kiushiu.

Distrib. Corea, Amur and Manchuria.

Clavis species, varietatis et formae

A. Utriculi longe rostrati.

a. Spicula ovata *C. albata* BOOTT

b. Spicula elongata cylindrica subinterrupta *C. albata* forma *laxiuscula* (KÜKENTH.)

B. Utriculi mediocri rostrati *C. albata* var. *Franchetiana* (OHWI)

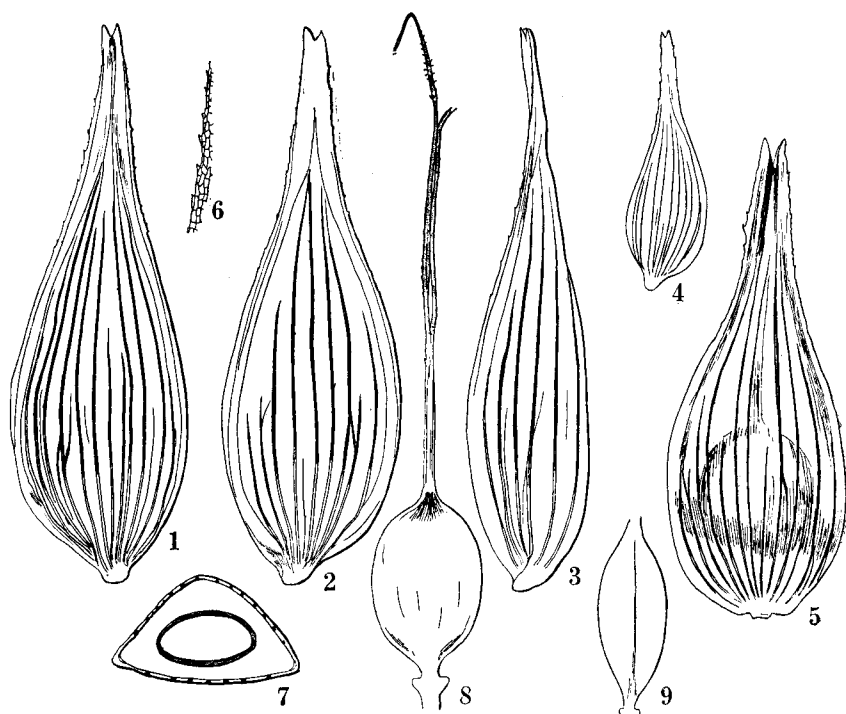


Fig. 16. *Carex albata* BOOTT

1. Utricle seen from dorsal side, $\times 14$. 2. The same, from ventral side, $\times 14$. 3. The same, from lateral side, $\times 14$. 4. and 5. Anomalous forms of the utricles. 6. Margin of the beak, $\times 30$. 7. Utricle with nut, transversely cut, $\times 14$. 8. Nut seen from dorsal side, $\times 14$. 9. The same, from lateral side, $\times 14$.

forma laxiuscula (KÜKENTHAL)

C. nubigena var. *albata* f. *laxiuscula* KÜKENTH. l. c. ; MIYABE & KUDO, l. c.

Hab. Hokkaido and Honshiu.

var. *Franchetiana* (OHWI)

C. nubigena var. *Franchetiana* OHWI in Mem. Coll. Sci. Kyoto Imp. Univ. Ser. B. V. 3 (1930) 283.

Nom. Jap. Tsukushi-minoboro-suge.

Hab. Kiushiu.

Distrib. Corea.

26. *Carex succedanea* NAKAI (Fig. 17), in FEDDE, Repertorium XIII. (1914) 244 et in Botan. Magaz. Tokyo XXVIII. (1914) 517; MAKINO & NEMOTO, Fl. of Jap. 1-ed. (1925) 1371.

C. Paxi var. *succedanea* OHWI l. c. 283.

Utriculi squamas superantes suberecti demum oblique patentes subcoriacei, textis e 3 stratis cellularum constantibus, ovati plano-convexi vel subbiconvexi 3 mm longi 1.5 mm lati stramineo-virides cinerascetes superne dorsalis atro-sanguineo-glandulosi glabri evidentius multinervi (nervis vix 27), basi contracti 0.2 mm longe stipitati, marginati, nervis marginalibus prominentibus percursis et e medio scabris, apice in rostrum mediocre latum margine vix alatum et scabrum ore bidentatum intus scabrum truncatim attenuati.

Nom. Jap. Kibi-no-minoboro-suge.

Hab. Honshiu.

Distrib. Corea.

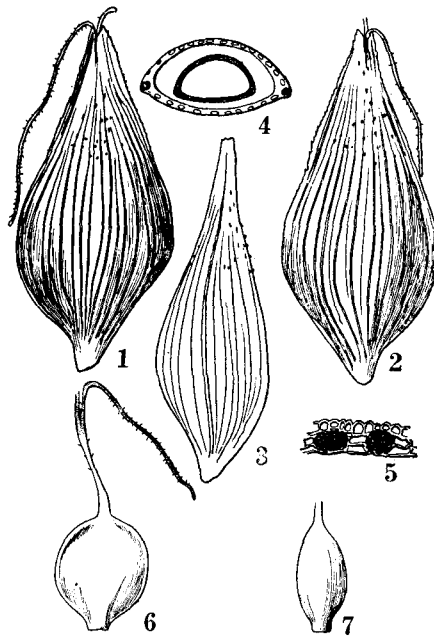


Fig. 17. *Carex succedanea* NAKAI

1. Utricle seen from dorsal side, $\times 14$.
2. The same, from ventral side, $\times 14$.
3. The same, from lateral side, $\times 14$.
4. The same with nut, transversely cut, $\times 14$.
5. Portion of the wall of the utricle, transversely cut, $\times$ ca. 100.
6. Nut seen from dorsal side, $\times 14$.
7. The same, from lateral side, $\times 14$.

Sect. 10. Stenorhynchae TH. HOLM. (p. 10)

27. *Carex stipata* MUEHLENBERG (Fig. 18), apud WILLD. Spec. pl. IV. (1805) 233; FRANCH. et SAV. Enum. pl. Japon. II. (1879) 125; FRANCH. in Nouv. Arch. Mus. Paris 3. sér. VIII. (1896) 218; MATSUM. Ind. pl. Japon. II. 1. (1905) 134; KÜKENTH. in ENGL. Pflanzenr. IV. 20 (1909) 172, fig. 27 H-L; MAKINO & NEMOTO, Fl. of Jap. 1-ed. (1925) 1370; MIYABE & KUDO, Fl. of Hokkaido & Saghal. II. (1931) 220.

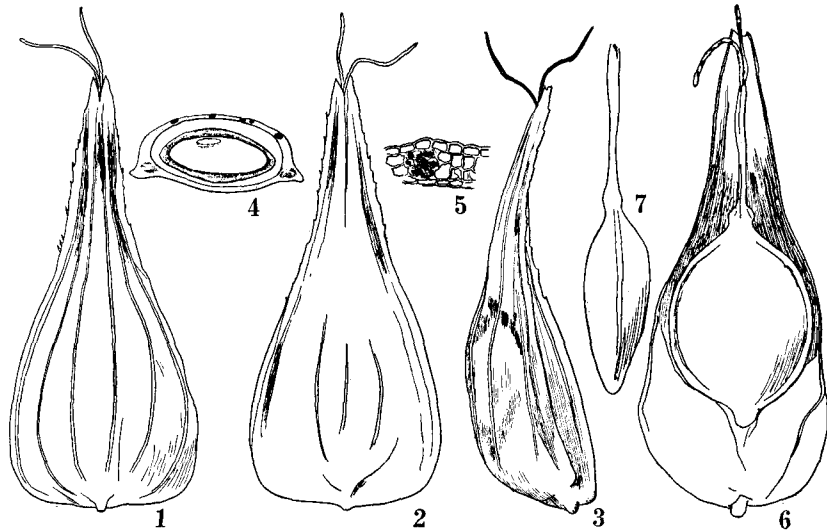


Fig. 18. *Carex stipata* MUEHL.

1. Utricle seen from dorsal side, $\times 14$. 2. The same, from ventral side, $\times 14$. 3. The same, from lateral side, $\times 14$. 4. The same with nut, transversely cut, $\times 14$. 5. Portion of the wall of the utricle, transversely cut, $\times$ ca. 150. 6. Utricle longitudinally cut, showing its spongy base and the nut on the same base, $\times 14$. 7. Nut seen from lateral side, $\times 14$.

Utriculi squamas multo superantes, superne textis e 2-3 stratis cellularum constantibus, lanceolati vel ovato-lanceolati subplano-convexi 4-5 mm longi vix 2 mm lati pallide virentes demum brunnei glabri nitidi dorso pluri-(vix 6-) costati ventre obsoletius nervosi, basi spongiosi subcordati turgidi conspicue sed brevius stipitati, anguste marginati, marginibus parce scabris, apice in rostrum longissimum conicum antice sulcatum margine scabrum ore leviter bidentatum sensim attenuati.

Nom. Jap. Ô-kawazu-suge.

Hab. Saghalien, Hokkaido and Honshiu.

Distrib. North America.

Sect. 11. *Paniculatae* KUNTH (p. 10)

28. *Carex diandra* SCHRANK in Acta Acad. Mogunt. (1782) 49 et in Baier. Fl. (1789) 281.

forma *major* KOCH. Synops. ed. 1. (1837) 751 sub *C. teretiusscula*; KÜKENTH. in ENGL. Pflanzenr. IV. 20 (1909) 177; MIYABE & KUDO, Fl. of Hokkaido & Saghal. II. (1931) 220.

C. diandra FRANCH. in Nouv. Arch. Mus. Paris 3. sér. VIII. (1896) 217; MATSUM. Ind. pl. Japon. II. 1. (1905) 107; MAKINO & NEMOTO, l. c. 1338.

Nom. Jap. Nagae-kawazu-suge.

Hab. Saghalien, Kuriles and Hokkaido.

Distrib. Kamtchatka, Manchuria, Siberia, Himalaya, Kashmir, and North America.

Sect. 12. *Macrocephalae* KUNTH (p. 10)

29. *Carex macrocephala* WILLDENOUGH, apud SPRENG. Syst. III. (1826) 808.

Clavis varietatum

- A. Utriculi marginibus late alati *C. macrocephala* var. *typica*
MIYABE & KUDO
- B. Utriculi marginibus minus late alati *C. macrocephala* var. *Kobomugi* MIYABE & KUDO

var. *typica* MIYABE et KUDO, Fl. of Hokkaid. & Saghal. II. (1931) 221.

Nom. Jap. Yezo-no-kôbô-mugi.

Hab. Saghalien, Kuriles and Hokkaido.

Distrib. Corea, China, Manchuria, Kamtchatka and East Siberia.

var. *Kobomugi* (OHWI) MIYABE et KUDO (Fig. 19), l. c. 221.

C. Kobomugi OHWI, in Mem. Coll. Sci. Kyoto Imp. Univ. Ser. B. V. 3 (1930) 281.

C. macrocephala A. GRAY, in PERRY, Exped. (1857) 328; Miq. Prol. Fl. Jap. (1865-66) 79; FRANCH. et SAV. Enum. pl. Jap. II. (1879) 132; FRANCH. in Nouv. Arch. Mus. Paris 3. sér. VIII. (1896) 287 p.p.; MATSUM. Ind. pl. Jap. II. 1. (1905) 119 p.p.; KÜKENTH. in ENGL. Pflanzenr. IV. 20 (1909) 187 p.p., non WILLD.

Utriculi squamas demum superantes coriacei, textis e 10-20 stratis cellularum concretis, lanceolato-ovati perobtuse trigoni 9-14 mm longi ferrugineo-virentes nigricantes glabri nitidi permulti-nervosi, nervis 30-40, basi valde spongiosi rotundato-contracti breviter stipitati, margine angustissime alati, alis fere e basi 0.1-0.2 mm latis irregulariter eroso-dentati, apice in rostrum perlongum subulato-conicum profunde bidentatum sensim abeuntes.

Nom. Jap. Kôbô-mugi; Hama-mugi; Fude-kusa.

Hab. Hokkaido, Honshiu, Shikoku and Riukius.

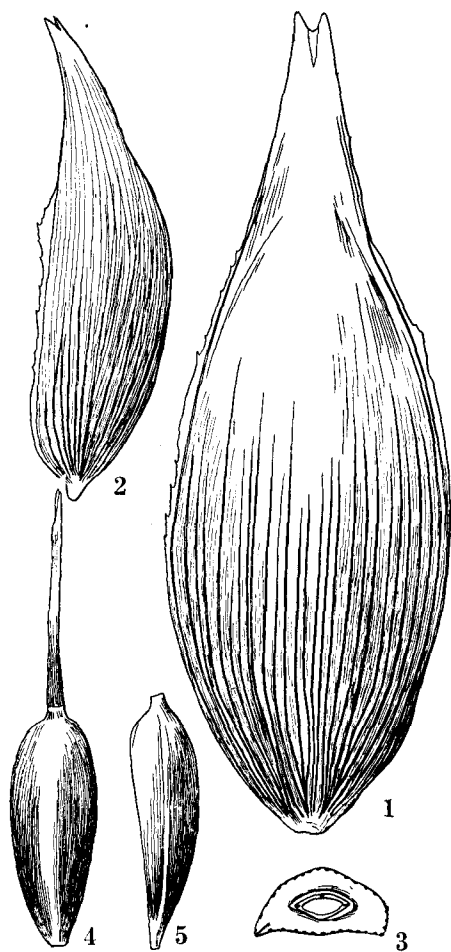


Fig. 19. *Carex macrocephala* var. *Kobomugi* MIYABE et KUDO

1. Utricle seen from dorsal side, $\times 14$.
2. The same, from lateral side, $\times 7$.
3. The same with nut, transversely cut, $\times 7$.
4. Nut seen from dorsal side, $\times 7$.
5. The same, from lateral side, $\times 7$.

rum breve conicum margine saepe bidentulum truncati.

Nom. Jap. Sengen-suge.

Hab. Honshiu.

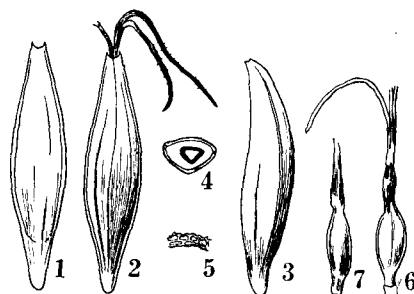


Fig. 20. *Carex digama* NAKAI

1. Utricle seen from dorsal side, $\times 14$.
2. The same, from ventral side, $\times 14$.
3. The same, from lateral side, $\times 14$.
4. The same with nut, transversely cut, $\times 14$.
5. Portion of the wall of the utricle, transversely cut, $\times$ ca. 75.
6. Nut seen from dorsal side, $\times 14$.
7. The same, from lateral side, $\times 14$.

Sect. 13. *Digamae* NAKAI (p. 11)

30. *Carex digama* NAKAI
(Fig. 20), in Botan. Magaz. Tokyo XXVII. (1914) 326; MAKINO & NEMOTO, Fl. of Jap. 1.-ed. (1925) 1339.

Utriculi squamis breviores erecti membranacei, textis e 2-stratis cellularum constantibus, lanceolato-cylindrici obtuse trigoni 2-5 mm longi virides glabri vel minutissime asperuli obsolete paucinervi, (2-nervis marginalibus prominentibus), basi longe attenuati stipitati, apice in rostrum

breve conicum margine saepe bidentulum truncati.

Sect. 14. *Schellhammeria* (MOENCH.) KUNTH (p. 11)

31. *Carex cyperoides* LINNAEUS (Fig. 21), Syst. veg. ed. 13. (1774) 703; KÜKENTH. in ENGL. Pflanzenr. IV. 20 (1909) 191, fig. 31 G-H; TATEWAKI, Veg. Distr. Akan (1927) 147; MIYABE & KUDO, Fl. of Hokkaido & Saghal. (1931) 221.

Utriculi squamas longe superantes dense imbricati erecti membranacei, textis e 2-3 stratis cellularum concretis, oblongo-lanceolati angustissimi plano-convexi 7-8 mm longi (saepe ad 1 cm longi) 1 mm lati pallidi glabri obsolete nervosi, nervis fuscis pluribus, basi attenuati ad 2.5 mm longe stipitati, margine supra basin anguste alati scabri, apice in rostrum longissimum (fere 4 mm longum) subulatum excurvum ore ferrugineo profunde bidentatum sensim desinentes; dentes rostri subpatuli 1 mm longi margine scabri.

Nom. Jap. Kayatsuri-suge.

Hab. Hokkaido.

Distrib. Manchuria, Amur, Siberia, and Europe.

Sect. 15. *Ovales* KUNTH
(p. 11)

32. *Carex macloviana* D'URV. in Mem. Soc. Linn. Paris IV. (1826) 599; KÜKENTH. in ENGL. Jahrb. XXVII. (1899) 505 et ENGL. Pflanzenr. IV. 20 (1909) 195, fig. 32, G-H; KUDO, Fl.

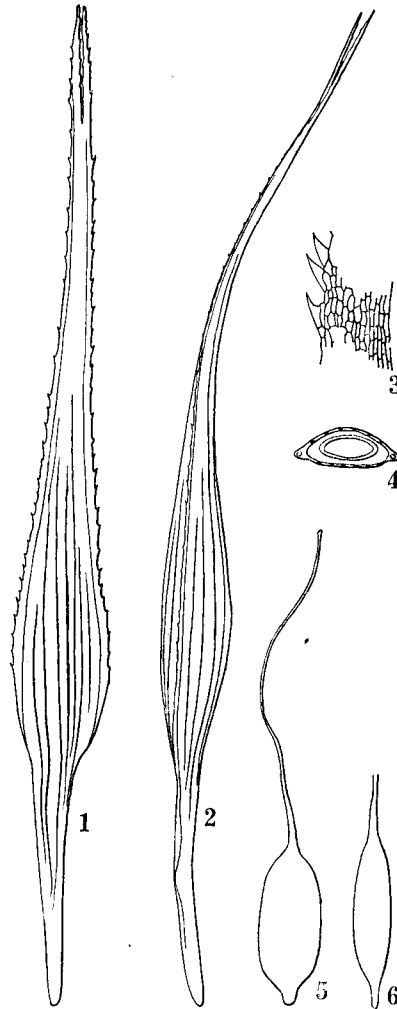


Fig. 21. *Carex cyperoides* L.

1. Utricle seen from dorsal side, $\times 14$.
2. The same, from lateral side, $\times 14$.
3. Portion of the margin of the utricle, $\times$ ca. 75.
4. Utricle with nut, transversely cut, $\times 14$.
5. Nut seen from dorsal side, $\times 14$.
6. The same, from lateral side, $\times 14$.

Paramushir. (1922) 78; MIYABE & KUDO, Fl. of Hokkaido & Saghal. II. (1931) 221.

Nom. Jap. Paramushiro-suge.

Hab. Kuriles.

Distrib. Kamtchatka, Europe and North & South America.

33. *Carex Maackii* MAXIM. Prim. Fl. amur. (1859) 308; FRANCH. in Nouv. Arch. Mus. Paris 3. sér. VIII. (1896) 231; KOMAROV, Fl. Manshur. I. (1901) 357; MATSUM. Ind. pl. Jap. II. 1. (1905) 119; KÜKENTH. in ENGL. Pflanzenr. IV. 20 (1909) 201 p.p.; NAKAI, Fl. Korean. II. (1911) 306.

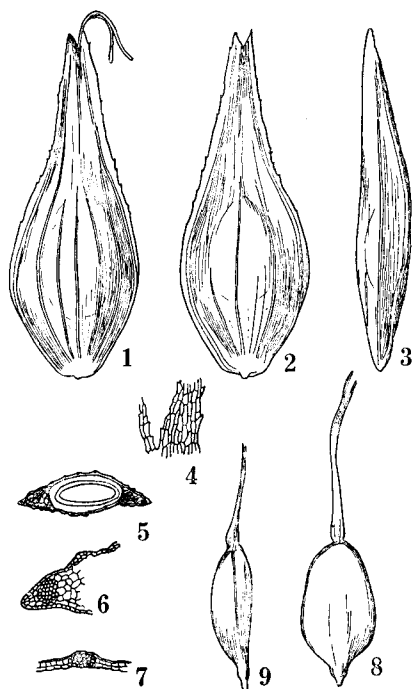


Fig. 22. *Carex Maackii*
var. *nipponica* OHWI

1. Utricle seen from dorsal side, $\times 14$.
2. The same, from ventral side, $\times 14$.
3. The same, from lateral side, $\times 14$.
4. Portion of the beak, $\times ca. 75$.
5. Utricle with nut, transversely cut, $\times 14$.
6. and 7. Portions of transversal sections of the utricle, $\times ca. 75$.
8. Nut seen from dorsal side, $\times 14$.
9. The same, from lateral side, $\times 14$.

var. *nipponica* OHWI (Fig. 22), in Mem. Coll. Sci. Kyoto Imp. Univ. Ser. B. V. 3 (1930) 280.

C. nipponica FRANCH. in Bull. Soc. Bot. France XXVI. (1879) 89 et in Nouv. Arch. Mus. Paris 3. sér. VIII. (1896) 218; MATSUM. Ind. pl. Jap. II. 1. (1905) 122.

C. lagopodioides (non SCH-KUHR.) FRANCH. et SAV. Enum. pl. Jap. II. (1879) 125.

C. calcitrapa FRANCH. in Bull. Soc. philom. Paris 3. sér. VII. (1895) 30 et in Nouv. Arch. Mus. Paris 3. sér. VIII. (1896) 230.

Differt a typo spicis crassioris, spiculis globoso-ovatis 6-8 mm longis, inferioribus interdum basi ramosis.

Utriculi squamas duplo superantes membranacei, textis e 2-3 stratis cellularum constantibus, lanceolato-ovati subconcavo-convexi 3.5 mm longi 1.3 mm lati stramineo-virentes glabri utrinque conspicue plurinervi, basi subrotundati breviter stipitati,

margine spongiosi latius alati superne scabriusculi, apice in rostrum longum excurvum bidentatum ore intus vix scabrum sensim abeuntes.

Nom. Jap. Yagami-suge.

Hab. Hokkaido, Honshiu and Kiushiu.

34. *Carex planata* FRANCHET et SAVATIER (Fig. 23), Enum. pl. Jap. II. (1879) 126 et 555; FRANCH. in Nouv. Arch. Mus. Paris 3. sér. VIII. (1896) 233; MATSUM. Ind. pl. Jap. II. 1. (1905) 126; KÜKENTH. in ENGL. Pflanzenr. IV. 20 (1909) 211; MAK. & NEM. Fl. of Jap. 1.-ed. (1925) 1361.

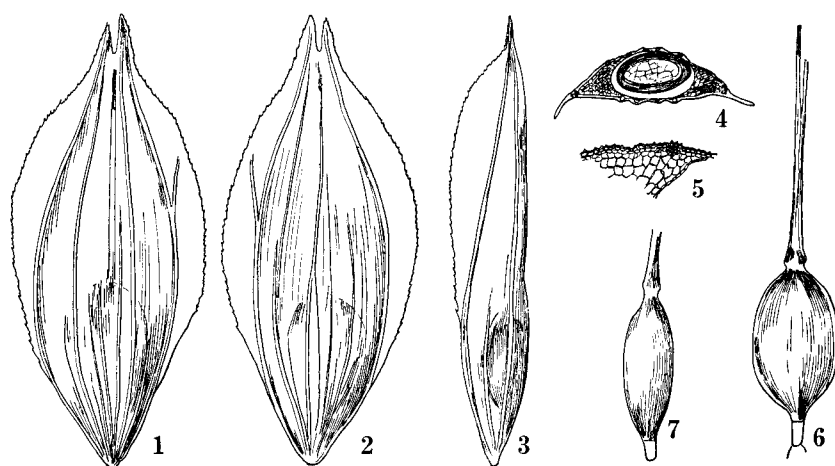


Fig. 23. *Carex planata* FRANCH. et SAV.

1. Utricle seen from dorsal side, $\times 14$. 2. The same, from ventral side, $\times 14$. 3. The same, from lateral side, $\times 14$. 4. The same with nut, transversely cut, $\times 14$. 5. Portion of the wall of the utricle, transversely cut, $\times$ ca. 100. 6. Nut seen from dorsal side, $\times 14$. 7. The same, from lateral side, $\times 14$.

C. ponmoshirensis MIYABE et KUDO, in Trans. Sapporo Nat. Hist. Soc. VI. (1917) 165.

Utriculi squamas multo superantes et iis latiores dense imbricati adpressi tenuiter membranacei, textis ex 1-2 stratis cellularum compositis, late ellipsoidei concavo-convexi vel compresso-biconvexi 3.5-4.5 mm longi vix 2 mm lati brunneo-virentes glabri (nonnisi paucissime asperuli) utrinque plurinervi, nervis 5-9, basi attenuato-contracti, margine spongiosi $\frac{3}{4}$ late viridi alati scabri, apice in rostrum breve antice fissum acute bifidum sensim attenuati.

Nom. Jap. Takane-masu-kusa ; Nishida-suge.

Hab. Hokkaido, Honshiu, Shikoku and Kiushiu.

Sect. 16. *Canescentes* FRIES. (p. 11)

35. *Carex lagopina* WAHLENBERG (Fig. 24), in Vet.-Acad. Handl. Stockholm XXIV. (1803) 145 ; MATSUM. l. c. 117 ; KÜKENTH. l. c. 213 fig. 35 A-B ; KUDO, Fl. Paramushir. (1922) 78 ; MAKINO & NEMOTO, Fl. of Jap. 1.-ed. (1925) 1349 ; MIYABE & KUDO, Fl. of Hokkaido & Saghal. II. (1931) 223.

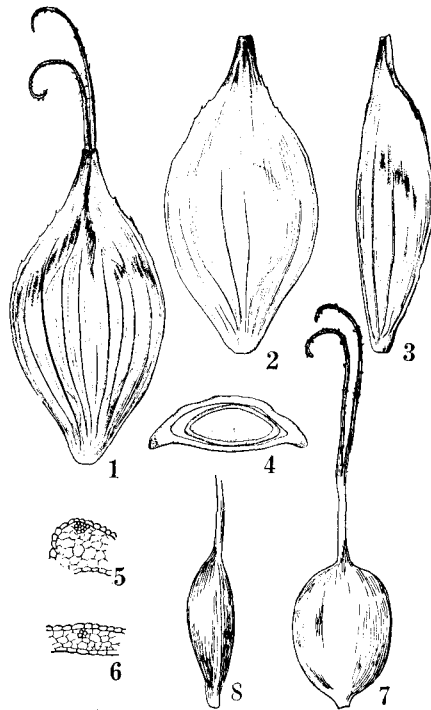


Fig. 24. *Carex lagopina* WAHL.

1. Utricle seen from dorsal side, $\times 14$.
2. The same, from ventral side, $\times 14$.
3. The same, from lateral side, $\times 14$.
4. The same with nut, transversely cut, $\times 14$.
- 5 and 6. Portions of the wall of the utricle, transversely cut, $\times$ ca. 100.
7. Nut seen from dorsal side, $\times 14$.
8. The same, from lateral side, $\times 14$.

Utriculi squamas superantes erecto-patentes subcoriacei ovati plano-convexi 3 mm longi 1.5 mm lati straminei superne castanei dense puncticulati utrinque nervis tenuibus castaneis obscurioribus percursi, basi in stipitem brevem attenuati, apice in rostrum breve coloratum antice fissum margine laeve vel scabrum ore hyalino subintegrum subsensim abeuntes.

Nom. Jap. Takane-yagami-suge.

Hab. Kuriles, Hokkaido and Honshiu.

Distrib. Kamtchatka, Siberia, Europe, North America and New Zealand.

36. *Carex glareosa* WAHLENBERG, in Vet.-Akad. Handl. Stockholm, XXIV. (1803) 146 ; KÜKENTH. l. c. 215.

forma *elegantissima* KÜKENTHAL, Car. Sachal. (1909) 35 ; MAKINO & NEMOTO, Fl. of Jap. 2.-ed. (1931) 1427.

Nom. Jap. Susuya-suge.

Hab. Saghalien.

37. *Carex norvegica* WILLDENOUGH, ex SCHKUHR, Riedgr. I. (1801) 50 t. S, fig. 66 et II. (1806) 207; KÜKENTH. in ENGL. Pflanzenr. IV. 20 (1909) 216; NAKAI in Botan. Magaz. Tokyo XXIX. (1915) (59); MIYABE & MIYAKE, Fl. Saghal. (1915) 532; MAKINO & NEMOTO, Fl. of Jap. 1.-ed. (1925) 1356; MIYABE & KUDO, Fl. of Hokkaido & Saghal. II. (1931) 223.

Nom. Jap. Norge-suge; Karafuto-suge.

Hab. Saghalien.

Distrib. Ochotsk, Kamtschatka, Chuktsch-Penins., Alaska, Sitcha, North America and Europe.

38. *Carex canescens* LINNAEUS (Fig. 25), Spec. pl. I. (1753) 974; FRANCH. in Nouv. Arch. Mus. Paris 3. sér. VIII. (1896) 226; MATSUM. Ind. pl. Japon. II. 1. (1905) 104; KÜKENTH. in ENGL.'s Botan. Jahrb. XXVII. (1899) 508 et in ENGL. Pflanzenr. IV. 20 (1909) 216 fig. 35 C-F; NAKAI, Fl. Korean. II. (1911) 306; MAKINO & NEMOTO, Fl. of Jap. 1.-ed. (1925) 1334; MIYABE & KUDO, l. c. 224.

Utriculi squamas superantes suberecti membranacei, textis e 5-7 stratis cellularum constantibus, ovati plano-convexi vix 2.5 mm longi 1.5 mm lati pallide virentes dense puncticulati glabri, nervis vix 10 tenuibus obscurioribus castaneis percursis, basi spongiosi in stipitem abrupte contracti interdum subcordati, apice in rostrum breve margine parce scabrum ore ferrugineo-emarginatum sensim attenuati.

Nom. Jap. Hakusan-suge.

Hab. Saghalien, Kuriles, Hokkaido and Honshiu.

Distrib. Corea, Manchuria, Kamtschatka, Siberia, Central Asia, Europe, North and South America and Australia.

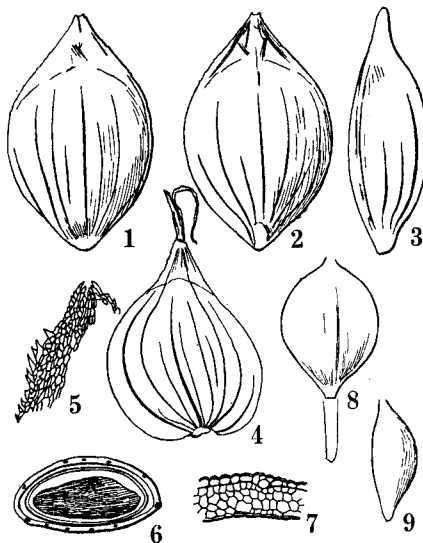


Fig. 25. *Carex canescens* L.

1. Utricle seen from dorsal side, $\times 14$.
2. The same, from ventral side, $\times 14$.
3. The same, from lateral side, $\times 14$.
4. Anomalous form of an utricle seen from dorsal side, $\times 14$.
5. Apical portion of the utricle, $\times 50$.
6. Utricle with nut, transversely cut, $\times 14$.
7. Portion of the wall of the utricle, transversely cut, $\times$ ca. 100.
8. Nut seen from dorsal side, $\times 14$.
9. The same, from lateral side, $\times 14$.

Clavis species et varietatum

- A. Folia 2-3 mm lata subherbacea flaccidior.
 Utriculi ovati.
 a. Spiculae superiores contiguae inferiores
 remotiusculae magis multiflorae
 I. Culmus 20-40 cm altus strictus.
 Squamae albido-stramineae *C. canescens* L.
 II. Culmus humilior saepe incurvus.
 Squamae fulvescentes *C. canescens* var. *fallax* F. KURTZ.
 b. Spiculae remotae parvulae pauciflorae. *C. canescens* var. *sublobiacea*
 LAESTAD.
 B. Folia latiora rigidiora. Utriculi late ovati. *C. canescens* var. *robustior* BLYTT.

var. *fallax* F. KURTZ. ex KÜKENTH. in ASCHERSON et GRAEBNER, Synopsis mitteleurop. Flor. II. 1. (1902) 61 et in ENGL. Pflanzenr. IV. 20 (1909) 217; MIYABE & MIYAKE, Fl. of Saghal. (1915) 533; MAK. & NEM. Fl. of Jap. 1.-ed. (1925) 1334; MIYABE & KUDO, Fl. of Hokkaido & Saghal. II. (1931) 224.

Nom. Jap. Ko-hakusan-suge.

Hab. Saghalien.

Distrib. Europe and North America.

var. *sublobiacea* LAESTAD. in Hartm. Handb. Sc. Fl. ed. 4. (1843) 299; KÜKENTH. l. c.; MIYABE & MIYAKE, l. c.; MAK. & NEM. l. c.; MIYABE & KUDO, l. c. 225.

Nom. Jap. Hosoba-hakusan-suge.

Hab. Saghalien.

Distrib. North America and Europe.

var. *robustior* BLYTT. ex ANDERS. Cyp. Scand. (1849) 57; KÜKENTH. l. c. 218; MAKIN. & NEM. l. c.

Nom. Jap. Hiroba-hakusan-suge.

Hab. Japan.

Distrib. Europe, North & South America, Australia and New Zealand.

39. *Carex traiziscana* FR. SCHMIDT (Fig. 26), Reis. Amurl. (1868) 192 t. VII, fig. 11-15; FRANCH. in Nouv. Arch. Mus. Paris 3. sér. VIII. (1896) 234; MATSUM. Ind. pl. Jap. II. 1. (1905) 136; KÜKENTH. in ENGL. Pflanzenr. IV. 20 (1909) 218; MAK. & NEM. Fl. of Jap. 1.-ed. (1925) 1374; MIYABE & KUDO, Fl. of Hokkaido & Saghal. II. (1931) 225.

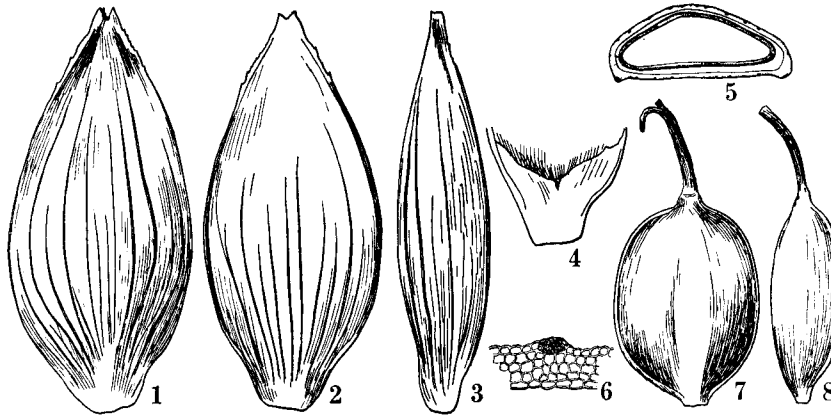


Fig. 26. *Carex traiziscana* FR. SCHM.

1. Utricle seen from dorsal side, $\times 14$. 2. The same, from ventral side, $\times 14$. 3. The same, from lateral side, $\times 14$. 4. Base of the utricle, longitudinally cut, $\times 14$. 5. Utricle with nut, transversely cut, $\times 14$. 6. Portion of the wall of the utricle, transversely cut, $\times$ ca. 100. 7. Nut seen from dorsal side, $\times 14$. 8. The same, from lateral side, $\times 14$.

Utriculi squamas superantes suberecti membranacei, textis e 5-7 stratis cellularum concretis, lanceolato-ovati plano-convexi 3.5-4 mm longi vix 2 mm lati pallidi demum brunnei glabri, (dense puncticulati), utrinque multinervi, nervis ad 25 castaneis tenuibus, basi spongiosi in stipitem brevem contracti, marginati, margine superne scabri, apice in rostrum breve antice fissum ore ferrugineo emarginatum sensim attenuati.

Nom. Jap. Osenuma-suge.

Hab. Saghalien, Kuriles, Hokkaido and Honshiu.

Distrib. Kamtchatka.

40. *Carex brunnescens* (PERS.) POIRET, *Encycl. Suppl.* III. (1813) 286.

var. *sphaerostachya* (DEW.) KÜKENTHAL (Fig. 27), in ENGL. *Pflanzenr.* IV. 20 (1909) 220; KUDO, *Fl. Paramushir.* (1922) 79; MAK. & NEM. *Fl. of Jap.* 1.-ed. (1925) 1334; MIYABE & KUDO, *Fl. of Hokkaido & Saghal.* II. (1931) 226.

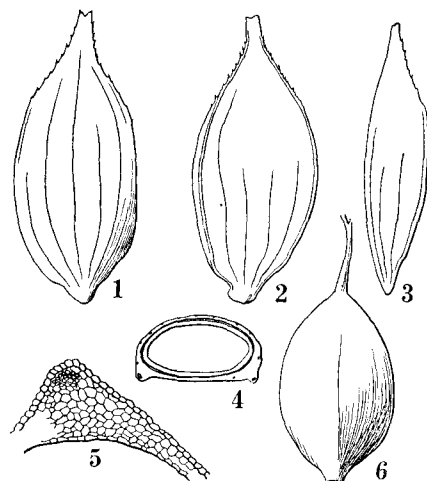


Fig. 27. *Carex brunnescens* var. *sphaerostachya* KÜKENTH.

1. Utricle seen from dorsal side, ×14.
2. The same, from ventral side, ×14.
3. The same, from lateral side, ×14.
4. The same with nut, transversely cut, ×14.
5. Portion of the wall of the utricle, transversely cut, × ca. 100.
6. Nut, ×14.

Syn. *C. sphaerostachya* DEWEY in Amer. Journ. of Sci. XLIX. (1845) 44 t. Ee, fig. 110. *C. vitilis* var. β . BOOTT, Illustr. IV. (1867) 219. *C. vitilis* b. *sylvatica* MEINSH. Fl. Ingr. (1878) 402. *C. canescens* var. *vulgaris* BAILEY. *C. canescens* var. *vitilis* CHRIST. *C. brunnescens* var. *glacilior* BRITTON. *C. brunnescens* var. *vitilis* ASCHERS. et GRAEBN. *C. brunnescens* var. *gracilis* KÜKENTH. ex MATSUM. Ind. pl. Jap. II. 1. (1905) 103.

Utriculi squamas subsuperantes suberecti membranacei, textis crassioribus, ovati planoconvexi 2-2.5 mm longi virentes glabri obsolete plurinervi, basi rotundati brevissime stipitati, marginati, apice in rostrum breve antice saepe ex toto fissum margine scabrum ore hyalino leviter bidentulum subabrupte contracti.

Nom. Jap. Hime-kawazu-suge.

Hab. Saghalien, Kuriles and Hokkaido.

Distrib. Kamtchatka, Siberia, Turkestan, Europe and North America.

Sect. 17. *Tenuiflorae* KUNTH (p. 12)

41. *Carex tenella* SCHKUHR (Fig. 28), Riedgr. I. (1801) 23 t. Pp, fig. 104; FRANCH. in Nouv. Arch. Mus. Paris 3. sér. VIII. (1896) 223; KOMAROV, Fl. Manshur. I. (1901) 362; KÜKENTH. in ENGL. Pflanzenr. IV. 20 (1909) 223, fig. 36 A-C; NAKAI, Fl. Korean. II. (1911) 307; MAK. & NEM. Fl. of Jap. 1.-ed. (1925) 1372; MIYABE & KUDO, Fl. of Hokkaido & Saghal. II. (1931) 226.

Utriculi squamas superantes suberecti subcoriacei oblongo-ovati subcompresso-trigoni 2.5-3 mm longi stramineo-virentes nitidi utrinque tenuiter vix 15-nervi, basi spongiosi in stipitem brevem abrupte contracti, apice in rostrum brevissimum margine laevem vel scabrum ore hyalino truncato apiculati.

Nom. Jap. Karafuto-hoso-suge.

Hab. Saghalien.

Distrib. Corea, Manchuria, Eastern Siberia, Kamtchatka, Europe and North America.

var. *misera* FRANCH. in Nouv. Arch. l. c. 224.

Culmus elatior submetralis. Folia perangusta saepe involuta. Spiculae perpauciflorae.

Nom. Jap. Hoso-suge.

Hab. Saghalien, Hokkaido and Honshiu.

var. *brachycarpa* KÜKENTHAL, Car. Sachal. (1909) 36; LÉVEILLÉ et VANIOT, in FEDDE, Repert. VII. (1909) 103; MIYABE & KUDO, l. c. 227.

Utriculi perparvi vix 2 mm longi.

Nom. Jap. Kotsubu-hoso-suge.

Hab. Saghalien.

42. *Carex tenuiflora* WAHLENBERG (Fig. 29), in Vet.-Acad. Handl. Stockholm XXIV. (1803) 147; FRANCH. in Nouv. Arch. Mus. Paris 3. sér. VIII. (1896) 224; KOMAROV, Fl. Manshur. I. (1901) 361; MATSUM. Ind. pl. Jap. II. 1. (1905) 135; KÜKENTH. in ENGL. Pflanzenr. IV. 20 (1909) 224, fig. 36 D-F; NAKAI, Fl. Korean. II. (1911) 307; MAK. &

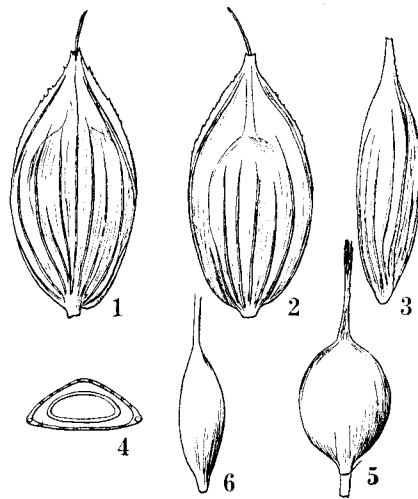


Fig. 28. *Carex tenella* SCHKUHR.

1. Utricle seen from dorsal side, $\times 14$.
2. The same, from ventral side, $\times 14$.
3. The same, from lateral side, $\times 14$.
4. The same with nut, transversely cut, $\times 14$.
5. Nut seen from dorsal side, $\times 14$.
6. The same, from lateral side, $\times 14$.

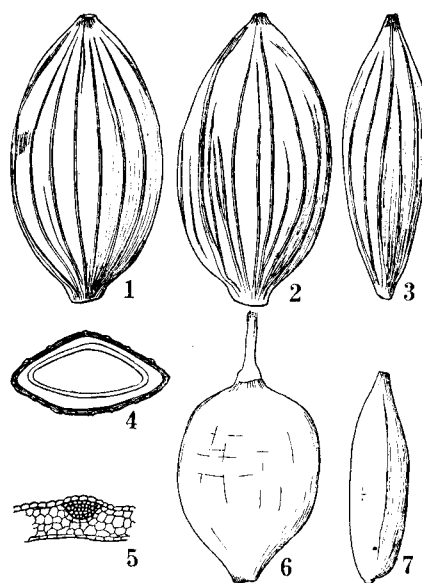


Fig. 29. *Carex tenuiflora* WAHL.

1. Utricle seen from dorsal side, $\times 14$.
2. The same, from ventral side, $\times 14$.
3. The same, from lateral side, $\times 14$.
4. The same with nut, transversely cut, $\times 14$.
5. Portion of the wall of the utricule, transversely cut, $\times$ ca. 100.
6. Nut seen from dorsal side, $\times 14$.
7. The same, from lateral side, $\times 14$.

C. macilenta FRIES in Bot. Notis. (1844) 23; FRANCH. in Nouv. Arch. l. c. 226.

Differt a typo culmis 30–50 cm altis, spiculis 3 subremotis, utriculis ore conspicue emarginatis.

Nom. Jap. Yezo-hari-suge.

Hab. Saghalien and Hokkaido.

Distrib. Central Norway.

43. *Carex arrhyncha* FRANCHET (Fig. 30), in Bull. Soc. philom. Paris 8. sér. VII. (1895) 30 et in Nouv. Arch. l. c. 228; MATSUM. l. c. 100.

C. tenuiflora var. *arrhyncha* KÜKENTH. in ENGL. Pflanzenr. IV. 20 (1909) 224; MAK. & NEM. l. c. 1372; MIYABE & KUDO, l. c. 227.

NEM. Fl. of Jap. 1.-ed. (1925) 1372; MIYABE & KUDO, Fl. of Hokkaido & Saghal. II. (1931) 227.

Utriculi squamas superantes demum patentes subcoriacei, textis e 5–7 stratis cellularum constantibus, oblongi subbiconvexi vix 3 mm longi 1.5 mm lati coesii dense puncticulati glabri, utrinque tenuiter sed clarius plurinervi, basi spongiosi brevissime contracti, margine sublaeves, apice suberostres ore emarginato acuti.

Nom. Jap. Shiro-hari-suge.

Hab. Saghalien, Hokkaido and Honshiu.

Distrib. Corea, Manchuria, Amur, Kamtchatka, Siberia, Northern Europe and North America.

var. *macilenta* O. F. LANG. in Linnaea XXIV. (1851) 541; KÜKENTH. l. c. 225; MAK. & NEM. l. c. 1372; MIYABE & KUDO, l. c. 228.

Utriculi longiores quam *C. tenuiflora*.

Nom. Jap. Haritama-suge.

Hab. Saghalien and Honshiu.

44. *Carex pseudo-loliacea* FR. SCHMIDT, Reis. Amurl. (1868) 193 t. VI, fig. 7-13; FRANCH. in Nouv. Arch. l.c. 225; KÜKENTH. in ENGL. Pflanzenr. IV. 20 (1909) 225; MAK. & NEM. l.c. 1363; MIYABE & KUDO, Fl. of Hokkaido & Saghal. II. (1931) 228.

Nom. Jap. Ô-tsuru-suge.

Hab. Saghalien, Kuriles and Honshiu.

forma *sejuncta* KÜKENTHAL l.c. 225; MIYABE & KUDO, l.c.

Differt a typo culmis 60 cm altis, spiculis discretis.

Nom. Jap. Seitaka-tsuru-suge.

Hab. Saghalien and Hokkaido.

45. *Carex loliacea* LINNAEUS, Spec. pl. ed. 1. (1753) 974; FRANCH. in Nouv. Arch. l.c. 225; KOMAROV, Fl. Manshur. I. (1901) 362; MATSUM. Ind. pl. Japon. II. 1. (1905) 118; KÜKENTH. in ENGL. Pflanzenr. IV. 20 (1909) 225; NAKAI, Fl. Korean. II. (1911) 307; MAK. & NEM. Fl. of Jap. 1.-ed. (1925) 1351; MIYABE & KUDO, Fl. of Hokkaido & Saghal. II. (1931) 228.

Nom. Jap. Akan-suge.

Hab. Saghalien, Hokkaido and Honshiu.

Distrib. Corea, Manchuria, Dahuria, Kamtchatka, Siberia and Europe.

Sect. 18. *Elongatae* KUNTH (p. 13)

46. *Carex stellulata* GOODENOUGH (Fig. 31), in Trans. Linn. Soc. II. (1794) 144; FRANCH. et SAV. Enum pl. Japon. II. (1879) 126;

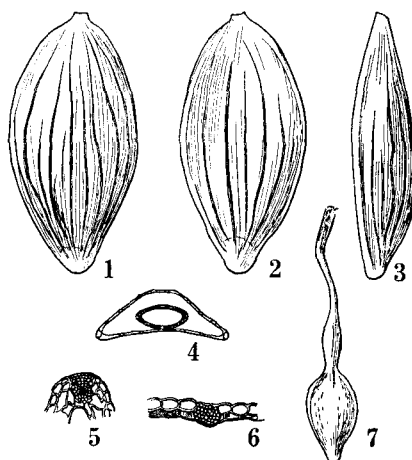


Fig. 30. *Carex arrhyncha* FRANCH.

1. Utricle seen from dorsal side, $\times 14$.
 2. The same, from ventral side, $\times 14$.
 3. The same, from lateral side, $\times 14$.
 4. The same with nut, transversely cut, $\times 14$.
 5. and 6. Portions of the wall of the utricle, transversely cut, $\times$ ca. 120.
 7. Nut, $\times 14$.
- (Figures drawn from an immature specimen)

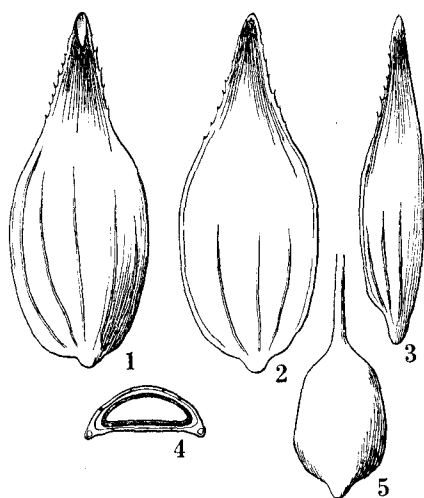


Fig. 31. *Carex stellulata* GOOD.

1. Utricle seen from dorsal side, ×14
2. The same, from ventral side, ×14.
3. The same, from lateral side, ×14.
4. The same with nut, transversely cut, ×14.
5. Nut, ×14.

MATSUM. Ind. pl. Jap. II. 1. (1905) 133; KÜKENTH. in ENGL. Pflanzenr. IV. 20 (1909) 228, fig. 37 C—D; KUDO, Fl. Paramushir. (1922) 79; MAK. & NEM. Fl. of Jap. 1.-ed. (1925) 1370; MIYABE & KUDO, Fl. of Hokkaido & Saghal. II. (1931) 229.

Syn. *C. muricata* LEERS. *C. Leersii* WILLD. *C. vulpina* LAM. *C. echinata* BOECK. Linnaea XXXIX. (1875) 124; FRANCH. in Nouv. Arch. Mus. Paris 3. sér. VIII. (1896) 232. *C. steriles* A. GRAY.

Utriculi squamas plus duplo superantes demum squarrosi membranacei, textis ex 1 strato cellularum compositis, ovati plano-convexi 3.5 mm longi 1.5 mm lati brunneo-virides glabri

dorso tenuiter ventre obsolete et breve nervosi, basi valde spongiosi rotundati brevissime stipitati, incrassato-marginati apice in rostrum longum latiusculum superne ferrugineum incurvum antice fissum margine scabrum ore hyalino bidenticulatum subsensim attenuati.

Nom. Jap. Kawazu-suge.

Hab. Kuriles, Hokkaido and Honshiu.

47. *Carex omiana* FRANCHET et SAVATIER (Fig. 32), Enum. pl. Jap. II. (1879) 126 et 554; FRANCH. in Nouv. Arch. Mus. Paris 3. sér. VIII. (1896) 232.

C. stellulata var. *Omiana* KÜKENTH. in ENGL. Pflanzenr. IV. 20 (1909) 230; MATSUM. Ind. pl. Jap. II. 1. (1905) 134; MAK. & NEM. Fl. of Jap. 1.-ed. (1925) 1370; MIYABE & KUDO, Fl. of Hokkaido & Saghal. II. (1931) 229.

Utriculi lanceolati, textis e 2 stratis cellularum concretis, 5 mm longi apice attenuati longissime rostrati ore bidenticulati; ceterae ut *C. stellulata*.

Nom. Jap. Yachi-kawazu-suge.

Hab. Kuriles, Hokkaido and Honshiu.

48. *Carex laeviculmis* MEINSHAUSEN, in Botan. Centralb. LV. (1893) 195 et in Acta Horti petropol. XVIII. (1901) 326; KÜKENTH. in ENGL. Pflanzenr. IV. 20 (1909) 232, fig. 37 E-F; MAK. & NEM. l. c. 1349; MIYABE & KUDO, l. c. 229.

Nom. Jap. Tachi-kawazu-suge.

Hab. Hokkaido and Honshiu.

Distrib. Kamtschatka and Pacific North America.

49. *Carex senanensis* OHWII in Mem. Coll. Sci. Kyoto Imp. Univ. Ser. B. VI. 5 (1931) 248.

C. Deweyana KÜKENTH. in ENGL. Pflanzenr. IV. 20 (1909) 233; MAK. & NEM. Fl. of Jap. 1.-ed. (1925) 1338, non SCHWEIN.

Nom. Jap.

Hab. Honshiu.

50. *Carex Honda* AKIYAMA (Fig. 33) in Botan. Magaz. Tokyo XLV. (1931) 474.

Utriculi squamas superantes suberecti tenuiter membranacei, textis, ex 1-2 stratis cellularum constantibus, lanceolato-ovati plano-convexi vix 4.5 mm longi 1.2 mm lati pallide virentes glabri obsolete plurinervi, nervis vix 10 obsoletissimis, basi valde spongiosi contracti brevissime stipitati, anguste marginati, apice in rostrum longum margine laevem ore albido leviter bidentatum subsensim attenuati.

Nom. Jap. Ho-suge.

Hab. Honshiu.

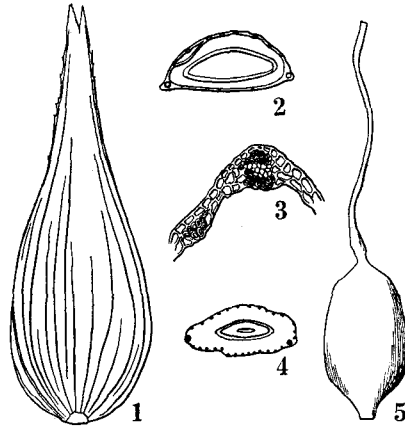


Fig. 32. *Carex omiana* FRANCH. et SAV.

1. Utricle seen from dorsal side, $\times 14$.
2. The same with nut, transversely cut $\times 14$.
3. Portion of the wall of the utricle, transversely cut, $\times$ ca. 120.
4. Basal portion of the utricle, transversely cut, $\times 14$.
5. Nut, $\times 14$.

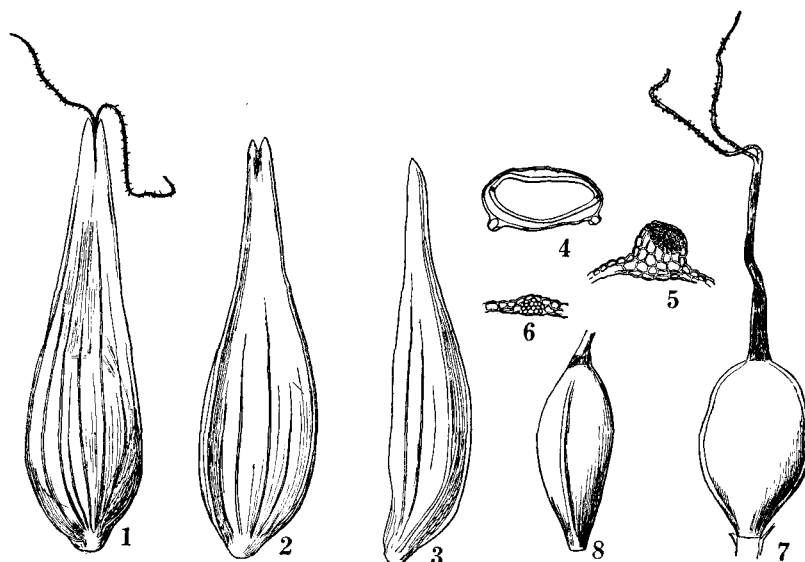


Fig. 33. *Carex Hondaе* AKIYAMA

1. Utricle seen from dorsal side, $\times 14$. 2. The same, from ventral side, $\times 14$. 3. The same, from lateral side, $\times 14$. 4. The same with nut, transversely cut, $\times 14$. 5. and 6. Portions of the wall of the utricle, transversely cut, $\times$ ca. 100. 7. Nut seen from dorsal side, $\times 14$. 8. The same, from lateral side, $\times 14$.

51. *Carex Rochebrunii* FRANCHET et SAVATIER, Enum. pl. Jap. II. (1879) 126 et 555.

C. remota Subsp. *Rochebrunii* KÜKENTH. in ENGL. Pflanzenr. IV. 20 (1909) 234; MAK. & NEM. Fl. of Jap. 1.-ed. (1925) 1365; MIYABE & KUDO, Fl. of Hokkaido & Saghal. II. (1931) 230.

Nom. Jap. Ô-yabu-suge.

Hab. Honshiu and Shikoku.

Distrib. Central China and East India.

var. *remotaeformis* (KOMAROV) (Fig. 34).

C. remotaeformis KOMAROV, in Acta Horti petropol. XVIII. (1901) 144 et in Fl. Manshur. I. (1901) 364.

C. remota Subsp. *Rochebrunii* var. *remotaeformis* KÜKENTH. in ENGL. Pflanzenr. IV. 20 (1909) 235; MAK. & NEM. Fl. of Jap. 1.-ed. (1925) 1365; MIYABE & KUDO, Fl. of Hokkaido & Saghal. II. (1931) 230.

C. remota FRANCH. et SAV.
l. c. 126. FRANCH. in Nouv. Arch.
Mus. Paris 3. sér. VIII. (1896)
235; LÉVEILLÉ et VANIOT. Bull.
Acad. Géogr. bot. 3. sér. X.
(1901) 125, non L.

C. alta var. *Rochebrunii*
FRANCH. l. c. 236 p.p.

Differt a typo habitibus gracilioribus, foliis angustioribus, spiculis reductis paucioribus ovatis.

Utriculi squamas superantes suberecti membranacei, textis e 4-5 stratis cellularum compositis, lanceolato-ovati plano-convexi (superne subbiconvexi) fere 3 mm longi 1 mm lati stramineo-virentes glabri nervis paucis arcuatim super nucem confluentibus percursi, ventre obsolete nervosi, basi spongiosi attenuati breviter stipitati, anguste marginati margine e medio scabri, apice in rostrum mediocre antice fissum ore hyalino leviter bidentatum sensim attenuati.

Nom. Jap. Yabu-suge; Shotai-sô; Itohiki-suge.

Hab. Saghalien, Hokkaido and Honshiu.

Distrib. Corea, China, Manchuria and Sikkin-himalaya.

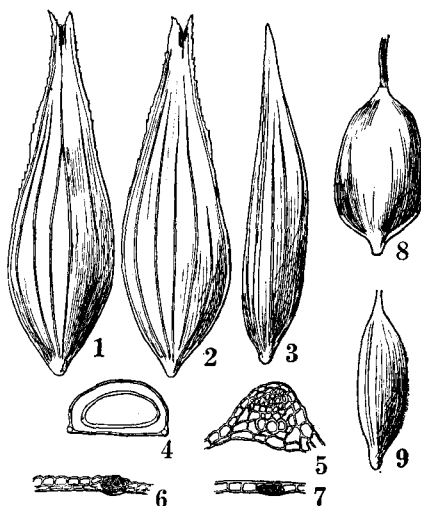


Fig. 34. *Carex Rochebrunii* var. *remotaeformis* (KOMAR.)

1. Utricle seen from dorsal side, $\times 14$.
2. The same, from ventral side, $\times 14$.
3. The same, from lateral side, $\times 14$.
4. The same with nut, transversely cut, $\times 14$.
5. Marginal portion of the utricle, transversely cut, $\times$ ca. 120.
6. and 7. Frontal portions of the wall of the utricle, transversely cut, $\times$ ca. 14.
8. Nut seen from dorsal side, $\times 14$.
9. The same, from lateral side, $\times 14$.

Sect. 19. *Gibbae* KÜENTH. (p. 13)

52. *Carex gibba* WAHLENBERG (Fig. 35) in Vet.-Acad. Handl. Stockholm XXIV. (1803) 148; FRANCH. et SAV. Enum. pl. Japon. II. (1879) 132; FRANCH. in Nouv. Arch. Mus. Paris 3. sér. VIII. (1896) 236; KÜENTH. in ENGL. Pflanzenr. IV. 20 (1909) 238, fig. 37 L, M; MATSUM. Ind. pl. Jap. II. 1. (1905) 111; MAK. & NEM. Fl. of Jap. 1.-ed. (1925) 1343.

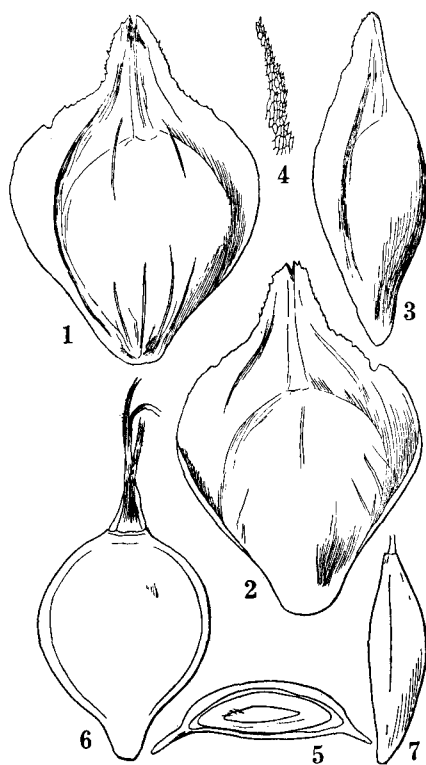


Fig. 35. *Carex gibba* WAHL.

1. Utricle seen from dorsal side, $\times 14$.
2. The same, from ventral side, $\times 14$.
3. The same, from lateral side, $\times 14$.
4. Marginal portion of the beak of the utricle, $\times$ ca. 50.
5. Utricle with nut, transversely cut, $\times 14$.
6. Nut seen from dorsal side, $\times 14$.
7. The same, from lateral side, $\times 14$.

Enum. pl. Japon. II. (1879) 132 et 558; FRANCH. in Nouv. Arch. Mus. Paris 3. sér. VIII. (1896) 259, t. 4, fig. 1, sub *nikoensis*; MATSUM. Ind. pl. Jap. II. 1. (1905) 131; MAK. & NEM. Fl. Jap. 1.-ed. (1925) 1366.

C. nikoensis FRANCH. et SAV. l. c.; KÜKENTH. in ENGL. Pflanzenr. IV. 20 (1909) 252.

Utriculi squamas paullo superantes demum divaricati dorso tenuiter ventre crassiore membranacei lanceolato-ellipsoidei trigoni 3-3.5 mm

C. remota THUNE. Fl. japon. (1784) 37, non L.

C. alta var. *brevior* LÉVEILLÉ et VANIOT, in Bull. Acad. Géogr. bot. 3. sér. X. (1901) 126.

Utriculi squamas longe superantes suberecti subcoriacei late obovati compresso-trigoni (vel plano-convexi) 3-3.5 mm longi 2.5 mm lati pallide virides glabri nitidi enervii (basi parcissime et obsoletissime striolati), basin versus cuneati subalati, margine e basi vix 0.3 mm late alati et e medio scabri, apice in rostrum breve vel mediocre incurvum antice fissum ore hyalino bidentatum intus castaneum abrupte contracti.

Nom. Jap. Masu-kusa.

Hab. Honshiu, Shikoku and Kiushiu.

Distrib. Corea and Northern & Central China.

Subgen. III. *Indocarex* BAILLON (pp. 13-14)

Sect. 20. *Japonicae* KÜKENTHAL (p. 14)

53. *Carex satsumensis* FRANCHET et SAVATIER (Fig. 36),

longi 1 mm lati stramineo-virentes glabri dorso obsolete ventre evidenter plurinervi, basi attenuati stipitati, apice in rostrum longum conicum ore hyalino oblique sectum demum bidentatum sensim abeuntes.

Nom. Jap. Abura-shiba.

Hab. Honshiu, Shikoku and Kiushiu.

Sect. 21. *Mundae* KÜKENTHAL
(p. 14)

54. *Carex dissitiflora* FRANCHET (Fig. 37), in Bull. Soc. philom. Paris 8. sér. VII. (1895) 32 et Nouv. Arch. Mus. Paris 3. sér. VIII. (1896) 250 t. 5; KÜKENTH. in ENGL. Pflanzenr. IV. 20 (1909) 254, fig. 38 F-L; MAK. & NEM. Fl. Jap. 1.-ed. (1925) 1339; MIYABE & KUDO, Fl. of Hokkaido & Saghal. II. (1931) 230.

Utriculi squamas duplo vel triplo superantes erecti (vel demum patuli) tenuiter membranacei, textis ex 1 strato cellularum constantibus, lanceolati trigoni 8-12 mm longi 2 mm lati virides apice basique vix fusco-maculati glabri tenuiter plurinervi (nervis fere 15), basi attenuati vix 1 mm longe stipitati, apice in rostrum longum paullo excurvum ore hyalino oblique sectum sensim abeuntes.

Nom. Jap. Miyama-juzu-suge.

Hab. Hokkaido, Honshiu and Kiushiu.

Sect. 22. *Indicae* TUCKERM. (p. 14)

55. *Carex filicina* NEES. in WIGHT, Contrib. (1834) 123; MAK. & NEM. Fl. of Jap. 2.-ed. (1931) 1424.

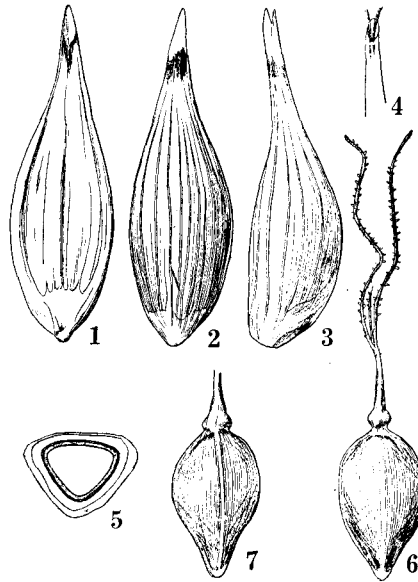
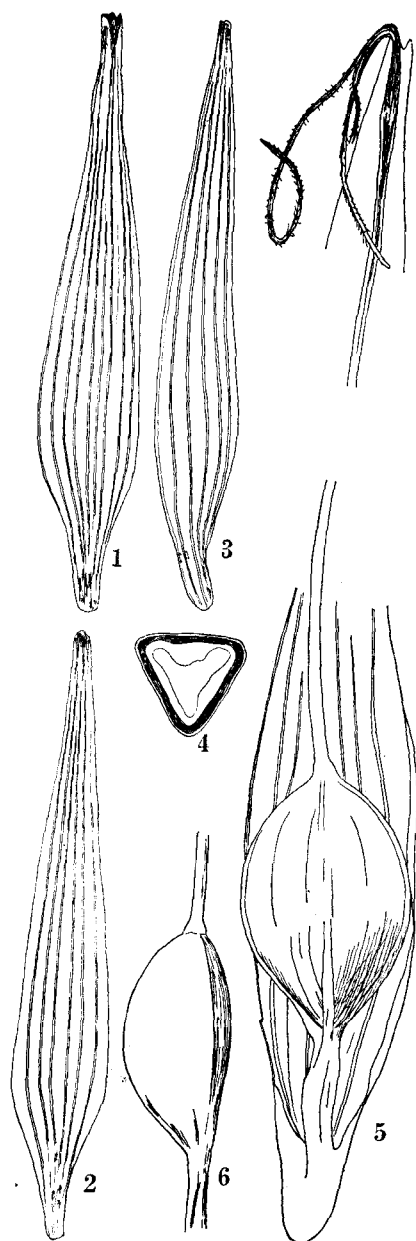


Fig. 36. *Carex satsumensis*
FRANCH. et SAV.

1. Utricle seen from dorsal side, $\times 14$.
2. The same, from ventral side, $\times 14$.
3. The same, from lateral side, $\times 14$.
4. Apical portion of the beak, $\times 14$.
5. Utricle with nut, transversely cut, $\times 14$.
6. Nut seen from ventral side, $\times 14$.
7. The same, from lateral side, $\times 14$.



Nom. Jap. Hanabi-suge.

Hab. Kiushiu.

Distrib. Formosa, India, China, Ceylon, Java and Philippines.

Subgen. IV. *Eucarex* COSS.
et GERM. (pp. 14-46)

Sect. 23. *Acutae* FRIES
(p. 17)

Subsect. 1. *Bicolores*
TUCKERMAN
(p. 18)

56. *Carex eleusinoides* TUR-
CZANIMOW, apud KUNTH, Enum.
pl. II. (1837) 407; TURCZ. Fl.
baic.-dahur. II. 1. (1856) 267;
KÜKENTH. in ENGL. Pflanzenr.
IV. 20 (1909) 299; MIYABE &
KUDO, Fl. of Hokkaid. & Saghal.
II. (1931) 230.

Nom. Jap. Ko-aze-suge.

Hab. Hokkaido.

Distrib. Kamtschatka, Ocho-
tsk, Amur and Eastern Siberia.

Fig. 37. *Carex dissitiflora* FRANCH.

1. Utricle seen from dorsal side, ×7.
2. The same, from ventral side, ×7.
3. The same, from lateral side, ×7.
4. The same with nut, transversely cut, ×7.
5. Portion of the utricle, the wall on dorsal side taken off, showing nut in the utricle, ×14.
6. Nut seen from lateral side, ×14.

Subsect. 2. *Rigidae* FRIES (p. 18)

57. *Carex orbicularis* BOOTT, in Proc. Linn. Soc. I. (1845) 254, et in Trans. Linn. Soc. XX. (1846) 134; KÜKENTH. in ENGL. Pflanzenr. IV. 20 (1909) 303.

var. *brachylepis* KÜKENTHAL, l. c. 304, fig. 46, G-H; NAKAI, Fl. Korean. II. (1911) 309; MAK. & NEM. Fl. of Jap. 1.-ed. (1925) 1359; MIYABE & KUDO, Fl. of Hokkaido & Saghal. II. (1931) 231.

C. tegulata LÉV. et VNT. in Bull. Acad. Géogr. bot. XI. (1902) 306.

Nom. Jap. Marumi-suge.

Hab. Hokkaido.

Distrib. Corea, Turkestan and West Himalaya.

?58. *Carex microsaccus* C. B. CLARKE in Journ. Linn. Soc. XXXV. (1902) 405, et Kew Bull. Adit. Ser. VIII. (1908) 83; KÜKENTH. in ENGL. Pflanzenr. IV. 20 (1909) 304.

Nom. Jap.

Hab. Japan prop. or Corea.

Subsect. 3. *Vulgares* ASCHERSON (p. 18)

59. *Carex jijogatakensis* LÉVEILLÉ et VANIOT, in Bull. Soc. bot. France LI. (1904) 203; KÜKENTH. l. c. 324.

Nom. Jap. Jijogatake-suge.

Hab. Honshiu.

60. *Carex Thunbergii* STEUDEL (Fig. 38), in Flora XXIX. (1846) 23; FRANCH. et SAV. Enum. pl. Japon. II. (1879) 129; MIYABE et KUDO, Fl. of Hokkaid. & Saghal. II. (1931) 231.

C. caespitosa THUNB. Fl. Jap. (1784) 39, non L.

C. vulgaris FRANCH. et SAV. l. c. 128; FRANCH. l. c. 124, non FRIES.

C. Gaudichaudiana KUNTH var. *Thunbergii* KÜKENTH. l. c. 313; MATSUM. Ind. pl. Japon. II. 1 (1905) 111; MAK. & NEM. Fl. of Jap. 1.-ed. (1925) 1342.

Utriculi squamas superantes suberecti membranacei, textis e 2-3 stratis cellularum concretis, late ovati 2.5 mm longi 1.8 mm lati compresso-biconvexi acuti medio faciei saepe longitudinaliter elevato-percursi, pallide virides obsolete purpureo-puncticulati glabri pluricostati

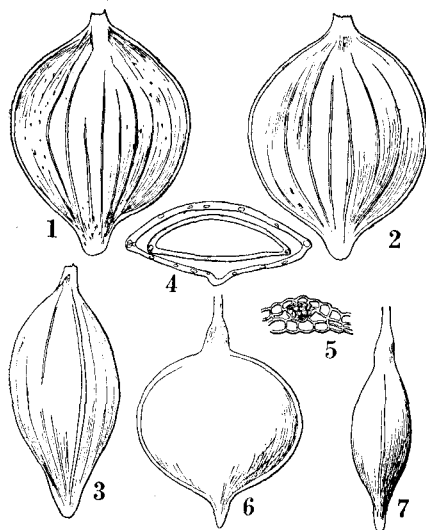


Fig. 38. *Carex Thunbergii* STEUD.

1. Utricle seen from dorsal side, $\times 14$.
2. The same, from ventral side, $\times 14$.
3. The same, from lateral side, $\times 14$.
4. The same with nut, transversely cut, $\times 14$.
5. Portion of the wall of the utricle, transversely cut, $\times$ ca. 100.
6. Nut seen from dorsal side, $\times 14$.
7. The same, from lateral side, $\times 14$.

basi spongiosi rotundati stipitati, apice in rostrum breve ore albido magis emarginato abruptio apiculati.

Nom. Jap. Aze-suge.

Hab. Hokkaido, Honshiu, Shikoku and Kiushiu.

Distrib. China.

var. *brachysandra* MIYABE et KUDO, Fl. of Hokkaido & Saghal. II. (1931) 231.

C. brachysandra FRANCH. in Bull. Soc. philom. Paris 8. sér. VII. (1895) 40 et in Nouv. Arch. Mus. Paris 3. sér. VIII. (1896) t. 9, fig. 1 et IX. (1897) 130.

C. Gaudichaudiana var. *Thunbergii* forma *brachysandra* KÜKENTH. l. c. 313; MAK. & NEM. Fl. of Jap. 1.-ed. (1925) 1342.

Differt a typo culmis elatioribus, spiculis femineis 5-7 cm longis, squamis femineis utriculo superantibus anguste lanceolatis.

Nom. Jap. Ô-aze-suge.

Hab. Kuriles, Hokkaido and Honshiu.

61. *Carex aperta* BOOTT, in HOOK. Fl. boreal.-Amer. II. (1840) 218 t. CCXIX; FRANCH. in Nouv. Arch. Mus. Paris 3. sér. IX. (1897) 125; MATSUM. Ind. pl. Jap. II. 1. (1905) 99; KÜKENTH. in ENGL. Pflanzenr. IV. 20 (1909) 318, fig. 49 A-C; MAK. & NEM. Fl. of Jap. 1.-ed. (1925) 1330; MIYABE & KUDO, Fl. of Hokkaido & Saghal. II. (1931) 232.

Nom. Jap. Ushio-suge.

Hab. Saghalien, Kuriles and Hokkaido.

Distrib. Pacific North America.

Subsect. 4. *Caespitosae* FRIES (p. 18)

62. *Carex wiliuca* MEINSHAUSEN (Fig. 39), ex MAACK, Vilyuisk. Okruga Yakutsk Obl. II. (1886) 308 t. I. B. et in Acta Horti petropol. XVIII. (1901) 339; KÜKENTH. in ENGL. Pflanzenr. IV. 20 (1909) 325.

Utriculi squamis longiores latiores suberecti membranacei, textis e 2-4 stratis cellularum constantibus, ovati (in utriculis mihi visis lanceolato-ovati) plano-convexi compressi 2-4 mm longi 1.7 mm lati flavo-virides obsolete purpureo-puncticulati glabri superne aliquantum papilloso obsolete nervosi, nervis duobus marginalibus prominentibus, basi contracti brevissime stipitati, apice in rostrum mediocriter ferrugineum attenuato-apiculati.

Nom. Jap. Naibuchi-suge.

Hab. Saghalien.

Distrib. Eastern Siberia.

63. *Carex descendens* KÜKENTHAL, in Finska Vetensk.-Soc. Förh. XLV. (1902-1903) n. 8 p. 6, et in ENGL. Pflanzenr. IV. 20 (1909) 326, fig. 50 G-J; MIYABE & KUDO, Fl. of Hokkaido & Saghal. II. (1931) 232.

Nom. Jap. Nebuka-suge.

Hab. Saghalien.

Distrib. Kamtschatka and East Asia.

64. *Carex Schmidtii* MEINSHAUSEN, in BAER et HELMERSEN, Beitr. Kenntn. russ. Reich. XXVI. (1871) 224 et in Acta Horti petropol. XVIII. (1901)

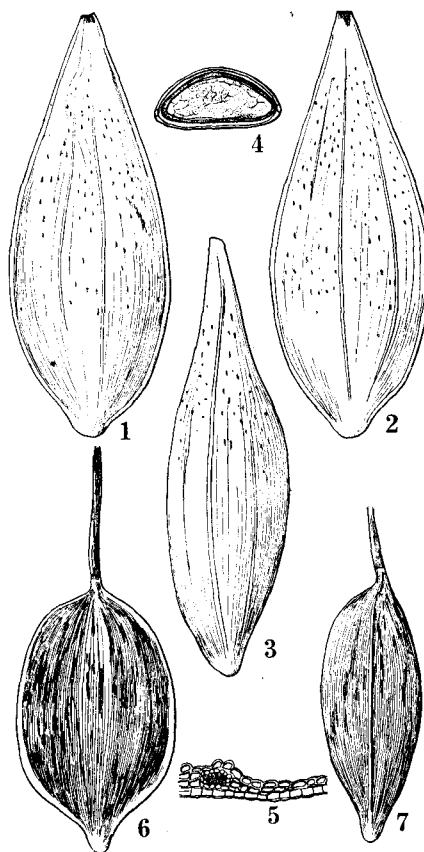


Fig. 39. *Carex wiliuca* MEINSH.

1. Utricle seen from dorsal side, $\times 14$.
2. The same, from ventral side, $\times 14$.
3. The same, from lateral side, $\times 14$.
4. The same with nut, transversely cut, $\times 14$.
5. Portion of the wall of the utricle, transversely cut, $\times$ ca. 100.
6. Nut seen from dorsal side, $\times 14$.
7. The same, from lateral side, $\times 14$.

338; KÜKENTH. in ENGL. Pflanzenr. IV. 20 (1909) 326, fig. 50 D-F; KOM. Fl. Manshur. I. (1901) 376; NAKAI, Fl. Korean. II. (1911) 310; MAK. & NEM. Fl. of Jap. 1.-ed. (1925) 1367; MIYABE & KUDO, l. c.

Nom. Jap. Schmidt-suge; Korai-aze-suge.

Hab. Saghalien and Hokkaido.

Distrib. Corea, Manchuria, Amur, Eastern Siberia and Manchuria.

65. *Carex caespitosa* LINNAEUS (Fig. 40), Spec. pl. ed. I. (1753) 978; FRANCH. in Nouv. Arch. Mus. Paris 3. sér. IX. (1897) 127 partim; MATSUM. Ind. pl. Jap. II. 1. (1905) 105; KÜKENTH. l. c. 328, fig. 50 A-C; MAK. & NEM. Fl. of Jap. 1.-ed. (1925) 1334; MIYABE & KUDO, Fl. of Hokkaido & Saghal. II. (1931) 233.

Utriculi squamis longiores latiores demum subpatuli membranacei textis e 2-stratis cellularum concretis, ovati vel ovato-oblongi biconvexi compressi 2.5-3 mm longi 1.5 mm lati stramineo-virides superne saepe

fusco-tincti atro-purpureo-puncticulati glabri aliquantum papilloso enervii, basi rotundati breve obconico-stipitati, marginati, apice in rostrum brevem integrum apiculati mox decidui.

Nom. Jap. Kuro-o-suge; Ô-kuro-me-suge; Kabu-suge.

Hab. Saghalien, Hokkaido and Honshiu.

Distrib. Corea, Manchuria, Siberia, Caucasus, Northern & Central Europe and North America.

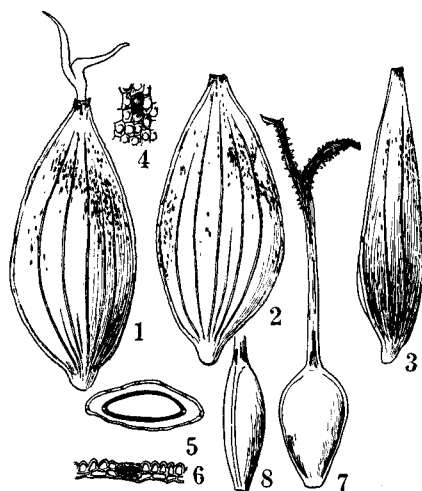


Fig. 40. *Carex caespitosa* L.

1. Utricle seen from dorsal side, $\times 14$.
2. The same, from ventral side, $\times 14$.
3. The same, from lateral side, $\times 14$.
4. Portion of the surface of the utricle, $\times$ ca. 100.
5. Utricle with nut, transversely cut, $\times 14$.
6. Portion of the wall of the utricle, transversely cut, $\times$ ca. 100.
7. Nut seen from dorsal side, $\times 14$.
8. The same, from lateral side, $\times 14$.

var. *elongata* OHWI in Mem. Coll. Sci. Kyoto Imp. Univ. Ser. B. VI. 5 (1931) 245.

Differt a typo spiculis femineis subclaxifloris angustioris, utriculis suberectis oblongis.

Nom. Jap. Nagami-kuro-suge.

Hab. Saghalien.

var. *minuta* KÜKENTH. in ENGL. Pflanzenr. l. c. 329. (Fig. 41)

C. usta FRANCH. in Bull. Soc. philom. Paris 8. sér. VII. (1895) 41, et Nouv. Arch. l. c. IX. (1897) 125, non L. H. BAILEY.

C. minuta FRANCH. ll. cc.

Utriculi squamis longiores latiores demum subpatuli membranacei ovati vel obovati biconvexi vel subplano-convexi compressi 2-2.5 mm longi 1.5 mm lati stramineo-virides atro-purpureo-

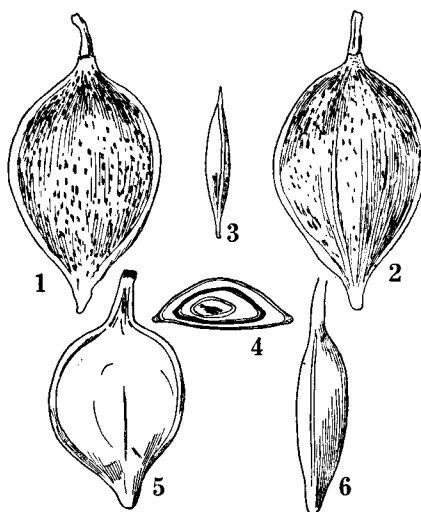


Fig. 41. *Carex caespitosa* var. *minuta*.

1. Utricle seen from dorsal side, $\times 14$.
2. The same, from ventral side, $\times 14$.
3. The same, from lateral side, $\times 7$.
4. The same with nut, transversely cut, $\times 14$.
5. Nut seen from dorsal side, $\times 14$.
6. The same, from lateral side, $\times 14$.

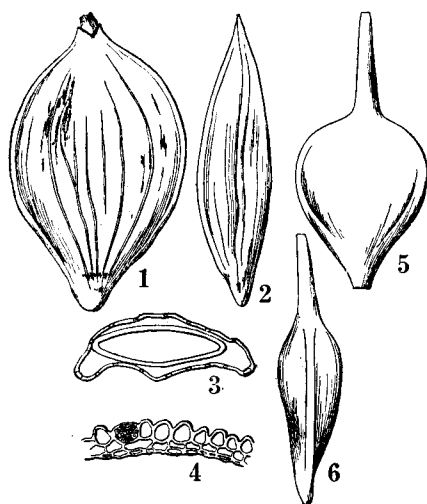


Fig. 42. *Carex vulpi-caudata* AKIYAMA

1. Utricle seen from dorsal side, $\times 14$.
2. The same, from lateral side, $\times 14$.
3. The same with nut, transversely cut, $\times 14$.
4. Portion of the wall of the utricle, transversely cut, $\times$ ca. 150.
5. Nut seen from dorsal side, $\times 14$.
6. The same, from lateral side, $\times 14$.

puncticulati glabri nonnisi papillosi fere enervii, basi attenuati breviter stipitati, marginati, nervis marginalibus conspicuis, apice in rostrum brevem ore integrum apiculati.

Nom. Jap. Kuro-me-suge.

Hab. Saghalien, Kuriles and Hokkaido.

66. *Carex vulpi-caudata* AKIYAMA (Fig. 42), in Journ. Facult. Sci. Hokkaido Imp. Univ. Ser. V. I. 2 (1931) 63; MIYABE & KUDO, Fl. of Hokkaido & Saghal. II. (1931) 233.

Utriculi squamas superantes erecti membranacei, textis e 2-3 stratis cellularum constantibus, ovati 3 mm longi subplano-convexi straminei superne stramineo-virides glabri dense papilloso pluri-nervosi, basi contracti breve stipitati, apice in rostrum brevissimum ore emarginatum apiculati.

Nom. Jap. Yezo-aze-suge.

Hab. Hokkaido.

67. *Carex Kinashii* LÉVEILLÉ et VANIOT, in Bull. Soc. bot. France LI. (1904) 204; KÜKENTH. in ENGL. Pflanzenr. IV. 20 (1909) 333; MAK. & NEM. Fl. of Jap. 1.-ed. (1925) 1348.

Nom. Jap. Kinashi-suge.

Hab. Honshiu.

Subsect. 5. *Forficulae* FRANCHET (p. 19)

68. *Carex appendiculata* KÜKENTHAL, in Bull. Herb. Boiss. 2. sér. IV. (1904) 54, et in ENGL. Pflanzenr. IV. 20 (1909) 338; NAKAI, Fl. Korean. II. (1911) 310; MIYABE & KUDO, Fl. of Hokkaido & Saghal. II. (1931) 234.

C. acuta var. *appendiculata* TRAUTV. in Florul. ochot. phaenog. (1856) 100.

C. vulgaris KOMAROV, Fl. Manshur. I. (1901) 365, non FRIES.

Nom. Jap. Sashisoe-suge.

Hab. Saghalien and Hokkaido.

Distrib. Corea, Kamtchatka, Amur and Ussuri.

69. *Carex semiplena* KÜKENTHAL, in Bull. Herb. Boiss. 2. sér. II. (1902) 1018 et in ENGL. Pflanzenr. IV. 20 (1909) 339, fig. 52 D—G; MAK. & NEM. Fl. of Jap. (1925) 1368; MIYAB. & KUD. Fl. of Hokkaido & Saghal. II. (1931) 234.

C. caulorrhiza LÉV. et VNT. in Bull. Acad. Géogr. bot. 3. sér. XI. (1902) 179; MATSUM. Ind. pl. Japon. II. 1. (1905) 104.

Nom. Jap. Kita-aze-suge.

Hab. Saghalien and Hokkaido.

var. *kirigaminensis* (OHWI) in Mem. Coll. Sci. Kyoto. Imp. Univ. Ser. B. VI. 5. (1931) 241.

Differt a typo spiculis subfastigiatis longius pedunculatis, utriculis angustioribus brevius stipitatis in textura tenuioribus, et squamam obtusiusculam subaequantibus.

Nom. Jap. Kirigamine-suge.

Hab. Honshiu.

70. *Carex aphyllopus* KÜKENTHAL (Fig. 43) in Bull. Herb. Boiss. 2. sér. IV. (1904) 53 et in ENGL. Pflanzenr. IV. 20 (1909) 340; MATSUM. Ind. pl. Japon. II. 1. (1905) 99; MAK. & NEM. Fl. of Jap. (1925) 1330; MIYABE & KUDO, Fl. of Hokkaido & Saghal. II. (1931) 234.

Utriculi squamis paullo breviores membranacei, textis e 2-3 stratis cellularum compositis, ovati subplano-convexi 3-3.5 mm longi vix 1.5 mm lati stramineo-virides obsolete nervosi saepe purpureo-punctati, marginati marginibus nervis prominentibus percursis hispiduli, apice in rostrum breve ferrugineum ore integrum apiculati.

Nom. Jap. Tateyama-suge.

Hab. Hokkaido, Honshiu and Shikoku.

var. *aristata* OHWI, in Mem. Coll. Sci. Kyoto Imp. Univ. Ser. B. VI. (1931) 244.

Differt a typo spiculis femineis elongatis cernuis saepe aristatis.

Hab. Honshiu.

var. *paludicola* OHWI l. c.

Differt a typo culmis ca. pedalis breviter aphyllopodis, basi squamis fusco-purpureis tectis, spiculis approximatis lateralibus omnibus femineis.

Hab. Honshiu.

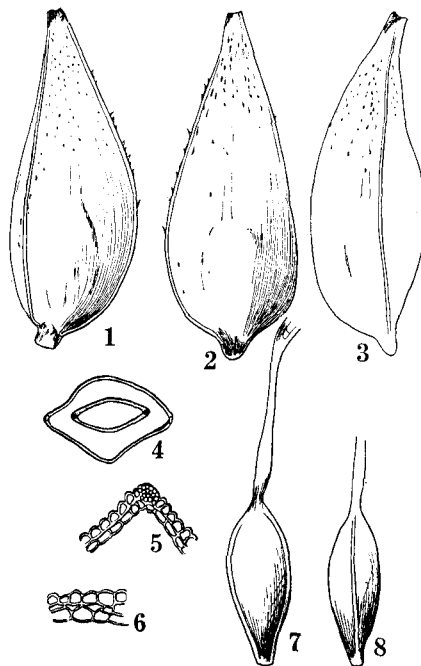


Fig. 43. *Carex aphyllopus* KÜKENTH.

1. Utricle seen from dorsal side, $\times 14$.
2. The same, from ventral side, $\times 14$.
3. The same, from lateral side, $\times 14$.
4. The same with nut, transversely cut, $\times 14$.
5. and 6. Portions of the wall of the utricle, transversely cut, $\times$ ca. 100.
7. Nut seen from dorsal side, $\times 14$.
8. The same, from lateral side, $\times 14$.

71. *Carex Otayai* OHWI l. c. 265.

Nom. Jap. Nagae-suge.

Hab. Honshiu.

72. *Carex cinerascens* KÜKENTHAL, in Bull. Herb. Boiss. 2. sér. II. (1902) 1017 et ENGL. Pflanzenr. IV. 20 (1909) 340; MATSUM. Ind. pl. Jap. II. 1. (1905) 105; MAK. & NEM. Fl. of Jap. (1925) 1336.

Nom. Jap. Haiiro-suge.

Hab. Honshiu.

73. *Carex leiogona* FRANCHET in Bull. Soc. philom. Paris 8. sér. VII. (1895) 88 et Nouv. Arch. Mus. Paris 3. sér. IX. (1897) 129; MATSUM. Ind. pl. Jap. II. 1. (1905) 117; KÜKENTH. in ENGL. Pflanzenr. IV. 20 (1909) 340; MAK. & NEM. Fl. of Jap. (1925) 1350.

Nom. Jap. Tsurugisan-suge.

Hab. Honshiu.

74. *Carex heterolepis* BUNGE in Enum. pl. Chin. bor. (1832) 69; KÜKENTH. in ENGL. Pflanzenr. IV. 20 (1909) 341; NAKAI, Fl. Korean. II. (1911) 310; MAK. & NEM. Fl. of Jap. (1925) 1345; MIYABE & KUDO, Fl. of Hokkaid. & Sagh. II. (1931) 234.

C. trappistarum FRANCH. in MOROT, Journ. de Bot. IV. (1890) 320 et in Nouv. Arch. Mus. Paris 3. sér. IX. (1897) 133.

C. latinervia LÉV. et VNT. in Bull. Acad. intern. Géogr. bot. 3. sér. X. (1901) 219.

C. forficula var. *espinulosa* KÜKENTH. in MATSUM. Ind. pl. Jap. II. 1. (1905) 110.

Nom. Jap. Yama-aze-suge.

Hab. Hokkaido, Honshiu and Kiushiu.

Distrib. Corea and North China.

75. *Carex chilosaccus* C. B. CLARKE, in Kew, Bullet. Addit. Ser. VIII. (1908) 82.

Nom. Jap.

Hab. Honshiu.

76. *Carex impura* OHWI, in Mem. Coll. Sci. Kyoto Imp. Univ. Ser. B. VI. 5. (1931) 251.

Nom. Jap. Hiruzen-suge.

Hab. Honshiu.

77. *Carex otaruensis* FRANCHET, in Bull. Soc. philom. Paris 8. sér. VII. (1895) 34 et Nouv. Arch. Mus. Paris 3. sér. IX. (1897) 122; KÜKENTH. in ENGL. Pflanzenr. IV. 20 (1909) 342; MAK. & NEM. Fl. of Jap. (1925) 1359, ed.-2. (1931) 1443; MIYABE & KUDO, Fl. of Hokkaido & Saghal. II. (1931) 235.

C. cardioglochis LÉV. et VNT. in Bull. Acad. Géogr. bot. 3. sér. XI. (1902) 31.

C. peniculacea LÉV. & VNT. l.c. 110.

C. Prescottiana var. *otaruensis* KÜKENTH. apud MATSUM. Ind. pl. Jap. II. 1. (1905) 127.

Nom. Jap. Otaru-suge.

Hab. Hokkaido, Honshiu, Shikoku and Kiushiu.

78. *Carex forficula* FRANCHET et SAVATIER (Fig. 44), Enum. pl. Japon. II. (1879) 131 et 557; FRANCH. in Nouv. Arch. l. c. VIII. (1896)

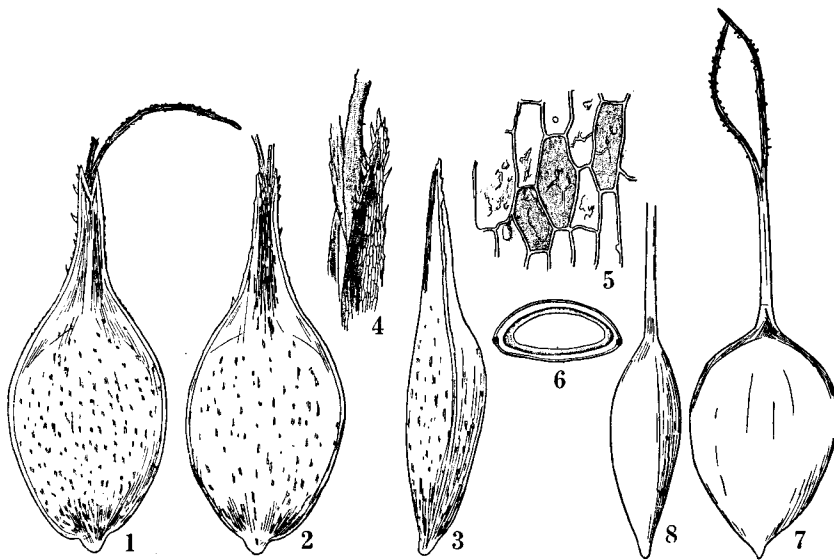


Fig. 44. *Carex forficula* FRANCH.

1. Utricle seen from dorsal side, $\times 14$.
2. The same, from ventral side, $\times 14$.
3. The same, from lateral side, $\times 14$.
4. Apical portion of the beak of the utricle, $\times$ ca. 30.
5. Portion of the surface of the utricle, $\times$ ca. 250.
6. Utricle with nut, transversely cut, $\times 14$.
7. Nut seen from dorsal side, $\times 14$.
8. The same, from lateral side, $\times 14$.

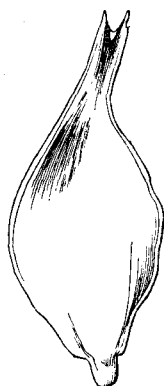


Fig. 45. *Carex forficula* form.
espinulifera AKIYAMA

Utricule seen from dorsal side $\times 14$.

t. 8, fig. 2 et IX. (1897) 135;
MATSUM. Ind. pl. Jap. II. 1.
(1905) 110; MAK. & NEM. Fl. of
Jap. (1925) 1342.

— sub *C. forficula* KÜ-
KENTH. l. c. 342 fig. 53 A—D;
NAKAI, Fl. Korean. II. (1911) 311;
MIYABE & KUDO, Fl. of Hokkaid.
& Saghal. II. (1931) 235.

Utriculi squamis longiores
latiores membranacei, textis e
vix 2 stratis cellularum constanti-
bus, ovaes vel subobovati plano-
convexi 3–3.5 mm longi 1.5 mm
lati stramineo-virides saepe pur-
pureo-lineolati vel punctulati (apice et basi densiores) resinosi glabri
enervii basi attenuato-contracta brevissime stipitati, marginati margi-
nibus nervis conspicuis et superne scabris, apice in rostrum vix 1.5 mm
longum tenue ore purpureo-bidentulum abrupte contracti, crura 0.3 mm
longa intus scabra.

Nom. Jap. Tanigawa-suge.

Hab. Hokkaido, Honshiu, Shikoku and Kiushiu.

Distrib. Corea, South Manchuria and Northern China.

forma *espinulifera* AKIYAMA forma nov. (Fig. 45)

Utriculi in rostrum laeves.

Hab. Nookawa, prov. Kii (Y. OGAWA, anno 1918) Herb. in Facult.
Sci. Hokkaido Imp. Univ.

79. *Carex sadoensis* FRANCHET (Fig. 46) in Bull. Soc. philom.
Paris 8. sér. VII. (1895) 42 et Nouv. Arch. Mus. Paris 3. sér. IX. (1897)
136; MATSUM. l. c. 131; KÜKENTH. l. c. 344, fig. 53 E—G; MAK. & NEM.
Fl. of Jap. (1925) 1366; MIYABE & KUDO l. c. 235.

Utriculi squamis breviores sed latiores membranacei, textis e
2 stratis cellularum constantibus, ovaes vel obovati compresso-
biconvexi vix 2 mm longi ad 1.5 mm lati primo virides demum
cinnamomei saepe dense purpureo-striolati minute resinosi enervii
glabri basi attenuati 0.5 mm longe stipitati, marginibus nervis con-

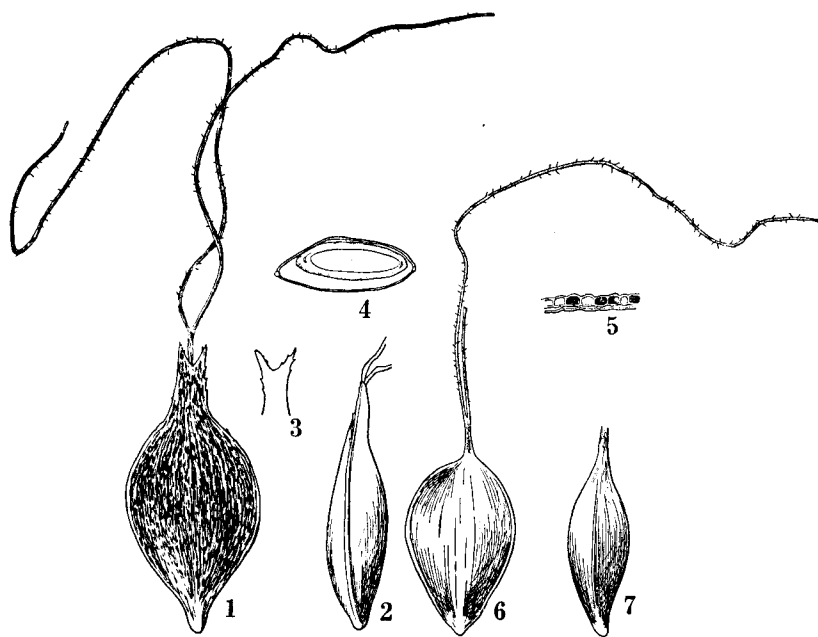


Fig. 46. *Carex sadoensis* FRANCH. et SAV.

1. Utricle seen from dorsal side, $\times 14$. 2. The same, from lateral side, $\times 14$. 3. Beak of the utricle, $\times 14$. 4. Utricle with nut, transversely cut, $\times 14$. 5. Portion of the wall of the utricle, transversely cut, $\times$ ca. 100. 6. Nut seen from dorsal side, $\times 14$. 7. The same, from lateral side, $\times 14$.

spicuis percursis laevibus vel parce scabris, apice in rostrum vix 0.7 mm longum gracile marginibus laeve vel scabrum ore bidentatum abrupte contracti, crura 0.3 mm longa in sicca patula intus scabra.

Nom. Jap. Sado-suge.

Hab. Saghalien, Hokkaido and Honshiu.

var. *integra* OHWI, Mem. Sci. Kyoto VI. 5 (1931) 243.

Differt a typo spiculis pallidioribus ima basi laxioribus, utriculis in rostrum ore integris.

Hab. Honshiu.

Subs. 6. *Praelongae* KÜKENTHAL (p. 20).

80. *Carex incisa* BOOTT, in A. GRAY, Narr. Exped. PERRY II. (1856-57) 327; FRANCH. et SAV. Enum. pl. Jap. II. (1879) 128; FRANCH. in Nouv. Arch. l. c. IX. 120; MATSUM. l. c. 114; KÜKENTH. l. c. 349, fig. 55; MAK. & NEM. l. c. 1346; MIYABE & KUDO, l. c. 235.

Nom. Jap. Tani-suge; Kawara-suge.

Hab. Hokkaido and Honshiu.

81. *Carex Tobae* HONDA, in Botan. Magaz. Tokyo XLIV. (1930) 409.

Nom. Jap. Hiroha-no-tanigawa-suge.

Hab. Kiushiu.

82. *Carex phacota* SPRENG. (Fig. 47), Syst. III. (1826) 826; KÜKENTH. in ENGL. Pflanzenr. IV. 20 (1909) 350, fig. 56 A-C; MAK. & NEM. Fl. of Jap. 1360.

Syn. *C. lenticularis* D. DON.

C. hexasticha REINW. *C.*

platycarpa HOCHST. *C. gracilipes* MIQ. in Ann. Mus. lugd. batav. II. (1865-66) 83; FRANCH. et SAV. Enum. pl. Japon. II. (1879) 127.

C. pruinosa β . *aristata* O. KTZE. *C. rubro-brunnea* FRANCH., non C. B. CLARKE.

Utriculi squamis longiores et latiores adpressi membranacei, textis e 2-3 stratis cellularum compositis, late ovati vel fere obovati compressi medio faciei saepe longitudinaliter elevato-percursi, vix 2.5 mm longi 1.2 mm lati fusco-ferruginei atrofusco densissime striolati dense glandulosi, in partibus glandis cellulis saepe ferrugineis, enerviis rarius paucinerviis glabri, basi attenuati breviter stipitati, cinereo-marginati, marginibus nervis

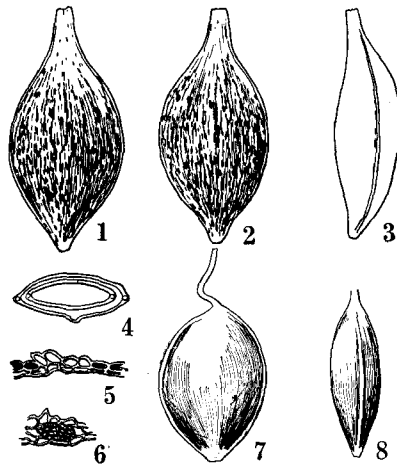


Fig. 47. *Carex phacota* SPRENG.

1. Utricle seen from dorsal side, $\times 14$.
2. The same, from ventral side, $\times 14$.
3. The same, from lateral side, $\times 14$.
4. The same with nut, transversely cut, $\times 14$.
5. and 6. Portions of the wall of the utricle, transversely cut, $\times$ ca. 100.
7. Nut seen from dorsal side, $\times 14$.
8. The same, from lateral side, $\times 14$.

conspicuis et nonnisi obsoletissime scabris, apice attenuati in rostrum vix 0.3 mm longum ore integrum apiculati.

Nom. Jap. Hime-naruko-suge; Kasuga-suge.

Hab. Honshiu and Kiushiu.

Distrib. India and Southern China.

83. *Carex Maximowiczii* MIQUEL (Fig. 48), Prol. Fl. Jap. (1866-67) 82; NAKAI, Veg. Mt. Apoi (1930) 75; MIYABE & KUDO, Fl. of Hokkaido & Saghal. II. (1931) 236.

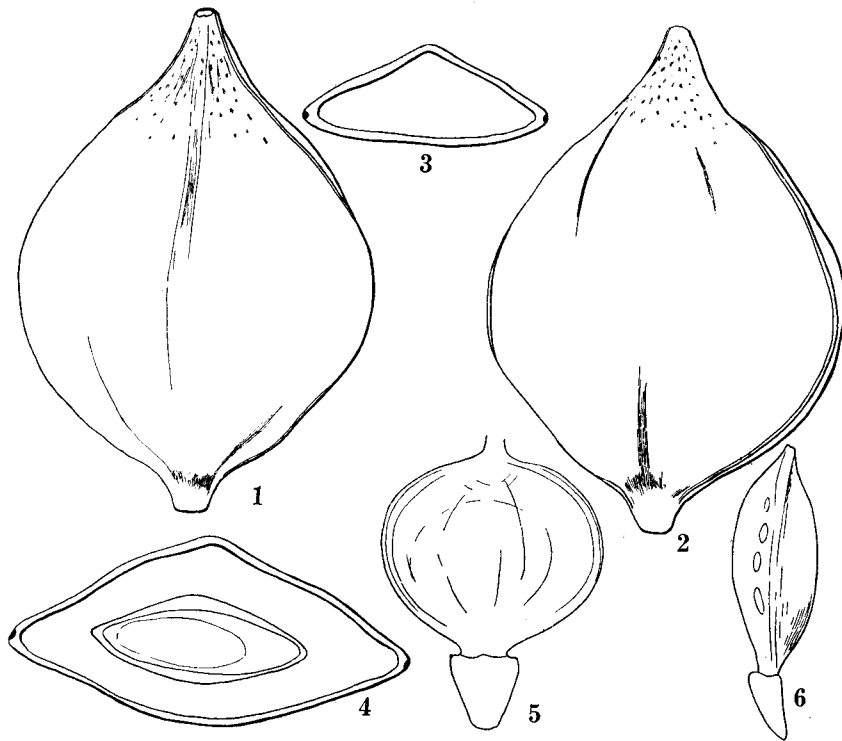


Fig. 48. *Carex Maximowiczii* MIQ.

1. Utricle seen from dorsal side, $\times 14$.
2. The same, from ventral side $\times 14$.
3. Upper portion of the utricle, transversely cut, $\times 14$.
4. Middle portion of the utricle with nut, transversely cut, $\times 14$.
5. Nut seen from dorsal side, $\times 14$.
6. The same, from lateral side, $\times 14$.

C. pruinosa Subsp. *Maximowiczii* KÜKENTH. l. c. 353; MAK. & NEM. l. c. 1362.

C. picta BOOTT in Mem. Amer. Acad. n. s. VI. (1858-59) 418, non STEUDEL.

C. pruinosa var. β . BOOTT, Illustr. IV. (1867) 198; FRANCH. in Nouv. Arch. l. c. 155; LÉV. et VNT. in Bull. Soc. Géogr. X. (1901) 226; MATSUM. Ind. pl. Jap. II. 1. (1905) 128.

Utriculi squamas aequantes sed latiores membranacei late ovati compresso-biconvexi 4-5 mm longi 3.5 mm lati cinnamomei tuberculis albidis densissime obsiti, supra purpureo-puncticulati enervii glabri, basi contracti breviter stipitati, marginibus nervis prominentibus, apice in rostrum brevem marginibus saepe scabriusculum ore integrum apiculati.

Nom. Jap. Gôso.

Hab. Kuriles, Hokkaido, Honshiu, Shikoku and Kiushiu.

Distrib. Corea and China.

var. *levisaccus* OHWI, in Mem. Coll. Sci. Kyoto Imp. Univ. Ser. B. V. (1930) 277, et J. J. B. VII. 5. (1931) 165.

C. pruinosa var. *levisaccus* MAKINO & NEMOTO, Fl. of Jap. 2.-ed. (1931) 1446.

Utriculi luteo-virides epapilloso.

Nom. Jap. Hoshinashi-gôso.

Hab. Honshiu.

var. *Kinashii* OHWI l. c.

C. pruinosa var. *Kinashii* MAKINO & NEMOTO, l. c.

Utriculi elongato-ovati sparsius papilloso distinctius plurinervosi.

Nom. Jap. Nagami-gôso.

Hab. Honshiu.

var. *subsessilis* OHWI l. c. VI. (1931) 248.

Deffert a typo spiculis 5 ovatis, inferioribus breviter pedunculatis superioribus subsessilibus omnibus erectis.

Nom. Jap. Tachi-gôso.

Hab. Honshiu.

var. *minor* AKIYAMA var. nov (Fig. 49).

Culmus ad 10 cm altus. Spiculae 1-3 cm longae 5 mm latae erectae vel suberectae. Utriculi angustiores 3 mm longi.

Nom. Jap. Chabô-gôso (nov.)

Hab. Nikkô, prov. Shimotsuke (S. AKIYAMA, anno 1928); Hannô, prov. Musashi (S. AKIYAMA, anno 1928).

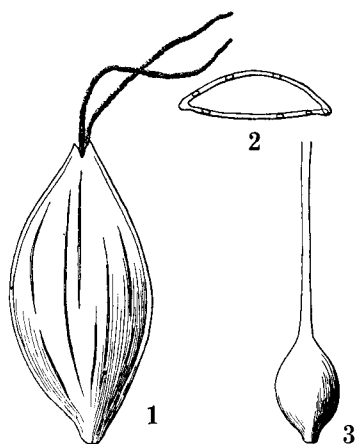


Fig. 49. *C. Maximowiczii*
var. *minor* AKIYAMA

1. Utricle, $\times 14$.
2. The same, transversely cut, $\times 14$.
3. Nut, $\times 14$.

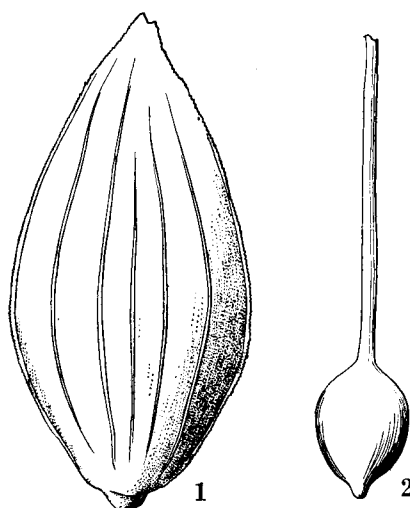


Fig. 50. *C. Maximowiczii*
var. *pallida* AKIYAMA

1. Utricle, $\times 14$.
2. Nut, $\times 14$.

var. *pallida* AKIYAMA var. nov. (Fig. 50).

Squamae multo dilutiores saepe hyalinae dorso viridi trinerviae. Utriculi angustiores magis compressi marginibus obsolete scabriusculi.

Nom. Jap. Shiro-gôso (nov.)

Hab. Warabitai, prov. Oshima, Hokkaido (S. SEGAWA, anno 1931); Kashiwano, prov. Oshima (I. YAMAMOTO, anno 1925).

84. *Carex cincta* FRANCH. (Fig. 51) in Bull. Soc. philom. Paris 8. sér. VII. (1895) 33; MATSUM. Ind. pl. Jap. II. 1. (1905) 105; KÜKENTH. l. c. 353; NAKAI, Fl. Korean. II. (1911) 312; MAK. & NEM. Fl. of Jap. (192) 1336; MIYABE & KUDO, Fl. of Hokkaido & Saghal. II. (1931) 236.

C. phacota LÉV. et VNT. in Bull. Acad. intern. Géogr. bot. 3. sér. X. (1901) 199, non SPRENG.

C. lepidopristis LÉV. et VNT. l. c. 198 et XI. (1902) 60.

Utriculi squamis longiores et latiores adpressi crassiore membranacei late ovati compresso-biconvexi 2.5–3 mm longi 1.7 mm lati cinnamomei dense albo-papilloso enervii vel obsolete paucinervi glabri, basi attenuato-truncati brevissime stipitati, cinereo-marginati, apice in rostrum 0.2 mm longum ore integrum vel emarginatum apiculati.

Nom. Jap. Hime-gôso.

Hab. Hokkaido, Honshiu and Kiushiu.

Distrib. Corea.

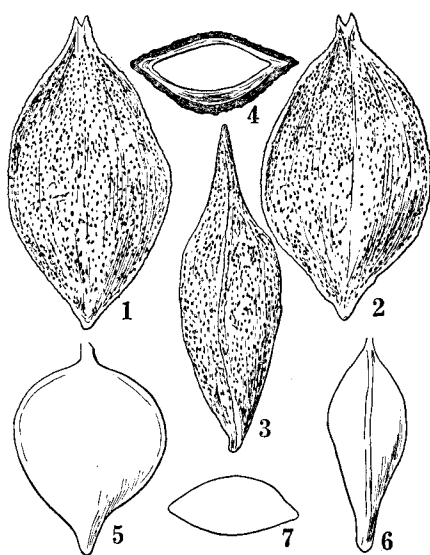


Fig. 51. *Carex cincta* FRANCH.

1. Utricle seen from dorsal side, $\times 14$.
2. The same, from ventral side, $\times 14$.
3. The same, from lateral side, $\times 14$.
4. The same, transversely cut, $\times 14$.
5. Nut seen from dorsal side, $\times 14$.
6. The same, from lateral side, $\times 14$.
7. The same, transversely cut, $\times 14$.

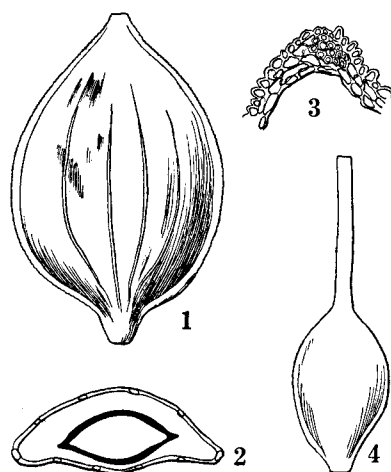


Fig. 52. *Carex cincta*
var. *laxiflora* AKIYAMA

1. Utricle, $\times 14$.
2. The same with nut, transversely cut, $\times 14$.
3. Portion of the wall of the utricle, transversely cut, $\times$ ca. 120.
4. Nut, $\times 14$.

var. *laxiflora* AKIYAMA var. nov. (Fig. 52).

Spiculae femineae subdensiflorae basi multo laxiores. Utriculi 3–3.5 mm longi stramineo-virentes.

Hab. in monte Esan prov. Oshima (K. Tsukamoto, anno 1931).
Herb. in Facult. Sci. Hokkaido Imp. Univ. 12172.

85. *Carex subphacota* NAKAI (Fig. 53), Veget. Insl. Quelp. (1914) 24; MAKINO & NEMOTO, Fl. of Jap. 2.-ed. (1931) 1455.

C. cincta var. *subphacota* KÜKENTH. in ENGL. Pflanzenr. IV. 20 (1909) 353; NAKAI, Fl. Korean. II. (1911) 312; MAK. & NEM. Fl. of Jap. (1925) 1336.

Utriculi squamis longiores et latiores adpressi membranacei, textis e 3-4 stratis cellularum compositis late ovati compresso-biconvexi 3 mm longi 2.3-2 mm lati cinnamomei dense albo-papilloso enervii glabri, basi truncata breviter stipitati, cinereo-marginati, apice in rostrum perbreve integrum demum saepe tortuoso-recurvum apiculati.

Nom. Jap. Honaga-hime-gôso.

Hab. Honshiu and Kiushiu.

Distrib. Corea.

var. *glauca* HONDA in Botan. Magaz. Tokyo XLIII. (1929) 542.

Utriculi densissime papilloso glauca.

Nom. Jap. Honaga-ao-gôso.

Hab. Hokkaido and Honshiu.

86. *Carex subcernua* OHWI, in Mem. Coll. Sci. Kyoto Imp. Univ. Ser. B. V. 3. (1930) 278.

Nom. Jap. Najima-gôso,

Hab. Kiushiu.

87. *Carex cernua* BOOTT (Fig. 54), Illustr. Car. IV. (1867) 171 t. 578 (incl. *β. minor*); LÉV. et VNT. in Bull. Acad. intern. Géogr. bot. 3. sér. X. (1901) 197 partim; MATSUM. Ind. pl. Jap. II. 1. (1905) 105;

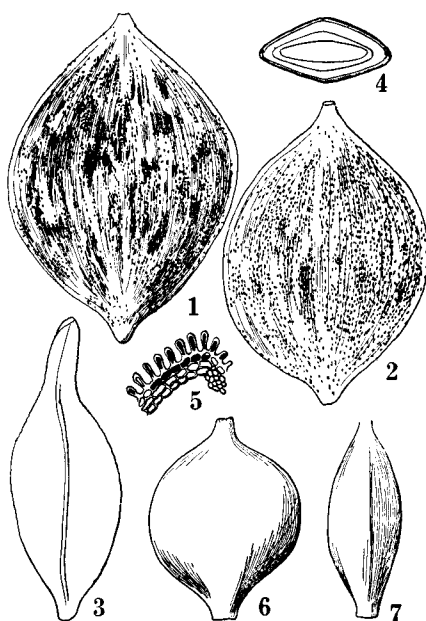


Fig. 53. *Carex subphacota* NAKAI

1. Utricle seen from dorsal side, $\times 14$.
2. The same, from ventral side, $\times 14$.
3. The same, from lateral side, $\times 14$.
4. The same with nut, transversely cut, $\times 14$.
5. Portion of the wall of the utricle, transversely cut, $\times$ ca. 100.
6. Nut seen from dorsal side, $\times 14$.
7. The same, from lateral side, $\times 14$.

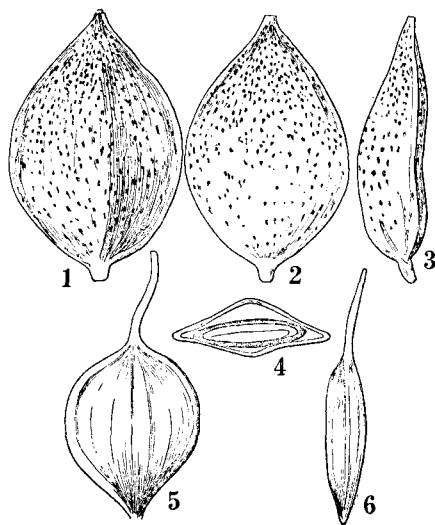


Fig. 54. *Carex cernua* BOOTT

1. Utricle seen from dorsal side, $\times 14$.
2. The same, from ventral side, $\times 14$.
3. The same, from lateral side, $\times 14$.
4. The same with nut, transversely cut, $\times 14$.
5. Nut seen from dorsal side, $\times 14$.
6. The same, from lateral side, $\times 14$.

Nom. Jap. Aze-naruko-suge.

Hab. Hokkaido, Honshiu, Shikoku and Kiushiu.

Distrib. Corea, China, Assam, Himalaya and India.

88. *Carex aequialta* KÜKENTHAL (Fig. 55), in ENGL. Pflanzenr. IV. 20 (1909) 354, fig. 57; MAK. & NEM. Fl. of Jap. (1925) 1329.

Utriculi squamas aequantes vel superantes et iis latiores suberecti membranacei, textis e 2-3 stratis cellularum compositis et cellulis intimis conspicue grandibus, orbiculato-ovati valde turgido-biconvexi 2.5-3 mm longi 2.5 mm lati ferrugineo-fusci dense fusco-sanguineo-punctulati plurinervi, nervis vix 15 in parte epiderminis orti, basi rotundati brevissime obconico-stipitati, marginati, nervis marginalibus prominentibus, apice in rostrum brevissimum albidum minus punctulatum ore integrum apiculati.

Nom. Jap. Awa-suge.

Hab. Honshiu.

KÜKENTH. in ENGL. Pflanzenr. IV. 20. (1909) 353, fig. 56 A-C; NAKAI, Fl. Korean. II. (1911) 312; MAK. & NEM. Fl. of Jap. (1925) 1335; MIYABE & KUDO, Fl. of Hok. & Sagh. II. (1931) 236.

C. phacota FRANCH. in Nouv. Arch. I. c. 117, non SPRENG.

C. Schkuhriana LÉV. et VNT. I. c. XI. (1902) 59.

C. dimorpholepis FRANCH. et SAV. I. c. 127; FRANCH. I. c. 118.

Utriculi squamis longiores et latiores adpressi membranacei ovaes vel fere obovati compresso-biconvexi vix 3 mm longi 1.7 mm lati flavo-virides demum cinnamomei dense papilloso et purpureo-granulosi enervi, basi truncati breviter obconico-stipitati, cinereo-marginati, apice in rostrum brevem ore subintegrum apiculati.

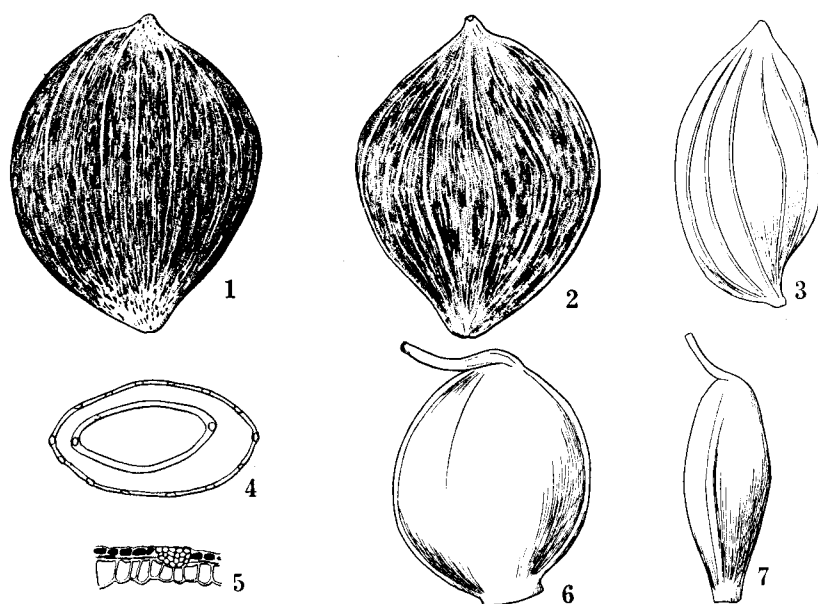


Fig. 55. *Carex aequialta* KÜKENTH.

1. Utricle seen from dorsal side, $\times 14$. 2. The same, from ventral side, $\times 14$. 3. The same, from lateral side, $\times 14$. 4. The same with nut, transversely cut, $\times 14$. 5. Portion of the wall of the utricle, transversely cut, $\times$ ca. 100. 6. Nut seen from dorsal side, $\times 14$. 7. The same, from lateral side, $\times 14$.

89. *Carex Prescottiana* BOOTT, in Proc. Linn. Soc. I. (1845) 286, et Illustr. I. (1858) 45 t. 115 p. p.; FRANCH. in Nouv. Arch. Mus. Paris 3. sér. IX. (1897) 122; MATSUM. Ind. pl. Japon. II. 1. (1905) 127; KÜKENTH. in ENGL. Pflanzenr. IV. 20 (1909) 355; MAK. & NEM. Fl. of Jap. (1925) 1361; MIYABE & KUDO, Fl. of Hokkaid. & Saghal. II. (1931) 237.

C. flabellata LÉV. et VNT. in Bull. Acad. Géogr. bot. sér. XI. (1902) 65.

? *C. Prescottiana* var. *flabellata* OHWI, in Mem. Coll. Sci. Kyoto Imp. Univ. Ser. B. VI. 5. (1931) 257.

Nom. Jap. Prescott-suge.

Hab. Hokkaido, Honshiu and Kiushiu.

Distrib. Himalaya.

var. *fuscescens* KÜKENTH. in ENGL. Pflanzenr. IV.20 (1909) 356; MAK. & NEM. Fl. of Jap. (1925) 1362.

C. polyantha FRANCH. et SAVAT. Enum. pl. Jap. II. (1879) 128 et 556; FRANCH. in Nouv. Arch. Mus. Paris 3. sér. IX. (1897) 120, non F. MUEL.

C. fuscescens BOECK. in ENGLER's Botan. Jahrb. V. (1884) 517.

C. Guffroyana LÉVEILLÉ et VANIOT, in Bull. Acad. intern. Géogr. bot. 3. sér. X. (1901) 203.

C. Kinashii LÉVEILLÉ et VANIOT in Bull. Soc. bot. France LI. (1904) 204.

Utriculi nonnisi 2 mm longi demum fusciscentes.

Hab. Honshiu and Shikoku.

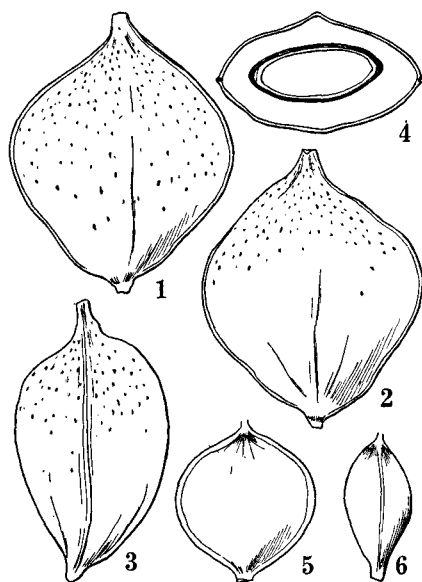


Fig. 56. *Carex kiotensis* FRANCH. et SAV.

1. Utricle seen from dorsal side, ×14.
2. The same, from ventral side, ×14.
3. The same, from lateral side, ×14.
4. The same with nut, transversely cut, ×14.
5. Nut seen from dorsal side, ×14.
6. The same, from lateral side, ×14.

? var. *fusco-cinnamomea* KÜKENTH. in MATSUM. Ind. pl. Japon. II. 1. (1905) 129; MAK. & NEM. l. c. (nom. sol.)

Nom. Jap. Toda-suge.

Hab. Honshiu.

90. *Carex kiotensis* FRANCHET et SAVATIER (Fig. 56), Enum. pl. Japon. II. (1879) 128 et 556; FRANCH. in Nouv. Arch. Mus. Paris 3. sér. IX. (1897) 121.

C. Prescottiana var. *kiotensis* KÜKENTH. in MATSUM. Ind. pl. Japon. II. 1. (1905) 127 et in ENGL. Pflanzenr. IV. 20 (1909) 356; MAK. & NEM. Fl. of Jap. (1925) 1362.

Utriculi squamis longiores et latiores vix patentes membranacei, cellulis intimis haud conspicue grandibus, late obovati biconvexi turgidi 2.5–3.0 mm longi vix ad 2.5 mm lati ferru-

gineo-virentes dense punctulati obsolete et pauce resinosi rugosi obsolete paucistriati basi truncata brevissime stipitati, marginati, apice demum recurvi in rostrum brevem albidum ore subintegrum apiculati.

Nom. Jap. Tekiri-suge.

Hab. Honshiu, Shikoku and Kiushiu.

91. *Carex periculosa* HONDA in Botan. Magaz. Tokyo XLIV. (1930) 408.

Nom. Jap. Hime-tekiri-suge.

Hab. Honshiu.

92. *Carex shinanoana* NAKAI in Rep. Veg. Kamikochi (1928) 34 et 42, cum. descr. Japon.; MAKINO & NEMOTO, Fl. of Jap. 2.-ed. (1931) 1453.

Utriculi fere ut. *C. kiotensis* FRANCHET. Vaginae foliorum reticulatae fissae. Squamae angustiores evidenter nervati. Ceteae fere ut *C. kiotensis*.

Nom. Jap. Miyama-tekiri-suge.

Hab. Kamikochi, prov. Shinano (T. NAKAI, 1927).

93. *Carex shimidzensis* FRANCHET (Fig. 57), in Bull. Soc. philom. Paris 8. sér. VII. (1895) 33; MATSUM. Ind. pl. Japon. II. 1. (1905) 132; KÜKENTH. in ENGL. Pflanzenr. IV. 20 (1909) 356; NAKAI, Fl. Korean. II. (1911) 312; MAK. & NEM. Fl. of Jap. (1925) 1368; MIY. & KUD. Fl. of Hok. & Sagh. II. (1931) 237.

C. cernua FRANCH. in Nouv. Arch. Mus. Paris 3. sér. IX. (1897) 116, non BOOTT.

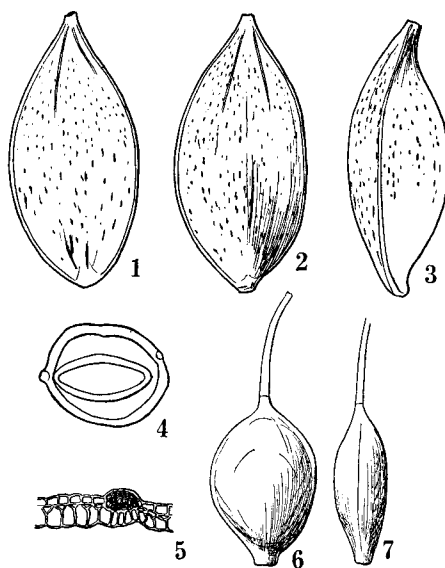


Fig. 57. *Carex shimidzensis* FRANCH.

1. Utricle seen from dorsal side, $\times 14$.
2. The same, from ventral side, $\times 14$.
3. The same, from lateral side, $\times 14$.
4. The same with nut, transversely cut, $\times 14$.
5. Portion of the wall of the utricle, transversely cut, $\times$ ca. 100.
6. Nut seen from dorsal side, $\times 14$.
7. The same, from lateral side, $\times 14$.

Utriculi squamis longiores et latiores demum patentes membranacei, textis e 2-3 stratis cellularum concretis et cellulis intimis conspicue grandibus, ovati vel oblongo-ovati biconvexi vix turgidi 2.5-2.8 mm longi 1.3 mm lati ferrugineo-virides purpureo-resinosi obsolete paucinervi basi contracti vix stipitati, marginati marginibus nervis conspicuis, apice attenuati in rostrum brevissimum ore saepe tortuosum subintegrum apiculati.

Nom. Jap. Azuma-naruko; Miyama-naruko-suge.

Hab. Hokkaido and Honshiu.

Distrib. Corea.

var. *nervulosa* KÜKENTHAL l. c. 357; MAK. & NEM. l. c. 1369; MIYABE & KUDO l. c. 237.

C. nervulosa FRANCH. in Nouv. Arch. l. c. 120.

Differt a typo culmis gracilioribus, spiculis brevioribus tenuioribus.

Nom. Jap.

Hab. Hokkaido.

forma *longispicula* AKIYAMA form. nov.

Spiculae ad 12 cm longae terminalis saepe masculina.

Nom. Jap. Nagabo-naruko-suge (nov.)

Hab. Nakayama-tôge, prov. Ishikari, Hokkaido (S. AKIYAMA, anno 1931); Gomyôjin-mura, prov. Rikuchiu, Honshiu (S. MURAI, anno 1930).

94. *Carex mitoensis* OHWI in Mem. Coll. Sci. Kyoto Imp. Univ. Ser. B. V. 3 (1930) 279, et J. J. Bot. VII. 5 (1931) 164; MAKINO & NEMOTO, Fl. of Jap. 2-ed. (1931) 1438.

Nom. Jap. Mito-suge.

Hab. Honshiu.

Subsect. 7. *Cryptocarpae* TUCKERMAN (p. 22)

95. *Carex subspathacea* WORMSKJ, Fl. Dan. IX. 4. t. 1530 (1816); FR. SCHMIDT, Reis. Amurl. (1868) 196; KÜKENTH. in ENGL. Pflanzenr. IV. 20 (1909) 363; MIYABE & KUDO, Fl. of Hokkaido & Saghalien (1931) 237; MAK. & NEM. Fl. of Jap. (1925) 1370.

Nom. Jap. Hime-ushio-suge.

Hab. Saghalien and Hokkaido.

Distrib. Northern Coast of Europe, Asia & North America.

96. *Carex Ramenskii* KOMAROV, in FEDDE, Repert. XIII. (1913) 164; HULTÉN, Fl. Kamtch. I. (1927) 188; MIYABE & KUDO, Fl. of Hok. & Sagh. II. (1931) 238.

Nom. Jap. Ramensk-suge.

Hab. Saghalien.

Distrib. Kamtchatka.

97. *Carex Lyngbyei* HORNEM. Fl. Dan. t. 1888 (1827); KÜKENTH. l. c. 363 p. p.

Subsp. *cryptocarpa* HULTÉN (Fig. 58), Fl. Kamtchat. I. (1927) 188; MIYAB. & KUD. Fl. of Hokkaid. & Saghal. II. (1931) 238.

C. cryptocarpa C. A. MEY. in Mém. Acad. St.-Petersb. I. (1831) 226 t. 14; FRANCH. in Nouv. Arch. l. c. 126; MATSUM. Ind. pl. Jap. II. 1. (1905) 106.

C. Lyngbyei KÜKENTH. l. c. p. p.

Utriculi squamis multo breviores sed latiores demum patentes coriacei, textis e 4-5 stratis cellularum compositis et cellulis intimis conspicue grandibus, ovaes vel obovati 2.7-3.0 mm longi 2.0 mm lati cinereo-virides demum brunnei (dense) punctulati saepe purpureo-granulosi obsolete nervosi, nervis fere 15 et 2-nervis marginalibus prominentibus, glabri, basi contracti vel rotundati obconico-stipitati, marginati, apice in rostrum brevem purpureum ore integrum apiculati.

Nom. Jap. Yaramé-suge; Yezo-suge.

Hab. Saghalien, Kuriles, Hokkaido and Honshiu.

Distrib. Manchuria, Ochootsk, Kamtchatka and North West parts of North America.

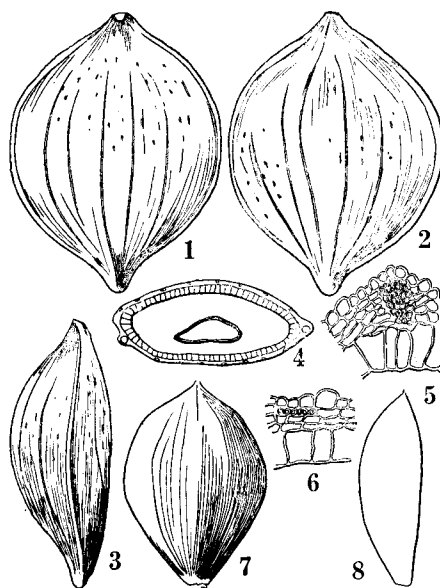


Fig. 58. *Carex Lyngbyei* Subsp. *cryptocarpa* HULT.

1. Utricle seen from dorsal side, $\times 14$.
2. The same, from ventral side, $\times 14$.
3. The same, from lateral side, $\times 14$.
4. The same with nut, transversely cut, $\times 14$.
5. and 6. Portions of the wall of the utricle, transversely cut, $\times$ ca. 100.
7. Nut seen from dorsal side, $\times 14$.
8. The same, from lateral side, $\times 14$.

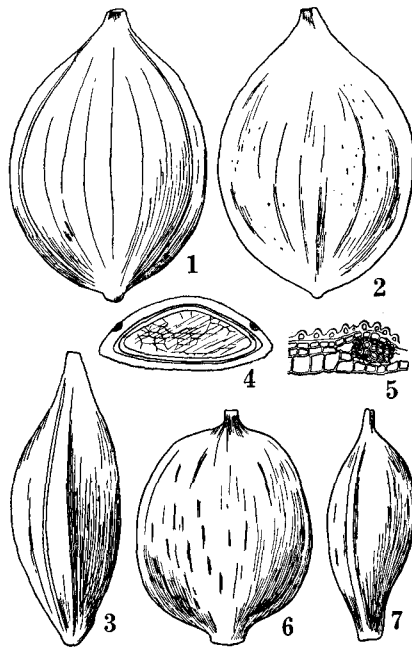


Fig. 59. *Carex prinocarpa* FRANCH.

1. Utricle seen from dorsal side, $\times 14$.
2. The same, from ventral side, $\times 14$.
3. The same, from lateral side, $\times 14$.
4. The same with nut, transversely cut, $\times 14$.
5. Portion of the wall of the utricle, transversely cut, $\times$ ca. 100.
6. Nut seen from dorsal side, $\times 14$.
7. The same, from lateral side, $\times 14$.

98. *Carex prinocarpa* FRANCHET (Fig. 59) in Bull. Soc. philom. Paris 8. sér. VII. (1895) 87 et in Nouv. Arch. Mus. Paris 3. sér. VIII. (1896) t. 8, fig. 1 et IX. (1897) 128; MATSUM. l. c. 128; MIYAB. & KUD. l. c. 239.

C. Lyngbyei var. *prinocarpa* KÜKENTH. l. c. 364; MAK. & NEM. l. c. 1352.

Utriculi angustiores marginibus scabri vel saepe laeves, ceterae ut *C. Lyngbyei*, Subsp. *cryptocarpa* HULTÉN.

Nom. Jap. Karafuto-yarame-suge.

Hab. Saghalien and Hokkaido.

99. *Carex Middendorffii* FR. SCHMIDT (Fig. 60), Reis. Amurl. (1868) 70 et 197 t. VII. fig. 1-5; FRANCH. in Nouv. Arch. Mus. Paris 3. sér. IX. (1897) 157; MATSUM. Ind. pl. Jap. II. 1. (1905) 120; KÜKENTH. in ENGL. Pflanzenr. IV. 20 (1909) 364 et Car. Sachal. 539; KUDO, Fl. Paramushir. (1922) 80; MAK. & NEM. Fl. of Jap. (1925)

1354; MIYABE & KUDO, Fl. of Hokkaido & Saghal. II. (1931) 239.

Utriculi squamis longiores et latiores adpressi coriacei, textis e 3-5 stratis cellularum constantibus et 1-2 stratis inferioribus conspicue grandibus, ovati vel late ovati concavo-convexi vel plano-convexi 4-5 mm longi 2-2.5 mm lati vix 1 mm alti cinereo-virides dense purpureo-puncticulati paucinervi, nervis fere 10, basi rotundato-contracti brevissime stipitati, marginibus laeves vel superne parce scabri nervis marginalibus prominentibus, apice in rostrum brevissimum ferrugineum ore subintegrum apiculati.

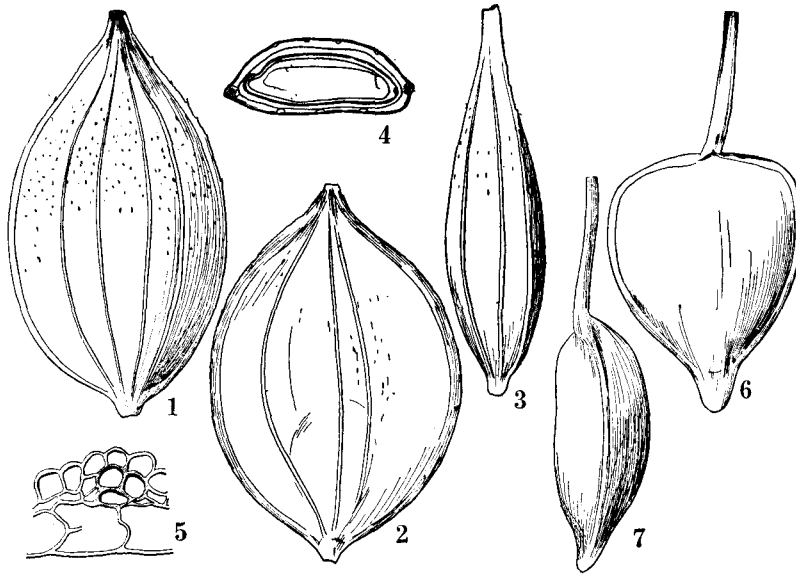


Fig. 60. *Carex Middendorffii* FR. SCHM.

1. Utricle seen from dorsal side, $\times 14$. 2. The same, from ventral side, $\times 14$. 3. The same, from lateral side, $\times 14$. 4. The same with nut, transversely cut, $\times 14$. 5. Portion of the wall of the utricle, transversely cut, $\times$ ca. 200. 6. Nut seen from dorsal side, $\times 14$. 7. The same, from lateral side, $\times 14$.

Nom. Jap. Horomui-suge; Kuro-suge; Tomari-suge.

Hab. Saghalien, Kuriles, Hokkaido, Honshiu and Shikoku.

Distrib. Amur, Kamtchatka and Primorsk.

100. *Carex tuminensis* KOMAROV, in Acta Horti petropol. XVIII. (1901) 444 et in Fl. Manshur. I. (1901) 368; KÜKENTH. in ENGL. Pflanzenr. IV. 20 (1909) 369; NAKAI, Fl. Korean. II. (1911) 313; MAK. & NEM. Fl. of Jap. (1925) 1374; MIYABE & KUDO Fl. of Hokkaido & Saghal. II. (1931) 240.

Nom. Jap. Mitsumata-suge; Hoki-kasasuge.

Hab. Saghalien.

Distrib. Corea, Amur, Primorsk, Udskoj and Kamtchatka.

Sect. 24. *Atratae* KUNTH (p. 23)

101. *Carex Hidewoi* OHWI in Mem. Coll. Sci. Kyoto Imp. Univ. Ser. B. V. 3 (1930) 276.

Nom. Jap. Senjô-suge.

Hab. Honshiu.

102. *Carex soyaeensis* KÜKENTHAL (Fig. 61), in Bull. Herb. Boiss. 2. sér. IV. (1904) 53 et in ENGL. Pflanzenr. IV. 20 (1909) 388; MAK. & NEM. Fl. of Jap. (1925) 1369; MIYAB. & KUD. Fl. of Hok. & Sagh. II. (1931) 240.

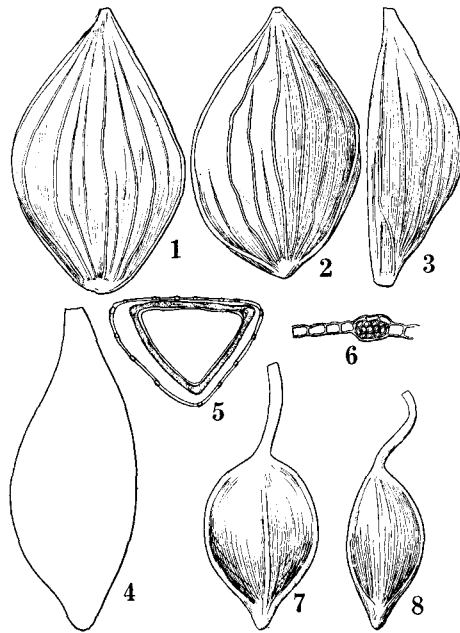


Fig. 61. *Carex soyaeensis* KÜKENTH.

1. Utricle seen from dorsal side, $\times 14$.
2. The same, from ventral side, $\times 14$.
3. The same, from lateral side, $\times 14$.
4. Anomalous form of an utricle, seen from dorsal side, $\times 14$.
5. Utricle with nut, transversely cut, $\times 14$.
6. Portion of the wall of the utricle, transversely cut, $\times$ ca. 100.
7. Nut seen from ventral side, $\times 14$.
8. The same, from lateral side, $\times 14$.

C. Buxbaumii FRANCH. in Nouv. Arch. Mus. Paris, 3. sér. IX. (1897) 149, non WAHLENB.

? *C. curtiglumis* C. B. CLARKE in Bull. Miscellan. Inform. Kew, Addit. Ser. VIII. (1908) 77.

Utriculi squamis longiores et latiores suberecti tenuiter membranacei, textis ex 1-2 stratis cellularum compositis, 2.8-3.2 mm longi 1.3-1.6 mm lati ovati raro oblongo-ovati subinflato-trigoni pallide virentes (dense papilloso) glabri, basi contracta brevissime stipitati, marginibus nervis conspicuis, apice in rostrum brevissimum ore truncatum vel emarginatum apiculati.

Nom. Jap. Sôya-suge.

Hab. Saghalien and Hokkaido.

103. *Carex Augustinowiczii* MEINSHAUSEN (Fig. 62), ex KORSHINSKY in Acta Horti petropol. XII. (1892) 411 et XVIII. (1901) 345; FRANCH. in Nouv. Arch. Mus. Paris 3. sér. IX. (1897) 132; KOMAROV, Fl. Manshur. I. (1901)

370; MATSUM. Ind. pl. Jap. II. 1. (1905) 100; KÜKENTH. in ENGL. Pflanzenr. IV. 20 (1909) 389 et Car. Sachal. (1909) 36; NAKAI, Fl. Korean. II. (1911) 313; MAK. & NEM. Fl. of Jap. 1.-ed. (1925) 1331; MIYABE & KUDO, Fl. of Hokkaido & Saghal. II. (1931) 240.

C. bidentula FRANCH. in Bull. Soc. philom. Paris 8. sér. VII. (1895) 41 et in Nouv. Arch. l. c. 132; MATSUM. l. c. 100.

C. eleusinoides var. *flaccidior* FR. SCHM. Reis. Amurl. (1868) 196.

C. flaccidior MIYABE et KUDO, in Trans. Sapporo nat. Hist. Soc. VII. (1918) 28; KUDO, Fl. Paramushir. (1922) 80; MAKINO & NEMOTO, Fl. of Jap. 2.-ed. (1931) 1425.

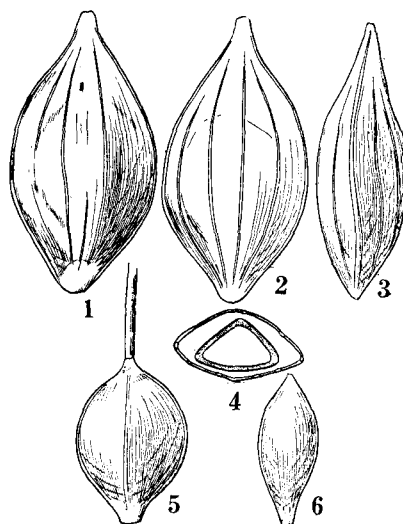


Fig. 62. *Carex Augustinowiczii* MEINSH.

1. Utricle seen from dorsal side, ×14.
2. The same, from ventral side, ×14.
3. The same, from lateral side, ×14.
4. The same with nut, transversely cut, ×14.
5. Nut seen from dorsal side, ×14.
6. The same, from lateral side, ×14.

Utriculi squamis longiores latioresque demum oblique patentem membranacei ovato-elliptici compresso-trigoni demum subinflati vix 3mm longi 1.5 mm lati stramineo-virides (dense punctulati) glabri vix 10-nervi (nervi marginales prominentes), basi attenuato-contracti brevissime stipitati, apice attenuati in rostrum brevem ore subintegrum demum recurvum apiculati.

Nom. Jap. Hiragishi-suge.

Hab. Saghalien, Kuriles, Hokkaido and Honshiu.

Distrib. Corea, Siberia, Europe, Africa, North America and Australia.

var. *macrogya* OHWI in Mem. Coll. Sci. Kyoto Imp. Univ. Ser. B. VI. (1931) 261.

Differt a typo foliis 5 mm latis, utriculis 4 mm longis squamam sesquiplo superantibus.

Hab. Saghalien.

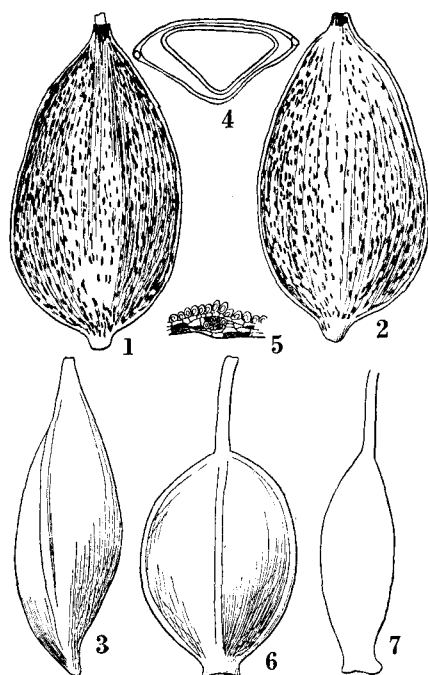


Fig. 63. *Carex Meyeriana* KUNTH

1. Utricle seen from dorsal side, $\times 14$.
2. The same, from ventral side, $\times 14$.
3. The same, from lateral side, $\times 14$.
4. The same with nut, transversely cut, $\times 14$.
5. Portion of the wall of the utricle, transversely cut, $\times$ ca. 75.
6. Nut seen from ventral side, $\times 14$.
7. The same, from lateral side, $\times 14$.

Hab. Honshiu.

Distrib. Corea, Manchuria, Amur and Eastern Siberia.

105. *Carex Buxbaumii* WAHLENBERG, in Vet.-Acad. Handl. Stockholm XXIV. (1803) 163; KÜKENTH. in ENGL. Pflanzenr. IV. 20 (1909) 393; MAK. & NEM. Fl. of Jap. 1.-ed. (1925) 1334; MIYABE & KUDO, Fl. of Hokkaido & Saghal. II. (1931) 241.

C. tarumensis FRANCH. in Bull. Soc. l. c. 37 et in Nouv. Arch. l. c. 147; MATSUM. l. c. 135.

C. picea FRANCH. l. c. 35 et l. c. 151; LÉV. et VNT. in Bull. Soc. Géogr. bot. X. (1901) 224; MATSUM. l. c. 125.

104. *Carex Meyeriana* KUNTH (Fig. 63), Enum. pl. II. (1837) 438; KOMAROV, Fl. Manshur. I. (1901) 372; KÜKENTH. in ENGL. Pflzr. IV. 20 (1909) 393; NAKAI, Fl. Korean. II. (1911) 314; MAK. & NEM. Fl. of Jap. 1.-ed. (1925) 1354.

C. funicularis FRANCH. in Bull. Soc. l. c. 37 et Nouv. Arch. l. c. 153 t. 3, fig. 1; MATSUM. l. c. 111.

C. crassinervia FRANCH. l. c. 38.

Utriculi squamas aequantes sed iis latiores suberecti coriacei, textis e 4-6 stratis cellularum concretis, ovati compresso-trigoni circa 3 mm longi 1.7 mm lati coesii dense papilloso purpureo-granuloso glabri nervosi, basi contracti breviter stipitati, marginati marginibus nervis prominentibus, apice attenuati erostrati vel rostro brevissimo purpureo ore integro apiculati.

Nom. Jap. Numa-kurobo-suge; Ô-miyama-suge; Shirakawa-suge.

Nom. Jap. Tarumai-suge.

Hab. Saghalien, Kuriles and Hokkaido.

Distrib. Siberia, Europe, Africa, North America and Australia.

106. *Carex Gmelinii* HOOK. et ARN. (Fig. 64) Botan. Beech. Voy. III. (1834) 118, t. 27; FR. SCHM. Reis. Amurl. (1868) 193; FRANCH. in Nouv. Arch. Mus. Paris 3. sér. IX. (1897) 151; KOMAR. Fl. Manshur. I.

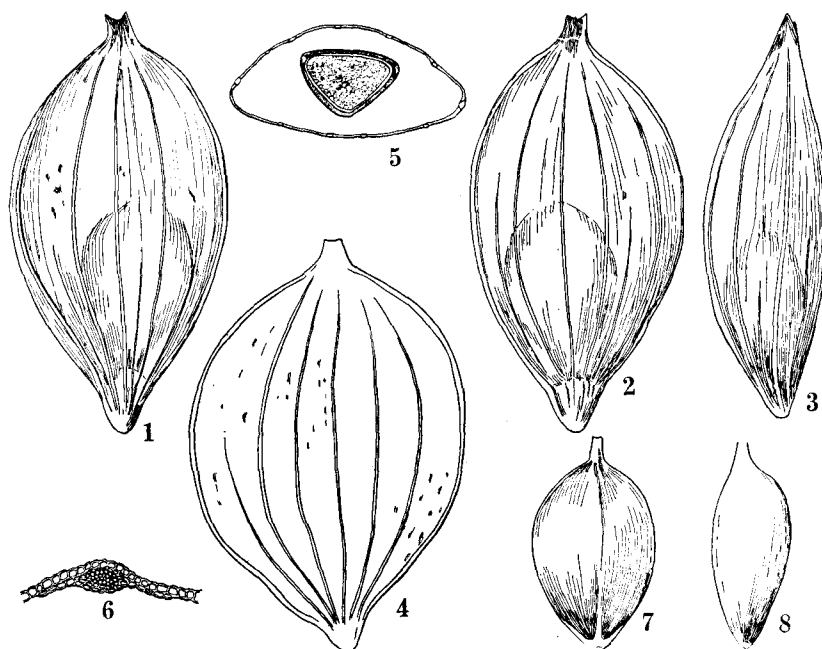


Fig. 64. *Carex Gmelinii* HOOK. et ARN.

1. Utricle seen from dorsal side, $\times 14$. 2. The same, from ventral side, $\times 14$. 3. The same, from lateral side, $\times 14$. 4. Anomalous form of an utricule, seen from dorsal side, $\times 14$. 5. Utricle with nut, transversely cut, $\times 14$. 6. Portion of the wall of the utricule, transversely cut, $\times$ ca. 100. 7. Nut seen from ventral side, $\times 14$. 8. The same, from lateral side, $\times 14$.

(1901) 369; LÉV. et VNT. in Bull. Soc. Géogr. Bot. X. (1901) 224; MATSUM. Ind. pl. Jap. II. 1. (1905) 112; KÜKENTH. in ENGL. Pflanzenr. IV. 20 (1909) 396, fig. 62 A-C, et Car. Sachal. 36; MAK. & NEM. Fl. of Jap. 1.-ed. (1925) 1344; MIYABE & KUDO, Fl. of Hokkaido & Saghal. II. (1931) 241.

C. laticuspis FRANCH. in Bull. Soc. l. c. 38.

Utriculi squamis paullo longiores latioresque suberecti membranacei, textis e 1-2 stratis cellularum compositis, ovaes vel subobovati compresso-trigoni vix inflati 4-5 mm longi 2-3 mm lati 1.3 mm alti straminei punctulati utrinque tenuiter quinquenervi (nervi 2 marginales prominentes) basi attenuati conspicue 0.5 mm longe obconico-stipitati, apice in rostrum 0.3 mm longum purpureum ore subintegrum vel emarginatum apiculati.

Nom. Jap. Nemuro-suge; Hidaka-suge.

Hab. Saghalien, Kuriles and Hokkaido.

Distrib. Manchuria, Amur, Primorsk, Ajan, Kamtchatka, Pribilof Isls., Unalaska and Sitcha.

107. *Carex atrata* LINNAEUS (Fig. 65), Spec. pl. ed. 1. (1753) 976; KOM. Fl. Manshur. I. (1901) 372; KÜKENTH. in ENGL. Pflanzenr. IV. 20 (1909) 396, fig. 62 D-G; NAKAI, Veg. Daisetsuzan Mts. (1929) 58; MIYABE & KUDO, Fl. of Hokkaid. & Saghal. II. (1931) 242.

C. atrata forma *castanea* MAKINO & NEM. Fl. of Jap. (1925) 1331, non K. RICHTER.

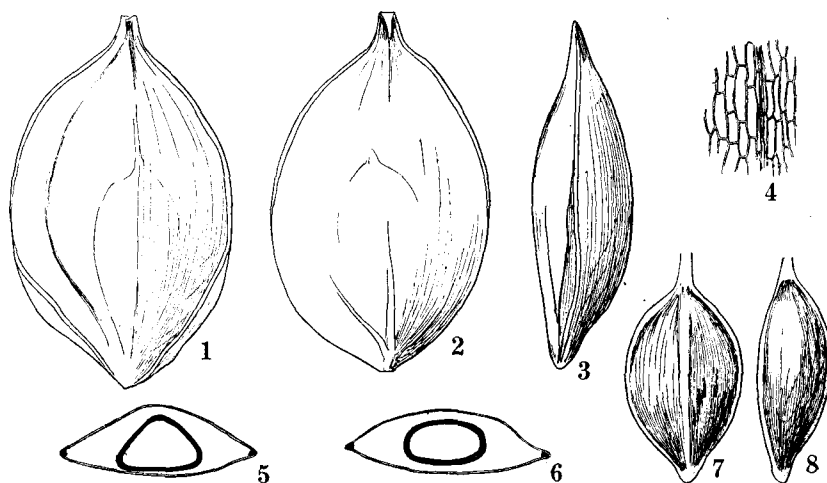


Fig. 65. *Carex atrata* L.

1. Utricle seen from dorsal side, $\times 14$.
2. The same, from ventral side, $\times 14$.
3. The same, from lateral side, $\times 14$.
4. Portion of the surface of the utricle, $\times$ ca. 100.
5. Utricle with nut, transversely cut, $\times 14$.
6. Anomalous form of an utricle with nut, transversely cut, $\times 14$.
7. Nut seen from dorsal side, $\times 14$.
8. The same, from lateral side, $\times 14$.

Utriculi squamis paullo breviores sed latiores erecti tenuiter membranacei, textis ex 1-(raro 2-) strato cellularum compositis, late ovaes vel obovati compresso-trigoni raro biconvexi 3.5 mm longi 2-2.5 mm lati flavescentes primo emaculati dein purpureo-maculati demum omnino atro-purpurei dense punctulati glabri enervii sed cellulis 1-2 stratis parvioribus longitudinaliter percursi, et 2 nervis marginalibus prominentibus, basi contracti vix stipitati, laeve marginati, apice in rostrum breve cylindricum atro-purpureum ore leviter bidentulum abrupte desinentes.

Nom. Jap. Kurobo-suge.

Hab. Hokkaido and Honshiu.

Distrib. Manchuria, Siberia, Europe and North America.

108. *Carex Mertensii* PRESCOTT, apud BONG. Vég. Sitcha, in Mém. Acad. St.-Pétersbourg 2. ser. VI. (1833) 168; KÜKENTH. in ENGL. Pflanzenr. IV. 20 (1909) 400, fig. 62 H-L.

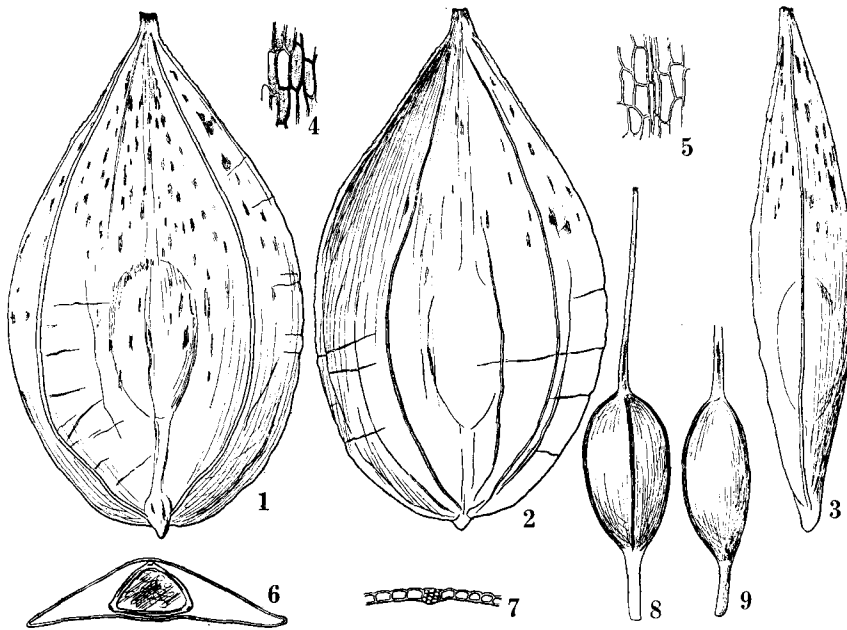


Fig. 66. *Carex Mertensii* var. *urostachys* KÜKENTH.

1. Utricle seen from dorsal side, $\times 14$. 2. The same, from ventral side, $\times 14$. 3. The same, from lateral side, $\times 14$. 4. and 5. Portions of the surface of the utricle, $\times$ ca. 100. 6. Utricle with nut, transversely cut, $\times 14$. 7. Portion of the wall of the utricle, transversely cut, $\times$ ca. 100. 8. Nut seen from dorsal side, $\times 14$. 9. The same, from lateral side, $\times 14$.

var. *urostachys* (FRANCHET) KÜKENTHAL (Fig. 66), l.c. 401; MIYABE & KUDO, in Trans. Sapporo nat. Hist. Soc. V. (1915) 150 et Fl. of Hokkaid. & Saghal. II. (1931) 242; MAK. & NEM. Fl. of Jap. (1925) 1354.

C. urostachys FRANCH. in Bull. Soc. philom. Paris 8. sér. VII. (1895) 35; NAKAI, Veg. Daisetsuzan (1930) 59.

C. Mertensii FRANCH. in Nouv. Arch. Mus. Paris, 3. sér. IX. (1897) 150 et VIII. (1896) t. 13, fig. 1; MATSUM. Ind. pl. Japon. II. 1. (1905) 120, non PRESC.

Utriculi squamis multo longiores et latiores adpressi papyracei, textis ex 1 strato cellularum concretis, late ovales compresso-trigoni vel subconcavo-convexi 5 mm longi vix 3 mm lati stramineo-virides purpureo-maculati, maculis e superne densiores, tenuiter utrinque bi-vel trinervi, basi truncati brevissime stipitati, marginibus angustis superne parcissime scabriusculi, apice in rostrum breve ore integrum abrupte contractum apiculati.

Nom. Jap. Kinchaku-suge; Iwaki-suge.

Hab. Kuriles, Hokkaido and Honshiu.

Sect. 25. *Scitae* KÜKENTHAL (p. 24)

109. *Carex angustisquama* FRANCHET (Fig. 67), in Bull. Soc. philom. Paris 8. sér. VII. (1895) 39 et in Nouv. Arch. Mus. Paris 3. sér. IX.

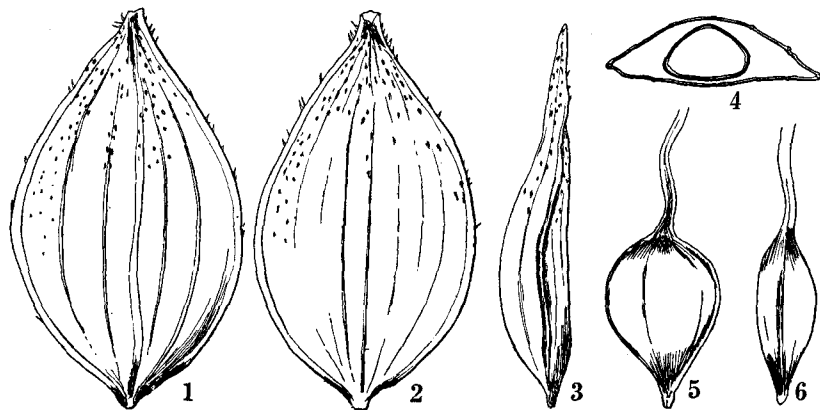


Fig. 67. *Carex angustisquama* FRANCH.

1. Utricle seen from dorsal side, $\times 14$. 2. The same, from ventral side, $\times 14$. 3. The same, from lateral side, $\times 14$. 4. The same with nut, transversely cut, $\times 14$. 5. Nut seen from dorsal side, $\times 14$. 6. The same, from lateral side, $\times 14$.

(1897) 152; LÉVEILLÉ et VANIOT, in Bull. Acad. intern. Géogr. bot. X. (1901) 225; MATSUM. Ind. pl. Japon. II. 1. (1905) 99; KÜKENTH. in ENGL. Pflanzenr. IV. 20 (1909) 410; MAK. & NEM. Fl. of Jap. (1925) 1330; MIYABE & KUDO, Fl. of Hokkaido & Saghal. II. (1931) 243.

Utriculi squamis longiores adpressi papyracei, textis ex 1 strato cellularum concretis, ovales compresso-trigoni vel plano-convexi 4-4.5 mm longi 2.3-2.5 mm lati straminei purpureo-punctulati glabri obsolete 10- et marginibus conspicue 2-nervi, basi rotundati vel contracti brevissime stipitati, marginibus viridibus superne e medio spinulosis, apice in rostrum brevissimum purpureum marginibus spinulosum ore emarginatum vel bidentatum abrupte contracti.

Nom. Jap. Yama-tanuki-ran.

Hab. Hakkaïdo and Honshiu.

110. *Carex pseudo-sadoensis* AKIYAMA sp. nov. (Pt. I et Fig. 68).

Rhizoma crassum stolones validos agens. Culmus 25-35 cm altus triqueter superne scaber vel laevis apice subcernuus; vaginae basillares aphyllae brunneo-purpureae parce fissae. Folia culmo breviora acuminata margine scabra revoluta subrigida. Spiculae 4-6, terminalis masculina lineari-cylindrica 1-3 cm longa sessilis vel pedunculata, laterales femineae superiores subapproximatae sessiles inferiores parum

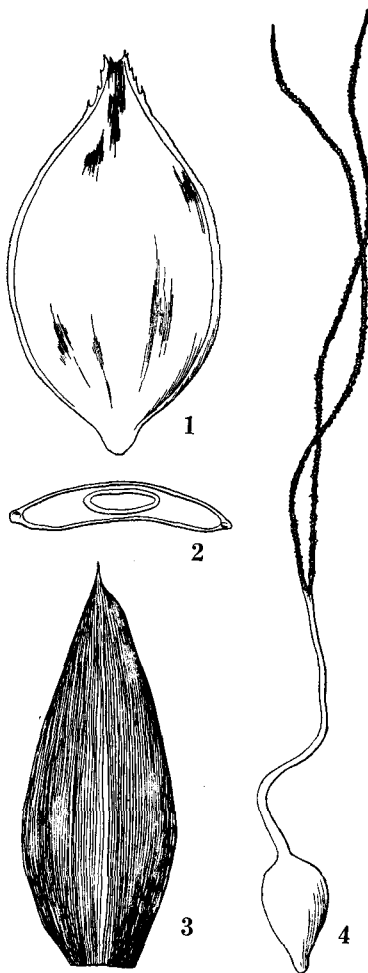


Fig. 68. *C. pseudo-sadoensis* AKIYAMA.

1. Utricle, $\times 14$.
2. The same with nut, transversely cut, $\times 14$.
3. Scale of the female flower, $\times 14$.
4. Nut, $\times 14$.

remotae brevipedunculatae, pedunculis sublaevibus, cylindricae 2-4(-5) cm longae erectae vel subcernuae. Bractea ima foliacea inflorescentiam subaequans evaginata. Squamae oblongo-lanceolatae muticae vel mucronulatae atro-fuscae stramineo 1-(3-)nerviae. Utriculi squamis vix breviores suberecti membranacei late ovati 3-3.5 mm longi cinerei superne purpureo-punctulati glabri enerves, basi contracti vix obconico-stipitati, marginati, marginibus superne albo-hispidi, apice in rostrum breve cylindricum ore emarginatum apiculati. Nux multo minora ovata. Stylus flexuosus aequalis. Stigmata 2, 5-6 mm longa.

Nom. Jap. Sadosuge-modoki (nov.)

Hab. in monte Iwate-san, prov. Rikuchiu (H. FUKUDA et S. SEGAWA, anno 1931).

111. *Carex Tolmiei* BOOTT, in Hook. Fl. bor.-amer. II. (1840) 224 et Illustr. II. (1860) 100 partim, t. 299; KÜKENTH. in ENGL. Pflanzenr. IV. 20 (1909) 411; FRANCH. in Nouv. Arch. l. c. 131; MIYABE & KUDO l. c. 243.

C. macrochaeta var. *paramushirensis* KUDO, Fl. Paramushir. (1922) 81.

Nom. Jap. Chishima-miyama-kuro-suge.

Hab. Kuriles.

Distrib. Kamtchatka, Chuktsh-Penins., Ajan and North West parts of North America.

112. *Carex macrochaeta* C. A. MEYER in Mem. Acad. St.-Petersb. I. (1831) 224 t. 13; FR. SCHM. Reis. Amurl. (1868) 195; KÜKENTH. l. c. 412; MAK. & NEM. Fl. of Jap. (1925) 1352; MIYABE & KUDO, l. c. 243.

Nom. Jap. Karafuto-miyama-kuro-suge.

Hab. Saghalien and Kuriles.

Distrib. Kamtchatka, N. E. Asia and N. W. parts of North America.

113. *Carex flavocuspis* FRANCHET et SAVATIER (Fig. 69), Enum. pl. Japon. II. (1879) 147 et 574; FRANCH. in Nouv. Arch. Mus. Paris 3. sér. IX. (1897) 143; MATSUM. Ind. pl. Jap. II. 1. (1905) 109; HONDA, List of Pl. of Shirouma Alp. Range (1930) 13; NAKAI, Veg. of Mt. Apoi (1930) 75; MIYABE & KUDO, Fl. of Hok. & Sagh. II. (1931) 243.

C. macrochaeta Subsp. *flavocuspis* KÜKENTH. in ENGL. Pflanzenr. IV. 20 (1909) 414; MAK. & NEM. Fl. of Jap. (1925) 1352.

C. ganzuensis FRANCH. in Bull. Soc. l. c. 35 et Nouv. Arch. l. c. 152 t. 3 fig. 2; MATSUM. Ind. pl. Jap. II. 1. (1905) 111.

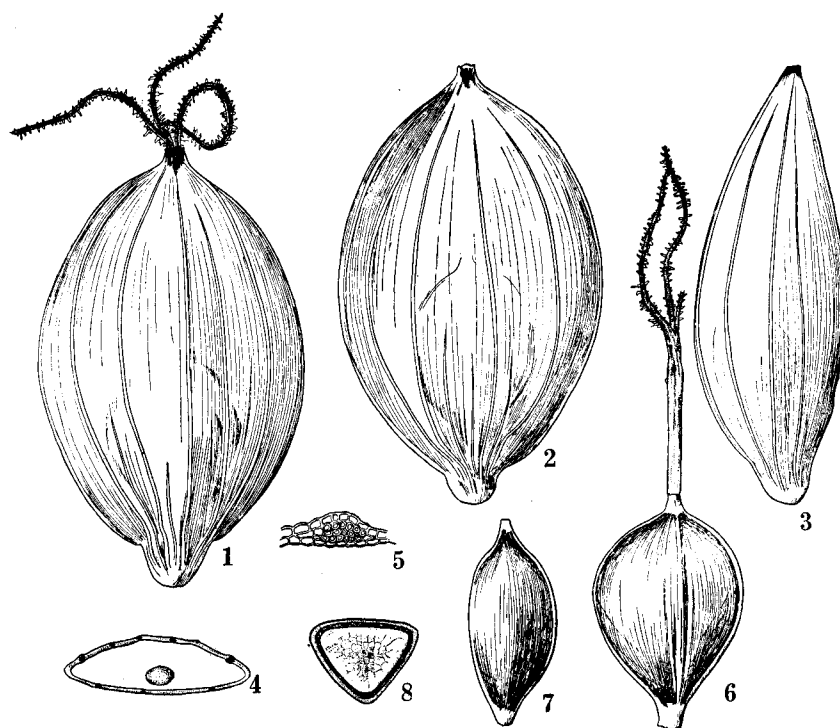


Fig. 69. *Carex flavocuspis* FRANCH. et SAV.

1. Utricle seen from dorsal side, $\times 14$. 2. The same, from ventral side, $\times 14$. 3. The same, from lateral side, $\times 14$. 4. The same, transversely cut, $\times 14$. 5. Portion of the same, $\times$ ca. 100. 6. Nut seen from ventral side, $\times 14$. 7. The same, from lateral side, $\times 14$. 8. The same, transversely cut, $\times 14$.

Utriculi squamis longiores (aristis breviores) et latiores adpressi tenuiter membranacei, textis e 1-2-3 stratis cellularum constantibus, ovato-elliptici trigono-compressi 4.5-6 mm longi 2.5 mm lati stramineo-virides atro-purpureo-maculati glabri vix 10-nervosi 0.3 mm longe stipitati, apice in rostrum brevissimum tenue ore atro-purpureo sub-integrum abrupte contracti.

Nom. Jap. Miyama-kuro-suge.

Hab. Kuriles, Hokkaido and Honshiu.

var. denticulata (KÜKENTHAL)

C. macrochaeta Subsp. *flavocuspis* var. *denticulata* KÜKENTHAL in ENGL. Pflanzenr. IV. 20 (1909) 414.

Differt a typo utriculis evidentius rostratis ore bidentatis.

Nom. Jap. Futamata-kuro-suge.

Hab. Honshiu.

var. platycarpa (KÜKENTH.)

C. macrochaeta Subsp. *flavocuspis* var. *platycarpa* KÜKENTHAL l. c. Utriculi ovati squamis breviores.

Nom. Jap. Hiromi-kuro-suge.

Hab. Honshiu.

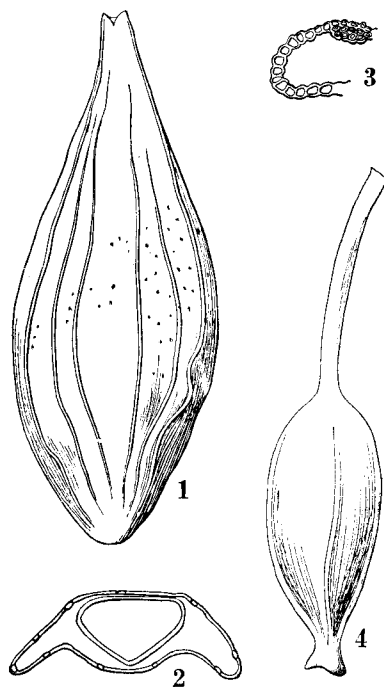


Fig. 70. *Carex flavocuspis* var. *iwatensis* AKIYAMA

1. Utricle, ×14.
2. The same with nut, transversely cut, ×14.
3. Portion of the wall of the utricle, transversely cut, × ca. 100.
4. Nut, ×14.



Fig. 71. *C. flavocuspis* var. *caudatifrons* AKIYAMA

1. Utricle seen from dorsal side, ×14.
2. The same, from lateral side, ×14.
3. Apical portion of the same, ×42.

var. *iwatensis* AKIYAMA var. nov. (Fig. 70).

Squamae fusco-badidae, femineae utriculos paullo superantes apice longe aristatae, aristis squama ipsa aequilongis non scabris. Utriculi praeter partes utroque latere prominente marginatas obsolete nervosi.

Nom. Jap. Chairō-tanukiran (nov.)

Hab. in monte Iwate-san prov. Rikuchiu (S. SEGAWA, anno 1931); Ibidem (M. MIURA, anno 1905).

var. *caudatifrons* AKIYAMA var. nov. (Fig. 71).

Culmus elatior. Spiculae 5-7, latiores, pedunculis laevibus. Utriculi 5-6 mm longi apice emarginati.

Nom. Jap. Ô-tanukiran (nov.)

Hab. in monte Iwatesan, prov. Rikuchiu (S. MURAI, anno 1930).

114. *Carex scita* MAXIMOWICZ (Fig. 72) in Mèlang. biol. XII. (1887) 565; FRANCH. in Nouv. Arch. l. c. 143; MATSUM. l. c. 244; KÜKENTH. l. c. 414, fig. 65 D-F; MAK. & NEM. l. c. 1367; MIYABE & KUDO, l. c. 244.

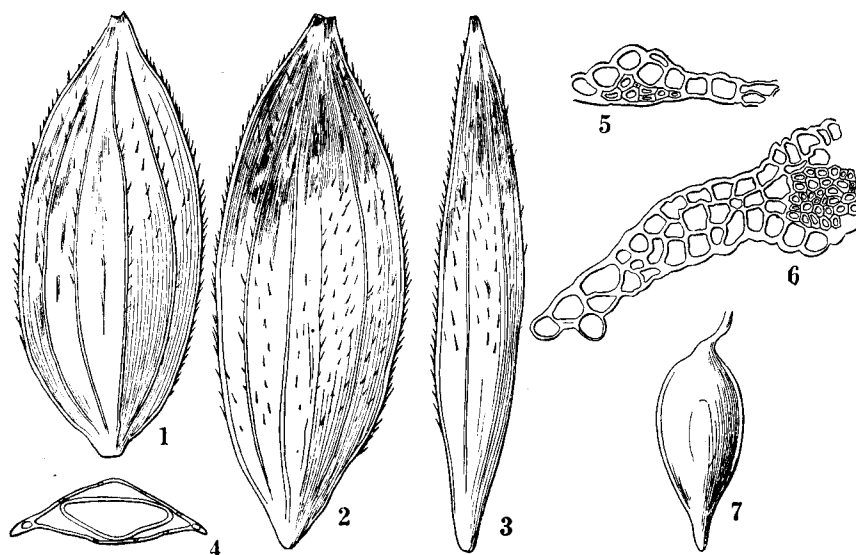


Fig. 72. *Carex scita* MAXIM.

1. Utricle seen from dorsal side, $\times 14$. 2. The same, from ventral side, $\times 14$. 3. The same, from lateral side, $\times 14$. 4. The same with nut, transversely cut, $\times 14$. 5. and 6. Portions of the wall of the utricle, transversely cut, $\times 250$. 7. Nut, $\times 14$.

C. ciliolata FRANCH. in Bull. Soc. philom. Paris 8. sér. VII. (1895) 38.

C. dicuspis LÉVEILLÉ et VANOT, in Bull. Acad. intern. Géogr. bot. 3. sér. X. (1901) 222, non FRANCH.

Utriculi squamis latiores aristis breviores erecti tenuiter membranacei oblongi vel elliptici compresso-trigoni 4-5 mm longi ad 2 mm lati primo virentes demum straminei atro-purpureo-tincti tenuiter nervosi superficie praesertim in nervis parce ad margines dense spinulosi basi truncati, marginibus alati, apice in rostrum brevissimum ore atro-purpureo emarginatum subabrupte contracti.

Nom. Jap. Mashike-suge.

Hab. Saghalien, Kuriles, Hokkaido and Honshiu.

Distrib. Kamtchatka.

var. *riishirensis* KÜKENTHAL in ENGL. Pflanzenr. IV. 20 (1909) 414; MAK. & NEM. Fl. of Jap. (1925) 1367; MIYABE & KUDO, Fl. of Hokkaido & Saghal. II. (1931) 245.

Carex riishirensis FRANCHET in Bull. Soc. philom. Paris 8. sér. VII. (1895) 88 et in Nouv. Arch. l. c. IX. (1897) 145; MATSUM. Ind. pl. Japon. II. 1. (1905) 131.

Nom. Jap. Rishiri-suge.

Hab. Hokkaido.

var. *scabrinervia* KÜKENTH. l. c. 415; MAK. & NEM. Fl. of Jap. (1925) 1367; MIYABE & KUDO, Fl. of Hokkaido & Saghal. II. (1931) 244.

Carex scabrinervia FRANCHET, in Bull. Soc. philom. Paris 8. sér. VII. (1895) 37 et Nouv. Arch. Mus. Paris 3. sér. IX. (1897) 144; MATSUM. Ind. pl. Jap. II. 1. (1905) 132.

Nom. Jap. Shikotan-suge.

Hab. Saghalien, Kuriles and Hokkaido.

115. *Carex koraginensis* MEINSH. in Acta Horti petropol. XVIII. (1901) 351; KOMAROV, Fl. Penins. Kamtch. I. 251; MIYABE & KUDO, Fl. of Hokkaido & Saghal. II. (1931) 245.

C. scita var. *koraginensis* KÜKENTH. l. c. 415.

C. scita forma *koraginensis* KUDO, Fl. Paramushir. (1922) 81.

Nom. Jap. Kita-chishima-suge.

Hab. Kuriles.

Distrib. Kamtchatka and Ochotsk.

Sect. 26. *Maximae* ASCHERSON (p. 25)

116. *Carex maculata* BOOTT (Fig. 73.) in Trans. Linn. Soc. XX. (1846) 128 et Illustr. I. (1858) 9 t. 26; FRANCH. et SAV. Enum. pl. Jap. II. (1879) 572; FRANCH. in Nouv. Arch. Mus. Paris 3. sér. X. (1898) 44, non LIEBM.; LÉVEILLÉ et VANIOT, in Bull. Soc. Géogr. Bot. XII. (1903) 505; MATSUM. Ind. pl. Jap. II. 1. (1905) 119; KÜKENTH. in ENGL. Pflanzenr. IV. 20 (1909) 427; NAKAI, Fl. Korean. II. (1911) 315; MATSUM. et HAYATA, Enum. pl. Formos. (1906) 495; HAYATA, Icon. pl. Formos. VI. (1916) 124; MAK. & NEM. Fl. of Jap. (1925) 1352.

C. micans BOOTT, in Mem. Amer. Acad. (n. ser.) VI. (1858-59) 419; FRANCH. et SAV. l.c. 145.

C. latitans LÉV. et VNT. in FEDDE, Repert. V. (1908) 240.

C. malacocarpa LÉV. et VNT. l.c. X. (1901) 200.

C. acrogyna LÉV. et VNT. l.c. 201.

Utriculi squamas superantes adpressi demum oblique patentes membranacei, textis e 3-4 stratis cellularum constantibus, parvuli ovati trigoni 2.5 mm longi 1.5 mm lati cinnamomei densissime elevato-papilloso, papillis demum atro-purpureis, utrinque nervis 3-8 percursi, basi contracti vix stipitati, nervis marginalibus prominentibus, apice in rostrum breve ore subintegrum vel subemarginatum subabrupte desinentes.

Nom. Jap. Tachi-suge.

Hab. Honshiu, Shikoku and Kiushiu.

Distrib. Formosa, Corea, South and Central China, India, Ceylon and Smatra.

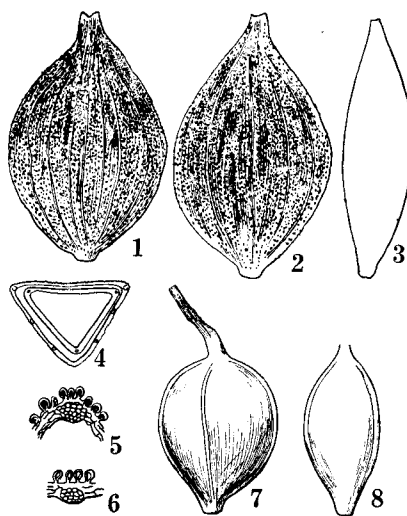


Fig. 73. *Carex maculata* BOOTT

1. Utricle seen from dorsal side, $\times 14$.
2. The same, from ventral side, $\times 14$.
3. The same, from lateral side, $\times 14$.
4. The same with nut, transversely cut, $\times 14$.
5. and 6. Portions of the wall of the utricle, transversely cut, $\times$ ca. 100.
7. Nut seen from ventral side, $\times 14$.
8. The same, from lateral side, $\times 14$.

forma *viridans* KÜKENTH. in MAKINO & NEMOTO, Fl. of Jap. 2.-ed. (1931) 1437.

Utriculi virides.

Sect. 27. *Pachystylae* KÜKENTHAL (p. 25)

117. *Carex mandshurica* MEINSHAUSEN in Bot. Centralb. LV. (1893) 197 et in Acta Horti petropol. XVIII. (1901) 394; KOMAROV, Fl. Manshur. I. (1901) 394; KÜKENTH. in ENGL. Pflanzenr. IV. 20 (1909) 434; MIYABE & KUDO, Fl. of Hok. & Sagh. II. (1931) 245.

Nom. Jap. Manshiu-suge.

Hab. Saghalien.

Distrib. Ussuri and North Corea.

118. *Carex globularis* LINNAEUS, Spec. pl. ed. 1. (1753) 976; KOMAR. Fl. Manshur. I. (1901) 397; KÜKENTH. l. c. 437 fig. 69 D-F et Car. Sachal. (1909) 36; NAKAI, Fl. Korean. II. (1911) 316; MIYABE & MIYAKE, Fl. of Sagh. (1916) 541; MAK. & NEM. Fl. of Jap. 1.-ed. (1925) 1343; MIYABE & KUDO, Fl. of Hokkaido & Saghal. II. (1931) 245.

Nom. Jap. Tonakai-suge; Tama-tsuri-suge.

Hab. Saghalien.

Distrib. Corea, Manchuria, Amur, Ajan, Kamtschatka, Siberia and Europe.

Sect. 28. *Montanae* FRIES (p. 25)

119. *Carex gifuensis* FRANCHET, in Bull. Soc. philom. Paris 8. sér. VII. (1895) 47 et Nouv. Arch. l. c. IX. (1897) 189; MATSUM. l. c. 112; KÜKENTH. l. c. 442; NAKAI, Fl. Korean. II. (1911) 316; MAK. & NEM. l. c. 1343.

Nom. Jap. Kuro-hina-suge.

Hab. Honshiu.

Distrib. Corea.

forma *argyrostachys* (LÉVEILLÉ et VANIOT) KÜKENTH. l. c. 443; MAK. & NEM. l. c. 1343.

C. argyrostachys LÉVEILLÉ et VANIOT, in Bull. Acad. intern. Géogr. bot. 3. sér. XI. (1902) 27.

Squamae masculinae stramineo-albidae. Spicula feminea unica brevissima.

Hab. Japan proper.

120. *Carex oxyandra* KUDO (Fig. 74), Rep. Veg. N. Saghal. (1923) 72; OHWI in Mem. Coll. Sci. Kyoto Imp. Univ. Ser. B. V. (1930) 275; MIYABE & KUDO, Fl. of Hokkaido & Saghal. II. (1931) 246.

C. montana var. *oxyandra* FRANCHET et SAVATIER, Enum. pl. Japon. II. (1879) 141 et 565.

C. pilurifera WRIGHT ex FRANCH. et SAV. l. c. 141.

C. stolonifera LÉVEILLÉ et VANIOT in Bull. Acad. intern. Géogr. bot. 3. sér. XI. (1902) 27.

C. Wrightii FRANCH. in Bull. Soc. philom. Paris 8. sér. VII. (1895) 47 et Nouv. Arch. Mus. Paris 3. sér. IX. (1897) 190; LÉV. et VNT. l. c. 279; MATSUM. l. c. 138; KÜKENTH. l. c. 443, fig. 74; MAK. & NEM. l. c. 1376.

Utriculi squamas superantes primo erecti demum subpatuli membranacei, textis e 2-4 stratis cellularum concretis, ovato-oblongi vel elliptici trigoni in parte dorsalis convexi 2.5-4 mm longi stramineo-virides pubescentes, praeter carinas prominentes vix obsolete nervosi, basi spongiosi longe attenuati mediocre stipitati, apice in rostrum mediocre conicum purpureum ore hyalino bidentulum subabrupte contracti.

Nom. Jap. Hime-suge.

Hab. Saghalien, Kuriles, Hokkaido, Honshiu, Shikoku and Kiu-shiu.

var. *lanceata* (KÜKENTH.) OHWI (Fig. 75, 1-3) l. c. 276.

C. Wrightii var. *lanceata* KÜKENTH. l. c. 443.

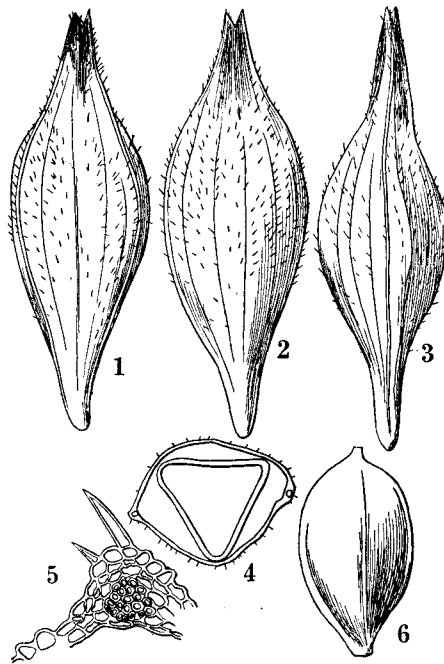


Fig. 74. *Carex oxyandra* KUDO

1. Utricle seen from dorsal side, $\times 14$.
2. The same, from ventral side, $\times 14$.
3. The same, from lateral side, $\times 14$.
4. The same with nut, transversely cut, $\times 14$.
5. Portion of the wall of the utricle, transversely cut, $\times$ ca. 250.
6. Nut, $\times 14$.

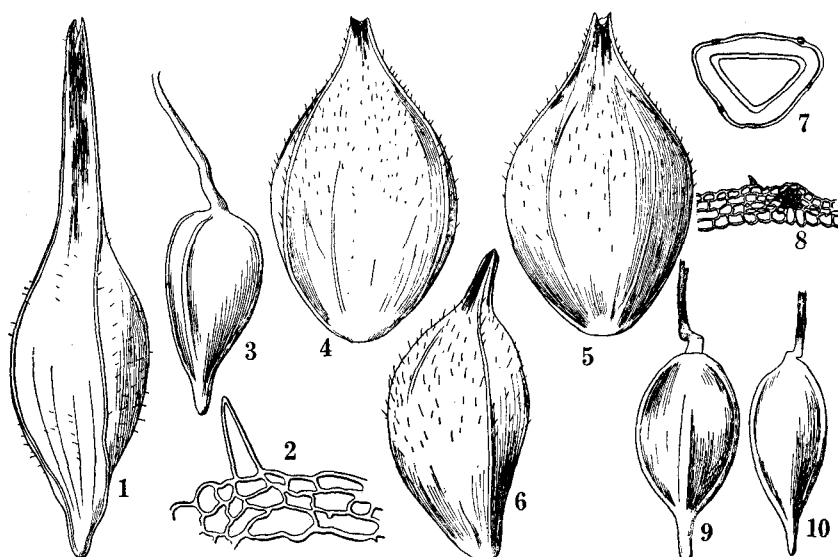


Fig. 75. 1-3. *Carex oxyandra* var. *lanceata* OHWI
4-10. *Carex oxyandra* var. *globosa* AKIYAMA

1. Utricle, $\times 14$. 2. Portion of the wall of the utricle, transversely cut, $\times$ ca. 300. 3. Nut, $\times 14$. 4. Utricle seen from dorsal side, $\times 14$. 5. The same, from ventral side, $\times 14$. 6. The same, from lateral side, $\times 14$. 7. The same with nut, transversely cut, $\times 14$. 8. Portion of the wall of the utricle, transversely cut, $\times$ ca. 120. 9. Nut seen from ventral side, $\times 14$. 10. The same, from lateral side, $\times 14$.

Utriculi 5-5.5 mm longi minus pubescentes vel glabrescentes apice in rostrum longum (vix 2 mm longum) purpureum tenue ore bidentatum longe desinentes; caeterae ut forma typica.

Nom. Jap. Nikkô-hime-suge.

Hab. Honshiu.

var. *globosa* AKIYAMA (Fig. 75, 4-10) in Botan. Magaz. Tokyo. XLV. (1931) 473.

Utriculi ovaes vel subglobosi vix 3 mm longi, basi spongiosi rotundati, apice brevissime rostrati contracti.

Nom. Jap. Marumi-no-hime-suge.

Hab. Hokkaido and Honshiu.

121. *Carex amblyolepis* TRAUTVETTER et MEYER, Florul. Ochot. phaenog. (1856) 99; MAXIM. Primit. Fl. amur. (1859) 312; KUDO, Fl. Paramushir. (1922) 82; MIYABE & KUDO, Fl. of Hokkaido & Saghal. II. (1931) 246.

C. pensylvanica LAM. var. *amblyolepis* KÜKENTH. in Finska Vet.-Soc. Förhandl. XLV. n. 8. (1902-3) 8, et in ENGL. Pflanzenr. IV. 20 (1909) 446.

Nom. Jap. Nuiwo-suge.

Hab. Saghalien, Kuriles and Hokkaido.

Distrib. Kamtschatka, Ochotsk, Amur, Ussuri and Siberia.

Sect. 29. *Lamprochlaenae*

DREJER (p. 25)

122. *Carex pseudo-Wrightii* HONDA (Fig. 76) in Botan. Magaz. Tokyo XLIII. (1929) 291.

Utriculi squamis breviores membranacei obovati vel subglobosi subturgido-trigoni vix 3 mm longi ad 2 mm lati flaves vel pallidi parcissime pubescentes praeter 2 nervos submarginales percurtos vix obsolete nervosi, basi subrotundati 0.2 mm longe stipitati, apice in rostrum breve cylindricum purpureum ore bifidum intus parce scabrum abrupte contracti.

Nom. Jap. Shirouma-hime-suge.

Hab. Honshiu.

Sect. 30. *Mitratae* KÜKENTHAL (p. 25)

123. *Carex caryophyllea* LATOURETTE, Chlor. lugdun. (1785) 27; KÜKENTH. in ENGL.

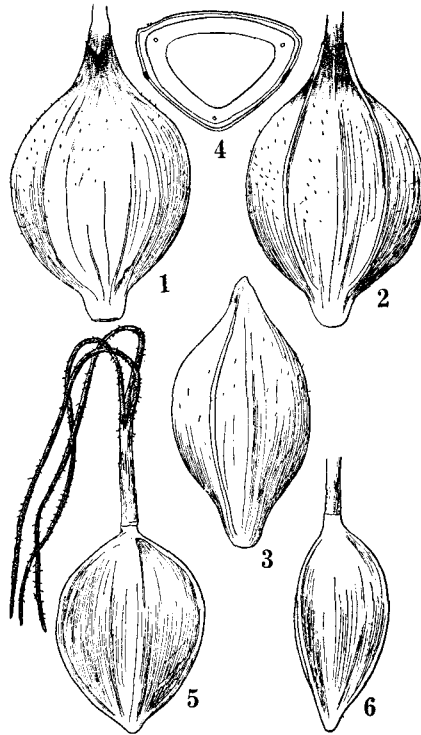


Fig. 76. *Carex pseudo-Wrightii* HONDA

1. Utricle seen from dorsal side, $\times 14$.
2. The same, from ventral side, $\times 14$.
3. The same, from lateral side, $\times 14$.
4. The same with nut, transversely cut, $\times 14$.
5. Nut seen from ventral side, $\times 14$.
6. The same, from lateral side, $\times 14$.

Pflanzenr. IV. 20 (1909) 463; KUDO, Fl. Paramushir. (1922) 82; TATEWAKI, in Trans. Sapporo nat. Hist. Soc. IX. 2 (1927) 157; MIYABE & KUDO, Fl. of Hokkaid. & Saghal. II. (1931) 247.

C. verna CHAIX in Vill. Hist. Pl. Dauph. II. (1787) 204; HULTÉN, Fl. Kamtch. I. (1927) 199.

Nom. Jap. Chishima-shiba-suge.

Hab. N. Kuriles.

Distrib. Kamtchatka, Siberia, Europe and North America.

124. *Carex nervata* FRANCHET et SAVATIER (Fig. 77), Enum. pl. Japon. II. (1879) 141 et 566; MIYABE & KUDO, Fl. of Hokkaid. & Saghal. II. (1931) 247.

C. praecox MIQ. in Ann. Mus. lugd.-batav. II. (1865-66) 149; FRANCH. l. c. 186 p. p.

C. caryophyllea Subsp. *nervata* KÜKENTH. in ENGL. Pflanzenr. IV. 20 (1909) 465; MATSUM. Ind. pl. Japon. II. 1. (1905) 104; NAKAI, Fl. Korean. II. (1911) 317; MAK. & NEM. Fl. of Jap. 1.-ed. (1925) 1334.

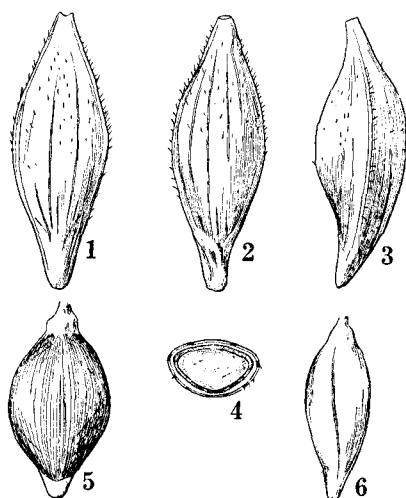


Fig. 77. *Carex nervata*
FRANCH. et SAV.

1. Utricle seen from dorsal side, $\times 14$.
2. The same, from ventral side, $\times 14$.
3. The same, from lateral side, $\times 14$.
4. The same with nut, transversely cut, $\times 14$.
5. Nut seen from ventral side, $\times 14$.
6. The same, from lateral side, $\times 14$.

Utriculi squamas subaequantes suberecti membranacei obovati subinflato-trigoni 2.5-3 mm longi ca. 1 mm lati stramineo-virides demum ferruginei parce pubescentes fere 10-nervosi (2 nervi marginales prominentes), basi cuneato-attenuati 0.4 mm longe stipitati, apice in rostrum breve conicum ferrugineum ore subemarginatum attenuatum desinentes.

Nom. Jap. Shiba-suge.

Hab. Kuriles, Hokkaido, Honshiu and Kiushiu.

Distrib. Corea and Amur.

forma *Vidalii* (FRANCHET et SAVATIER)

C. praecox var. *Vidalii* FRANCH. et SAV. Enum. pl. Japon. II. (1879) 565.

C. caryophyllea Subsp. *nervata* form. *Vidalii* KÜKENTH. l. c. 466.

Differt a typo squamis masculinis marginibus hyalinis saepe ciliatis.

Hab. Honshiu.

forma *leiocarpa* (FRANCH.)
MIYABE & KUDO (Fig. 78), Fl. of
Hokkaido & Saghal. II. (1931)
248.

C. caryophyllea Subsp. *nervata*
forma *leiocarpa* FRANCH. apud
KÜKENTH. l. c. 466 ; MAK. &
NEM. Fl. of Jap. (1925) 1335.

Utriculi glabrescentes, in
rostrum marginibus et ore
ciliatum desinentes.

Hab. Hokkaido and Honshiu.

forma *dissita* (FRANCH.)
MIYABE et KUDO, Fl. of Hokkaido
& Saghal. II. (1931) 248.

C. caryophyllea Subsp.
nervata forma *dissita* FRANCH.
apud KÜKENTH. l. c. ; MAK. &
NEM. l. c. 1335.

Hab. Saghalien, Hokkaido
and Honshiu.

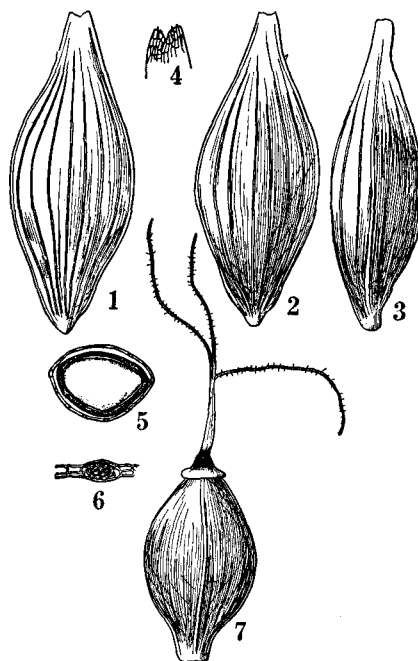


Fig. 78. *Carex nervata* form.
leiocarpa MIY. & KUD.

1. Utricle seen from dorsal side, $\times 14$.
2. The same, from ventral side, $\times 14$.
3. The same, from lateral side, $\times 14$.
4. Apex of the beak, $\times 20$.
5. Utricle with nut, transversely cut, $\times 14$.
6. Portion of the wall of the utricle, transversely cut, $\times$ ca. 100.
7. Nut, $\times 14$.

125. *Carex microtricha* FRANCHET (Fig. 79) in Nouv. Arch. Mus.
Paris 3. sér. IX. (1897) 189 ; LÉV. et VNT. Bull. Acad. Géogr. bot. 3. sér.
X. (1901) 279 ; MATSUM. Ind. pl. Jap. II. 1. (1905) 120 ; NAKAI, Veg.
Daisetsuzan Mts. (1930) 59 ; MIY. & KUD. Fl. of Hok. & Sagh. II. (1931)
248.

C. caryophyllea Subsp. *nervata* var. *microtricha* KÜKENTH. in ENGL.
Pflanzenr. IV. 20 (1909) 466 ; MAK. & NEM. Fl. of Jap. (1925) 1335.

C. Heribaudiana LÉV. et VNT. in Bull. Acad. Géogr. bot. X. (1901)
275 ; MATSUM. Ind. pl. Jap. II. 1. (1905) 113.

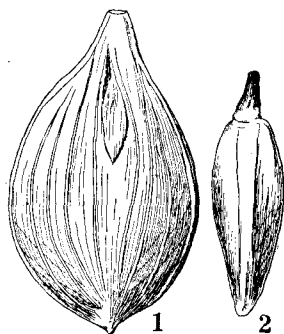


Fig. 79. *Carex microtricha* FRANCH.

1. Utricle $\times 14$. 2. Nut, $\times 14$.

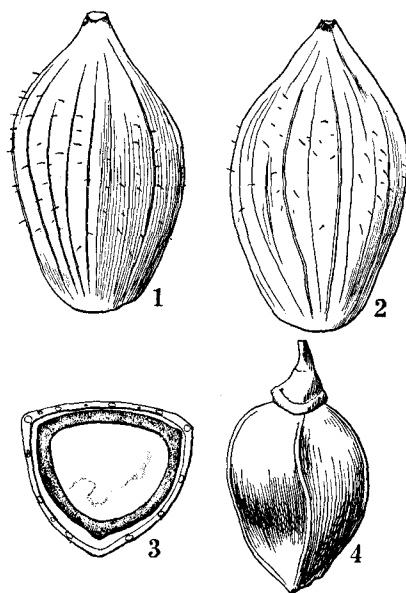


Fig. 80. *Carex squamoidea* AKIYAMA.

1. Utricle seen from dorsal side, $\times 14$.
2. The same, from ventral side, $\times 14$.
3. The same with nut, transversely cut, $\times 14$.
4. Nut, $\times 14$.

Utriculi squamas subaequantes suberecti membranacei obovato-fusiformes vel fere ovati subinflato-trigoni 3 mm longi 1.5–1.8 mm lati stramineo-virides demum ferruginei glabrescentes plurinervi, basi subrotundati, apice in rostrum breve conicum ore submarginatum attenuato-contracti. (Figures drawn from an abnormal specimen)

Nom. Jap. Yezo-shiba-suge.

Hab. Saghalien, Hokkaido and Honshiu.

126. *Carex squamoidea* AKIYAMA (Fig 80) in Journ. Facult. Sci. Hokkaido Imp. Univ. Ser. V. I. 2 (1931) 60, Pt. 13, fig. 7; MIYAB. & KUD. Fl. of Hokkaid. & Saghal. II. (1931) 249.

Utriculi squamis aequilongi obovales inflati 2.5–3 mm longi albo-straminei vel ferruginei trigoni parce adpresso-hirti plurinervi, basi spongiosi attenuati vel rotundati vix stipitati, obscure marginati, apice in rostrum breve ore ferrugineum integrum apiculati.

Nom. Jap. Iburi-suge.

Hab. Hokkaido.

127. *Carex yesoensis* KOIDZUMI in Botan. Magaz. Tokyo XXXII. (1918) 55; MAK. & NEM. Fl. of Jap. (1925) 1377; MIYAB. & KUD. Fl. of Hok. & Saghal. II. (1931) 249.

Nom. Jap. Hokkai-suge.

Hab. Hokkaido.

128. *Carex praestabilis* OHWI, in Mem. Coll. Sci. Kyoto Imp. Univ. Ser. B. VI. (1931) 262.

? *C. umbrosa* Ssp. *sabynensis* var. *stolonifera* KÜKENTH. l. c. 468.

Nom. Jap. Tsuru-kamikawa-suge.

Hab. Honshiu.

129. *Carex sabynensis* LESSING (Fig. 81) apud KUNTH, Enum. pl. II. (1837) 440; KOMAROV, Fl. Manshur. I. (1901) 395; MIY. & KUD. Fl. of Hokkaido & Saghal. II. (1931) 249.

C. umbrosa HOST. Subsp. *sabynensis* KÜKENTH. l. c. 468 et Car. Sachal. 36; NAKAI, Fl. Korean. II. (1911) 317; MAK. & NEM. Fl. of Jap. (1925) 1374.

? *C. pediformis* var. *rostrata* FR. SCHM. Reis. (1868) 194, non MAXIM.

C. kamikawensis FRANCH. in Bull. Soc. philom. Paris 8. sér. VII. (1895) 48 et Nouv. Arch. Mus. Paris 3. sér. IX. (1897) 188; MATSUM. Ind. pl. Jap. II. 1. (1905) 116.

C. reticulmis FRANCH. l. c. 48 et l. c. 188; MATSUM. l. c. 130.

C. lucida FRANCH. l. c. 48.

Utriculi squamas superantes demum oblique patentes tenuiter membranacei, textis e 1-2 stratis cellularum compositis, obovati subinflato-trigoni 2.5-3 mm longi 1.2-1.5 mm lati pallide virentes parce hirtelli vix 10-nervosi (nervi marginales prominentes), basi longe cuneatim attenuati, apice in rostrum breve ferrugineum

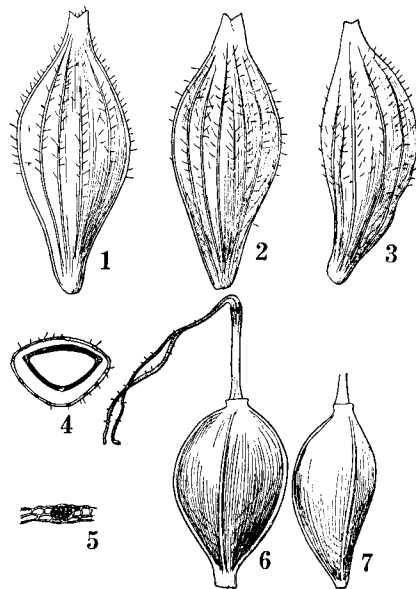


Fig. 81. *Carex sabynensis* LESSING.

1. Utricle seen from dorsal side, $\times 14$.
2. The same, from ventral side, $\times 14$.
3. The same, from lateral side, $\times 14$.
4. The same with nut, transversely cut, $\times 14$.
5. Portion of the wall of the utricle, transversely cut, $\times$ ca. 100.
6. Nut seen from ventral side, $\times 14$.
7. The same, from lateral side, $\times 14$.

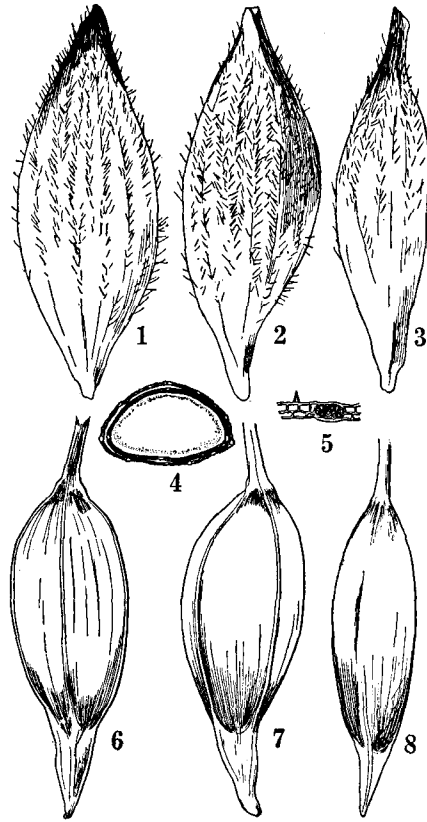


Fig. 82. *Carex blepharicarpa* FRANCH.

1. Utricle seen from dorsal side, $\times 14$.
2. The same, from ventral side, $\times 14$.
3. The same, from lateral side, $\times 14$.
4. The same with nut, transversely cut, $\times 14$.
5. Portion of the wall of the utricule, transversely cut, $\times$ ca. 100.
6. Nut seen from dorsal side, $\times 14$.
7. The same, from ventral side, $\times 14$.
8. The same, from lateral side, $\times 14$.

MIYAB. & KUD. Fl. of Hokkaido & Saghal. II. (1931) 259.

Utriculi squamas superantes suberecti membrancei, textis e 2 stratis cellularum constantibus, obovato-oblongi vel elliptici subinflato-trigoni 4-5 mm longi vix 1.5 mm lati pallide virentes superne demum purpureo-

cylindricum ore emarginatum parce ciliatum abrupte contracti.

Nom. Jap. Kamikawa-suge;
Chôsen-awo-suge.

Hab. Hokkaido and Saghalien.

Distrib. Corea, Manchuria and Eastern Siberia.

130. *Carex blepharicarpa* FRANCHET (Fig. 82), in Bull. Soc. philom. Paris 8. sér. VII. (1895) 46 et Nouv. Arch. Mus. Paris 3. sér. IX. (1897) 171; LÉVEILLÉ et VANIOT, in Bull. Acad. Géogr. Bot. X. (1901) 272; MATSUM. Ind. pl. Jap. II. 1. (1905) 101; KÜKENTH. in ENGL. Pflanzenr. IV. 20 (1909) 468, fig. 74 F-G; MAK. & NEM. Fl. of Jap. (1925) 1332; MIYAB. & KUD. Fl. of Hokkaido & Saghal. II. (1931) 249.

C. polyrrhiza FRANCH. et SAV. Enum. pl. Japon. II. (1879) 140, non WALLR.

C. pediformis var. *pedunculata* FR. SCHM. Reis. (1868) 194, non MAXIM.

C. Hayatae LÉVEILLÉ et VANIOT, in FEDDE, Repert. V. (1908) 240.

C. yezo-montana AKIYAMA, in Journ. Facult. Sci. Hokkaido Imp. Univ. Ser. V. I. 2 (1931) 62 Pt. XV. fig. 9. (form. juvenis);

colorati hirtuli, praeter 2-nervos marginales prominentes nonnisi obsolete nervosi (nervi 10-15), basi attenuati in rostrum breve vel mediocre conicum ferrugineum ore emarginatum vel emarginato-bidentulum subabrupte abeuntes.

Nom. Jap. Shôjô-suge; Takane-shôjô-suge.

Hab. Saghalien, Hokkaido and Honshiu.

Distrib. Kamtchatka.

forma **distenta** KÜKENTH. Car. sachal. (1909) 36; MIYAKE & KUDO l. c. 250.

Hab. Saghalien.

var. **stenocarpa** OHWI, in Mem. Coll. Sci. Kyoto Imp. Univ. Ser. B. V. 3. (1930) 269.

Utriculi longe rostrati.

Hab. Honshiu.

131. *Carex Royleana* NEES v. ESENBECK (Fig. 83), ex WIGHT, Contr. Bot. of India (1834) 127; FRANCH. et SAV. Enum. pl. Jap. II. (1879) 138; MIYABE & KUDO, Fl. of Hokkaid. & Saghal. II. (1931) 250.

C. leucochlora BUNGE, in Mém. Acad. St.-Petersb. II. (1835) 142; FRANCH. et SAV. l. c. 136.

C. puberula BOOTT in A. GRAY, Narr. Exped. Perry II. (1856-57) 324.

C. breviculmis BOOTT, Illustr. IV. (1867) 181 p. p.; MIQ. Prol. Fl. Jap. (1866-67) 357; FRANCH. et SAV. l. c. 136; FRANCH. in Nouv. Arch. l. c. 192 p. p.; KOM. Fl. Manshur. I. (1901) 376; PALIBIN in Acta Horti petropol. XIX. (1902) 122; MATSUM. et HAYATA, Enum. pl. Formos. (1906) 493.

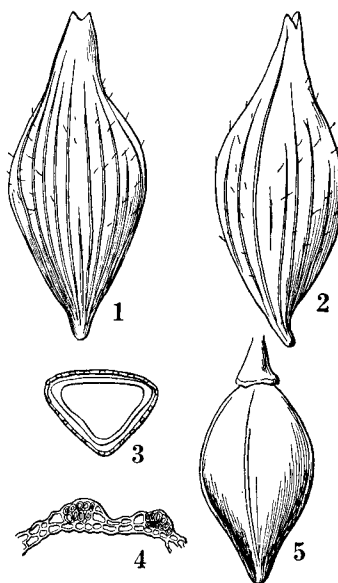


Fig. 83. *Carex Royleana* NEES.

1. Utricle seen from dorsal side, $\times 14$.
2. The same, from lateral side, $\times 14$.
3. The same with nut, transversely cut, $\times 14$.
4. Portion of the wall of the utricle, transversely cut, $\times$ ca. 100.
5. Nut, $\times 14$.

C. breviculmis R. BR. Subsp. *Royleana* KÜKENTH. in ENGL. Pflanzenr. IV. 20 (1909) 469; MATSUM. Ind. pl. Jap. II. 1. (1905) 102; NAKAI, Fl. Korean. II. (1911) 318; MAK. & NEM. Fl. of Jap. (1925) 1332.

Utriculi squamas subaequantes (aristis breviores) suberecti membranacei, textis e 2 stratis cellularum concretis, ovati vel late ellipsoidei subinflato-trigoni vix 3 mm longi stramineo-virides pubescentes demum saepe glabrescentes plurinervi (nervis vix 20) nervis 2 carinatis percursoris prominentibus, basi in stipitem vix alatum attenuati, apice in rostrum breve latum conicum ore hyalino emarginatum vel subemarginatum abeuntes.

Nom. Jap. Ao-suge.

Hab. Hokkaido, Honshiu, Shikoku, Kiushiu and Riukius.

Distrib. Formosa, Corea, Manchuria, Amur, China, India and Himalaya.

var. *longearistata* (KÜKENTH.)

C. breviculmis Subsp. *Royleana* forma *longearistata* KÜKENTH., l. c. 470; NAKAI, Fl. Korean. II. (1911) 318; MAK. & NEM. l. c. 1333.

C. Heribaudiana LÉVEILLÉ et VANIOT partim.

Utriculi parvuli. Spiculae graciles laxiflorae. Squamae longe aristatae.

Hab. Honshiu and Shikoku.

Distrib. Corea and Central China.

132. *Carex aphanandra* FRANCHET et SAVATIER, Enum. pl. Japon. II. (1879) 137 et 564.

C. breviculmis FRANCH. in Nouv. Arch. Mus. Paris 3. sér. IX. (1897) 192 p. p.

C. breviculmis Ssp. *Royleana* f. *aphanandra* KÜKENTH. l. c. 470; MAK. & NEM. Fl. of Jap. (1925) 1332.

Nom. Jap. Me-ao-suge.

Hab. Riukius.

133. *Carex filiculmis* FRANCHET et SAVATIER, l. c. 137 et 563.

C. Candolleana LÉVEILLÉ et VANIOT l. c. (1901) 273.

C. breviculmis FRANCH. l. c. 192 p. p.

C. breviculmis Subsp. *Royleana* forma *filiculmis* KÜKENTH. l. c. 470; NAKAI, Fl. Korean. II. (1911) 318; MAK. & NEM. Fl. of Jap. (1925) 1333.

Nom. Jap. Ito-ao-suge.

Hab. Japan and Corea.

134. *Carex discoidea* BOOTT (Fig. 84) in Mem. Amer. Acad. (n. ser.) VI. (1859) 419.

C. breviculmis FRANCH. l. c.

C. breviculmis Subsp. *Royleana* forma *discoidea* KÜKENTH. l. c. 470; MAK. & NEM. l. c. 1332.

C. breviculmis Subsp. *Royleana* forma *Wardiana* MATSUM. Ind. pl. Jap. II. 1. (1905) 102, p. p.

Utriculi squamas subaequantur suberecti membranacei, textis e 1 strato cellularum concretis, late ellipsoidei subinflato-trigoni vix 2.5 mm longi 1 mm lati stramineo-virides pubescentes demum glabrescentes praeter nervos 2 marginales obsolete plurinervi, basi attenuata longe stipitati, apice attenuata in rostrum breve latum conicum ore hyalino submarginatum abeunt.

Nom. Jap. Hime-ao-suge.

Hab. Riukius.

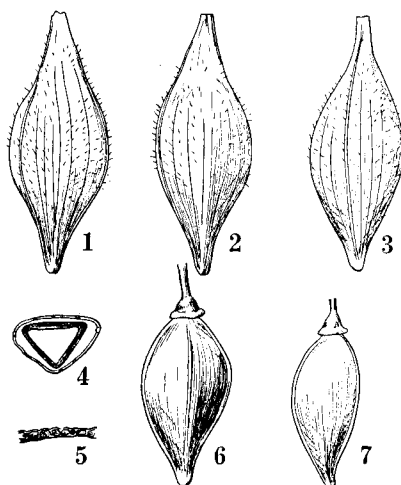


Fig. 84. *Carex discoidea* BOOTT.

1. Utricle seen from dorsal side, $\times 14$.
2. The same, from ventral side, $\times 14$.
3. The same, from lateral side, $\times 14$.
4. The same with nut, transversely cut, $\times 14$.
5. Portion of the wall of the utricle, transversely cut, $\times$ ca. 75.
6. Nut seen from ventral side, $\times 14$.
7. The same, from lateral side, $\times 14$.

135. *Carex fibrillosa* FRANCHET et SAVATIER (Fig. 85), Enum. pl. Japon. II. (1879) 137 et 564.

C. breviculmis Subsp. *Royleana* forma *fibrillosa* KÜKENTH. ap. MATSUM. Ind. pl. Jap. II. 1. (1905) 102 et in ENGL. Pflanzenr. IV. 20 (1909) 470.

C. breviculmis FRANCH. in Nouv. Arch. l. c. IX. (1897) 192, p. p.

Utriculi squamas subaequantur vel superantes suberecti tenuiter membranacei, textis ex 1 strato cellularum constantibus, late ellipsoidei subinflato-trigoni 3 mm longi vix 2 mm lati stramineo-virides pubescentes conspicue pluri-(15-20-)nervi, basi attenuati breviter alato-stipitati, apice in rostrum breve latum conicum ore hyalino submarginatum apiculatim abeunt.

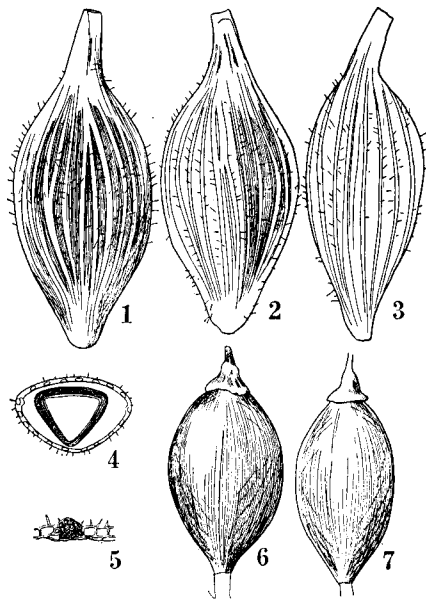


Fig. 85. *Carex fibrillosa* FRANCH. et SAV.

1. Utricle seen from dorsal side, $\times 14$.
2. The same, from ventral side, $\times 14$.
3. The same, from lateral side, $\times 14$.
4. The same with nut, transversely cut, $\times 14$.
5. Portion of the wall of the utricle, transversely cut, $\times$ ca. 100.
6. Nut seen from dorsal side, $\times 14$.
7. The same, from lateral side, $\times 14$.

Nom. Jap. Suna-suge.

Hab. Honshiu, Kiushiu and Riukius.

Distrib. Central China.

136. *Carex subumbellata* MEINSHAUSEN, in Acta Horti petropol. XVIII. (1901) 395; KÜKENTH. in ENGL. Pflanzenr. IV. 20 (1909) 453; MAK. & NEM. Fl. of Jap. (1925) 1371; MIYABE & KUDO, Fl. of Hokkaido & Saghal. II. (1931) 247; OHWI, in Mem. Coll. Sci. Kyoto Imp. Univ. Ser. B. VI. (1931) 260.

C. Wardiana LÉVEILLÉ et VANIOT in Bull. Acad. intern. Géogr. bot. X. (1901) 276.

C. multifliculmis LÉV. et VNT. (1909) 340 p.p.

C. breviculmis Subsp. *Royleana* forma *Wardiana* KÜKENTH. l. c. 470 p.p.; MAK. & NEM. l. c. 1333.

C. Royleana forma *Wardiana* MIYABE & KUDO, l. c. 250.

? *C. artinux* C. B. CLARKE in Kew Bull. Addit. Ser. VIII. (1908) 81.

C. ischne C. B. CLARKE l. c.

Nom. Jap. Hime-ao-suge.

Hab. Hokkaido, Honshiu and Riukius.

var. *vercunda* OHWI l. c. 260.

C. Heribaudiana LÉV. et VNT. l. c. (1901) 275, partim.

C. artinux C. B. CLARKE l. c. 81, partim.

C. caryophyllea Subsp. *nervata* var. *microtricha* KÜKENTH. l. c. 466, partim.

Nom. Jap. Kumoma-shiba-suge.
Hab. Honshiu.

137. *Carex perangusta* OHWI in Mem. Coll. Sci. Kyoto Imp. Univ. Ser. B. V. 3 (1930) 273 et in J. J. Bot. VII. 5 (1931) 165; MAK. & NEM. Fl. of Jap. 2.-ed. (1931) 1444.

Nom. Jap. Yakushima-ito-suge.
Hab. Kiushiu (Insl. Yakushima).

138. *Carex Kingiana* LÉVEILLÉ et VANIOT, in Bull. Acad. intern. Géogr. bot. X. (1901) 272; MATSUM. Ind. pl. Jap. II. 1. (1905) 116, non C. B. CLARKE.

C. breviculmis Subsp. *Royleana* var. *Kingiana* KÜKENTH. l. c. 470; MAK. & NEM. Fl. of Jap. (1925) 1333.

Nom. Jap. Kusa-suge.
Hab. Honshiu and Kiushiu.

139. *Carex geantha* OHWI, in Mem. Coll. Sci. Kyoto Imp. Univ. Ser. B. V. 3 (1930) 265; MIYABE & KUDO, Fl. of Hokkaido & Saghal. II. (1931) 251; MAK. & NEM. Fl. of Jap. 2.-ed. (1931) 1426.

C. breviculmis Subsp. *Royleana* var. *Kingiana* KÜKENTH. in ENGL. Pflanzenr. IV. 20 (1909) 470, partim.

Nom. Jap. Hagakure-suge.
Hab. Hokkaido and Honshiu.

? 140. *Carex jacens* C. B. CLARKE in Kew Bull. Addit. Ser. VIII. (1908) 80.

Hab. Honshiu.

141. *Carex lonchophora* OHWI in Mem. Coll. Kyoto B. ser. V. (1930) 274, et in J. J. Bot. VII. 5 (1931) 165; MAK. & NEM. Fl. of Jap. 2.-ed. (1931) 1435.

Nom. Jap. Ô-awo-suge.
Hab. Honshiu.

142. *Carex pudica* HONDA (Fig. 86) in Botan. Magaz. Tokyo XLIII. (1929) 543; MAK. & NEM. Fl. of Jap. 2.-ed. (1931) 1447.

Utriculi squamas superantes suberecti vix patuli membranacei, textis e 2 stratis cellularum concretis, late ellipsoidei trigoni vix inflati

3.5 mm longi 1.5 mm lati stramineo-virides vix 20-nervosi pubescentes, basi vix contracta 0.3 mm longe stipitati, apice in rostrum breve latum conicum ore hyalino subemarginatum abeuntes.

Nom. Jap. Mame-suge.

Hab. Honshiu.

143. *Carex mitrata* FRANCHET
(Fig. 87) in Bull. Soc. philom. Paris

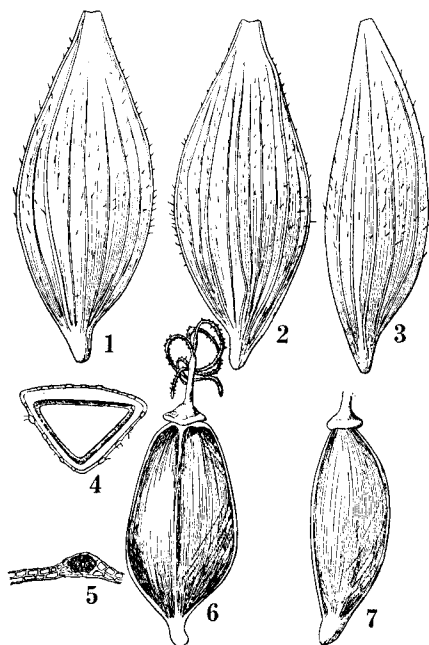


Fig. 86. *Carex pudica* HONDA

1. Utricle seen from dorsal side, ×14.
2. The same, from ventral side, ×14.
3. The same, from lateral side, ×14.
4. The same with nut, transversely cut, ×14.
5. Portion of the wall of the utricle, transversely cut, × ca. 100.
6. Nut seen from ventral side, ×14.
7. The same, from lateral side, ×14.

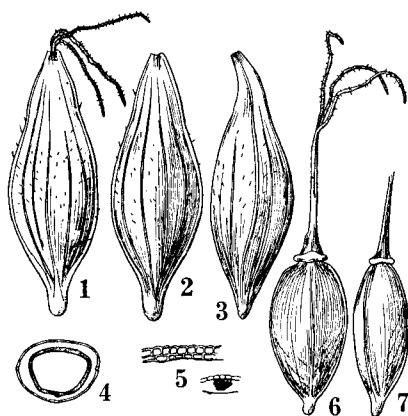


Fig. 87. *Carex mitrata* FRANCH.

1. Utricle seen from dorsal side, ×14.
2. The same, from ventral side, ×14.
3. The same, from lateral side, ×14.
4. The same with nut, transversely cut, ×14.
5. Portions of the wall of the utricle, transversely cut, × ca. 100.
6. Nut seen from ventral side, ×14.
7. The same, from lateral side, ×14.

8. sér. VII. (1895) 88 et in Nouv. Arch. Mus. Paris 3. sér. IX. (1897) 173; KÜKENTH. in ENGL. Pflanzenr. IV. 20 (1909) 471; NAKAI, Fl. Korean. II. (1911) 318; MAK. & NEM. Fl. of Jap. (1925) 1355.

Utriculi squamas superantes suberecti membranacei ovato-elliptici fusiformes trigoni fere 2.5 mm longi 0.8–1.0 mm lati stramineo-virides nitidi parce puberuli mox glabrescentes vix 10-nervosi, nervis marginalibus prominentibus apice attingeris, basi attenuati 0.3 mm longe stipitati, apice in rostrum mediocre late pyramidale basi vix tumidum ore albido subintegrum abeuntes.

Nom. Jap. Nuka-suge.

Hab. Honshiu, Kiushiu and Corea.

var. *aristata* OHWI in Mem. Coll. Kyoto, Ser. B. V. (1930) 269.

C. Kingiana LÉV. et VNT. l. c. 272 p.p.

Squamae longe aristatae. Utriculi glabrescentes.

Nom. Jap. Noge-nuka-suge.

Hab. Honshiu, Shikoku and Kiushiu.

? 144. *Carex Mariessi* C. B. CLARKE in Kew, Bull. Addit. Ser. VIII. (1908) 80.

Hab. Honshiu.

145. *Carex scabro-aristata* AKIYAMA (Fig. 88) in Journ. Coll. Sci. Hokkaido Imp. Univ. V. I. 2 (1931) 58, Pt. IX. fig. 3.

Utriculi squamis aequilongi suberecti membranacei ovato-oblongi 2.5 mm longi trigoni brunneo-virides multinervi glabri, basi breve stipitati, marginati, apice in rostrum longum marginibus scabrum excurvum latum ore hyalino leviter bidentatum desinentes.

Nom. Jap. Shiro-ito-suge.

Hab. Honshiu (Musashi, Sagami and Shinano).

146. *Carex tristachya* THUNBERG (Fig. 89, 1) Fl. japon. (1784) 38; FRANCH. et SAV. Enum. pl. Japon. II. (1879) 135; FRANCH. in Nouv. Arch. Mus. Paris 3. sér. IX. (1897) 162; MATSUM. Ind. pl. Japon. II. 1. (1905) 136; KÜKENTH. in ENGL. Pflanzenr. IV. 20 (1909) 471; MAK. & NEM. Fl. of Jap. (1925) 1374.

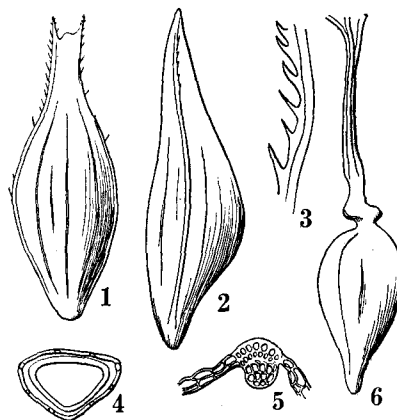


Fig. 88. *Carex scabro-aristata* AKIYAMA

1. Utricle seen from dorsal side, $\times 14$.
2. The same, from lateral side, $\times 14$.
3. Portion of margin of the utricle, $\times$ ca. 120.
4. Utricle with nut, transversely cut, $\times 14$.
5. Portion of the wall of the utricle, transversely cut, $\times$ ca. 120.
6. Nut, $\times 14$.

Utriculi fere ut *C. pocilliformis*: squamas superantes suberecti membranacei, textis e vix 2 stratis cellularum compositis, ellipsoidei trigoni vix 3 mm longi stramineo-virides primo puberuli demum glabrescentes multinervi, basi breviter stipitati, apice in rostrum breve saepe excurvum ore albido emarginatum sensim abeuntes. (Figures drawn from an immature specimen.)

Nom. Jap. Moegi-suge.

Hab. Honshiu, Shikoku and Kiushiu.

147. *Carex pocilliformis* BOOTT (Fig. 89, 2-8), Illustr. IV. (1867) 175 t. 593; FRANCH. in Nouv. Arch. Mus. Paris 3. sér. IX. (1897) 163.

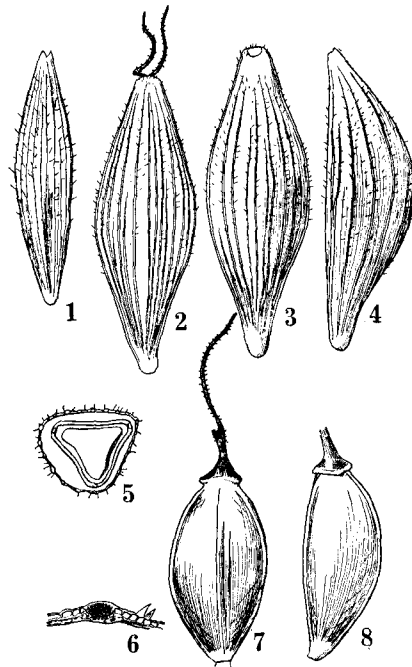


Fig. 89. 1. Utricle of *Carex tristachya* THUNB. 2-8. *Carex pocilliformis* BOOTT. 2. Utricle seen from dorsal side, $\times 14$. 3. The same, from ventral side, $\times 14$. 4. The same, from lateral side, $\times 14$. 5. The same with nut, transversely cut, $\times 14$. 6. Portion of the wall of the utricle, transversely cut, $\times$ ca. 100. 7. Nut seen from ventral side, $\times 14$. 8. The same, from lateral side, $\times 14$.

C. tristachya var. *pocilliformis* KÜENTH. in ENGL. Pflanzenr. IV. 20 (1909) 473; NAKAI, Fl. Korean. II. (1911) 319; MAK. & NEM. Fl. of Jap. (1925) 1374 (sub. *procilliformis*); MATSUM. et HAYATA, Enum. pl. Formos. (1906) 496; HAYATA, Icon. pl. Formos. VI. (1916) 125, fig. 38, j-m.

C. tristachya MATSUM. l. c. 136 p. p.

Utriculi fere ut *C. tristachya* sed rostrum raro integrum.

Nom. Jap.

Hab. Honshiu, Shikoku and Kiushiu.

Distrib. Formosa and Corea.

148. *Carex tumidula* OHWI in Mem. Coll. Sci. Kyoto Imp. Univ. Ser. B. VI. (1931) 244.

Nom. Jap.

Hab. Shikoku.

149. *Carex cucullata* (KÜENTH.) OHWI (Fig. 90), in Mem. Coll. Sci. l. c. V. (1930) 272.

C. ligata FRANCH. in Nouv. Arch. Mus. Paris 3. sér. IX.

(1897) 164 t. 7, fig. 1; LÉVEILLÉ et VANIOT in Bull. Acad. Géogr. bot. X. (1901) 64.

C. ligata var. *cucullata* KÜKENTH. ap. MATSUM. Ind. pl. Japon. II. 1. (1905) 118, in Journ. Coll. Sc. Tokyo XXII. (1906) 495 et in ENGL. Pflanzenr. IV. 20 (1909) 474.

Utriculi squamas longe superantes suberecti membranacei, textis e 2-3 stratis cellularum compositis, 3-3.5 mm longi 1.5 mm lati vix 1 mm alti obovato-lageniformes subinflato-trigoni stramineo-virides minute puberuli fere 20-nervosi, basi attenuati breviter stipitati, apice in rostrum breve ore bidentulum contracti.

Nom. Jap. Nago-suge.

Hab. Riukius.

Distrib. Hongkong.

150. *Carex formosensis* LÉVEILLÉ et VANIOT, in Mem. Soc. Sci. nat. Cherbourg XXXV. (1906) 216 et FEDDE, Repert. V. (1908) 31; OHWI, l. c. 271.

C. ligata var. *formosensis* KÜKENTH. in ENGL. Pflanzenr. IV. 20 (1909) 474; HAYATA, Icon. pl. Formos. X. (1920) 64.

C. kelungensis HAYATA l. c. 63.

Nom. Jap. Taiwan-suge.

Hab. Kiushiu.

Distrib. Formosa.

var. *vogens* (KÜKENTH.) OHWI l. c. 271.

C. mitrata var. *vogens* KÜKENTH. l. c. 471.

Hab. Kiushiu.

Distrib. Corea.

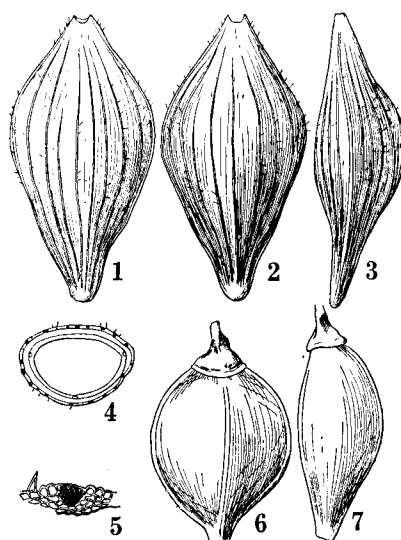


Fig. 90. *Carex cucullata* OHWI

1. Utricle seen from dorsal side, $\times 14$.
2. The same, from ventral side, $\times 14$.
3. The same, from lateral side, $\times 14$.
4. The same with nut, transversely cut, $\times 14$.
5. Portion of the wall of the utricle, transversely cut, $\times$ ca. 100.
6. Nut seen from ventral side, $\times 14$.
7. The same, from lateral side, $\times 14$.

var. *kabashimensis* OHWI, in Mem. Coll. Sci. Kyoto Imp. Univ. Ser. B. V. 3 (1930) 272.

Differt a typo foliis paullo latioris, vaginis atro-fuscis, opacis sub-integris, spiculis terminalis masculinis brevis, squamis apice rotundatis plus minus flavescentibus albo-marginatis.

Hab. Kiushiu.

151. *Carex lutchensis* OHWI l. c. 270, et in J. J. Bot. VII. 5 (1931) 165; MAK. & NEM. Fl. of Jap. 2.-ed. (1931) 1435.

Nom. Jap. Okinawa-suge.

Hab. Riukius.

152. *Carex hololasius* LÉVEILLÉ et VANIOT in Bull. Acad. intern. Géogr. bot. 3. sér. X. (1901) 280; MATSUM. Ind. pl. Japon. II. 1. (1905) 114; MAK. & NEM. Fl. of Jap. (1925) 1346.

Nom. Jap. Hime-kesuge.

Hab. Honshiu.

153. *Carex tenuissima* BOOTT (Fig. 91) in Proc. Linn. Soc. I. (1845) 288; FRANCH. et SAV. Enum. pl. Japon. II. (1879) 147; FRANCH. in Nouv. Arch. Mus. Paris 3. sér. X. (1898) 63; LÉV. et VNT. in Bull. Acad. Géogr. Bot. XI. (1902) 109; MATSUM. Ind. pl. Japon. II. 1. (1905) 135; KÜKENTH. in ENGL. Pflanzenr. IV. 20 (1909) 475; NAKAI, Fl. Korean. II. (1911) 319; MAKINO & NEMOTO, Fl. of Jap. (1925) 1373; MIYABE & KUDO, Fl. of Hokkaid. & Saghal. II. (1931) 251.

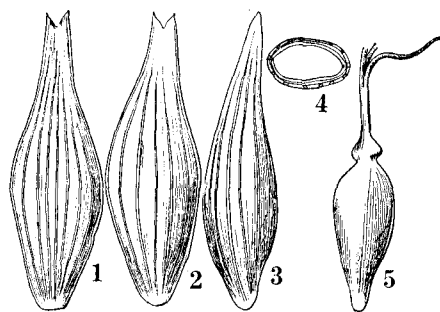


Fig. 91. *Carex tenuissima* BOOTT

1. Utricle seen from dorsal side, $\times 14$.
2. The same, from ventral side, $\times 14$.
3. The same, from lateral side, $\times 14$.
4. The same with nut, transversely cut, $\times 14$.
5. Nut, $\times 14$.

Utriculi squamas superantes suberecti membranacei subobovato-elliptici obtuse trigoni 2.5–3 mm longi 1 mm lati pallide virides glabri 10–15-nervi, nervis 2 marginalibus prominentibus, basi in stipitem longe attenuati, apice in rostrum mediocre conicum marginibus saepe parce scabrum ore hyalino bidentulum subabrupte desinentes.

Nom. Jap. Ito-suge.

Hab. Hokkaido, Honshiu, Shikoku and Kiushiu.

Distrb. Corea, Northern and Central China.

154. *Carex sikokiana* FRANCHET et SAVATIER (Fig. 92), Enum. pl. Japon. II. (1879) 573; FRANCH. in Nouv. Arch. Mus. Paris, 3. sér. X. (1898) 64; MATSUM. Ind. pl. Japon. II. 1. (1905) 133; MIYABE & KUDO, Fl. of Hok. & Sagh. II. (1931) 251; OHWI in Mem. Coll. Sci. Kyoto Imp. Univ. Ser. B. VI. (1931) 259.

C. tenuissima var. *sikokiana* KÜKENTH. in ENGL. Pflanzenr. IV. 20 (1909) 475; MAK. & NEM. Fl. of Jap. (1925) 1373.

C. alterniflora FRANCH. in Bull. Soc. philom. Paris 8. sér. VII. (1895) 51 et in Nouv. Arch. l. c. 64 t. 6, fig. 2.

C. pseudo-strigosa LÉVEILLÉ et VANIOT in Bull. Acad. Géogr. bot. 3. sér. XI. (1902) 109.

C. Duvaliana var. *alterniflora* KÜKENTH. apud MATSUM. l. c. 108.

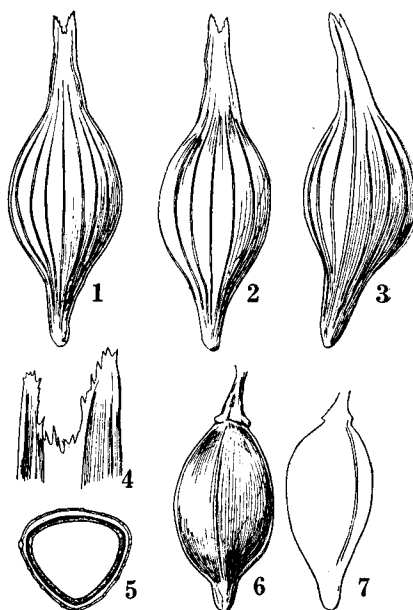


Fig. 92. *Carex sikokiana* FRANCH. et SAV.

1. Utricle seen from dorsal side, $\times 14$.
2. The same, from ventral side, $\times 14$.
3. The same, from lateral side, $\times 14$.
4. Apical portion of the beak of the utricle, $\times$ ca. 60.
5. Utricle with nut, transversely cut, $\times 14$.
6. Nut seen from ventral side, $\times 14$.
7. The same, from lateral side, $\times 14$.

Utriculi squamas subsuperantes suberecti membranacei subobovato-elliptici medio inflati trigoni ad 4 mm longi 1.5 mm lati pallide virides glabri 15-nervi, basi attenuati longe stipitati, apice in rostrum mediocre vel longum conicum marginibus saepe scabrum ore hyalino bidentulum intus scabrum abrupte abeuntes.

Nom. Jap. Shikoku-ito-suge; Tachikawa-suge.

Hab. Saghalien, Hokkaido, Honshiu, Shikoku and Kiushiu.

Carex alterniflora FRANCHET (? et SAVAT.)

var. *tenuinervis* OHWI, in Mem. Coll. Sci. Kyoto Imp. Univ. Ser. B. VI. 5 (1931) 259.

C. tenuinervis OHWI l. c. V. 3 (1930) 266 ; MAK. & MEM. Fl. of Jap. 2.-ed. (1931) 1459.

Rhizoma dense caespitosum estoloniferum. Utriculi glabri.

Nom. Jap. Tsurunashi-ôito-suge.

Hab. Kiushiu.

var. *arimensis* OHWI l. c.

Culmus humilis non caespitosus, stolones epigeos longos tenues agens.

Nom. Jap. Tsuru-ito-suge.

Hab. Honshiu.

var. *aureo-brunnea* OHWI l. c.

Stolonifera ; vaginae foliorum exteriorum aureo-brunneae nitidulae.

Hab. Kiushiu.

var. *elongatula* OHWI l. c. 260.

Laxiuscule caespitosa, utriculis late obovatis in rostrum longum (subaequilongum) abrupte contractis.

Nom. Jap. Kuju-suge.

Hab. Kiushiu.

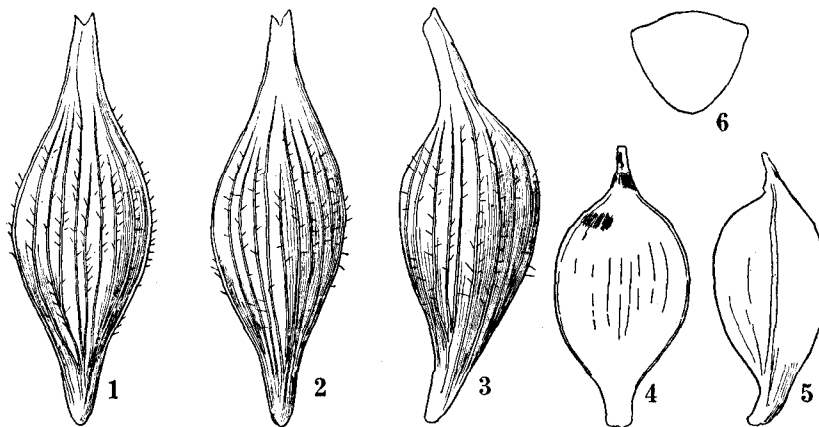


Fig. 93. *Carex Duvaliana* FRANCH. et SAV.

1. Utricle seen from dorsal side, $\times 14$. 2. The same, from ventral side, $\times 14$. 3. The same, from lateral side, $\times 14$. 4. Nut seen from dorsal side, $\times 14$. 5. The same, from lateral side, $\times 14$. 6. The same, transversely cut, $\times 14$.

155. *Carex Duvaliana* FRANCHET et SAVATIER (Fig 93), Enum. pl. Japon. II. (1879) 568; FRANCH. in Nouv. Arch. Mus. Paris 3. sér. IX. (1897) 183; MATSUM. Ind. pl. Japon. II. 1. (1905) 108.

C. tenuissima var. *Duvaliana* KÜKENTH. in ENGL. Pflanzenr. IV. 20 (1909) 476; MAK. & NEM. Fl. of Jap. 1.-ed. (1925) 1373.

C. villosa FRANCH. et SAV. l. c. 142 p. p., non BOOTT.

C. Hilgendoriana BOECK. in ENGLER's Bot. Jahrb. V. (1884) 518.

C. Duvaliana f. *parviflora* KÜKENTH. ap. MATSUM. l. c. 108.

Utriculi squamas superantes suberecti membranacei ovato-elliptici trigoni 4 mm longi 1.5 mm lati pallide virides parce hirtuli vel glabri plurinervi (nervi vix 20 et 2-nervi marginales prominentes) basi attenuati stipitati, apice in rostrum breve vel sublongum conicum marginibus scabrum ore hyalino bidentulum subabrupte desinentes.

Nom. Jap. Ke-suge; Yama-kesuge.

Hab. Honshiu.

156. *Carex pisiformis* BOOTT (Fig. 94), in A. GRAY, Narr. Exped. Perry II. (1857) 324; FRANCH. in Nouv. Arch. Mus. Paris 3. sér. IX. (1897) 185 t. 7, fig. 2; KOMAROV, Fl. Manshur. I. (1901) 375; MATSUM. l. c. 125; KÜKENTH. l. c. 476, fig. 76 A-D; NAKAI, Fl. Korean. II. (1911) 319; MAK. & NEM. Fl. of Jap. (1925) 1361.

C. amphora FRANCH. et SAV. Enum. pl. Japon. II. (1879) 142 et 566.

Utriculi squamas aequantes vel superantes suberecti membranacei, textis e 1-2 stratis cellularum concretis, ovato-elliptici subinflato-trigoni 2.5-3 mm longi ad 1 mm lati pallide virides breviter hirtuli fere 15-nervi (2 nervi marginales prominentes), basi ob-

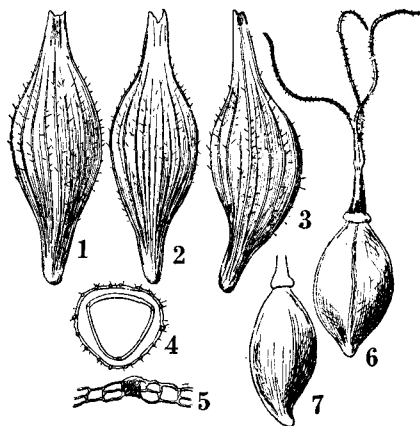


Fig. 94. *Carex pisiformis* BOOTT

1. Utricle seen from dorsal side, $\times 14$.
2. The same, from ventral side, $\times 14$.
3. The same, from lateral side, $\times 14$.
4. The same with nut, transversely cut, $\times 14$.
5. Portion of the wall of the utricle, transversely cut, $\times$ ca. 120.
6. Nut seen from ventral side, $\times 14$.
7. The same, from lateral side, $\times 14$.

lique attenuati 0.3 mm longe stipitati, apice in rostrum mediocre (vix 0.6 mm longum) conicum rectum ore bidentulum subabrupte contracti.

Nom. Jap. Honmonji-suge.

Hab. Saghalien, Hokkaido and Honshiu.

Distrib. Corea and China.

157. *Carex cuneata* OHWI in Mem. Coll. Sci. Kyoto Imp. Univ. B. VI. (1931) 256.

Nom. Jap. Michinoku-honmonji-suge.

Hab. Honshiu.

158. *Carex polyschoena* LÉVEILLÉ et VANIOT in Bull. Acad. intern. Géogr. bot. 3. sér. XII. (1903) 9; OHWI in Mem. Coll. Sci. Kyoto Imp. Univ. Ser. B. VI. (1931) 255.

C. pisiformis forma *polyschoena* KÜKENTH. l. c. 477.

C. indistinctum LÉV. et VNT. in FEDDE, Repert. V. (1908) 194; NAKAI, Fl. Korean. II. (1911) 335.

C. pisiformis BAKER et MOORE in Journ. Linn. Soc. XVII. (1880) 389; LÉV. et VNT. in Bull. Acad. l. c. X. 8.

Nom. Jap. Shiro-honmonji-suge.

Hab. Kiushiu.

Distrib. Corea and Manchuria.

159. *Carex stenostachys* FRANCH. et SAV. Enum. pl. Jap. II. (1879) 142 et 569; OHWI l. c. VI. (1931) 253.

C. pisiformis KÜKENTH. in ENGL. Pflanzenr. IV. 20 (1909) 476, non BOOTT.

Nom. Jap. Nishino-honmonji-suge.

Hab. Honshiu.

160. *Carex sachalinensis* FR. SCHMIDT (Fig. 95), Reis. Amurl. (1868) 194 t. VI, fig. 14-17; MIYABE & KUDO, Fl. of Hokkaido & Saghal. II. (1931) 252.

C. pisiformis var. *sachalinensis* KÜKENTH. ap. MATSUM. Ind. pl. Japon. II. 1. (1905) 126 et in ENGL. Pflanzenr. IV. 20 (1909) 477 et Car. Sach. (1909) 36; LÉVEILLÉ in FEDDE, Repert. VII. (1909) 104; MAK. & NEM. Fl. of Jap. (1925) 1361.

C. pseudo-conica FRANCH. et SAV. l. c. 144 et 570; FRANCH. l. c. IX. (1897) 170; MATSUM. l. c. 128; MAK. & NEM. l. c. 1362.

C. korsakoviensis LÉVEILLÉ.

C. alba Subsp. *ussuriensis* MIYABE et MIYAKE, Fl. Saghal. (1916) 546.

Utriculi squamas subaequant-
es suberecti membranacei, textis
e 2 stratis cellularum compositis,
ovato-elliptici fere 3 mm longi
1 mm lati stramineo-virides nitidi
parce pubescentes vel glabres-
centes plurinervi (nervi 2 mar-
ginales apice attingeri promi-
nentes), basi abrupte attenuati
vix 1 mm longe stipitati, apice in

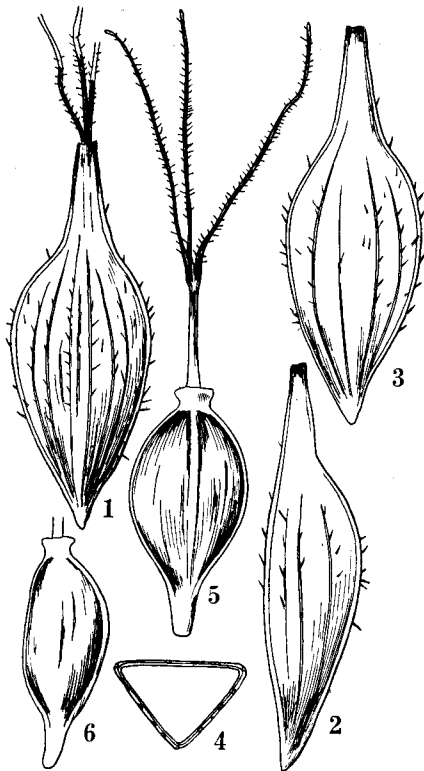


Fig. 96. *Carex oshimensis* NAKAI

1. Utricle seen from dorsal side, $\times 14$.
2. The same, from ventral side, $\times 14$.
3. The same, from lateral side, $\times 14$.
4. The same with nut, transversely cut, $\times 14$.
5. Nut seen from ventral side, $\times 14$.
6. The same, from lateral side, $\times 14$.

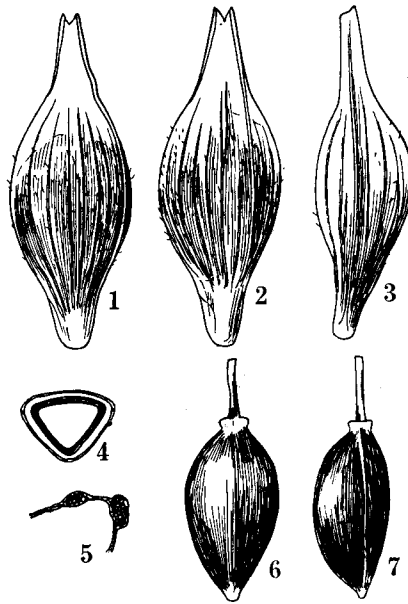


Fig. 95. *Carex sachalinensis* FR. SCHM.

1. Utricle seen from dorsal side, $\times 14$.
2. The same, from ventral side, $\times 14$.
3. The same, from lateral side, $\times 14$.
4. The same with nut, transversely cut, $\times 14$.
5. Portion of the wall of the utricle, trans-
versely cut, $\times$ ca. 75.
6. Nut seen from ventral side, $\times 14$.
7. The same, from lateral side, $\times 14$.

rostrum longum marginibus saepe
scabrum conicum ore hyalino
leviter bidentatum abrupte abe-
untes.

Nom. Jap. Ô-ito-suge; Gon-
gen-suge; Susuya-shiro-suge.

Hab. Saghalien, Kuriles,
Hokkaido and Honshiu.

161. *Carex oshimensis*
NAKAI (Fig. 96) in Botan. Magaz.
Tokyo XXVIII. (1914) 326; MAK.
& NEM. Fl. of Jap. (1925) 1359.

Utriculi squamas superantes erecti membranacei obovato-oblongi trigoni parum compressi vix 4 mm longi 1.3 mm lati stramineo-virides pubescentes obscure plurinervi (2 nervi marginales prominentes), basi attenuata breve stipitati, apice in rostrum sublongum conicum ferrugineum ore integrum subsensim abeuntes.

Nom. Jap. Ôshima-kan-suge.

Hab. Honshiu (Insl. Ôshima).

162. *Carex Reinii* FRANCHET et SAVATIER (Fig. 97), Enum. pl. Japon. II. (1879) 559; FRANCH. in Nouv. Arch. Mus. Paris 3. sér. VIII. (1896) t. 7, fig. 1 et IX. (1897) 115; MATSUM. Ind. pl. Jap. II. 1. (1905) 130; KÜKENTH. in ENGL. Pflanzenr. IV. 20 (1909) 477; MAK. & NEM. Fl. of Jap. (1925) 1364.

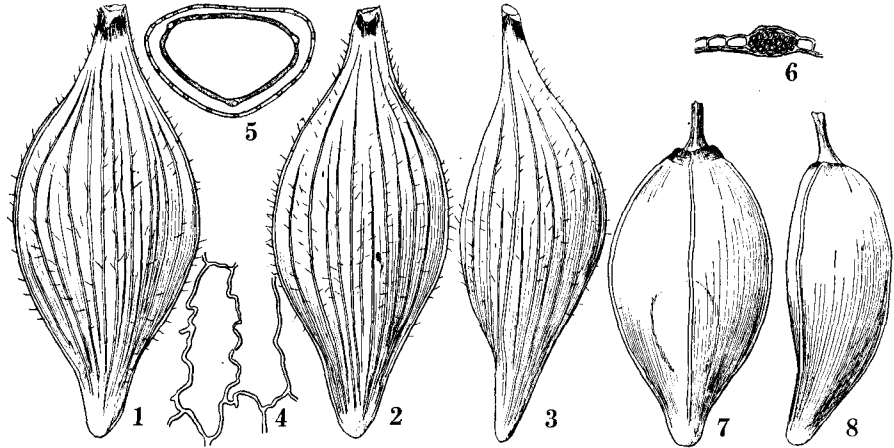


Fig. 97. *Carex Reinii* FRANCH. et SAV.

1. Utricle seen from dorsal side, $\times 14$. 2. The same, from ventral side, $\times 14$. 3. The same, from lateral side, $\times 14$. 4. Portion of the surface of the utricle, $\times$ ca. 250. 5. Utricle with nut, transversely cut, $\times 14$. 6. Portion of the wall of the utricle, transversely cut, $\times$ ca. 100. 7. Nut seen from ventral side, $\times 14$. 8. The same, from lateral side, $\times 14$.

C. nambuensis FRANCH. in Bull. Soc. philom. Paris 8. sér. VII. (1895) 44 et in Nouv. Arch. l. c. VIII. t. 9, fig. 2 et IX. 115; MATSUM. l. c. 121.

Utriculi squamas superantes suberecti membranacei, textis e 2 stratis cellularum concretis, cellulis inferioribus conspicue minoribus, late ellipsoidei obtuse trigoni 4.5–5 mm longi 1.5–2 mm lati straminei

pilosi vix 25-nervosi (nervi 2 marginales prominentes), basi attenuati vix 1 mm longe stipitati, marginibus dense ciliati, apice in rostrum vix 0.7 mm longum excurvum ore albido primo integrum demum bidentulum subsensim abeuntes.

Nom. Jap. Ko-kan-suge; Nambu-suge.

Hab. Honshiu, Shikoku and Kiushiu.

163. *Carex multifolia* OHWI (Fig. 98) in Mem. Coll. Sci. Kyoto Imp. Univ. Ser. B. V. (1930) 264; MIYABE & KUDO, Fl. of Hokkaido & Saghal. II. (1931) 252.

C. foliosissima (non FR. SCHMIDT) FRANCH. ex KAWAKAMI in Botan. Magaz. Tokyo XI. (1897) 53 et in Nouv. Arch. Mus. Paris 3. sér. X. (1898) 60; KÜKENTH. in ENGL. Pflanzenr. IV. 20 (1909) 478; MATSUM. Ind. pl. Japon. II. 1. (1905) 110.

C. pseudoconica FRANCH. l. c. IX. 170, partim.

Utriculi squamas vix superantes suberecti membranacei subobovato-elliptici trigoni 3–3.5 mm longi vix 1.2 mm lati pallide virides parce pubescentes vel demum glabrescentes plurinervi (nervi vix 15 et 2 nervi marginales prominentes), basi longe attenuati breviter stipitati, apice in rostrum breve vel mediocre (fere 0.5 mm longum) conicum saepe excurvum ore hyalino leviter bidentulum vel subintegrum apiculato-abeuntes.

Nom. Jap. Miyama-kan-suge; Hime-kasa-suge.

Hab. Hokkaido, Honshiu, Shikoku and Kiushiu.

var. *glaberrima* OHWI l. c. 265.

Utriculi glaberrimi.

Hab. Southern Honshiu.

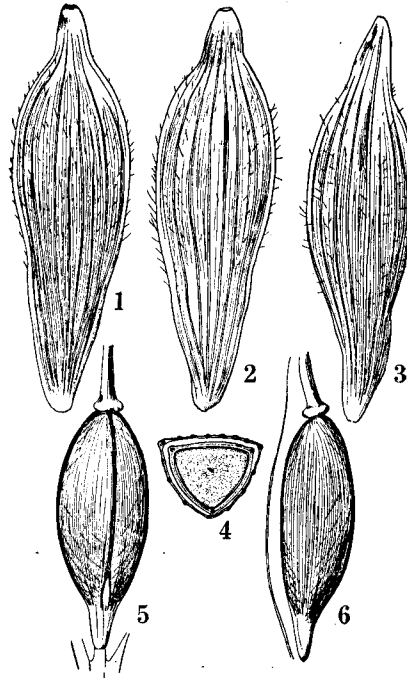


Fig. 98. *Carex multifolia* OHWI

1. Utricle seen from dorsal side, $\times 14$.
2. The same, from ventral side, $\times 14$.
3. The same; from lateral side, $\times 14$.
4. The same with nut, transversely cut, $\times 14$.
5. Nut seen from ventral side, $\times 14$.
6. The same, from lateral side, $\times 14$.

var. *pallidisquama* OHWI l. c. VI. (1931) 258.

Spiculae masculinae et femineae pallidae.

Hab. Honshiu and Shikoku.

var. *stolonifera* OHWI l. c.

Utriculi glabri. Rhizoma stoloniferum.

Hab. Kiushiu.

var. *globosa* OHWI l. c.

Hab. Honshiu.

var. *imbecillis* OHWI l. c. 259.

Rhizoma stoloniferum. Culmus gracilior. Folia flaccida. Spiculae pallidae. Utriculi 4 mm longi.

Hab. Kiushiu.

164. *Carex atroviridis* OHWI in Mem. Coll. Sci. Kyoto Imp. Univ. Ser. B. VI. 5 (1931) 241.

Nom. Jap. Yashima-suge.

Hab. Kiushiu.

165. *Carex shimotsukensis* HONDA in Botan. Magaz. Tokyo XLIV. (1930) 667; MAK. & NEM. Fl. of Jap. 2.-ed. (1931) 1453.

Nom. Jap. Ô-miyama-kan-suge.

Hab. Honshiu.

166. *Carex temnolepis* FRANCHET in Nouv. Arch. Mus. Paris 3. sér. X. (1898) 61, t. 4 fig. 2; MATSUM. Ind. pl. Japon. II. 1. (1905) 135; MAK. & NEM. Fl. of Jap. (1925) 1371.

C. foliosissima var. *temnolepis* KÜKENTH. in ENGL. Pflanzenr. IV. 20 (1909) 478.

Nom. Jap. Idsu-kan-suge.

Hab. Honshiu.

167. *Carex conicoides* HONDA (Fig. 99) in Botan. Magaz. Tokyo XLII. (1928) 506; MAK. & NEM. Fl. of Jap. 2.-ed. (1931) 1421.

Utriculi squamas aequantes suberecti membranacei ovato-elliptici 3 mm longi subinflato-trigoni stramineo-virides, parce puberuli plurinervi, basi in stipitem obliquum attenuati, apice in rostrum breve conicum excurvum ore albido bifidum subsensim abeuntes.

Nom. Jap. Watari-suge.

Hab. Kiushiu.

168. *Carex Tashiroana* OHWI in Mem. Coll. Sci. Kyoto Imp. Univ. Ser. B. V. (1930) 267, et in J. J. Bot. VII. 5 (1931) 166; MAK. & NEM. Fl. of Jap. 2.-ed. (1931) 1456.

Nom. Jap. No-suge.

Hab. Honshiu.

169. *Carex conica* BOOTT (Fig. 100) in A. GRAY, Narr. Exped. Perry II. (1857) 325; FRANCH. et SAV. Enum. pl. Japon. II. (1879) 143; FRANCH. in Nouv. Arch. Mus. Paris 3. sér. IX. (1897) 169; LÉVEILLÉ et

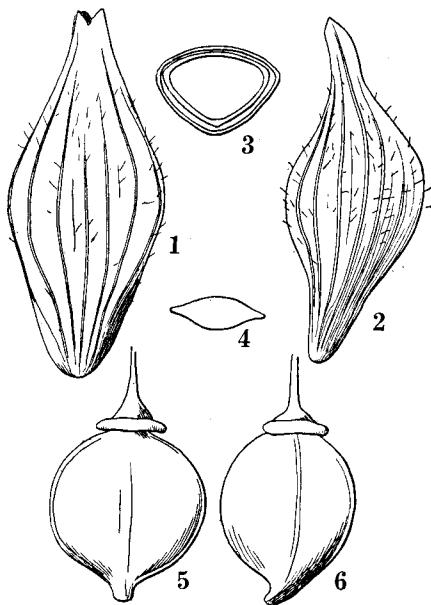


Fig. 99. *Carex conicoides* HONDA

1. Utricle seen from dorsal side, $\times 14$.
2. The same, from lateral side, $\times 14$.
3. The same with nut, transversely cut, $\times 14$.
4. Basal portion of the utricles, transversely cut, $\times 14$.
5. Nut seen from ventral side, $\times 14$.
6. The same, from lateral side, $\times 14$.

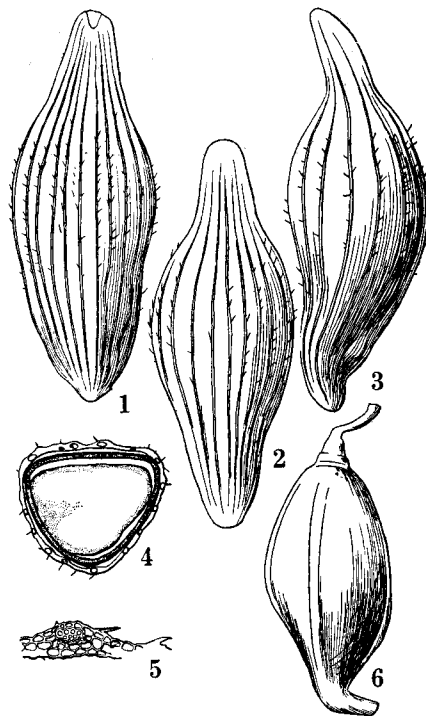


Fig. 100. *Carex conica* BOOTT

1. Utricle seen from dorsal side, $\times 14$.
2. The same, from ventral side, $\times 14$.
3. The same, from lateral side, $\times 14$.
4. The same with nut, transversely cut, $\times 14$.
5. Portion of the wall of the utricles, transversely cut, $\times$ ca. 100.
6. Nut, $\times 14$.

VANIOT in Bull. Acad. intern. Géogr. bot. X. (1901) 269; MATSUM. Ind. pl. Japon. II. 1. (1905) 105; KÜKENTH. in ENGL. Pflanzenr. IV. 20 (1909) 478, fig. 76 E-H; MAK. & NEM. Fl. of Jap. (1925) 1337.

C. conica var. *leucolepis* FRANCH. et SAV. l. c. 143 et 570.

C. Naumanniana BOECK. in ENGL. Botan. Jahrb. V. (1884) 518.

C. discolor BOECK. l. c. 519, non NYLAND.

Utriculi squamas fere aequantes suberecti membranacei, textis e 3 stratis cellularum constantibus, ovato-elliptici subinflato-trigoni 3 mm longi cinereo-virides primo puberuli demum saepe glabri plurinervi, basi in stipitem obliquum attenuati, apice in rostrum breve conicum excurvum ore albido integrum subsensim abeuntes.

Nom. Jap. Hime-kan-suge.

Hab. Hokkaido, Honshiu and Kiushiu.

forma *mollis* KÜKENTH. in ENGL. Pflanzenr. IV. 20 (1909) 479.

Folia mollia.

Hab. Honshiu.

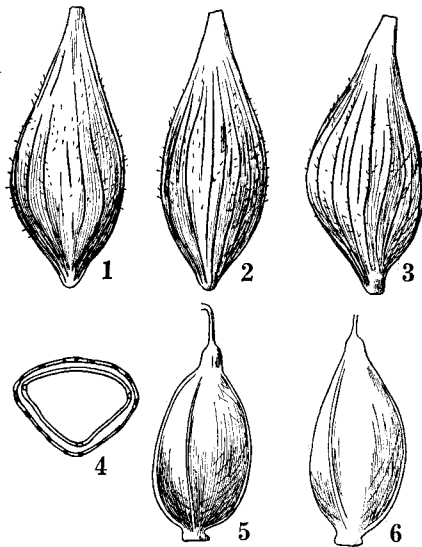


Fig. 101. *Carex conica* var. *rubens* KÜKENTH.

1. Utricle seen from dorsal side, $\times 14$.
2. The same, from ventral side, $\times 14$.
3. The same, from lateral side, $\times 14$.
4. The same with nut, transversely cut, $\times 14$.
5. Nut seen from ventral side, $\times 14$.
6. The same, from lateral side, $\times 14$.

var. *rubens* KÜKENTH. (Fig. 101) apud MATSUM. Ind. Pl. Japon. II. 1. (1905) 106.

C. conica forma *rubens* KÜKENTH. in ENGL. Pflanzenr. IV. 20 (1909) 479.

Utriculi nervis elevatis fusco-rubentibus percursi.

Nom. Jap. Beni-kan-suge.

Hab. Honshiu.

forma *longirostrata* KÜKENTH. in ENGL. l. c.

Utriculi longius rostrati ore emarginati.

Hab. Honshiu.

var. *lanceolata* AKIYAMA in Journ. Facult. Sci. Hokkaid. Imp. Univ. V. I. 2 (1931) 61.

Squamae anguste lanceolatae vel ovato-lanceolatae. Utriculi fere ut var. *rubens*.

Nom. Jap. Beni-himekansuge.

Hab. Honshiu.

var. *variegata* NAKAI, in MAK. & NEM. Fl. of Jap. 2.-ed. (1931) 1421.

Folia albo-maculata.

Nom. Jap. Fui-ri-kansuge.

Hab. Cult.

170. *Carex Doiana* AKIYAMA (Fig. 102) in Journ. Facult. Sci. Hokkaido Imp. Univ. V. I. 2 (1931) 59, pt. X. fig. 4.

Utriculi squamis parum minores suberecti membranacei oblongo-ovati 2-2.5 mm longi stramineo-brunnei obtuse trigoni plurinervi parvis et obsolete pubescentes, basi in stipitem obliquum attenuati, margine minute scabri, apice in rostrum brevissimum excurvum ore integrum apiculati.

Nom. Jap. Satsuma-kan-suge.

Hab. Kiushiu.

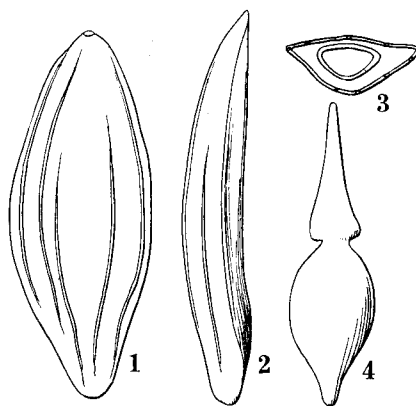


Fig. 102. *Carex Doiana* AKIYAMA

1. Utricle seen from dorsal side, $\times 14$.
2. The same, from lateral side, $\times 14$.
3. The same with nut, transversely cut, $\times 14$.
4. Nut, $\times 14$.

Sect. 31. *Digitatae* FRIES. (p. 31)

171. *Carex lasiolepis* FRANCHET (Fig. 103) in Bull. Soc. philom. Paris 8. sér. VII. (1895) 46 et Nouv. Arch. Mus. Paris 3. sér. IX. (1897) 173; LÉVEILLÉ et VANIOT in Bull. Soc. Géogr. bot. XIII. (1904) 504; MATSUM. Ind. pl. Jap. II. 1. (1905) 117; KÜKENTH. in ENGL. Pflanzenr. IV. 20 (1909) 486; NAKAI, Fl. Korean. II. (1911) 320; MIYABE & KUDO, in Trans. Sapporo nat. Hist. Soc. VII. (1918) 29 et Fl. of Hokkaido & Saghal. II. (1931) 253; MAK. & NEM. Fl. of Jap. 1.-ed. (1925) 1350.

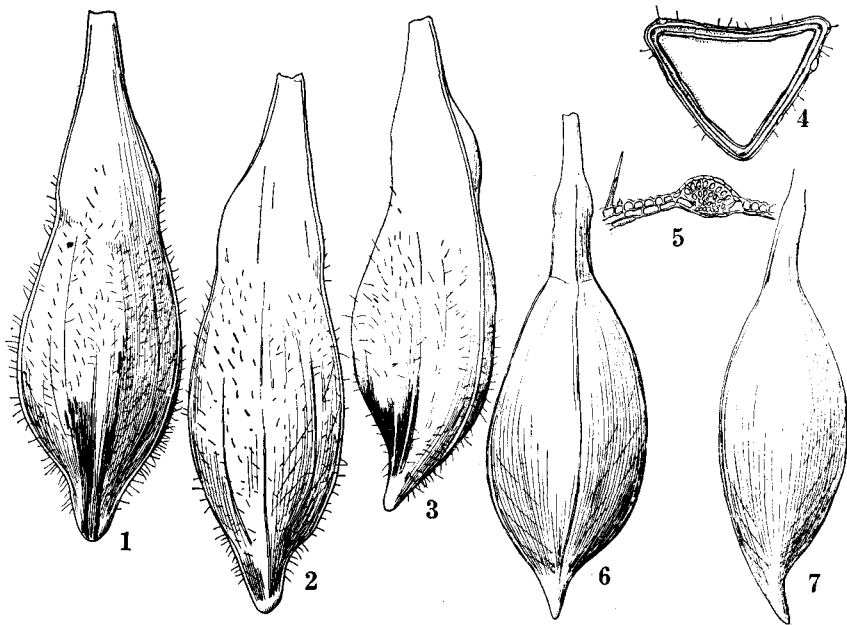


Fig. 103. *Carex lasiolepis* FRANCH.

1. Utricle seen from dorsal side, $\times 14$. 2. The same, from ventral side, $\times 14$. 3. The same, from lateral side, $\times 14$. 4. The same with nut, transversely cut, $\times 14$. 5. Portion of the wall of the utricle, transversely cut, $\times$ ca. 100. 6. Nut seen from ventral side, $\times 14$. 7. The same, from lateral side, $\times 14$.

Utriculi squamas breviter vel longius superantes suberecti membranacei, textis e 2-3 stratis cellularum constantibus, ovato-oblongi trigoni 4-5 mm longi vix 1.7 mm lati stramineo-virides basi dorsalis purpureo-colorati praeter nervos 2 marginales validos percursos obsolete nervosi (nervis vix 10), basi attenuati vel contracti 1 mm longe stipitati, apice in rostrum inferne vix tumidum breve conicum excurvum ferrugineum ore emarginatum subabrupte attenuati.

Nom. Jap. Azuma-suge.

Hab. Hokkaido and Honshiu.

Distrib. Corea.

172. *Carex lanceolata* BOOTT (Fig. 104), in A. GRAY, Narr. Exped. Perry II. (1857) 326; MIQ. Prol. Fl. Jap. (1866-67) 357; FRANCH. et SAV. Enum. pl. Jap. II. (1879) 134; FRANCH. in Nouv. Arch. Mus. Paris 3. sér. IX. (1898) 167; LÉVEILLÉ et VANIOT in Bull. Soc. l. c. X. (1901) 269;

KÜKENTH. in ENGL. Pflanzenr. IV. 20 (1909) 493 fig. 78 G, et Car. Sachal. (1909) 36; NAKAI, Fl. Korean. II. (1911) 321; MAK. & NEM. Fl. of Jap. (1925) 1349; MIYABE & KUDO, Fl. of Hokkaido & Saghal. II. (1931) 253.

C. pediformis C. A. MEY. var. *genuina* FR. SCHMIDT, Reis. Amurl. (1868) 193.

C. pediformis var. *floribunda* KORSHINSKI in Acta Horti petropol. XII. (1892) 409.

C. floribunda MEINSH. l. c. 402.

C. longisquamata MEINSH. ex KOMAROV, Fl. Manshur. I. (1901) 399.

C. pediformis MATSUM. Ind. pl. Jap. II. 1. (1905) 124, non C. A. MEY.

Utriculi squamis subduplo breviores suberecti membranacei, textis dorso e 2, ventre e 3-4 stratis cellularum concretis, obovato-oblongi obtuse trigoni 3 mm longi 1.5 mm lati pallide virides (e basi straminei) dense pubescentes (e superne densiores) vix ad 15 nervosi (nervi marginales prominentes) basi spongiosi marginibus alati in stipitem curvatum attenuati, apice in rostrum brevissimum saepe excurvum ore integrum apiculati.

Nom. Jap. Hikage-suge.

Hab. Saghalien, Hokkaido and Honshiu.

Distrib. Corea, China, Manchuria, Ussuri, Amur and Eastern Siberia.

var. *albo-mediana* MAKINO, in J. J. Bot. VI. 12 (1930) 38 et in MAK. & NEM. Fl. of Jap. 2.-ed. (1931) 1433.

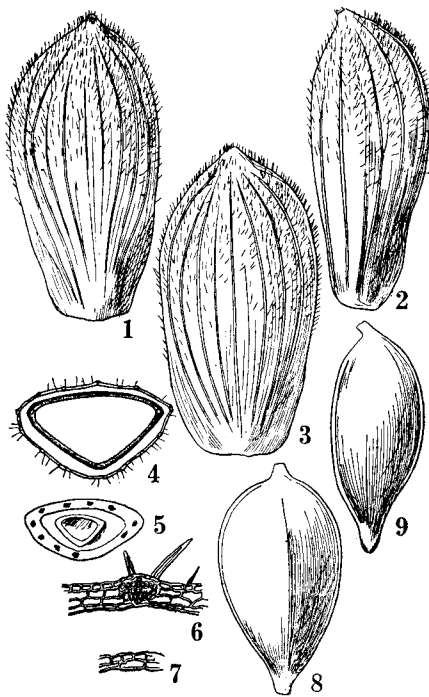


Fig. 104. *Carex lanceolata* BOOTT

1. Utricle seen from dorsal side, $\times 14$.
2. The same, from ventral side, $\times 14$.
3. The same, from lateral side, $\times 14$.
4. The same with nut, transversely cut, $\times 14$.
5. Basal portion of the utricle, transversely cut, $\times 14$.
6. and 7. Portions of the wall of the utricle, transversely cut, $\times$ ca. 100.
8. Nut seen from ventral side, $\times 14$.
9. The same, from lateral side, $\times 14$.

Folia longitudinaliter albo-striolata.

Nom. Jap. Fui-ri-hikage-suge.

Hab. Cult.

var. *subpediformis* KÜKENTH. in ENGL. Pflanzenr. IV. 20 (1909) 493; MAK. & NEM. Fl. of Jap. 2.-ed. (1931) 1433.

Spiculae femineae densiores, squamis obovatis utriculos paullo tantum superantibus.

Hab. Honshiu.

173. *Carex humilis* LEYSSER, Fl. Halens. (1761) 175; KÜKENTH. in ENGL. Pflanzenr. IV. 20 (1909) 493; OHWI in Mem. Coll. Sci. Kyoto Imp. Univ. Ser. B. VI. (1931) 242.

C. lanceolata var. *nana* LÉVEILLÉ et VANIOT, in Bull. Acad. intern. Géogr. bot. (1901) 269; KÜKENTH. l. c. 493; MAK. & NEM. Fl. of Jap. (1925) 1433.

C. nanella OHWI l. c. V. (1930) 263.

Nom. Jap. Hosoba-hikage-suge.

Hab. Hokkaido, Honshiu and Kiushiu.

Distrib. Corea and Manchuria.

174. *Carex Yoshinoi* OHWI in Mem. Coll. Sci. Kyoto VI. (1931) 265.

Nom. Jap. Murasaki-hime-kan-suge.

Hab. Honshiu.

175. *Carex delicatula* C. B. CLARKE in Kew, Bull. Addit. Ser. VIII. (1908) 78.

Hab. Honshiu.

Sect. 32. *Limosae* TUCKERMAN (p. 32)

176. *Carex rariflora* SMITH, ENGL. Botan. t. 2516 (1813); BOOTT, Illustr. II. (1860) 79 t. 217; MATSUM. Ind. pl. Jap. II. 1. (1905) 130; KÜKENTH. in ENGL. Pflanzenr. IV. 20 (1909) 502 fig. 80 A-D; KUDO, Fl. Paramushir. (1922) 82; MAK. & NEM. Fl. of Jap. 1.-ed. (1925) 1364; MIYABE & KUDO, Fl. of Hokkaido & Saghal. II. (1931) 254.

C. limosa var. *rariflora* WAHLENB. in Vet. Acad. Nya Handl. Stockholm XXIV. (1803) 162.

Nom. Jap. Chishima-suge.

Hab. Saghalien and Kuriles.

Distrib. Kamtschatka, Tschuktschland, Aleutians, North America and Europe.

forma *brevipedunculata* MEINSH. in Acta Horti petropol. XVIII. (1901) 351; KÜKENTH. l. c. 502; MAK. & NEM. l. c.

Differt a typo spiculis brevibus breviter pedunculatis omnibus approximatis.

Hab. Saghalien.

Distrib. Lapland.

177. *Carex grandilimosa* AKIYAMA (Fig. 105), in Journ. Coll. Sci. Hokkaido. Imp. Univ. V. I. (1931) 57, Pt. VIII. fig. 2.

Nom. Jap. Yashima-yachi-suge.

Hab. Honshiu.

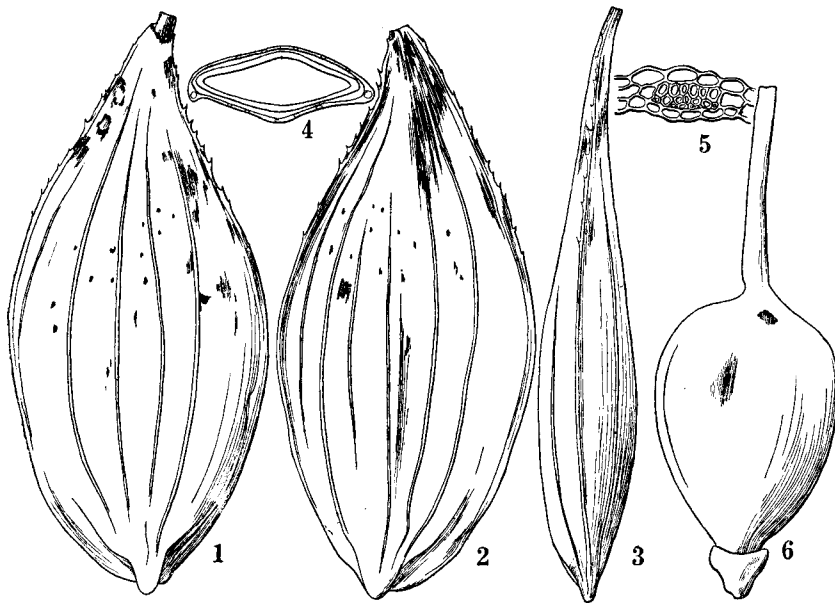


Fig. 105. *Carex grandilimosa* AKIYAMA

1. Utricle seen from dorsal side, $\times 14$. 2. The same, from ventral side, $\times 14$. 3. The same, from lateral side, $\times 14$. 4. The same with nut, transversely cut, $\times 14$. 5. Portion of the wall of the utricle, transversely cut, $\times$ ca. 200. 6. Nut, $\times 14$.

178. *Carex limosa* LINNAEUS, Spec. pl. ed. I. (1753) 977; KOMAR. Fl. Manshur. I. (1901) 373; KÜKENTH. in ENGL. Pflanzenr. IV. 20 (1909) 504, fig. 80 E-G; MAK. & NEM. Fl. of Jap. 1.-ed. (1925) 1351; MIYABE & KUDO, Fl. of Hokkaido & Saghal. II. (1931) 255.

Nom. Jap. Karafuto-yachi-suge.

Hab. Saghalien and Kuriles.

Distrib. Corea, Manchuria, Kamtchatka, Amur, Siberia, Europe and North America.

var. *fusco-cuprea* KÜKENTH. (Fig. 106) apud MATSUM. Ind. pl. Jap. II. 1. (1905) 118 et in ENGL. Pflanzenr. IV. 20 (1909) 505; MAK. & NEM. Fl. of Jap. (1925) 1351; MIYABE & KUDO, Fl. of Hokkaido & Saghal. II. (1931) 255.

C. limosa FRANCH. in Bull. Soc. philom. Paris 8. sér. VII. (1895) 36 et Nouv. Arch. Mus. Paris 3. sér. IX. (1897) 154.

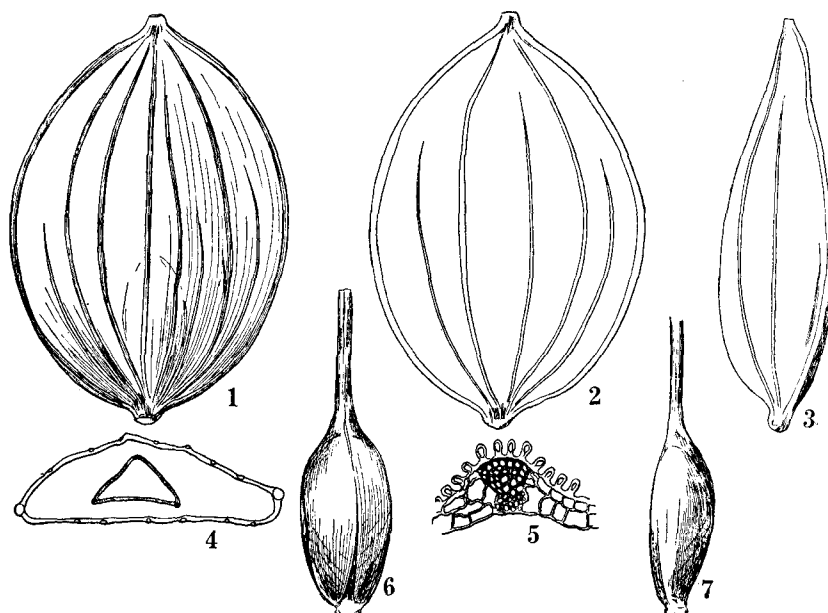


Fig. 106. *Carex limosa* var. *fusco-cuprea* KÜKENTH.

1. Utricle seen from dorsal side, $\times 14$.
2. The same, from ventral side, $\times 14$.
3. The same, from lateral side, $\times 14$.
4. The same with nut, transversely cut, $\times 14$.
5. Portion of the wall of the utricle, transversely cut, $\times$ ca. 200.
6. Nut seen from dorsal side, $\times 14$.
7. The same, from lateral side, $\times 14$.

Differt a typo foliis longioris angustis sed planis, spiculis femineis ovato-lanceolatis crassioribus apice fere semper masculinis, squamis femineis fusco-cupreis acuminatis.

Utriculi squamis paullo breviores sed latiores suberecti coriacei, textis e 2-3 stratis cellularum constantibus, ovati vel late ovati compresso-trigoni 3-4 mm longi 2-2.7 mm lati coesii demum dense punctulati dense papilloso glabri vix 15-nervosi (nervi marginales prominentes), basi rotundata breviter late obconico-stipitati, marginibus incrassati laeves, apice acuti in rostrum brevissimum albidum ore integrum vel emarginatum contracto apiculati.

Nom. Jap. Yachi-suge.

Hab. Saghalien, Kuriles, Hokkaido, Honshiu and Shikoku.

179. *Carex magellanica* LAM. (Fig. 107) Encycl. III. (1789) 385; KÜKENTH. in ENGL. Pflanzenr. IV. 20 (1909) 505, fig. 80 H-K; MATSUM. Ind. pl. Japon. II. 1. (1905) 119; MAK. & NEM. Fl. of Jap. 1.-ed. (1925) 1353.

C. atrata β . *magellanica* WAHLENB. in Vet.-Acad. Nya Handl. Stockholm XXIV. (1803) 160.

C. Gentiliana LÉVEILLÉ in Bull. Acad. intern. Géogr. bot. 3. sér. X. (1901) 221.

Utriculi squamis multo breviores sed latiores suberecti coriacei, textis e 3 stratis cellularum concretis, late ovati compresso-trigoni vel compresso-biconvexi vix 3 mm longi 1.5 mm lati pallide coesii dense papilloso glabri obsolete 2-3 striati basi rotundati late obconico 0.5 mm longo stipitati, marginibus nervis

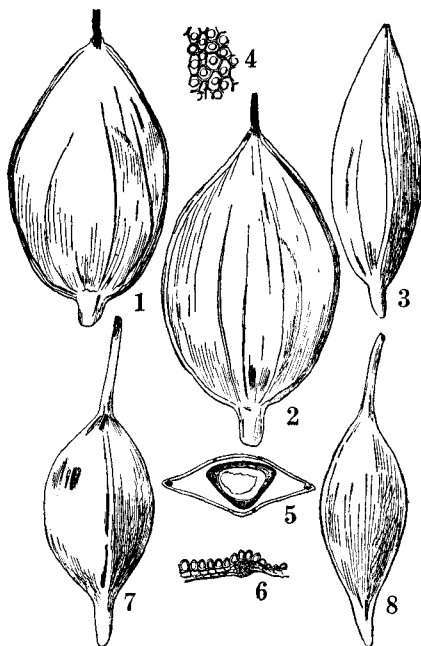


Fig. 107. *Carex magellanica* LAM.

1. Utricle seen from dorsal side, $\times 14$.
2. The same, from ventral side, $\times 14$.
3. The same, from lateral side, $\times 14$.
4. Portion of the surface of the utricle, $\times$ ca. 75.
5. Utricle with nut, transversely cut, $\times 14$.
6. Portion of the wall of the utricle, transversely cut, $\times$ ca. 75.
7. Nut seen from ventral side, $\times 14$.
8. The same, from lateral side, $\times 14$.

prominentibus incrassatis laevibus, apice contracti suberostres vel brevissime (ad 2 mm longe) rostrati in rostrum ferrugineum apiculati, os rostri integri vel emarginati.

Nom. Jap. Dake-suge.

Hab. Honshiu.

Distrib. Northern Siberia, Northern & Central Europe and North & South America.

180. *Carex Fujitae* KUDO, Fl. Paramushir. (1922) 82; MIYABE & KUDO, Fl. of Hokkaido & Saghal. II. (1931) 255.

Nom. Jap. Musen-suge.

Hab. Kuriles (Insl. Paramushir).

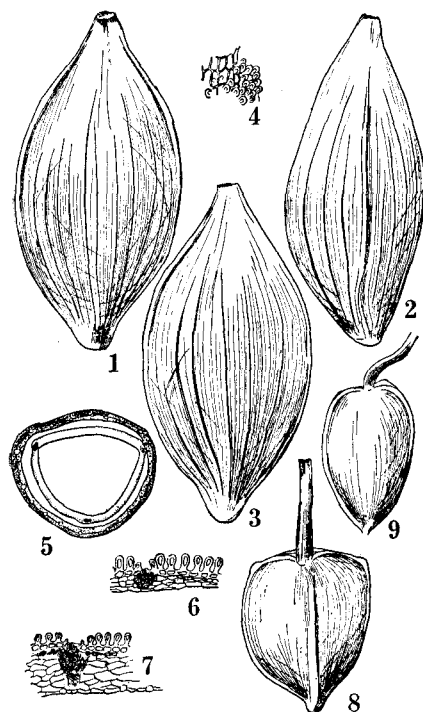


Fig. 108. *Carex laxa* WAHL.

1. Utricle seen from dorsal side, $\times 14$.
2. The same, from ventral side, $\times 14$.
3. The same, from lateral side, $\times 14$.
4. Portion of the surface of the utricle, $\times$ ca. 75.
5. Utricle with nut, transversely cut, $\times 14$.
6. and 7. Portions of the wall of the utricle, transversely cut, $\times$ ca. 75.
8. Nut seen from ventral side, $\times 14$.
9. The same, from lateral side, $\times 14$.

181. *Carex laxa* WAHLENBERG (Fig. 108) in Vet.-Akad. Nya Handl. Stockholm XXIV. (1803) 156 et Fl. lappon. (1812) 237 t. XV, fig. 1; KOMAROV, Fl. Manshur. I. (1901) 374; MATSUM. Ind. pl. Japon. II. 1. (1905) 117; KÜKENTH. in ENGL. Pflanzenr. IV. 20 (1909) 506; MAK. & NEM. Fl. of Jap. 1.-ed. (1925) 1350; MIYABE & KUDO, Fl. of Hokkaido & Saghal. II. (1931) 255.

C. macrochlamys FRANCH. in Bull. Soc. philom. Paris 8. sér. VII. (1895) 49 et in Nouv. Arch. Mus. Paris 3. sér. X. (1898) 42 t. I, fig. 2.

Utriculi squamas paullo superantes suberecti coriacei, textis e 5-8 stratis cellularum constantibus, oblongo-elliptici obsolete trigoni vix 3.5 mm longi 1.7 mm lati coesii dense papilloso (sed superficiebus nervorum epapilloso), glabri tenuiter fusco pluri-(vix 20-)nervosi, basi

attenuati vix contracti breviter stipitati, marginati marginibus nervis prominentibus percursi et laeves, apice in rostrum breve ferrugineum ore truncatum subabrupte desinentes.

Nom. Jap. Ito-naruko-suge.

Hab. Hokkaido and Honshiu.

Distrib. Manchuria, Amur and Northern Europe.

Sect. 33. *Paniceae* TUCKERMAN (p. 33)

182. *Carex sparsiflora* (WAHLENBERG) STEUDEL, Nomencl. bot. ed. 2. I. (1841) 296; KÜKENTH. in ENGL. Pflanzenr. IV. 20 (1909) 511, fig. 81 A-D; MAK. & NEM. Fl. of Jap. (1925) 1369; MIYABE & KUDO, Fl. of Hokkaido & Saghal. II. (1931) 256.

C. panicea L. var. *β. sparsiflora* WAHL. Fl. lappon. (1812) 236.

C. vaginata TAUSCH. in Flora IV. (1821) 557.

Nom. Jap. Keyari-suge.

Hab. Saghalien, Kuriles and Hokkaido.

Distrib. Manchuria, Amur, Ussuri, Kamtchatka, Siberia and Europe.

Sect. 34. *Griseae* BAILEY (p. 33)

183. *Carex kamikochiana* NAKAI, Rep. Veg. of Kamikochi (1928) 34 et 42; MAKINO & NEMOTO, Flora of Japan 2.-ed. (1931) 1431.

Spiculae femineae remotae. Bracteae superiores setaceae graciles, inferiores foliaceae. Squamae femineae oblongo-ovatae muticae.

Nom. Jap. Kamikôchi-suge.

Hab. Honshiu : Kamikôchi, prov. Shinano (T. Nakai, anno 1927).

Sect. 35. *Careyanae* TUCKERMAN (p. 33)

184. *Carex ciliato-marginata* NAKAI (Fig. 109) in FEDDE, Repert. XIII. (1916) 244 et in Botan. Magaz. Tokyo XXVIII. (1914) 518; MAK. & NEM. Fl. of Jap. 1.-ed. (1925) 1336.

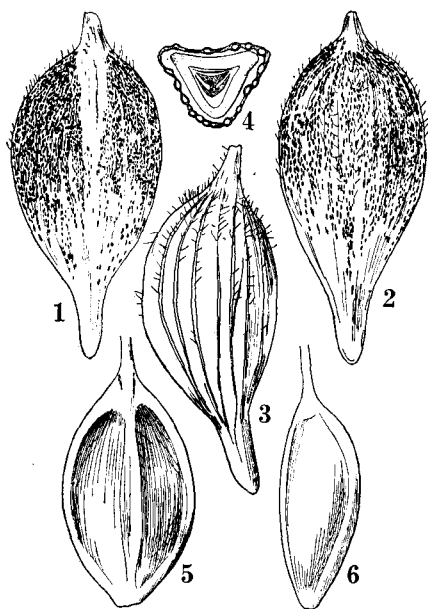


Fig. 109. *Carex ciliato-marginata* NAKAI

1. Utricle seen from dorsal side, $\times 14$.
2. The same, from ventral side, $\times 14$.
3. The same, from lateral side, $\times 14$.
4. The same with nut, transversely cut, $\times 14$.
5. Nut seen from ventral side, $\times 14$.
6. The same, from lateral side, $\times 14$.

zenr. IV. 20 (1909) 523, fig. 83 A-C; MAK. & NEM. Fl. of Jap. 1.-ed. (1925) 1369; MIYABE & KUDO, Fl. of Hokkaido & Saghal. II. (1931) 256.

Nom. Jap. Takane-sô (Tagane-sô); Yama-ôbako; Gyôja-sô; Sasasuge.

Hab. Hokkaido, Honshiu, Shikoku and Kiushiu.

Distrib. Corea and Manchuria.

var. *bracteosa* FRANCH. l. c. 196; KÜKENTH. l. c.; MATSUM. l. c.; MAK. & NEM. l. c.; MIYABE & KUDO l. c. 257.

C. platiphylla FRANCH. in Bull. Soc. philom. Paris 8. sér. VII. (1895) 50, non CAREY.

Differt a typo bracteis omnibus in laminam elongatam excurrentibus, squamis acutis utriculos superantibus.

Nom. Jap. Yezo-takane-sô.

Hab. Hokkaido.

C. siderosticta (non HANCE) KÜKENTH. in ENGL. Pflanzenr. IV. 20 (1909) 523 p. p.; NAKAI, Fl. Korean. II. (1911) 322 p. p.

Utriculi squamis subaequilongi suberecti membranacei obovati ca. 3 mm longi virides densissime atro-sanguineo-punctulati pluri- sed obsolete nervosi pubescentes, basi attenuati vix spongiosi longe stipitati, apice in rostrum breve subito mucronatum ore integrum apiculati.

Nom. Jap. Ke-tagane-sô.

Hab. Honshiu.

Distrib. Corea.

185. *Carex siderosticta* HANCE in Journ. Linn. Soc. XIII. (1873) 89 et in Journ. of Bot. II. (1879) 560; FRANCH. in Nouv. Arch. Mus. Paris 3. sér. IX. (1897) 195 t. 5, fig. 1; KOMAROV, Fl. Manshur. I. (1901) 390; MATSUM. Ind. pl. Japon. II. 1. (1905) 133; KÜKENTH. in ENGL. Pflanzenr. IV. 20 (1909) 523, fig. 83 A-C; MAK. & NEM. Fl. of Jap. 1.-ed. (1925) 1369; MIYABE & KUDO, Fl. of Hokkaido & Saghal. II. (1931) 256.

186. *Carex pachygyna* FRANCHET et SAVATIER, Enum. pl. Japon. II. (1879) 133 et 560; FRANCH. in Nouv. Arch. l. c. IX. (1897) 194 t. 5, fig. 2; LÉVEILLÉ et VANIOT in Bull. Acad. intern. Géogr. bot. XI. (1902) 29; KÜKENTH. l. c. 525, fig. 83 D-E; MAK. & NEM. Fl. of Jap. (1925) 1359.

Nom. Jap. Sasano-ha-suge.

Hab. Honshiu and Shikoku.

Sect. 36. Frigidæ FRIES (p. 33)

Subsect. 1. *Mucronatae* NYMAN (p. 34)

187. *Carex mira* KÜKENTHAL in Bull. Herb. Boiss. 2. sér. V. (1905) 1161 et in ENGL. Pflanzenr. IV. 20 (1909) 534; MAK. & NEM. Fl. of Jap. (1925) 1354; OHWI in Mem. Coll. Sci. Kyoto Imp. Univ. Ser. B. V. (1930) 254.

Nom. Jap. Sawa-hina-suge.

Hab. Honshiu.

Subsect. 2. *Podogynae*

TH. HOLM. (p. 34)

188. *Carex Doenitzii* BOECK. (Fig. 110) in Flora LXV. (1882) 61; MATSUM. Ind. pl. Japon. II. 1. (1905) 108; KÜKENTH. in ENGL. Pflanzenr. IV. 20 (1909) 535, fig. 86 A-D; MAK. & NEM. Fl. of Jap. 1.-ed. (1925) 1339; MIYABE & KUDO, Fl. of Hokkaido & Saghal. II. (1931) 257.

C. plocamostyla MAXIM. in Mélang. biolog. XII. (1887) 565; FRANCH. in Nouv. Arch. Mus. Paris 3. sér. IX. (1897) 140.

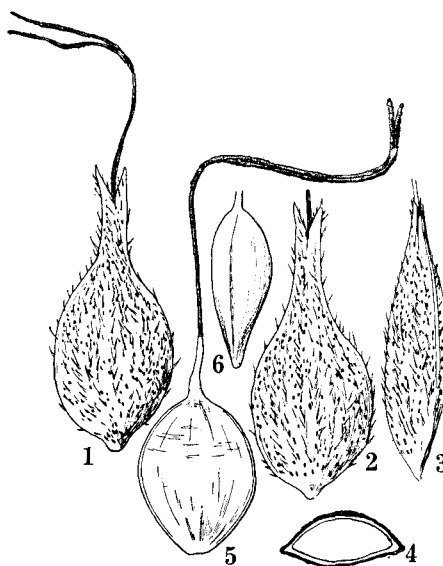


Fig. 110. *Carex Doenitzii* BOECK.

1. Utricle seen from dorsal side, ×14.
2. The same, from ventral side, ×14.
3. The same, from lateral side, ×14.
4. The same, transversely cut, ×14.
5. Nut seen from dorsal side, ×14.
6. The same, from lateral side, ×14.

C. dicuspis FRANCH. in Bull. Soc. philom. Paris 8. sér. VII. (1895) 42 et in Nouv. Arch. l. c. VIII. (1896) t. 10, fig. 1 et IX. 6 (1897) 140, non LÉVEILLÉ et VANIOT.

C. chrysolepis var. *modesta* LÉV. et VNT. in Bull. Acad. intern. Géogr. bot. X. (1901) 279.

? *C. dicraea* C. B. CLARKE in Kew, Bull. Addit. Ser. VIII. (1908) 71.

Utriculi squamis (aristis inclusis) breviores erecti membranacei, textis e 1-2 stratis cellularum compositis, oblongo-ovati subbiconvexi 3-4 mm longi ad 1-1.5 mm lati stramineo-virides purpureo-striolati vel punctati adpresso-hirti obsolete nervosi, basi contracta brevissime stipitati, marginati marginibus fere e basi hispidi, apice in rostrum longum tenue ore profunde bifurcatum subsensim attenuati; crura 0.4 mm longa aristaeformia, intus scabra in sicca patentia.

Nom. Jap. Ko-tanuki-ran.

Hab. Hokkaido, Honshiu and Shikoku.

var. *trichopoda* (FRANCHET) KÜKENTHAL, in ENGL. Pflanzenr. IV. 20 (1909) 537; MAK. & NEM. Fl. of Jap. (1925) 1340.

C. trichopoda FRANCH. in Bull. Soc. l. c. 43 et Nouv. Arch. l. c. VIII. (1896) t. 11, fig. 2 et IX. (1897) 141; MATSUM. l. c. 136.

Differt a typo culmis nonnisi 10-15 cm altis gracilibus, spiculis ovatis 1 cm longis perlonge pedunculatis, squamis brevis aristatis et utriculis in faciebus glabrescentibus.

Nom. Jap. Hime-tanuki-ran.

Hab. Honshiu.

189. *Carex Okuboi* FRANCHET (Fig. 111) in Bull. Soc. philom. Paris 8. sér. VII. (1895) 43 et Nouv. Arch. Mus. Paris 3. sér. IX. (1897) 141.

C. Doenitzii var. *Okuboi* KÜKENTH. apud MATSUM. Ind. pl. Japon. II. 1. (1905) 108 et in ENGL. Pflanzenr. IV. 20 (1909) 537; MAK. & NEM. Fl. of Japan (1925) 1340.

Utriculi squamis (aristis inclusis) breviores erecti membranacei, textis ex 1 strato cellularum concretis, ovato-lanceolati subbiconvexi 4.5-6 mm longi ad 1.5 mm lati stramineo-virides purpureo-striolati vel punctati adpresso-hirti obsolete nervosi, basi contracta brevissime stipitati, marginati marginibus fere e basi hispidi, apice in rostrum longissimum tenue ore profunde bifurcatum subsensim attenuati, crura

0.5 mm longa anguste lanceolata
intus scabra in sicca patentia.

Nom. Jap. Shima-tanuki-ran.

Hab. Honshiu (Ô-shima et
Miyake-shima).

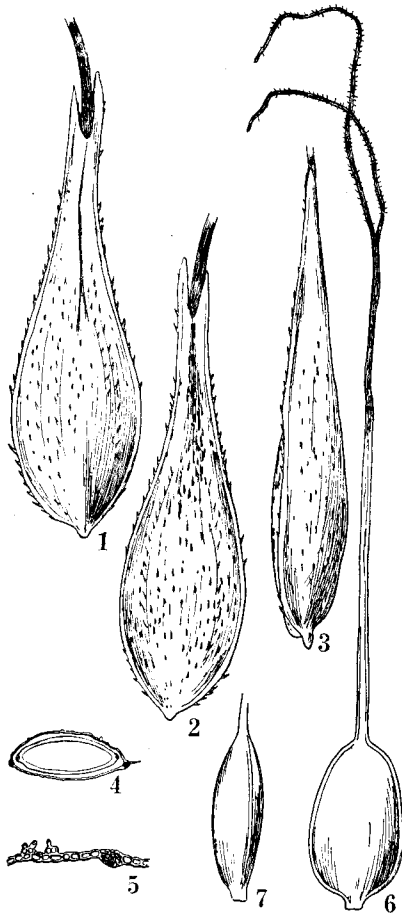


Fig. 111. *Carex Okuboi* FRANCH.

1. Utricle seen from dorsal side, $\times 14$.
2. The same, from ventral side, $\times 14$.
3. The same, from lateral side, $\times 14$.
4. The same with nut, transversely cut, $\times 14$.
5. Portion of the wall of the utricle, transversely cut, $\times$ ca. 75.
6. Nut seen from dorsal side, $\times 14$.
7. The same, from lateral side, $\times 14$.

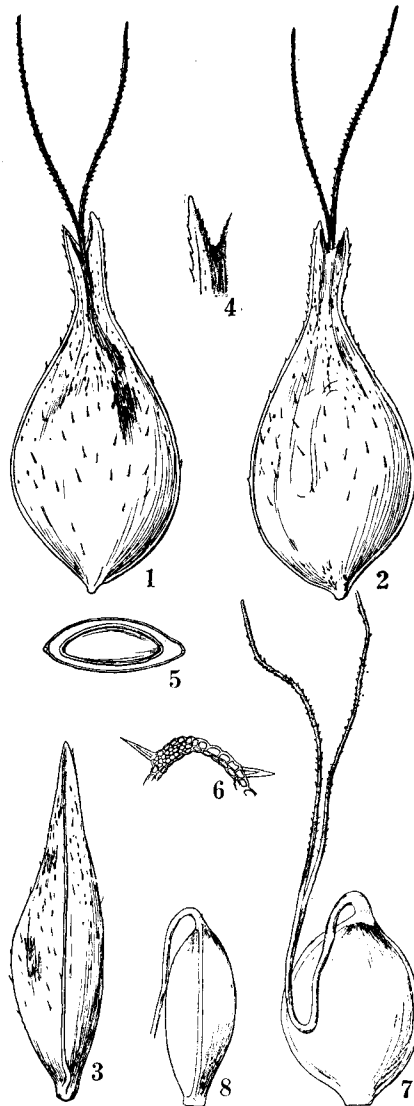


Fig. 112. *Carex shakushizawaensis*
AKIYAMA

1. Utricle seen from dorsal side, $\times 14$.
2. The same, from ventral side, $\times 14$.
3. The same, from lateral side, $\times 14$.
4. Portion of the beak, $\times 21$.
5. Utricle with nut, transversely cut, $\times 14$.
6. Portion of the wall of the utricle, transversely cut, $\times$ ca. 100.
7. Nut seen from dorsal side, $\times 14$.
8. The same, from lateral side, $\times 14$.

190. *Carex shakushizawaensis* AKIYAMA (Fig. 112) in Botan. Magaz. Tokyo XLV. (1931) 473.

Utriculi squamis breviores suberecti membranacei ovati compresso-biconvexi 3.7 mm longi 1.7 mm lati fusco-virentes papilloso hispidi fere enervii, purpureo-punctulati, basi contracti vix stipitati, marginati, marginibus scabris, apice in rostrum purpureo-puncticulatum marginibus scabrum ore bifurcatum intus scabrum subabrupte desinentes.

Nom. Jap. Katta-suge.

Hab. Honshiu.

191. *Carex kattaana* KÜKENTHAL in Bull. Herb. Boiss. 2. sér. V. (1905) 1161 et in ENGL. Pflanzenr. IV. 20 (1909) 537; MAK. & NEM. Fl. of Jap. (1925) 1348.

Nom. Jap.

Hab. Honshiu.

192. *Carex levicuspis* OHWI in Mem. Coll. Sci. Kyoto Imp. Univ. Ser. B. V. (1930) 253, et in Journ. J. Bot. VII. 5 (1931) 167; MAK. & NEM. Fl. of Jap. 2.-ed. (1931) 1434.

Nom. Jap. Kita-tanukiran.

Hab. Honshiu.

193. *Carex uzenensis* KOIDZUMI (Fig. 113) in Botan. Magaz. Tokyo XXX. (1916) 332; MAK. & NEM. Fl. of Jap. 1.-ed. (1925) 1375.

Utriculi squamas superantes adpressi membranacei oblongo-lanceolati plano-convexi compressi ad 6.5 mm longi 1.5 mm lati stramineo-virides superne fusco-maculati glabri enervii, basi contracti 0.7 mm longe stipitati,

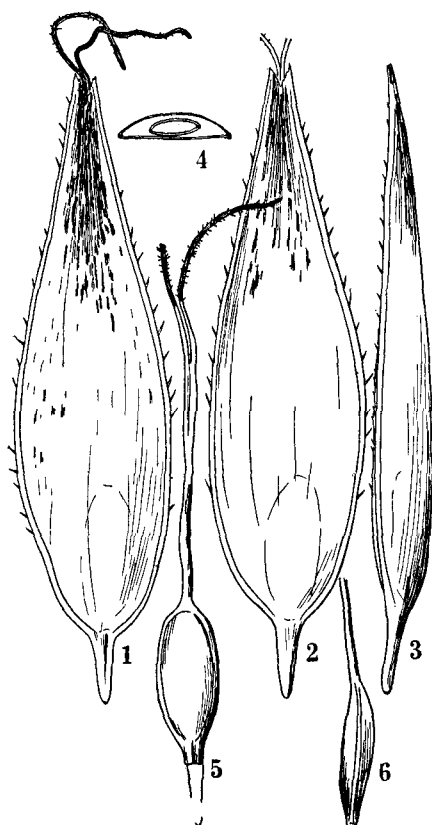


Fig. 113. *Carex uzenensis* KOIDZUMI

1. Utricle seen from dorsal side, $\times 14$.
2. The same, from ventral side, $\times 14$.
3. The same, from lateral side, $\times 14$.
4. The same with nut, transversely cut, $\times 14$.
5. Nut seen from dorsal side, $\times 14$.
6. The same, from lateral side, $\times 14$.

marginati (nervis marginalibus conspicuis) marginibus scabri, apice in rostrum longum ore bidenticulatum abrupte desinentes.

Nom. Jap. Oku-tanuki-ran.

Hab. Honshiu.

194. *Carex scitaeformis* KÜKENTHAL in Bull. Herb. Boiss. 2. sér. V. (1905) 1162 et in ENGL. Pflanzenr. IV. 20 (1909) 537; MAK. & NEM. Fl. of Jap. (1925) 1367.

Nom. Jap. Mashikesuge-modoki.

Hab. Honshiu.

195. *Carex podogyna* FRANCHET et SAVATIER (Fig. 114), Enum. pl. Japon. II. (1879) 131 et 557; FRANCH. in Bull. Soc. philom. Paris 8. sér. VII. (1895) 88 et Nouv. Arch. Mus. Paris 3. sér. VIII. (1896) t. 6 et IX. (1897) 134; LÉVEILLÉ et VANIOT, in Bull. Soc. Géogr. bot. X. (1901) 218; MATSUM. Ind. pl. Jap. II. 1. (1905) 126; KÜKENTH. in ENGL. Pflanzenr. IV. 20 (1909) 538, fig. 86 E-F; MAK. & NEM. Fl. of Jap. (1925) 1361; MIYABE & KUDO, Fl. of Hokkaido & Saghal. II. (1931) 257.

Utriculi squamas triplo superantes adpressi demum paullo patentes tenuiter membranacei, textis ex 1 strato cellularum concretis, lineari-lanceolati compresso-biconvexi 10-13 mm longi ad 2 mm lati stramineo-virides demum straminei fusco- demum atro-fusco-striolati, basi contracti 3-4 mm longe lineari-cylindrico stipitati, in stipitem marginibus incrassati et hirtio-

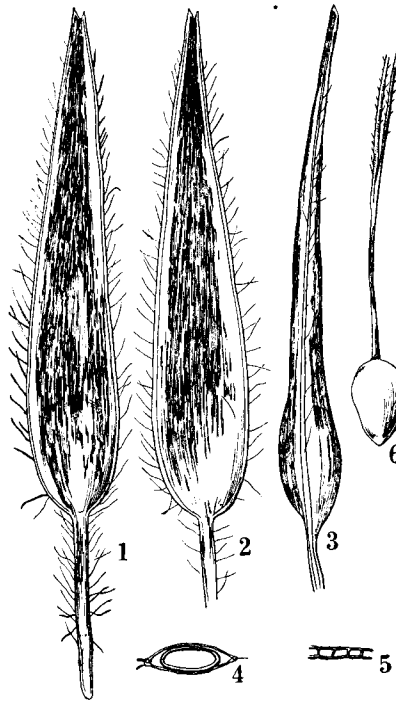


Fig. 114. *Carex podogyna* FRANCH.

1. Utricle seen from dorsal side, $\times 7$.
2. The same, from ventral side, $\times 7$.
3. The same, from lateral side, $\times 7$.
4. The same with nut, transversely cut, $\times 7$.
5. Portion of the wall of the utricle, transversely cut, $\times$ ca. 75.
6. Nut, $\times 7$.

pilosi, marginati marginibus incrassati virides pilosi, apice in rostrum longum breviter bidentatum sensim attenuati, crura lanceolata.

Nom. Jap. Tanuki-ran.

Hab. Hokkaido, Honshiu and Shikoku.

forma aristodentata KÜKENTHAL l. c. 538.

Utriculi profunde bidentati, dentes aristaeformes subpatuli.

Hab. Honshiu.

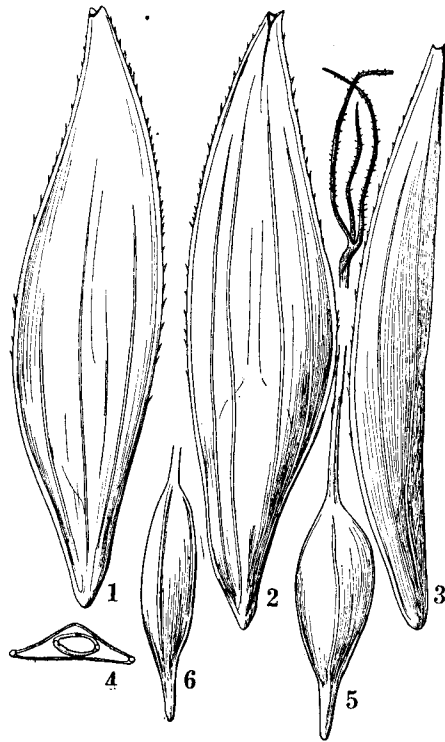


Fig. 115. *Carex tenuiseta* FRANCH.

1. Utricle seen from dorsal side, $\times 14$.
2. The same, from ventral side, $\times 14$.
3. The same, from lateral side, $\times 14$.
4. The same with nut, transversely cut, $\times 14$.
5. Nut seen from ventral side, $\times 14$.
6. The same, from lateral side, $\times 14$.

196. *Carex tenuiseta* FRANCH. (Fig. 115) in Bull. Soc. philom. Paris 8. sér. VII. (1895) 43 et Nouv. Arch. Mus. Paris 3. sér. IX. (1897) 142; KÜKENTHAL in ENGL. Pflanzenr. IV. 20 (1909) 538; MATSUM. l. c. 135; MAK. & NEM. Fl. of Jap. (1925) 1372; MIYABE & KUDO, Fl. of Hokkaid. & Saghal. II. (1931) 257.

Utriculi squamis breviores erecti membranacei, textis ex 1 strato cellularum compositis, anguste lanceolati compresso-trigoni 6 mm longi 1.5 mm lati straminei superne saepe purpureo-tincti glabri tenuiter plurinervi (nervis vix 10), basi longe attenuati brevissime stipitati, marginati marginibus nervis prominentes spinulosi, apice in rostrum nonnisi excurvum ore breviter bifurcatum attenuati, dentes breves subulati intus atropurpurei demum patentes.

Nom. Jap. Ashiboso-suge; Shirouma-suge.

Hab. Hokkaido and Honshiu.

var. *brevisquama* KOIDZUMI in Botan. Magaz. Tokyo XXXII. (1918) 54; MAK. & NEM. Fl. of Jap. (1925) 1373.

Hab. Honshiu.

Subsect. 3. *Curvicolles* KÜKENTHAL (p. 35)

197. *Carex sharensis* FRANCHET in Bull. Soc. philom. Paris 8. sér. VII. (1895) 90 et Nouv. Arch. Mus. Paris 3. sér. X. (1898) 72; LÉVEILLÉ et VANIOT, in Bull. Soc. Géogr. bot. XI. (1902) 175; MATSUM. Ind. pl. Jap. II. 1. (1905) 132; KÜKENTH. in ENGL. Pflanzenr. IV. 20 (1909) 539; MAK. & NEM. Fl. of Jap. (1368) 1368; MIYABE & KUDO, Fl. of Hokkaid. & Saghal. II. (1931) 258.

Nom. Jap. Shari-suge.

Hab. Hokkaido and Honshiu.

198. *Carex infirma* C. B. CLARKE in Kew, Bullet. Addit. Ser. VIII. (1908) 78.

Hab. Hokkaido.

199. *Carex Savatieri* FRANCHET (Fig. 116), in Nouv. Arch. Mus. Paris 3. sér. X. (1898) 71; MATSUM. Ind. pl. Japon. II. 1. (1905) 131.

C. curvicollis KÜKENTH. in ENGL. Pflanzenr. IV. 20 (1909) 539, partim.

C. viridula FRANCHET et SAV. Enum. pl. Jap. II. (1879) 579, nec MICHX. nec SCHWEIN. et TORR.

Utriculi squamas subtriplo superantes suberecti membranaeci, textis ex 1-2 stratis cellularum compositis, anguste lanceolati trigoni 4-5 mm longi 1.2 mm lati

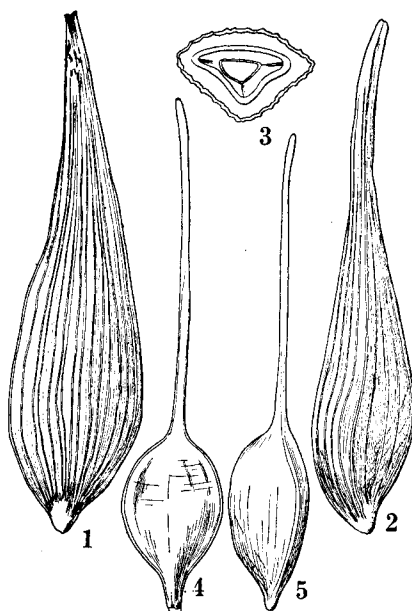


Fig. 116. *Carex Savatieri* FRANCH.

1. Utricle seen from dorsal side, $\times 14$.
2. The same, from lateral side, $\times 14$.
3. The same with nut, transversely cut, $\times 14$.
4. Nut seen from dorsal side, $\times 14$.
5. The same, from lateral side, $\times 14$.

primo virentes demum stramineo-virides glabri tenuiter 20-nervosi, basi rotundata obconico tenuiter stipitati, marginibus laeves, apice in rostrum perlongum subulatum demum apice incurvum ore saepissime colorato integrum sensim attenuati; utriculi raro ovati inflato-trigoni 2.5 mm lati basi valde rotundati.

Nom. Jap. Yama-naruko-suge.

Hab. Honshiu and Shikoku.

200. *Carex curvicollis* FRANCHET et SAVATIER (Fig. 117), Enum. pl. Japon. II. (1879) 579; FRANCHET in Nouv. Arch. l. c. X. (1898) 72 t. 8, fig. 1; LÉV. et VNT. in Bull. Soc. X. (1901) 175; MATSUM. Ind. pl. Japon. II. 1. (1905) 106; KÜKENTH. l. c. 539 p. p.; MAK. & NEM. Fl. of Jap. 1.-ed. 1338.

Utriculi fere ut *C. Savatieri*.

Nom. Jap. Yama-naruko.

Hab. Hokkaido and Honshiu.

Subsect. 4. *Decorae*
KÜKENTHAL (p. 36)

201. *Carex Ogawai* AKIYAMA sp. nov. (Pt. II. et Fig. 118)

Rhizoma lignosum stolones longos emittens et vaginis fuscis spadiceis saepe dissolutis obtectum. Culmus 25-35 cm altus gracilis obsolete triqueter laevis. Folia culmo breviora vel aequantia 4-6 mm lata parce revoluta pallide viridia rigida; vaginae fuscae marcidiae. Spiculae numerosae (4-12) androgynae (terminalis saepe masculina) anguste cylindricae 2-5 cm longae, partibus flores masculinis gerentibus 1-3 cm longis, iis femineis 0.5-3 cm

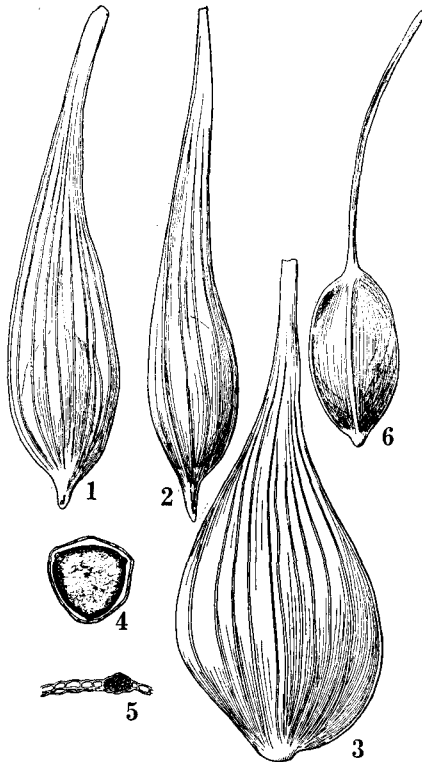


Fig. 117. *Carex curvicollis* FRANCH. et SAV.

1. Utricle seen from dorsal side, $\times 14$.
2. The same, from ventral side, $\times 14$.
3. Anomalous form of an utricle, $\times 14$.
4. Utricle with nut, transversely cut, $\times 14$.
5. Portion of the wall of the utricle, transversely cut, $\times$ ca. 100.
6. Nut, $\times 14$.

longis, subluxiflorae singulae, binae vel ternae saepe basi ramosae, ramis floribus femineis instructis 0.5 cm longis, longe pedunculatae, pedunculis in spiculis superioribus 1-2-3 cm longis, inferioribus ad 6 cm longis, omnes graciles laeves, suberectae vel cernuae. Bractee vaginiformes, vaginis ad 4 cm longis, breviter (ima ad 2 cm longe) laminatae. Squamae femineae late obovatae involventes cuspidatae dorso castaneae flavo-carinatae marginibus hyalinae apice repandulae, masculinae ovatae fusco-castaneae marginibus et apice anguste hyalinae rotundatae. Utriculi squamas subaequantes suberecti tenuiter membranacei lanceolato-ovati vix 5 mm longi flavo-virides trigoni pubescentes plurinervi, basi attenuati breve stipitati marginibus superne dense ciliati, apice in rostrum sublongum excurvum ore albido bidentatum subsensim abeuntes. Nux obovato-oblonga apice dilatato-annulata. Styli basis incrassata. Stigmata 3.

Nom. Jap. Kokansuge-modoki (nov).

Hab. Honshiu: Jintsû, in oppido Ikeda, prov. Kii (Y. OGAWA, anno 1930)

Subsect. 5. *Fuliginosae* TUCKERMAN (p. 36)

202. *Carex siroumensis* KOIDZUMI (Fig. 119), in Botan. Magaz. Tokyo XXXII. (1918) 54; MAK. & NEM. Fl. of Jap. (1925) 1369; HONDA, List of pl. of Shirouma Alp. Range (1930) 14.

Utriculi squamas duplo superantes suberecti tenuiter membranacei, textis ex 1 strato cellularum compositis, oblongo-lanceolati plano-convexi compressi fere 5.5 mm longi ad 1.5 mm lati stramineo-virides superne vix purpureo-maculati dense sed tenuiter puberuli tenuiter vix 10-nervi

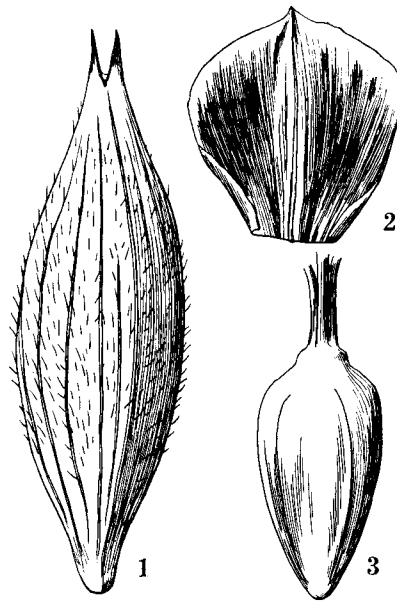


Fig. 118. *Carex Ogawai* AKIYAMA

1. Utricle, $\times 14$.
2. Scale of the female flower, $\times 14$.
3. Nut, $\times 14$.

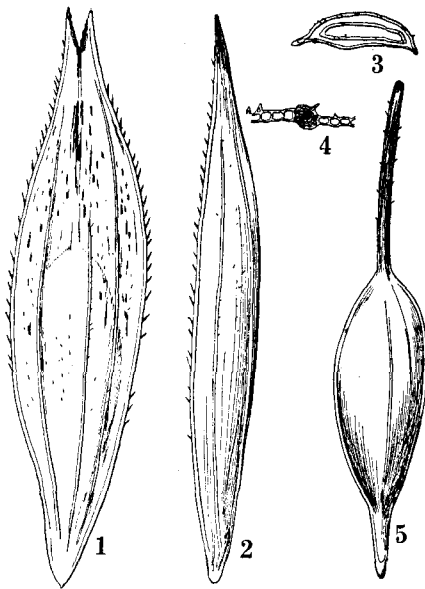


Fig. 119. *Carex siroumensis* KOIDZUMI

1. Utricle seen from dorsal side, $\times 14$.
2. The same, from lateral side, $\times 14$.
3. The same with nut, transversely cut, $\times 14$.
4. Portion of the wall of the utricle, transversely cut, $\times$ ca. 100.
5. Nut, $\times 14$.

basi anguste attenuati breve stipitati, marginati marginibus incrassati fere e basi hispiduli, apice in rostrum longum ferrugineum ore bidentatum abeuntes, crura lanceolata 0.5 mm longa intus scabra.

Nom. Jap. Takane-narukosuge.

Hab. Honshiu.

Subsect. 6. *Ferrugineae*

TUCKERMAN (p. 36)

203. *Carex chrysolepis*

FRANCHET et SAVATIER (Fig 120), Enum. pl. Japon. II. (1879) 144 et 571; FRANCH. in Nouv. Arch. Mus. Paris 3. sér. IX. (1897) 184; LÉVEILLÉ et VANIOT in Bull. Acad. intern. Géogr. bot. X. (1901) 278; MATSUM. Ind. pl. Jap. II. 1. (1905) 105; KÜKENTH. in ENGL. Pflanzenr. IV. 20 (1909) 564, fig. 93; MAK. & NEM. Fl. of Jap. 1.-ed. (1925) 1336.

C. makinoensis FRANCH. in Bull. Soc. philom. Paris 8. sér. VII. (1895) 47 et Nouv. Arch. l.c. X. (1898) 58 t. 4, fig. 1; MATSUM. l.c. 119; MAKINO in Botan. Magaz. Tokyo XIX. (1905) 145.

C. shikokiana MAKINO in Botan. Magaz. Tokyo VI. (1892) 47, non FRANCH.

Utriculi squamas superantes suberecti membranacei anguste oblongi trigoni 3.5–4 mm longi ad 1 mm lati stramineo-virides superne e medio fusco-colorati parce hispidi obsolete plurinervi basi attenuati 0.3 mm longe stipitati, marginibus setulosi, apice in rostrum longum fuscum ore acute bidentatum abrupte abeuntes; crura lanceolata 0.5 mm longa densiore ciliata.

Nom. Jap. Iwa-kan-suge; Kibana-suge; Shikoku-suge.

Hab. Shikoku and Kiushiu.

Distrib. Northern Formosa.

forma *asoensis* OHWI in Mem. Coll. Sci. Kyoto Imp. Univ. Ser. B. VI. (1931) 249.

C. picea var. *asoensis* LÉV. et VNT. in Bull. Acad. intern. Géogr. bot. (1901) 224.

C. odontostoma var. *variegata* KÜKENTH. in Bull. Herb. Boiss. (1905) 1163, partim et in ENGL. Pflanzenr. IV. 20 (1909) 571, partim.

Squamae piceae.

Hab. Kiushiu.

forma *variegata* OHWI l. c.

C. odontostoma var. *variegata* KÜKENTH. l. c. 1163 et l. c. 571 partim.

Spica angusta elongata.

Hab. Kiushiu.

var. *kiushiana* OHWI l. c. 250.

C. kiushiana OHWI l. c. V. (1930) 268.

Hab. Kiushiu.

204. *Carex stenantha* FRANCHET et SAVATIER (Fig. 121), Enum. pl. Japon. II. (1879) 146 et 573; FRANCH. in Nouv. Arch. l. c. X. (1898) 50 t. 3, fig. 2; LÉV. et VNT. in Bull. Acad. XI. (1902) 105 partim; MATSUM. Ind. pl. Jap. II. 1 (1905) 134; KÜKENTH. in ENGL. Pflanzenr. IV. 20 (1909) 565, fig. 94 A-C; MAK. & NEM. Fl. of Jap. (1925) 1370; MIYABE & KUDO, Fl. of Hokkaido & Saghal. II. (1931) 258.

C. ferruginea var. FR. SCHM. Reis. Amurl. (1868) 196.

C. Schmidtii BOECK. in Flora LXV. (1882) 63, non MEINSH.

C. stenolepis FRANCH. l. c. 96, non TORR.

C. Ktausipali MEINSH. in Acta Horti petropol. XVII. (1901) 359.

Utriculi squamas superantes suberecti membranacei, textis e 2 stratis cellularum concretis, oblongo-lanceolati trigoni 6-8 mm longi 1 mm lati pallidi superne (praesertim dorso) fusci glabri obsolete nervosi

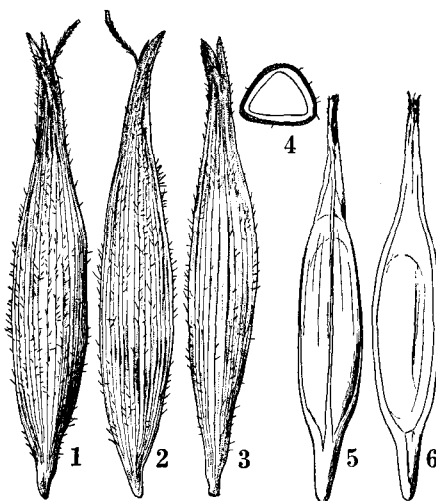


Fig. 120. *Carex chrysolepis* FRANCH. et SAV.

1. Utricle seen from dorsal side, $\times 14$.
2. The same, from ventral side, $\times 14$.
3. The same, from lateral side, $\times 14$.
4. The same with nut, transversely cut, $\times 14$.
5. Nut seen from frontal side, $\times 14$.
6. The same, from another side, $\times 14$.

(nervi marginales et dorsalis apice attingeri prominentes), basi attenuati ad 1 mm longe stipitati marginati, marginibus e medio scabris, apice in rostrum longum ore oblique sectum demum leviter bidentatum sensim abeuntes.

Nom. Jap. Iwa-suge; Takane-suge.

Hab. Saghalien, Hokkaido, Honshiu and Kiushiu.

var. *taisetsuensis* AKIYAMA
(Fig. 122) in Journ. Coll. Sci.

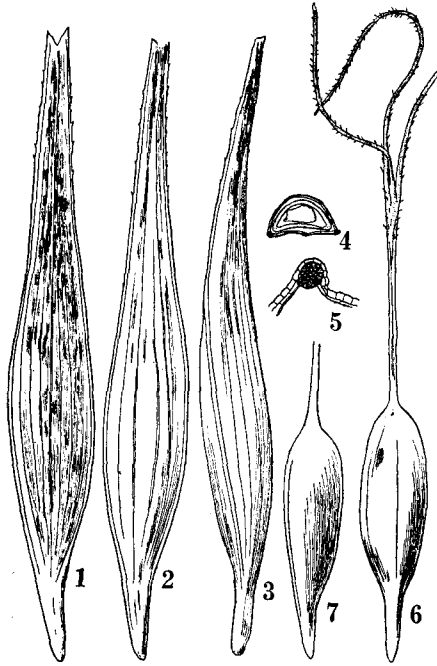


Fig. 121. *Carex stenantha* FRANCH.
et SAV.

1. Utricle seen from dorsal side, $\times 14$.
2. The same, from ventral side, $\times 14$.
3. The same, from lateral side, $\times 14$.
4. The same with nut, transversely cut, $\times 14$.
5. Portion of the wall of the utricule, transversely cut, $\times$ ca. 100.
6. Nut seen from dorsal side, $\times 14$.
7. The same, from lateral side, $\times 14$.

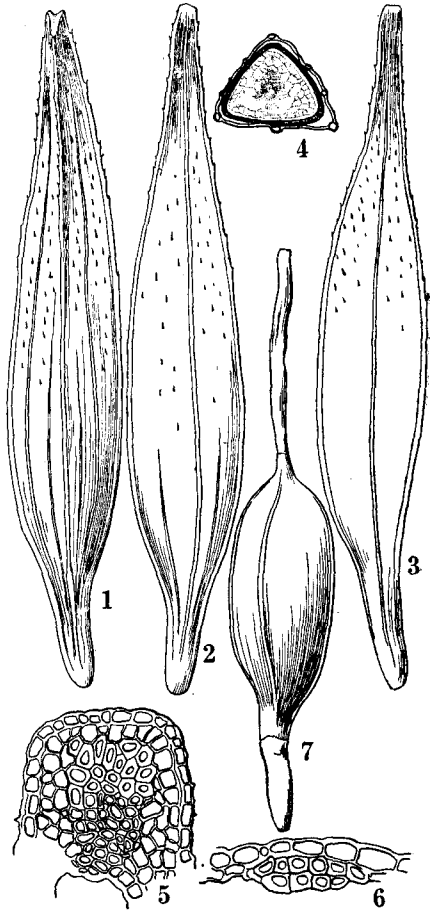


Fig. 122. *Carex stenantha*
var. *taisetsuensis* AKIYAMA

1. Utricle seen from dorsal side, $\times 14$.
2. The same, from ventral side, $\times 14$.
3. The same, from lateral side, $\times 14$.
4. The same with nut, transversely cut, $\times 14$.
5. and 6. Portions of the wall of the utricule, transversely cut, $\times$ ca. 250.
7. Nut, $\times 14$.

Hokkaido Imp. Univ. Ser. V. I. (1931) 60, Pt. XI. fig. 5; MIYABE & KUDO, Fl. of Hokkaid. & Saghal. II. (1931) 258.

C. stenantha KUDO, Fl. Paramushir. (1922) 84; HULTÉN, Fl. Kamtch. I. (1927) 204.

Utriculi robustiores superficie adpresso-hirti.

Nom. Jap. Taisetsu-iwa-suge.

Hab. Saghalien, Kuriles and Hokkaido.

var. *yatsugatakensis* AKIYAMA l. c. Pt. XI. fig. 6.

Rhizoma caespitosum. Culmus humilis.

Nom. Jap. Hime-iwa-suge.

Hab. Honshiu.

205. *Carex tenuiformis* LÉVEILLÉ et VANIOT, in Bull. Acad. intern. Géogr. bot. XI. (1902) 104; MATSUM. Ind. pl. Japon. II. 1. (1905) 135; KÜKENTH. in ENGL. Pflanzenr. IV. 20 (1909) 571; MAK. & NEM. Fl. of Jap. 1.-ed. (1925) 1372; MIYABE & KUDO, Fl. of Hokkaid. & Saghal. II. (1931) 259.

Nom. Jap. Rebun-suge.

Hab. Hokkaido.

206. *Carex odontostoma* KÜKENTHAL, in Bull. Herb. Boiss. 2. sér. V. (1905) 1162 et in ENGL. Pflanzenr. IV. 20 (1909) 571; MAK. & NEM. Fl. of Jap. (1925) 1357.

C. chrysolepis var. *odontostoma* OHWI, in Mem. Coll. Sci. Kyoto Imp. Univ. B. VI. 5 (1931) 250.

Nom. Jap. Sobosan-suge.

Hab. Kiushiu.

var. *glabrior* OHWI l. c. V. 3 (1930) 253.

C. chrysolepis var. *glabrior* OHWI l. c. VI. 5 (1931) 250.

Utriculi secundum nervos marginales hispidos tantum parce adpresse pilosuli.

Hab. Honshiu.

207. *Carex hirtifructus* KÜKENTHAL (Fig. 123) in Bull. Herb. Boiss. 2. sér. V. (1905) 1163 et in ENGL. Pflanzenr. IV. 20 (1909) 571; MAK. & NEM. Fl. of Jap. (1925) 1346.

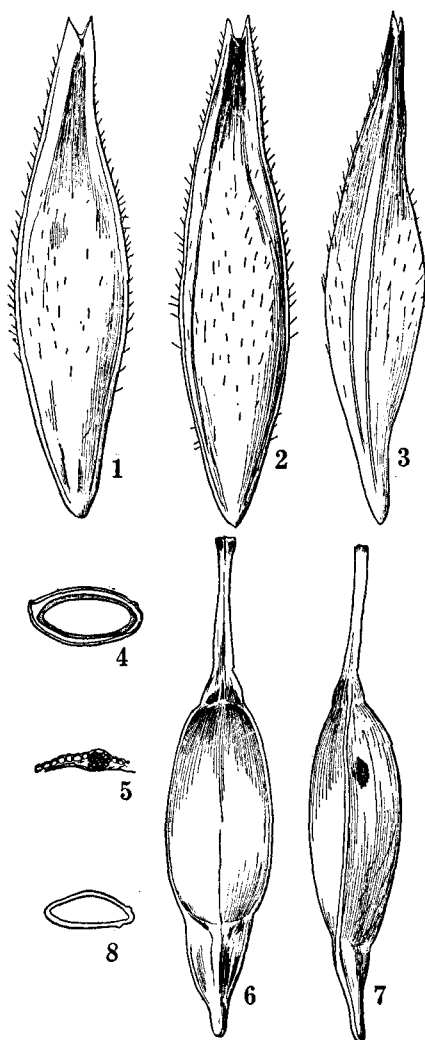


Fig. 123. *Carex hirtifructus* KÜKENTH.

1. Utricle seen from dorsal side, $\times 14$.
2. The same, from ventral side, $\times 14$.
3. The same, from lateral side, $\times 14$.
4. The same with nut, transversely cut, $\times 14$.
5. Portion of the wall of the utricle, transversely cut, $\times$ ca. 75.
6. Nut seen from dorsal side, $\times 14$.
7. The same, from lateral side, $\times 14$.
8. The same, transversely cut, $\times 14$.

C. odontostoma var. *sejuncta*
KÜKENTH. apud MATSUM. Ind.
pl. Japon. II. 1. (1905) 123 (nom.
sol.)

C. blepharicarpa var. *hirti-*
fructus OHWI, l. c. VI. (1931) 247.

Utriculi squamas longe super-
antes suberecti membranacei,
textis e 1-2 stratis cellularum con-
cretis, ovato-oblongi trigoni (inter-
dum tortuosi et fere biconvexi)
5 mm longi 1.2 mm lati pallide
virides dense hirti enervii, sed
3 nervi marginales prominentes,
basi longe attenuati breviter stipi-
tati, marginibus hispidi, apice
in rostrum longum ore oblique
sectum demum leviter bidentat-
um subabrupte abeuntes.

Nom. Jap. Tsukuba-suge.

Hab. Honshiu.

Sect. 37. *Hymenochlaenae* DRE-
JER (p. 36)

Subsect. 1. *Capillares*
ASCHERSON et
GRAEBNER (p. 37)

208. *Carex Sedakowii* C. A.
MEYER, in Acta Horti petropol.
XVIII. (1901) 360; KOMAROV, Fl.
Manshur. I. (1901) 376; KÜKENTH.
in ENGL. Pflanzenr. IV. 20 (1909)
588, fig. 99 A-C; NAKAI, Fl.
Korean. II. (1911) 323; ? MAK. &
NEM. Fl. of Jap. (1925) 1367;
MIYABE & KUDO, Fl. of Hokkaid.
& Saghal. II. (1931) 259.

C. capillaris var. *paludosa* FR. SCHMIDT, Reis. Amurl. (1868) 69.

Nom. Jap. Sedakow-suge.

Hab. Hokkaido and Honshiu.

Distrib. Corea, Amur, N.-Mongolia and East Siberia.

209. *Carex capillaris* L. (Fig. 124) Spec. pl. ed. 1. (1753) 977; KUNTH, Enum. pl. II. (1837) 472; BOOTT, Illustr. IV. (1867) 182; KOMAROV, Fl. Manshur. I. (1901) 377; KÜKENTH. in ENGL. Pflanzenr. IV. 20 (1909) 590; NAKAI, Fl. Korean. II. (1911) 323; KOIDZUMI, in Botan. Magaz. Tokyo XXXI. (1917) 143; KUDO, Fl. Paramushir. (1922) 84; MIYABE & KUDO, Fl. of Hokkaid. & Saghal. II. (1931) 259; MAK. & NEM. Fl. of Jap. 2.-ed. (1931) 1419.

Utriculi squamas superantes suberecti tenuiter membranacei ovato-elliptici subinflato-trigoni 3-4 mm longi 1.5 mm lati brunnei superne vix purpureo-maculati nitidi glabri, praeter carinas prominentes enervii, basi parum spongiosi 0.8 mm longe stipitati contracti, apice in rostrum medio ocre conicum ore hyalino subintegrum sensim abeuntes.

Nom. Jap. Takane-shiba-suge.

Hab. Saghalien, Kuriles and Hokkaido.

Distrib. Corea. Widely distributed in Siberia, Europe and North America.

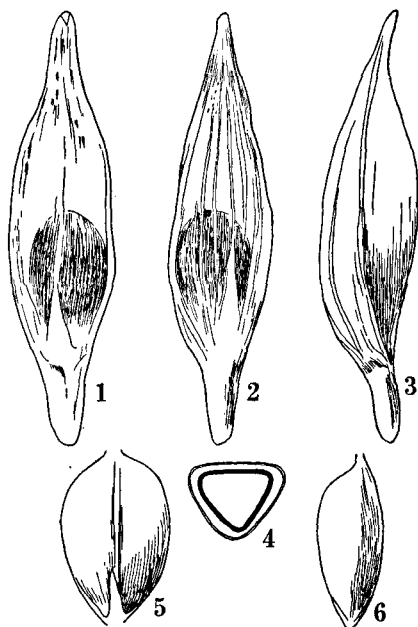


Fig. 124. *Carex capillaris* L.

1. Utricle seen from dorsal side, $\times 14$.
2. The same, from ventral side, $\times 14$.
3. The same, from lateral side, $\times 14$.
4. The same with nut, transversely cut, $\times 14$.
5. Nut seen from ventral side, $\times 14$.
6. The same, from lateral side, $\times 14$.

210. *Carex koreana* KOMAROV (Fig. 125), in Acta Horti petrop. XVIII. (1901) 446 et in Fl. Manshur. I. (1901) 399, non BAILEY; KÜKENTH. in ENGL. Pflanzenr. IV. 20 (1909) 591, fig. 99 D-F; NAKAI, Fl. Korean. II. (1911) 324; MAK. & NEM. Fl. of Jap. (1925) 1348.

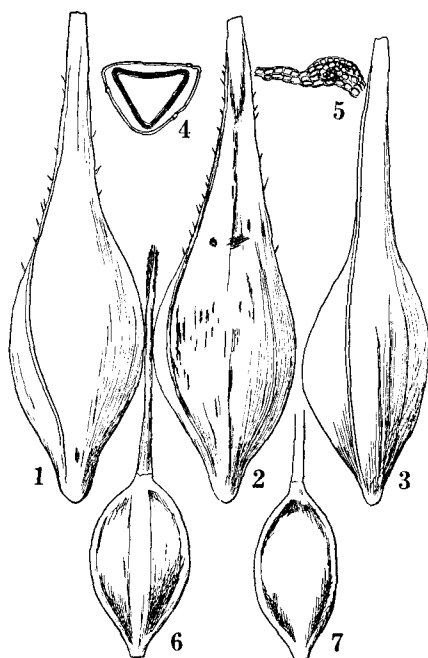


Fig. 125. *Carex koreana* KOMAR.

1. Utricle seen from dorsal side, $\times 14$.
2. The same, from ventral side, $\times 14$.
3. The same, from lateral side, $\times 14$.
4. The same with nut, transversely cut, $\times 14$.
5. Portion of the wall of the utricle, transversely cut, $\times$ ca. 75.
6. Nut seen from ventral side, $\times 14$.
7. The same, from lateral side, $\times 14$.

VANIOT, in Bull. Acad. intern. Géogr. bot. XI. (1902) 107; MATSUM. Ind. pl. Japon. II. 1. (1905) 101; KÜKENTH. in ENGL. Pflanzenr. IV. 20 (1909) 593; NAKAI, Fl. Korean. II. (1911) 324; MAK. & NEM. Fl. of Jap. 1.-ed. (1925) 1332.

C. explens KÜKENTH. Bull. Herb. Boiss. 2. sér. II. (1902) 1011.

C. stenantha C. B. CLARKE in Journ. Linn. Soc. XXXVI. (1904) 311, p.p.

Utriculi squamas superantes erecti membranacei, textis e 1-2 stratis cellularum compositis, anguste lanceolati trigoni 6-7 mm longi 1 mm lati pallide virides glabri tenuiter vix pluri-nervosi, nervi vix 10 (2 nervi marginales prominentes), basi attenuati in stipitem 0.5 mm

Utriculi squamas superantes suberecti membranacei, textis e 1-2 (raro 3) stratis cellularum constantibus, ovato-elliptici subinflato-trigoni 3-4.5 mm longi 1.5 mm lati pallide virides demum ferruginei vix fusco-maculati glabri nitidi praeter 3 nervos carinatos enervii, basi cuneatim attenuati obconico-stipitati, marginibus scabri, apice in rostrum sublongum cylindricum marginibus scabrum saepe excurvum ore hyalino subemarginatum vel integrum subsensim attenuati.

Nom. Jap. Onoé-suge; Chôsen-suge.

Hab. Honshiu.

Distrib. Corea.

Subsect. 2. *Debiles* CAREY
(p. 37)

211. *Carex bostrychostigma* MAXIMOWICZ (Fig. 126), Mélang. biol. XII. (1887) 568; FRANCH. in Nouv. Arch. Mus. Paris 3. sér. X. (1898) 58; KOMAROV, Fl. Manchur. I. (1901) 374; LÉVEILLÉ et

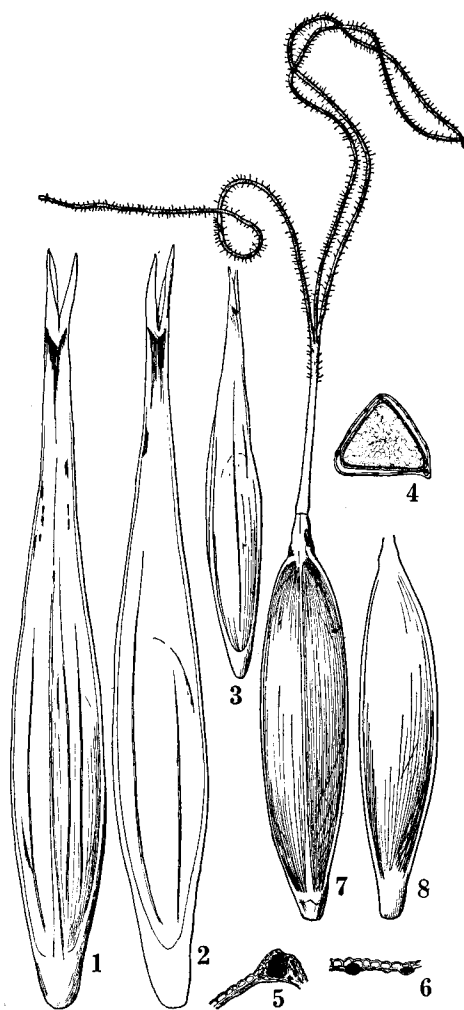


Fig. 126. *Carex bostrychostigma* MAXIM.

1. Utricle seen from dorsal side, $\times 14$.
2. The same, from ventral side, $\times 14$.
3. The same, from lateral side, $\times 7$.
4. The same with nut, transversely cut, $\times 14$.
5. and 6. Portions of the wall of the utricle, transversely cut, $\times$ ca. 75.
7. Nut seen from dorsal side, $\times 14$.
8. The same, from lateral side, $\times 14$.

longum rotundati, apice in rost-
rum cylindricum aequilongum
superne vix coloratum ore hyalino
oblique sectum demum grosse
bidentatum sensim abeuntes,
crura ad 1 mm longa anguste
lanceolata.

Nom. Jap. Yamaji-suge.

Hab. Shikoku and Kiushiu.

Distrib. Corea and Man-
churia.

212. *Carex nagasakensis* C.
B. CLARKE in Kew, Bull. Addit.
Ser. VIII. (1908) 87.

Nom. Jap. Nagasaki-suge.

Hab. Kiushiu.

213. *Carex niko-montana*
AKIYAMA (Fig. 127) in Botan.
Magaz. Tokyo XLV. (1931) 472.

Utriculi squamas vix su-
perantes erecti membranacei
2.5–3.5 mm longi
ellipsoidei trigoni
virides glabri ob-
solete nervosi, basi
attenuati 0.5 mm
longe stipitati, mar-
ginati, apice in rost-
rum excurvum mar-
ginibus laevem vel
scabrum ore biden-
tatum abeuntes.

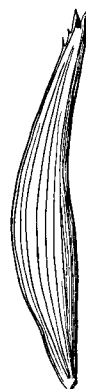


Fig. 127.

*Carex niko-
montana*
AKIYAMA

Utricle, $\times 14$.

Nom. Jap. Mi-
yama-ao-suge.

Hab. Honshiu.

Subsect. 3. *Graciles* TUCKERMAN (p. 38)

214. *Carex brunnea* THUNBERG (Fig. 128), Fl. japon. (1784) 38; KUNTH, Enum. pl. II. (1837) 392; FRANCH. in Nouv. Arch. Mus. Paris 3. sér. VIII. (1896) 241; LÉVEILLÉ et VANIOT, in Bull. Acad. intern. Géogr. bot. X. (1901) 186 et XII. (1903) 504; MATSUM. Ind. pl. Japon. II. 1. (1905) 103; KÜKENTH. in ENGL. Pflanzenr. IV. 20 (1909) 599, fig. 102 A-E; MATSUM. et HAYATA, Enum. pl. Formos. (1908) 493; NAKAI, Fl. Korean. II. (1911) 324; HAYATA, Icon. pl. Formos. VI. (1916) 128; MAK. & NEM. Fl. of Jap. 1.-ed. (1925) 1333.

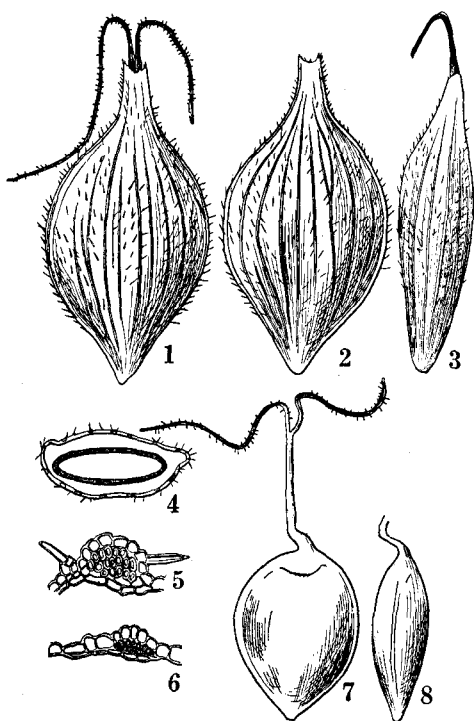


Fig. 128. *Carex brunnea* THUNB.

1. Utricle seen from dorsal side, $\times 14$.
2. The same, from ventral side, $\times 14$.
3. The same, from lateral side, $\times 14$.
4. The same with nut, transversely cut, $\times 14$.
5. and 6. Portions of the wall of the utricule, transversely cut, $\times$ ca. 100.
7. Nut seen from dorsal side, $\times 14$.
8. The same, from lateral side, $\times 14$.

C. gracilis R. BR. Prodr. Fl. Nov. Holl. (1810) 242.

C. flexilis D. DON, in Till. Mag. (1823) 455 pp. non RUDGE.

C. lenta D. DON, in Trans. Linn. Soc. XIV. (1825) 327.

C. Commersoniana KUNTH l.c. 391, p.p.

C. mauritanica STEUD. Synops. Cyper. (1855) 204.

C. ischnantha STEUD. l. c. 204.

C. asperifolia STEUD. l. c. 195.

C. assimilis STEUD. l. c. 195.

C. tenuispica STEUD. l. c. 319, non BOECK.

C. Fabei HANCE in Journ. Linn. Soc. XIII. (1873) 20.

C. mosoynensis FRANCH. in Bull. Soc. 31 et Nouv. Arch. VIII. 242.

C. Bodinieri FRANCH. in Bull. Soc. l. c. 85 et Nouv. Arch. VIII. 243.

C. Franchetiana LÉV. et VNT. Bull. Acad. 268.

Utriculi squamas superantes suberecti membranacei, textis e 1-2 stratis cellularum compositis, ovals plano-convexi vel subbiconvexi 3-4 mm longi 1.5-2 mm lati cinnamomei demum brunnei e superne densiore hispidi vel demum glabrescentes, in parte hispidum cellulis parce incrassatis, ad 20-nervi, basi cuneatim attenuati stipitati, marginibus nervis prominentibus, apice in rostrum mediocre vel longum marginibus scabrum ore emarginato-bidentulum scabrum abrupte contracti.

Nom. Jap. Nakiri-suge.

Hab. Honshiu, Shikoku, Kiushiu and Riukius.

Distrib. Formosa, India and its neighbourhood, Australia, Philippines and China.

215. *Carex autumnalis* OHWI in Mem. Coll. Sci. Kyoto Imp. Univ. Ser. B. V. (1930) 251; MAK. & NEM. Fl. of Jap. 2.-ed. (1931) 1416.

Nom. Jap. Ô-nakiri-suge.

Hab. Shikoku.

216. *Carex sendaica* FRANCHET in Bull. Soc. philom. Paris 8. sér. VII. (1895) 42 et Nouv. Arch. Mus. Paris 3. sér. VIII. (1896) t. 10, fig. 2 et IX. (1897) 137; MATSUM. Ind. pl. Japon. II. 1. (1905) 132.

C. brunnea var. *sendaica* KÜKENTH. in ENGL. Pflanzenr. IV. 20 (1909) 601; MAK. & NEM. Fl. of Jap. (1925) 1333.

Nom. Jap. Sendai-suge.

Hab. Honshiu.

Distrib. Central China.

217. *Carex teiogyna* BOOTT, Illustr. I. (1858) 60 t. 158.

var. *scabriculum* KÜKENTHAL (Fig. 129) in ENGL. Pflanzenr. IV. 20 (1909) 602; NAKAI, Fl. Korean. II. (1911) 325; MAK. & NEM. Fl. of Jap. 1.-ed. (1925) 1371.

Utriculi squamas parum superantes suberecti membranacei, textis ex 1-2 stratis cellularum compositis, ovati plano-convexi 3.5 mm longi ad 1.5 mm lati cinnamomei marginibus et in nervis tenuibus numerosis (vix 16) hispiduli, basi attenuati 0.4 mm longe stipitati, apice in rostrum vix 7 mm longum tenue ore profunde bidentatum abrupte attenuati.

Nom. Jap. Fusa-nakiri-suge.

Hab. Kiushiu.

Distrib. Corea.

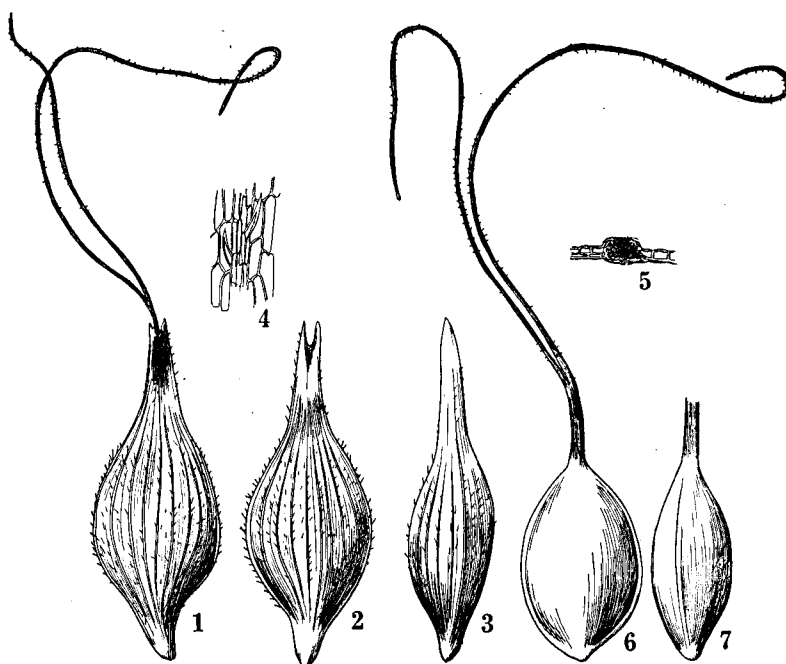


Fig. 129. *Carex teiogyna* var. *scabriculumis* KÜENTH.

1. Utricle seen from dorsal side $\times 14$. 2. The same, from ventral side, $\times 14$. 3. The same, from lateral side, $\times 14$. 4. Portion of the surface of the utricule, $\times$ ca. 100. 5. Portion of the wall of the utricule, transversely cut, $\times$ ca. 100. 6. Nut seen from dorsal side, $\times 14$. 7. The same, from lateral side, $\times 14$.

218. *Carex kasugayamensis* AKIYAMA (Fig. 130) in Journ. Facult. Sci. Hokkaido Imp. Univ. Ser. V. I. 2 (1931) 57, Pt. VII. fig. 1.

Utriculi squamas superantes suberecti membranacei, textis ex 1-2 stratis cellularum concretis, ovato-elliptici 4.5 mm longi plano-convexi cinnamomeo-brunnei marginibus et in nervis numerosis hispidi, medio-criter longe stipitati, apice in rostrum tenue marginibus viride ore bidentatum intus scabrum abrupte contracti.

Nom. Jap. Hime-nakiri-suge.

Hab. Honshiu.

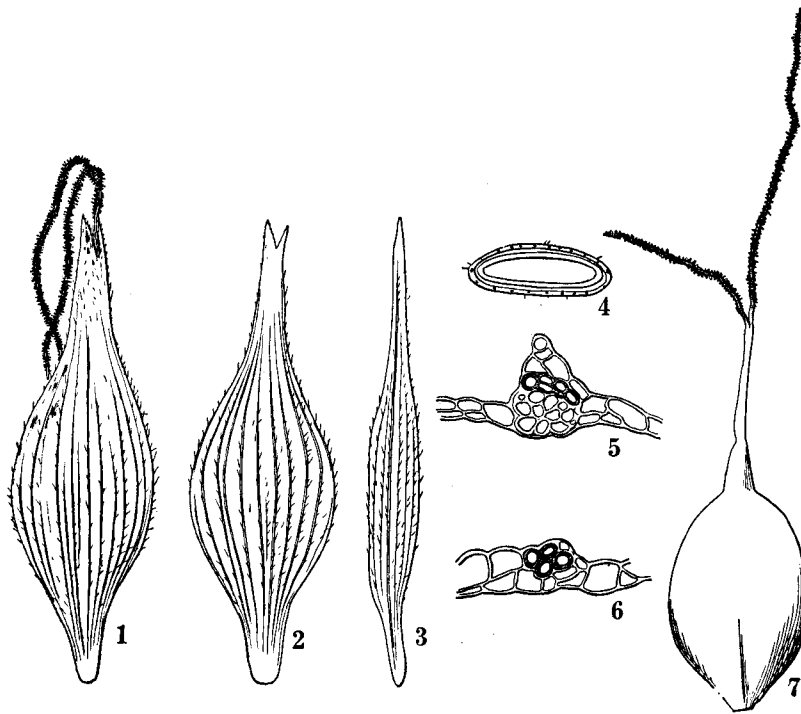


Fig. 130. *Carex kasugayamensis* AKIYAMA

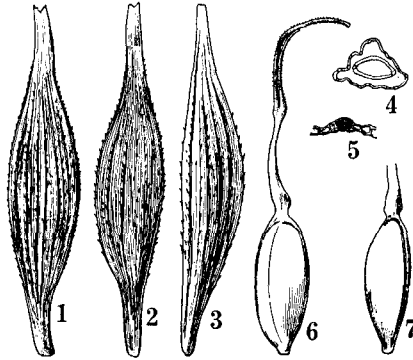
1. Utricle seen from dorsal side, $\times 14$. 2. The same, from ventral side, $\times 14$. 3. The same, from lateral side, $\times 14$. 4. The same with nut, transversely cut, $\times 14$. 5. and 6. Portions of the wall of the utricle, transversely cut, $\times$ ca. 250. 7. Nut, $\times 14$.

219. *Carex sacrosancta* HONDA (Fig. 131) in Botan. Magaz. Tokyo XLIII. (1929) 190; MAK. & NEM. Fl. of Jap. 2.-ed. (1931) 1450.

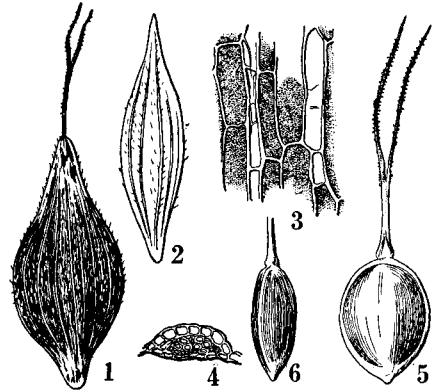
Utriculi squamis breviores erecti membranacei, textis ex 1 strato cellularum constantibus, lanceolato-elliptici compresso-plano-convexi 3.5 mm longi 0.7-1 mm lati cinnamomei breviter hirtuli 12-15-nervosi, basi attenuati vix 0.7 mm longe stipitati, apice in rostrum longum rectum ore oblique sectum grosse bifidum sensim abeuntes.

Nom. Jap. Jingû-suge.

Hab. Honshiu.

Fig. 131. *Carex sacrosancta* HONDA

1. Utricle seen from dorsal side, $\times 14$.
2. The same, from ventral side, $\times 14$.
3. The same, from lateral side, $\times 14$.
4. The same with nut, transversely cut, $\times 14$.
5. Portion of the wall of the utricule, transversely cut, $\times$ ca. 75.
6. Nut seen from dorsal side, $\times 14$.
7. The same, from lateral side, $\times 14$.

Fig. 132. *Carex amami-oshimensis* AKIYAMA

1. Utricle seen from dorsal side, $\times 14$.
2. The same, from lateral side, $\times 14$.
3. Portion of the surface of the utricule, $\times$ ca. 200.
4. Portion of the wall of the utricule, transversely cut, $\times$ ca. 100.
5. Nut seen from dorsal side, $\times 14$.
6. The same, from lateral side, $\times 14$.

220. *Carex amami-oshimensis* AKIYAMA (Fig. 132) nom. nov.

C. gentilis FRANCHET var. *oshimensis* KÜKENTH. in ENGL. Pflanzenr. IV. 20 (1909) 603; MAK. & NEM. Fl. of Japan 1.-ed. (1925) 1343.

Differt a *C. gentilis* culmis longioris, folia latioris, spiculis longioris et utriculis scabridis.

Utriculi squamas superantes suberecti membranacei, textis ex 1-2 stratis cellularum constantibus ovati plano-convexi vix 2 mm longi densissime cinnamomeo-olivaceo-maculati, marginibus et saepissime in nervis scabri plurinervi, basi contracti breve stipitati, apice in rostrum ore integrum vel vix bidentulum attenuati.

Nom. Jap. Kogome-suge.

Hab. Kiushiu (Ô-shima).

Subsect. 4. *Longirostres* KÜKENTHAL (p. 38)

221. *Carex metallica* LÉVEILLÉ et VANIOT in FEDDE, Repert. V. (1908) 239; KÜKENTH. in ENGL. Pflanzenr. IV. 20 (1909) 766; NAKAI,

Fl. Korean. II. (1911) 325; OHWI in Mem. Coll. Sci. Kyoto Imp. Univ. Ser. B. VI. (1931) 248.

C. pachinensis HAYATA, Icon. pl. Formos. X. (1920) 58, f. 33.

C. alliiformis HAYATA l. c. 67, fig. 43, non C. B. CLARKE.

Nom. Jap. Fusa-suge.

Hab. Kiushiu, Shikoku and Riukius.

Distrib. Formosa and Corea.

222. *Carex Arnellii* CHRIST, apud SCHEUTZ in Svensk. Vet.-Akad. Handl. N. F. XXII. (1887) 177; KOMAROV, Fl. Manshur. I. (1901) 377; KÜKENTH. in ENGL. Pflanzenr. IV. 20 (1909) 609, fig. 103; MAK. & NEM. Fl. of Jap. (1925) 1331 p.p.; MIYABE & KUDO, Fl. of Hokkaid. & Saghal. II. (1931) 260.

C. silvatica var. TURCZ. Fl. baic.-dahur. II. 1. (1856) 279.

C. silvatica MAXIM. Primit. Fl. amur. (1859) 312, non HUDS.

C. Maximowiczii BOECK. in Linnaea XLI. (1877) 237, nec MIQ. nec. FR. SCHM.

C. Turczaninowiana MEINSH. ex KORSHINSK. in Acta Horti petropol. XII. (1892) 411 et XVIII. (1901) 363; FRANCH. in Nouv. Arch. Mus. Paris 3. sér. X. (1898) 55.

Nom. Jap. Arnel-suge.

Hab. Saghalien.

Distrib. Manchuria, Siberia and Mongolia.

223. *Carex hondoensis* OHWI (Fig. 133) in Mem. Coll. Sci. Kyoto Imp. Univ. Ser. B. V. 3 (1930) 252 et Journ. Jap. Bot. VII. 5 (1931) 168; MAK. & NEM. Fl. of Jap. 2.-ed. (1931) 1431.

C. Arnellii MATSUM. Ind. pl. Japon. II. 1. (1905) 100; KÜKENTH. l. c. p.p.

Utriculi squamas superantes demum oblique patentes membranacei ovato-elliptici subinflato-

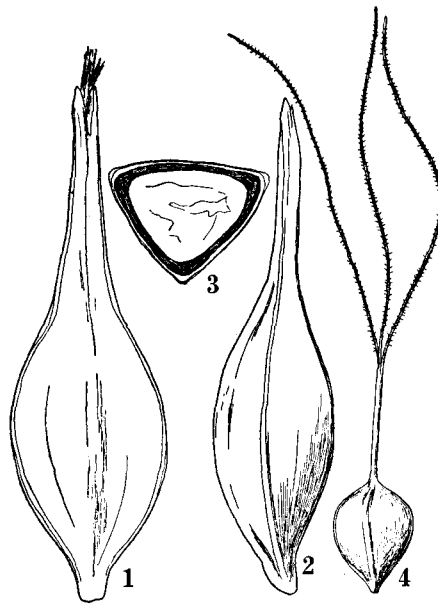


Fig. 133. *Carex hondoensis* OHWI

1. Utricle seen from dorsal side, $\times 14$.
2. The same, from lateral side, $\times 14$.
3. The same with nut, transversely cut, $\times 14$.
4. Nut, $\times 7$.

trigoni 5 mm longi 1.6 mm lati stramineo-virides nitidi glabri praeter carinas prominentes nonnisi basi obsolete nervosi, basi contracti brevissime stipitati, apice in rostrum 2 mm longum gracile ore hyalino oblique sectum demum grosse bidentatum subabrupte desinentes.

Nom. Jap. Aizu-suge.

Hab. Honshiu.

Sect. 38. *Tumidae* KÜKENTHAL (p. 39)

224. *Carex Brownii* TUCKERMAN, Enum. meth. (1843) 21; BOOTT, Illustr. IV. (1867) 161 t. 532 p.p.; FRANCH. et SAV. Enum. pl. Japon. II. (1879) 578; FRANCH. in Nouv. Arch. Mus. Paris 3. sér. X. (1898) 49; PALIBIN in Acta Horti petropol. XIX. (1902) 122; MATSUM. Ind. pl. Jap. II. 1. (1905) 102 p.p.; KÜKENTH. in ENGL. Pflanzenr. IV. 20 (1909) 612, fig. 104 A-D; NAKAI, Fl. Korean. II. (1911) 325; MAK. & NEM. Fl. of Jap. 1.-ed. (1925) 1333; MIYABE & KUDO, Fl. of Hokkaid. & Saghal. II. (1931) 260.

C. stricta R. BR. Prodr. Fl. Nov. Holl. (1810) 243.

C. rigens BOOTT, in Mem. Amer. Acad. (n. s.) VI. (1859) 419; FRANCH. et SAV. l. c. 149, non BAILEY.

C. transversa MIQ. in Ann. Mus. lugd. batav. II. (1865-66) 148, non BOOTT.

Nom. Jap. Awabo-suge.

Hab. Hokkaido, Honshiu, Shikoku, Kiushiu and Riukius.

Distrib. Corea, New Zealand and Australia.

225. *Carex transversa* BOOTT, in PERRY, Exped. Jap. II. (1857) 324 et Illustr. IV. (1867) 202; FRANCH. et SAV. Enum. pl. Jap. II. (1879) 149 (incl. var. *dissociata*); FRANCH. in Nouv. Arch. Mus. Paris 3. sér. X. (1898) 48, t. III. fig. 1; C. B. CLARKE in Journ. Linn. Soc. XXXVI. (1904) 314, non MIQ.

C. Brownii var. *transversa* KÜKENTH. apud MATSUM. Ind. pl. Japon. II. 1. (1905) 103 et in ENGL. Pflanzenr. IV. 20 (1909) 614; NAKAI, Fl. Korean. II. (1911) 326; MAK. & NEM. Fl. of Jap. (1925) 1333.

C. Brownii MATSUM. l. c., p. p.

Nom. Jap. Yawara-suge.

Hab. Honshiu, Shikoku and Kiushiu.

Distrib. Corea.

226. *Carex ischnostachya* STEUDEL (Fig. 134), Synops. Cyper. II. (1855) 222; FRANCH. in Nouv. Arch. Mus. Paris 3. sér. X. (1898) 47; MATSUM. Ind. pl. Japon. II. 1. (1905) 114; KÜKENTH. in ENGL. Pflanzenr. IV. 20 (1909) 614, fig. 104 E-F; NAKAI, Fl. Korean. II. (1911) 326; MAK. & NEM. Fl. of Jap. 1.-ed. (1925) 1347; MIYABE & KUDO, Fl. of Hokkaid. & Saghal. II. (1931) 261.

C. Ringgoldiana BOOTT in Mem. Acad. (n. ser.) VI. (1859) 419; FRANCH. et SAV. Enum. pl. Japon. II. (1879) 148 et var. *stenandra* l. c. 577.

Utriculi squamas 3-4-plo superantes suberecti membranacei, textis ex 1-2 stratis cellularum concretis ovato-ellipsoidei obtuse trigoni 4-6.5 mm longi ad 2 mm lati primo virides demum brunneo-olivacei glabri

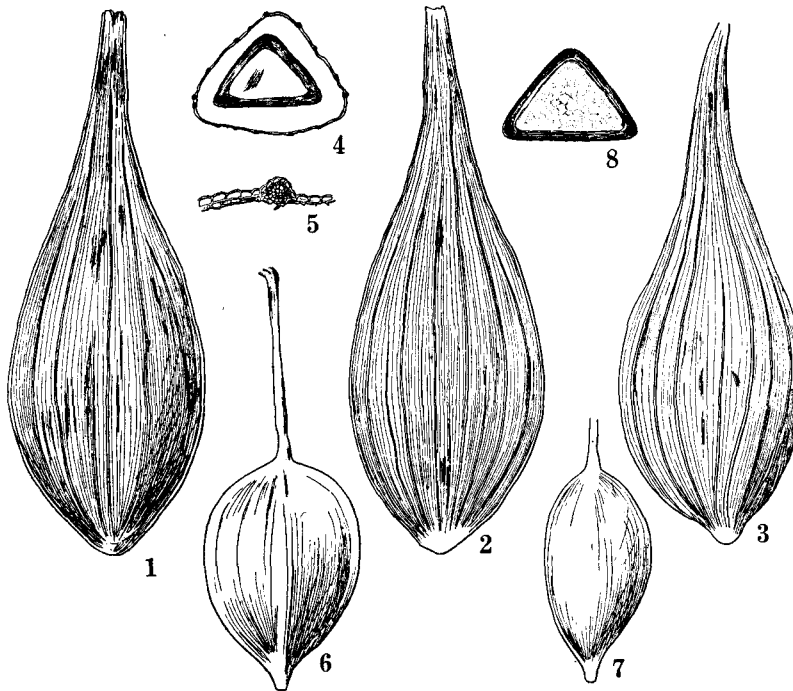


Fig. 134. *Carex ischnostachya* STEUD.

1. Utricle seen from dorsal side, $\times 14$. 2. The same, from ventral side, $\times 14$. 3. The same, from lateral side, $\times 14$. 4. The same with nut, transversely cut, $\times 14$. 5. Portion of the wall of the utricle, transversely cut, $\times$ ca. 75. 6. Nut seen from dorsal side, $\times 14$. 7. The same, from lateral side, $\times 14$. 8. The same, transversely cut, $\times 14$.

15-20-nervosi, basi rotundati brevissime stipitati, apice in rostrum longum (vix 1.5 mm) conicum ore hyalino emarginatum subsensim desinentes.

Nom. Jap. Juzu-suge; Hiroba-no-yawara-suge.

Hab. Hokkaido, Honshiu, Shikoku, Kiushiu and Riukius.

Distrib. Corea.

227. *Carex nemostachys* STEUDEL (Fig. 135) in Flora XXIX. (1846) 23 et in Synops. Cyper. (1855) 218; MIQUEL in Ann. Mus. lugd. batav. II. (1865-66) 150; FRANCH. et SAV. Enum. pl. Japon. II. (1879) 144 et 572; FRANCH. in Nouv. Arch. Mus. Paris 3. sér. X. (1898) 76; MATSUM. Ind. pl. Japon. II. 1. (1905) 122; KÜKENTH. in ENGL. Pflanzenr. IV. 20 (1909) 615; MAK. & NEM. Fl. of Jap. (1925) 1356.

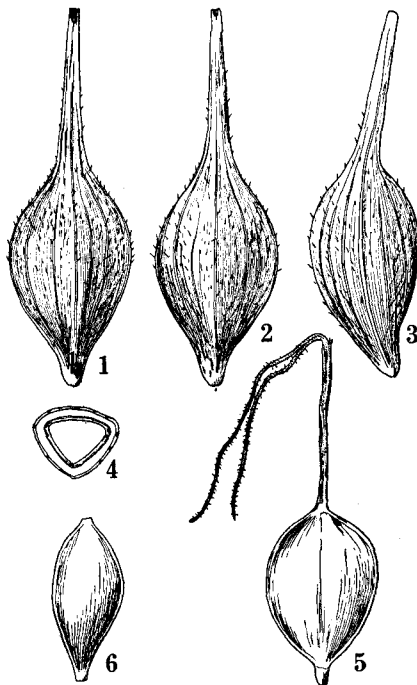


Fig. 135. *Carex nemostachys* STEUD.

1. Utricle seen from dorsal side, $\times 7$.
2. The same, from ventral side, $\times 7$.
3. The same, from lateral side, $\times 7$.
4. The same with nut, transversely cut, $\times 7$.
5. Nut seen from dorsal side, $\times 7$.
6. The same, from lateral side, $\times 7$.

Utriculi squamis latiores sed aristis breviores demum excurvi membranacei ovati trigoni vix inflati 3-3.5 mm longi ad 1.5 mm lati brunneo-olivacei scabri plurinervi, nervis vix 10 et 2-nervis marginalibus prominentibus, basi breviter attenuati breve stipitati, apice in rostrum vix 2.5 mm longum cylindricum deflexum ore hyalino oblique sectum subsensim desinentes.

Nom. Jap. Aki-kasa-suge.

Hab. Shikoku and Kiushiu.

Distrib. Southern and Eastern China and Assam.

228. *Carex dispalata* BOOTT (Fig. 136) ex A. GRAY, Narr. Exped. PERRY II. (1856-57) 325 et in Illustr. IV. (1867) 205; FR. SCHM. Reis. Amurl. (1868) 196, t. 7, fig. 6-10; FRANCH. et SAV. Enum. pl. Jap. II. (1879) 151 (incl. var. *nigatensis*); FRANCH. in Nouv. Arch. Mus. Paris 3. sér. X. (1898) 74; KOMAROV, Fl. Man-

shur. I. (1901) 391; MATSUM. Ind. pl. Japon. II. 1. (1905) 107; KÜKENTH. in ENGL. Pflanzenr. IV. 20 (1909) 616; NAKAI, Fl. Korean. II. (1911) 326; MAK. & NEM. Fl. of Jap. (1925) 1339; MIYABE & KUDO, Fl. of Hokkaid. & Saghal. II. (1931) 261.

C. subanceps BOECK. in ENGLER's Bot. Jahrb. V. (1884) 520.

C. acutiformis FRANCH. l. c. 83, non EHRH.

C. japonica var. *alopeculoides* LÉVEILLÉ et VANIOT in Bull. Acad. intern. Géogr. bot. XI. (1902) 177.

C. pollens C. B. CLARKE in Journ. Linn. Soc. XXXVI. (1904) 305, pro maxima parte. (incl. var. *angustior*).

Utriculi squamis longiores et latiores primo erecti demum oblique patentés apice tenuiter e basi crassiore membranacei ovati subinflato-trigoni vix compressi 2.5 mm longi 1.5 mm lati griseo-olivacei rugosi nitiduli glabri tenuiter nervosi (nervi marginales prominentes), basi rotundata brevissime stipitati, apice in rostrum mediocre conicum excurvum apice purpureo-coloratum ore hyalino oblique sectum demum emarginatum subabrupte desinentes.

Nom. Jap. Kasa-suge.

Hab. Saghalien, Hokkaido, Honshiu, Shikoku and Kiushiu.

Distrib. Corea, Manchuria and China.

var. *reducta* KÜKENTHAL, Car. Sachal. (1909) 37.

Hab. Saghalien.

229. *Carex confertiflora* BOOTT (Fig. 137) in Proc. Linn. Soc. I. (1845) 286 et in Trans. Linn. Soc. XX. (1846) 138 et in A. GRAY, on the

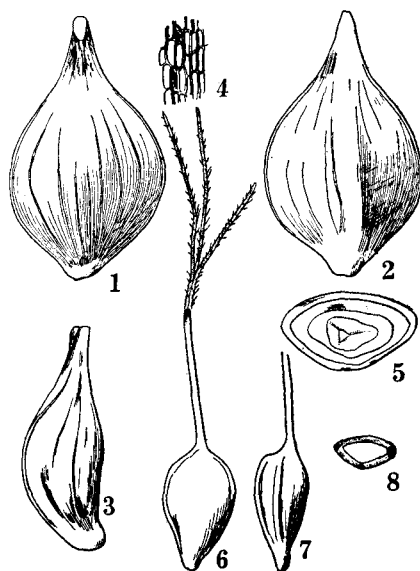


Fig. 136. *Carex dispalata* BOOTT

1. Utricle seen from dorsal side, $\times 14$.
2. The same, from ventral side, $\times 14$.
3. The same, from lateral side, $\times 14$.
4. Portion of the surface of the utricle, $\times 100$.
5. Utricle with nut, transversely cut, $\times 14$.
6. Nut seen from dorsal side, $\times 14$.
7. The same, from lateral side, $\times 14$.
8. The same, transversely cut, $\times 14$.

Bot. Jap. (1859) 418; FRANCH. et SAV. Enum. pl. Japon. II. (1879) 151 et 578; MAKINO in Botan. Magaz. Tokyo IX. (1895) 73; FRANCH. in Nouv. Arch. Mus. Paris 3. sér. X. (1898) 75; OHWI, in Mem. Coll. Sci. Kyoto Imp. Univ. Ser. B. V. 3 (1930) 289; MIYABE & KUDO, Fl. of Hokkaid. & Saghal. II. (1931) 262.

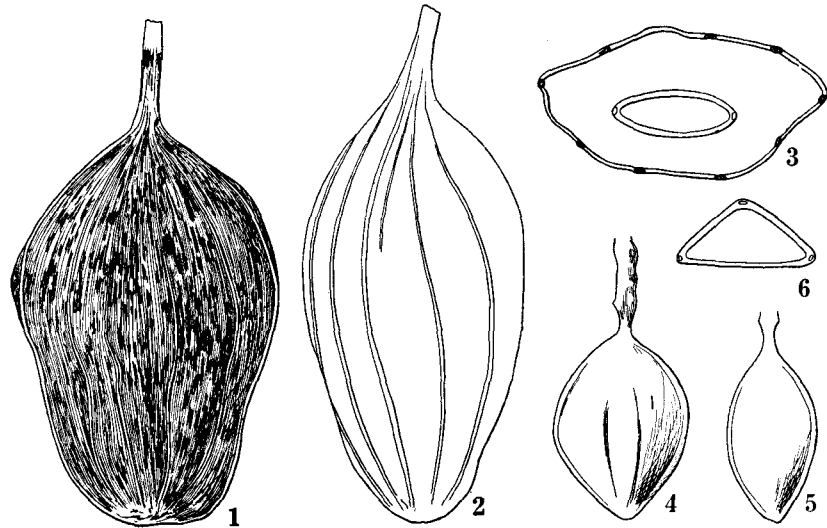


Fig. 137. *Carex confertiflora* BOOTT

1. Utricle seen from dorsal side, $\times 14$. 2. The same, from lateral side, $\times 14$. 3. The same with nut, transversely cut, $\times 14$. 4. Nut seen from dorsal side, $\times 14$. 5. The same, from lateral side, $\times 14$. 6. The same, transversely cut, $\times 14$.

C. olivacea KÜKENTH. in ENGL. Pflanzenr. IV. 20 (1909) 617, p.p.; MATSUM. Ind. pl. Japon. II. 1. (1905) 124, non BOOT.

C. olivacea var. *angustior* KÜKENTH. l. c. 618.

Utriculi squamis aequilongi sed latiores demum divaricati tenuiter membranacei ovati vel obovati turgido-trigoni 5 mm longi 2.5 mm lati primo virides albidi demum atro-olivacei dense punctulati rugosi nitidi plurinervi nervis vix 10, basi contracti vix stipitati, apice in rostrum vix 1 mm longum anguste cylindricum reflexum ore hyalino emarginato-bidentulum abrupte abeuntes.

Nom. Jap. Miyama-shira-suge.

Hab. Hokkaido, Honshiu, Shikoku and Kiushiu.

230. *Carex persistens* OHWI in Mem. Coll. Sci. Kyoto Imp. Univ. Ser. B. V. 3 (1930) 249, et Jour. Jap. Bot. VII. 5 (1931) 168; MAK. & NEM. Fl. of Jap. 2.-ed. (1931) 1444.

Nom. Jap. Kinki-kasa-suge.

Hab. Honshiu.

var. *Takeuchii* OHWI l. c. 250 et l. c. 168; MAKINO & NEMOTO, l. c.

Culmus medio uninodus. Utriculi parce granulosi, rostro glabro, ore fimbriato.

Hab. Honshiu.

231. *Carex alliiformis* C. B. CLARKE (Fig. 138) in Journ. Linn. Soc. XXXVI. (1903) 270; KÜKENTH. in ENGL. Pflanzenr. IV. 20 (1909) 618 fig. 105 A-C; MAK. & NEM. Fl. of Jap. (1925) 1329.

C. purpurascens KÜKENTH. ex MATSUM. Ind. pl. Japon. II. 1. (1905) 129 (nom. sol.) et in Journ. Coll. Sc. Tokyo XXII. (1906) 496.

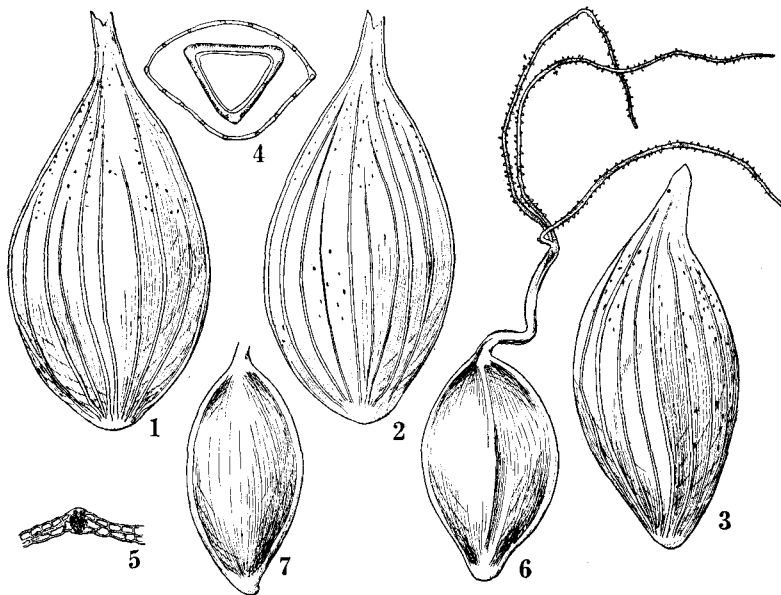


Fig. 138. *Carex alliiformis* C. B. CLARKE

1. Utricle seen from dorsal side, $\times 14$.
2. The same, from ventral side, $\times 14$.
3. The same, from lateral side, $\times 14$.
4. The same with nut, transversely cut, $\times 14$.
5. Portion of the wall of the utricle, transversely cut, $\times$ ca. 100.
6. Nut seen from ventral side, $\times 14$.
7. The same, from lateral side, $\times 14$.

Utriculi squamas paullo superantes demum patentes membranacei, textis e 2 stratis cellularum compositis, ovati inflato-trigoni 4 mm longi 2 mm lati stramineo-virides nitidi glabri vix purpureo-punctulati vix 16-nervi (nervi marginales prominentes), basi subrotundati vix stipitati, apice in rostrum mediocre (vix 0.5 mm longum) ore colorato leviter bidentulum subabrupte contracti.

Nom. Jap. Riukiu-suge.

Hab. Riukius.

Distrib. Central China.

232. *Carex japonica* THUNBERG (Fig. 139), Fl. Japon. (1784) 38; KUNTH, Enum. pl. II. (1837) 517; MATSUM. Ind. pl. Japon. II. 1. (1905) 115; KÜKENTH. in ENGL. Pflanzenr. IV. 20 (1909) 620; NAKAI, Fl.

Korean. II. (1911) 327; MAK. & NEM. Fl. of Japan, 1.-ed. (1925) 1347; NAKAI, Veg. Mt. Apoi (1930) 24, 75; MIYABE & KUDO, Fl. of Hokkaido & Saghal. II. (1931) 262.

C. japonica β . *minor* BOOTT, Illustr. II. (1860) 88.

C. Motoskei MIQ. Ann. Mus. lugd. batav. II. (1865-66) 148; FRANCH. et SAV. Enum. pl. Jap. II. (1879) 140.

C. trichostyles FRANCH. et SAV. l. c. 152 et 581.

C. tokioensis BOECK. in Flora LXV. (1882) 63.

C. japonica β . *gracilis* FRANCH. in Nouv. Arch. Mus. Paris 3. sér. X. (1898) 78.

Utriculi squamas superantes et iis latiores hexastichi oblique patentes tenuiter membranacei (sed e basi subcoriacei) ovato-oblongi subinflato-trigoni 3-4 mm longi 1-1.5 mm lati primo virides demum stramineo-virides nitidi

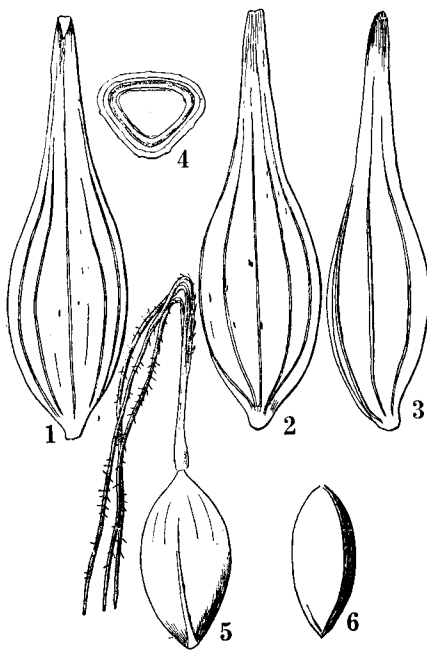


Fig. 139. *Carex japonica* THUNB.

1. Utricle seen from dorsal side, $\times 14$.
2. The same, from ventral side, $\times 14$.
3. The same, from lateral side, $\times 14$.
4. The same with nut, transversely cut, $\times 14$.
5. Nut seen from ventral side, $\times 14$.
6. The same, from lateral side, $\times 14$.

glabri ad 10-nervosi, basi contracti brevissime stipitati, apice in rostrum longum conicum medio subtumens saepe excurvum marginibus laevem vel scabrum ore hyalino leviter bidentatum subabrupte abeuntes.

Nom. Jap. Higo-kusa.

Hab. Hokkaido, Honshiu, Shikoku and Kiushiu.

Distrib. Corea, Manchuria and China.

233. *Carex aphanolepis* FRANCHET et SAVATIER (Fig. 140), Enum. pl. Japon. II. (1879) 152 et 580; MIYABE & KUDO, Fl. of Hokkaido & Saghal. II. (1931) 263.

C. japonica var. *aphanolepis* KÜKENTH. apud MATSUM. Ind. pl. Japon. II. 1. (1905) 116 et in ENGL. Pflanzenr. IV. 20 (1909) 620; NAKAI, Fl. Korean. II. (1911) 327; MAK. & NEM. Fl. of Jap. 1.-ed. (1925) 1348.

C. japonica var. *humilis* FRANCH. in Nouv. Arch. Mus. X. (1898) 77.

Utriculi squamis longiores et latiores hexastichi oblique patentes membranacei, textis e 2-5 stratis cellularum concretis, ovato-oblongi inflato-trigoni 3-4 mm longi 1.5 mm lati stramineo-virides dilute purpureo-maculati nitidi glabri obsolete ad 10-nervosi, basi contracta vix stipitati, apice in rostrum mediocre conicum medio subtumens saepe excurvum ore hyalino leviter bidentatum subabrupte abeuntes.

Nom. Jap. Sawa-suge; Enashi-higo-kusa.

Hab. Hokkaido and Honshiu.

Distrib. Corea.

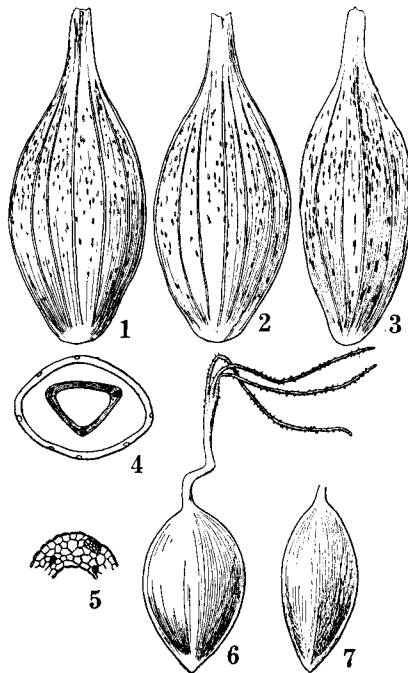


Fig. 140. *Carex aphanolepis* FRANCH. et SAV.

1. Utricle seen from dorsal side, $\times 14$.
2. The same, from ventral side, $\times 14$.
3. The same, from lateral side, $\times 14$.
4. The same with nut, transversely cut, $\times 14$.
5. Portion of the wall of the utricle, transversely cut, $\times$ ca. 100.
6. Nut seen from ventral side, $\times 14$.
7. The same, from lateral side, $\times 14$.

234. *Carex japonicaeformis* NAKAI, Veg. Kamikochi (1928) 34, 42 ; MAKINO & NEMOTO, Fl. of Jap. 2.-ed. (1931) 1431.

Valde affinis a *C. japonica*, sed differt a *C. japonica* spiculis vix grandioribus sessilibus vel brevipedunculatis erectis, squamis aristatis, utriculis ore bidentatis.

Nom. Jap. Miyama-higo-kusa.

Hab. Kamikochi, prov. Shinano (T. Nakai, anno 1927).

235. *Carex Doniana* SPRENG. (Fig. 141) Syst. III. (1826) 825 ; FRANCH. et SAV. Enum. pl. Japon. II. (1879) 152.

C. chlorostachys D. DON in Trans. Linn. Soc. XIV. (1825) 330 ; MIYABE & KUDO, Fl. of Hokkaido & Saghal. II. (1931) 263, non STEVEN.

C. japonica BOOTT, Illustr. II. (1860) 88 t. 257.

C. patens FRANCH. in Bull. Soc. Paris 8. sér. VII. (1895) 90.

C. japonica var. *alopeculoides* FRANCH. in Nouv. Arch. X. (1898) 78, non C. B. CLARKE.

C. baviensis FRANCH. l. c. 77 t. 8, fig. 2.

C. alopeculoides var. β . *chlorostachya* C. B. CLARKE in Journ. Linn. Soc. XXXVI. (1903) 271 (excl. syn. *Zollingeri*).

C. tricarinata LÉVEILLÉ et VANIOT in Bull. Soc. bot. France 4. sér. VI. (1906) 317.

C. japonica var. *chlorostachys* KÜKENTH. in ENGL. Pflanzenr. IV. 20 (1909) 620.

Utriculi squamis longiores latiores hexastichi oblique patentibus demum excurvi tenuiter membranacei late ovato-oblongi subinflato-trigoni 3.5–4 mm longi ad 1.5 mm lati stramineo-virides dilute purpureo-maculati nitidi glabri plurinervi (nervi 2 marginales prominentes), basi contracti

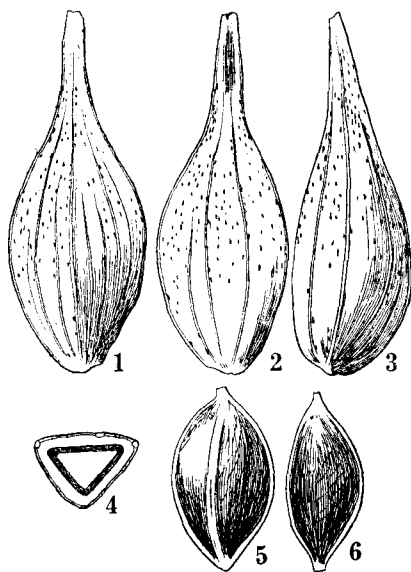


Fig. 141. *Carex Doniana* SPRENG.

1. Utricle seen from dorsal side, $\times 14$.
2. The same, from ventral side, $\times 14$.
3. The same, from lateral side, $\times 14$.
4. The same with nut, transversely cut, $\times 14$.
5. Nut seen from ventral side, $\times 14$.
6. The same, from lateral side, $\times 14$.

brevissime stipitati, apice in rostrum longum conicum excurvum ore hyalino subintegrum subabrupte abeuntes.

Nom. Jap. Shira-suge.

Hab. Hokkaido, Honshiu, Kiushiu and Riukius.

Distrib. Formosa, Corea, Tonkin, Khasia and Sikkin.

236. *Carex planiculmis* KOMAROV (Fig. 142) in Acta Horti petropol. XVIII. (1901) 448; KÜKENTH. in ENGL. Pflanzenr. IV. 20 (1909) 621; OHWI in Mem. Coll. Sci. Kyoto Imp. Univ. Ser. B. VI. 5 (1931) 257.

C. japonica var. *naipiangensis* LÉVEILLÉ in Bull. Soc. bot. France (1904) 206.

C. japonica var. *chlorostachys* forma *naipiangensis* LÉVEILLÉ in Bull. Acad. intern. Géogr. bot. (1910) 48.

C. japonica var. *chlorostachys* KÜKENTH. l. c. 620 p. min. p.

C. paniculigera NAKAI in FEDDE, Repert. (1915) 244.

Nom. Jap. Hikage-shira-suge.

Hab. Hokkaido and Honshiu.

Distrib. Corea and Manchuria.

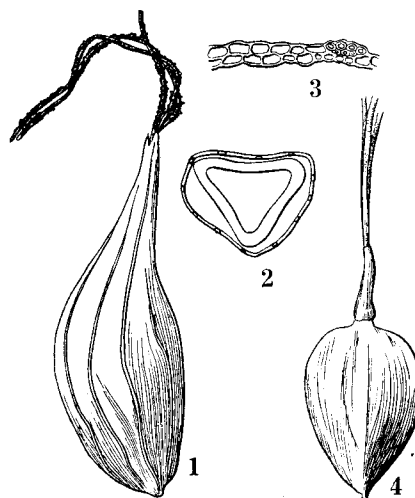


Fig. 142. *Carex planiculmis* KOMAR.

1. Utricle, $\times 14$.
2. The same with nut, transversely cut, $\times 14$.
3. Portion of the wall of the utricle, transversely cut, $\times$ ca. 200.
4. Nut, $\times 14$.

237. *Carex mollicula* BOOTT (Fig. 143), Illustr. IV. (1867) 192; FRANCH. in Nouv. Arch. X. (1898) 73; LÉVEILLÉ et VANIOT, in Bull. Soc. bot. XI. (1902) 178; MATSUM. Ind. pl. Japon. II. 1. (1905) 121; KÜKENTH. in ENGL. Pflanzenr. IV. 20 (1909) 622, fig. 105 D-E; NAKAI, Fl. Korean. II. (1911) 328; MAK. & NEM. Fl. of Jap. (1925) 1365; MIYABE & KUDO, Fl. of Hokkaido & Saghal. II. (1931) 263.

C. arcuata FRANCH. in Bull. Soc. philom. 7. sér. X. (1886) 106.

Utriculi squamas duplo superantes subdistichi divaricati demum deflexo-excurvi membranacei, textis e 3-4 stratis cellularum compositis, oblongo-ovati vel ovato-elliptici 3-4 mm longi ad 1.5 mm lati stramineo-virides rugulosi obsolete purpureo-punctulati nitidi glabri paucinervosi

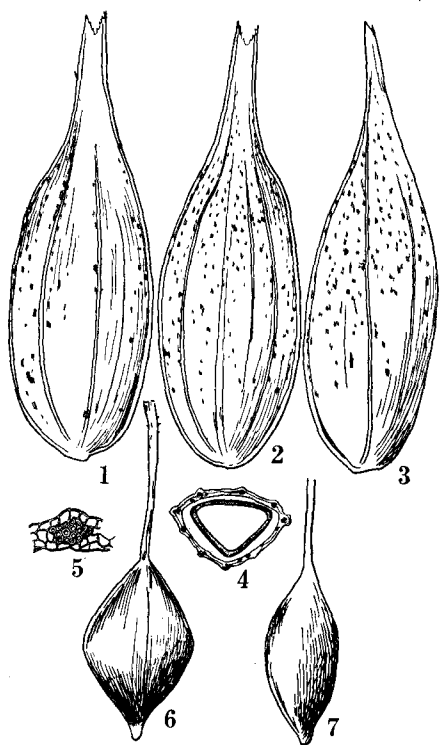


Fig. 143. *Carex mollicula* BOOTT

1. Utricle seen from dorsal side, $\times 14$.
2. The same, from ventral side, $\times 14$.
3. The same, from lateral side, $\times 14$.
4. The same with nut, transversely cut, $\times 14$.
5. Portion of the wall of the utricle, transversely cut, $\times$ ca. 100.
6. Nut seen from dorsal side, $\times 14$.
7. The same, from lateral side, $\times 14$.

50 et in Nouv. Arch. Mus. Paris 3. sér. X. (1898) 62 t. 5; KÜKENTH. in ENGL. Pflanzenr. IV. 20 (1909) 625; MAK. & NEM. Fl. of Jap. (1925) 1353.

C. hebecarpa MATSUMURA, Ind. pl. Japon. II. 1. (1905) 113 p. p.

Utriculi squamas superantes suberecti membranacei, textis e 2-4 stratis cellularum compositis, ovato-elliptici compressi 4 mm longi stramineo-virides demum straminei glabri multicostati, basi spongiosa in

(2 nervi marginales prominentes), basi spongiosi rotundati vix stipitati, apice in rostrum mediocre vel longum conicum marginibus laeve ore hyalino leviter sed grosse bidentatum sensim attenuati.

Nom. Jap. Hime-shira-suge.

Hab. Kuriles, Hokkaido, Honshiu, Shikoku and Kiushiu.

Distrib. Corea and Northern China.

238. *Carex macromollicula* NAKAI, Veg. Kamikochi (1928) 34, 41 MAKINO & NEMOTO, Fl. of Jap. 2.-ed. (1931) 1436.

Nom. Jap. Miyama-shira-suge.

Hab. Kamikochi, prov. Shinano, Honshiu (T. NAKAI, anno 1927); Kariyose, prov. Musashi, Honshiu (T. NAKAI, anno 1930).

Sect. 39. Rhomboidales

KÜKENTHAL (p. 41)

239. *Carex Matsumurae* FRANCHET (Fig. 144) in Bull. Soc. philom. Paris 8. sér. VII. (1895)

50 et in Nouv. Arch. Mus. Paris 3. sér. X. (1898) 62 t. 5; KÜKENTH. in ENGL. Pflanzenr. IV. 20 (1909) 625; MAK. & NEM. Fl. of Jap. (1925) 1353.

stipitem late alatum longe attenuati, marginibus subalati, apice in rostrum mediocre conicum ore emarginatum subsensim desinentes.

Nom. Jap. Kuroshima-suge; Kinokuni-suge; Kishiu-suge.

Hab. Honshiu, Shikoku and Kiushiu.

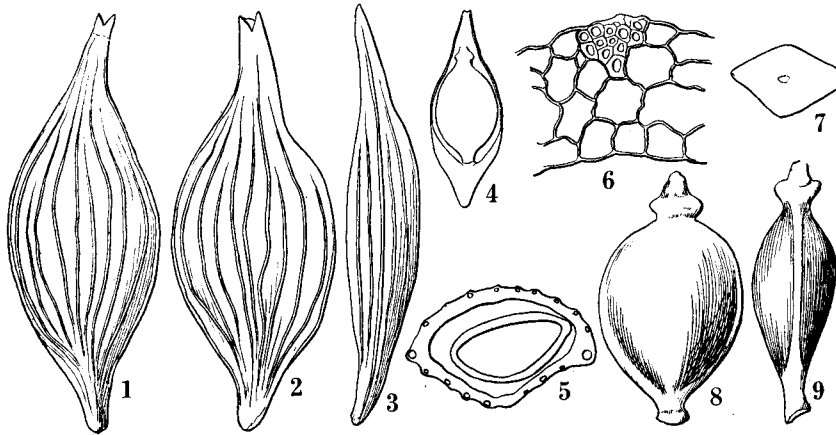


Fig. 144. *Carex Matsumurae* FRANCH.

1. Utricle seen from dorsal side, $\times 14$. 2. The same, from ventral side, $\times 14$. 3. The same, from lateral side, $\times 14$. 4. The same, longitudinally cut, $\times 7$. 5. The same with nut, transversely cut, $\times 14$. 6. Portion of the wall of the utricle, transversely cut, $\times$ ca. 250. 7. Basal portion of the utricle, transversely cut, $\times 14$. 8. Nut seen from dorsal side, $\times 14$. 9. The same, from lateral side, $\times 14$.

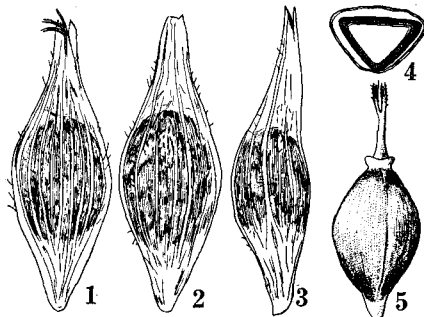
240. *Carex chinensis* RETZ. (Fig. 145) Observ. III. (1783) 42; FRANCH. in Nouv. Arch. Mus. Paris 3. sér. IX. (1897) 182; KÜKENTH. in ENGL. Pflanzenr. IV. 20 (1909) 625; MAK. & NEM. Fl. of Jap. (1925) 1336.

C. sinensis J. F. GMEL. Syst. (1791) 144.

C. Retzii NEES in WIGHT, Contr. Bot. Ind. (1834) 128.

C. Gendrei LÉVEILLÉ et VANIOT in Rev. scient. du Limousin (1905) 7.

Utriculi squamas (aristis inclusis) superantes demum patentes membranacei rhomboidales subinflato-trigoni 2.5–3.5 mm longi flavo-virides minute pubescentes multicostati, basi in stipitem obliquum

Fig. 145. *Carex chinensis* RETZ.

1. Utricle seen from dorsal side, $\times 14$.
2. The same, from ventral side, $\times 14$.
3. The same, from lateral side, $\times 14$.
4. The same with nut, transversely cut, $\times 14$.
5. Nut, $\times 14$.

longae. Utriculi brevius rostrati.

Nom. Jap. Tsushima-suge.

Hab. Kiushiu (Insl. Tsushima).

var. *variegata* MAKINO in Journ. Jap. Bot. IV. 12 (1930) 38; MAK. & NEM. Fl. of Jap. 2.-ed. (1931) 1437.

Folia variegata.

Nom. Jap. Fui-ri-kinokuni-suge.

Hab. Cult.

241. *Carex sociata* BOOTT (Fig. 146), in Mem. Amer. Acad. n. ser. VI. (1859) 420 et Illustr. IV. (1867) 200; FRANCH. in Nouv. Arch. Mus. Paris 3. sér. X. (1898) 59; MATSUM. Ind. pl. Japon. II. 1. (1905) 133; OHWI in Mem. Coll. Sc. Kyoto Imp. Univ. Ser. B. V. (1930) 262.

C. nexa var. *strictior* KÜ-KENTH. ex MATSUM l. c. 122.

longe attenuati, apice in rostrum longum conicum rectum ore hyalino bidentulum sensim abeuntes.

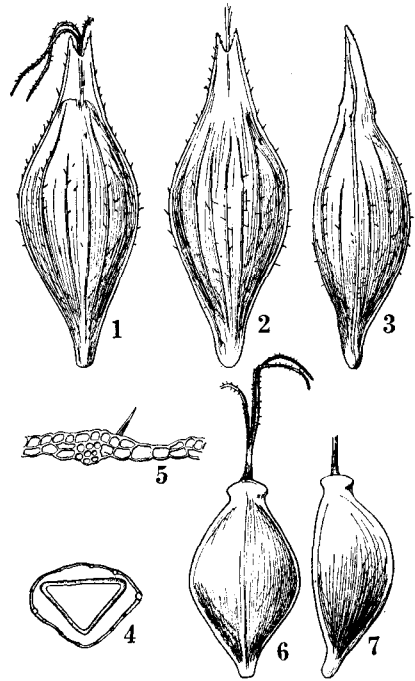
Nom. Jap. Shina-suge.

Hab. Honshiu and Riukius.

Distrib. Formosa.

var. *tsushimensis* OHWI in Mem. Coll. Sci. Kyoto Imp. Univ. Ser. B. V. 3 (1930) 263.

Spiculae femineae 15-30 mm

Fig. 146. *Carex sociata* BOOTT

1. Utricle seen from dorsal side, $\times 14$.
2. The same, from ventral side, $\times 14$.
3. The same, from lateral side, $\times 14$.
4. The same with nut, transversely cut, $\times 14$.
5. Portion of the wall of the utricle, transversely cut, $\times$ ca. 120.
6. Nut seen from ventral side, $\times 14$.
7. The same, from lateral side, $\times 14$.

C. ligata var. *strictior* KÜKENTH. in ENGL. Pflanzenr. IV. 20 (1909) 474.

C. chinensis KÜKENTH. l. c. pro. min. part.

C. atronucula HAYATA, Mater. Fl. Formos. (1921) 379.

Utriculi squamas superantes suberecti membranacei, textis ex 1-2 stratis cellularum compositis, rhomboidales subinflati 3.5 mm longi stramineo-virides minute puberuli plurinervi (nervi vix 13), basi attenuati stipitati, apice in rostrum longum ore bidentatum intus scabrum desinentes.

Hab. Kiushiu, Amami-oshima and Riukius.

Distrib. Formosa.

242. *Carex uber* OHWI in Mem. Coll. Sci. Kyoto Imp. Univ. Ser. B. V. 3 (1930) 261.

Nom. Jap. Tsukushi-suge.

Hab. Shikoku and Kiushiu.

243. *Carex Morrowii* BOOTT (Fig. 147) in A. GRAY, Narr. Exped. PERRY II. (1857) 326; FRANCH. et SAV. Enum. pl. Japon. II. (1879) 145

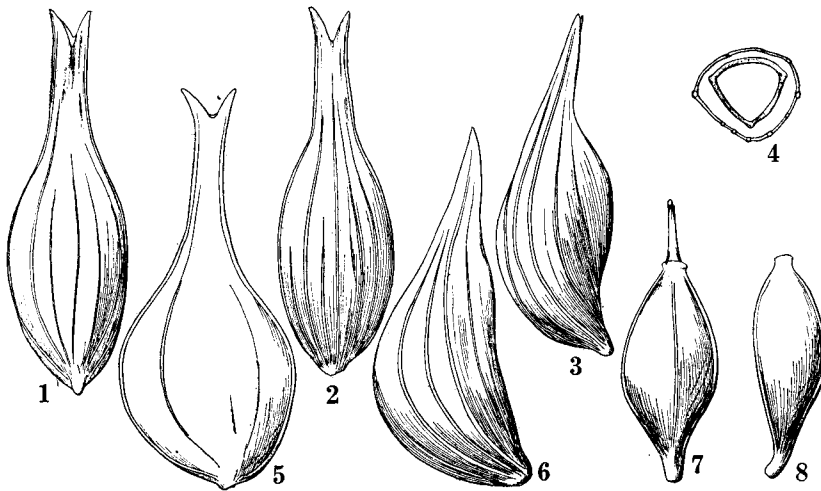


Fig. 147. *Carex Morrowii* BOOTT

1. and 5. Utricle seen from dorsal side, $\times 14$. 2. The same, from ventral side, $\times 14$. 3. and 6. The same, from lateral side, $\times 14$. 4. Utricle with nut, transversely cut, $\times 14$. 7. Nut seen from ventral side, $\times 14$. 8. The same, from lateral side, $\times 14$.

et 572; FRANCH. in Nouv. Arch. X. (1898) 40; MATSUM. Ind. pl. Jap. II. 1. (1905) 121 p. p.; KÜKENTH. l. c. 626; MAK. & NEM. Fl. of Jap. 1.-ed. (1925) 1355 p. p.

Utriculi squamas subaequantes primo subpatuli demum divaricati membranacei ovati saepe oblongo-ovati subinflato-trigoni 3-3.5 mm longi 1.2-2 mm lati stramineo-virides cinerascetes glabri dorso pauci ventre plurinervi, 2 nervis marginalibus prominentibus percursis, basi obliquum contracta brevissime stipitati, apice in rostrum vix 1 mm longum subconicum (vel cylindricum mihi) saepe excurvum marginibus interdum parce scabrum ore grosse bidentatum subabrupte abeuntes, crura 0.3 mm longa vix patentia.

Nom. Jap. Kan-suge.

Hab. Honshiu, Shikoku and Kiushiu.

Clavis speciei varietatum

- A. Squamae masculinae obovatae fuscae vel pallide fulvae vel etiam lutescentes apice non ciliolatae, femineae acumen leaves.
 - a. Spiculae femineae subdensiflorae.
 - I. Folia viridis *C. Morrowii*
 - II. Folia albo-marginata var. *expallida*
 - b. Spiculae laxiflorae var. *laxa*
- B. Squamae masculinae oblongae ex toto albo-scariosae apice ciliolatae, femineae acumen scabrae var. *virginea*

var. *laxa* OHWI in Mem. Coll. Sci. Kyoto Imp. Univ. Ser. B. V. 3 (1930) 260 et Journ. Jap. Bot. VII. 5 (1931) 167; MAK. & NEM. Fl. of Jap. 2.-ed. (1931) 1439.

Nom. Jap. Yakushima-kan-suge.

Hab. Kiushiu.

var. *expallida* OHWI l. c.

Nom. Jap. Fui-ri-kan-suge.

Hab. in hortis culta (Honshiu and Kiushiu)

var. *virginea* FRANCHET et SAVATIER, Enum. pl. Japon. II. (1879) 145 et 572.

Hab. Honshiu.

var. *albo-marginata* MAKINO in Journ. Jap. Bot. VI. (1930) 38 ;
MAK. & NEM. Fl. of Jap. 2.-ed. (1931) 1439.

Nom. Jap. Shima-kan-suge.

Hab. Cult.

244. *Carex foliosissima* FR. SCHMIDT, Reis. Amurl. (1868) 196, t.
VI. fig. 1-6, nec FRANCH. nec KÜKENTH.; OHWI in Mem. Coll. Sci.
Kyoto Imp. Univ. Ser. B. VI. (1931) 251 (pro. *Morrowii* Subsp.)

C. niigatensis KOIDZ. Fl. Symbol. Orient.-asiat. (1930) 46.

C. Morrowii FRANCH. in Nouv. Arch. X. (1898) 40, p. p.; KÜKENTH.
l. c. 626 p. major. p.

C. yesanensis FRANCH. in Bull. Soc. VII. (1895) 88 et l. c.

Nom. Jap. Okuno-kansuge.

Hab. Saghalien, Hokkaido, Honshiu and Kiushiu.

var. *brevisquamosa* (KOIDZUMI)

C. niigatensis var. *brevisquamosa* KOIDZUMI l. c.; MIYABE & KUDO,
Fl. of Hokkaido & Saghal. II. (1931) 264.

Utriculi squamis valde minores.

Nom. Jap. Yezo-kan-suge.

Hab. Saghalien, Hokkaido and N. Honshiu.

var. *crassicaulis* (FRANCH.)

C. Morrowii var. *crassicaulis* FRANCH. in Nouv. Arch. l. c. 41.

C. niigatensis var. *crassicaulis* KOIDZUMI l. c.; MIYABE & KUDO, l. c.

Nom. Jap. O-kansuge.

Hab. Hokkaido and Honshiu.

var. *latissima* OHWI l. c. VI. (1931) 251.

Nom. Jap. Haba-biro-suge.

Hab. Honshiu and Kiushiu.

245. *Carex oahuensis* C. A. MEY. in Mem. Acad. St.-Petersb. I.
(1831) 218.

var. *Boottiana* KÜKENTH. in ENGL. Pflanzenr. IV. 20 (1909) 632 p. p.; OHWI in Mem. Coll. Sci. Kyoto Imp. Univ. Ser. B. V. (1930) 286.

Nom. Jap.

Hab. Kiushiu and Riukius.

var. *robusta* FRANCH. et SAV. (Fig. 148) Enum. pl. Jap. II. (1879) 563; OHWI l. c. 287.

Nom. Jap. Hige-suge; Iso-suge.

Hab. Honshiu, Kiushiu and Riukius.

Distrib. Corea.

246. *Carex insanae* KOIDZUMI (Fig. 149), Fl. Symbol. Orient.-asiat. (1930) 44; MIYABE & KUDO, Fl. of Hokkaid. and Saghal. II. (1931) 265.

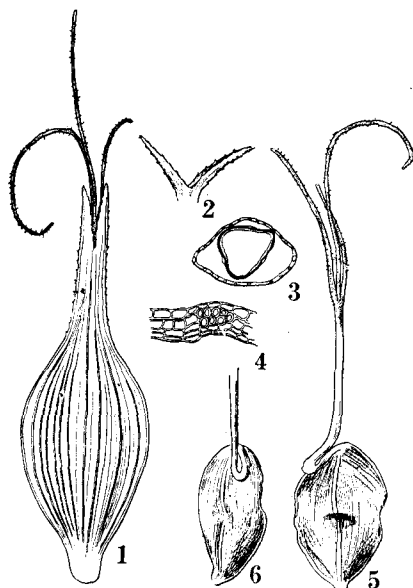


Fig. 148. *Carex oahuensis* var. *robusta* KÜKENTH.

1. Utricle seen from dorsal side, $\times 7$.
2. Apical portion of the beak, $\times 7$.
3. Utricle with nut, transversely cut, $\times 7$.
4. Portion of the wall of the utricle, transversely cut, $\times$ ca. 75.
5. Nut seen from dorsal side, $\times 7$.
6. The same, from lateral side, $\times 7$.

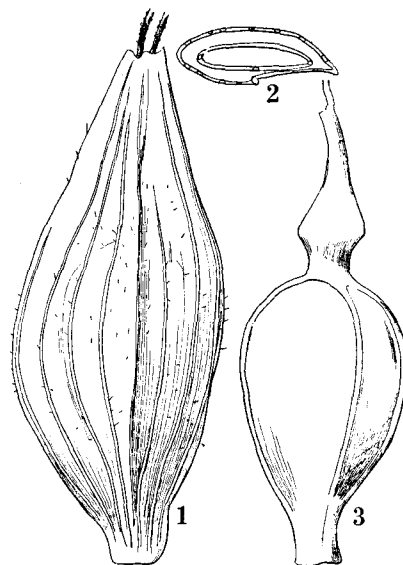


Fig. 149. *Carex insanae* KOIDZUMI

1. Utricle, $\times 14$.
2. The same with nut, transversely cut, $\times 14$.
3. Nut, $\times 14$.

C. Fauriei FRANCH. in Bull. Soc. philom. Fr. (1886) 105 et Nouv. Arch. Mus. Paris 3. ser. IX. (1897) 197 t. 6, fig. 1; LÉVEILLÉ et VANIOT, in Bull. Acad. Géogr. bot. XI. (1902) 30; MATSUM. Ind. pl. Japon. II. 1. (1905) 108; KÜKENTH. in ENGL. Pflanzenr. IV. 20 (1909) 632; MAK. & NEM. Fl. of Jap. (1925) 1340, non FRANCHET (1897).

Utriculi squamas superantes demum vix oblique patentēs subcoriacei ovati vel late ovati trigoni vix turgidi 4–5 mm longi ad 2 mm lati stramineo-virides fuscēscentes parce pubescentes 15–20-nervi, basi attenuati dilatato-stipitati, apice in rostrum longum subconicum ore hyalino grosse bidentatum subabrupte abeuntes. (Figura rostrum caducum ostentata).

Nom. Jap. Hiroba-suge;
Hosoba-tagane-sô.

Hab. Hokkaido and Honshiu.

247. *Carex papillaticulmis* OHWI in Mem. Coll. Sci. Kyoto Imp. Univ. Ser. B. V. (1930) 257 et Journ. Jap. Bot. VII. 5 (1931) 167; MAK. & NEM. Fl. of Jap. 2.-ed. (1931) 1443.

C. Fauriei FRANCH. in Nouv. Arch. IX. (1897) 197, t. 6. fig. 1. a; KÜKENTH. l. c. 632 p. p.

Nom. Jap. Aoba-suge.

Hab. Honshiu, Shikoku and Kiushiu.

248. *Carex longerostrata* C. A. MEYER (Fig. 150) in Mém. Acad. St.-Petersb. I. (1831) 220 t. 11; FRANCH. et SAV. Enum. pl. Jap. II. (1879) 144; FRANCH. in Nouv. Arch. X. (1898) 53; KOMAROV, Fl. Manshur. I. (1901) 389; MATSUM. Ind. pl. Jap. II. 1. (1905) 118; KÜKENTH. in ENGL. Pflanzenr. IV. 20 (1909) 636, fig.

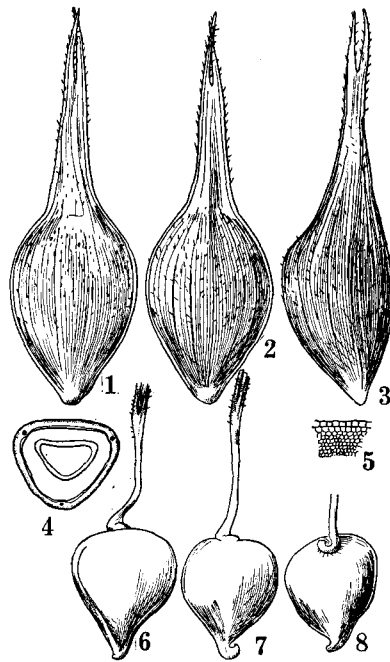


Fig. 150. *Carex longerostrata*
C. A. MEYER

1. Utricle seen from dorsal side, $\times 7$.
2. The same, from ventral side, $\times 7$.
3. The same, from lateral side, $\times 7$.
4. The same with nut, transversely cut, $\times 7$.
5. Basal portion of the wall of the utricle, transversely cut, $\times$ ca. 50.
6. Nut seen from dorsal side, $\times 7$.
7. The same, from ventral side, $\times 7$.
8. The same, from lateral side, $\times 7$.

108 E-G; MAK. & NEM. Fl. of Jap. (1925) 1351; MIYABE & KUDO, Fl. of Hokkaid. & Saghal. II. (1931) 265.

C. bispicata HOOK. et ARN. in Botan. Beech. Voy. III. (1834) 118 t. 28.

C. camschatense KUNTH, Enum. pl. II. (1837) 477.

C. Michelii var. β . BOOTT, Illustr. IV. (1867) 191.

C. fusco-fibrosa OHWI in Mem. Coll. Sci. Kyoto Imp. Univ. Ser. B. VI. 5 (1931) 246.

Utriculi squamas vix superantes suberecti superne membranacei e basi subcoriacei obovati inflato-trigoni 6-8 mm longi 2.5 mm lati stramineo-virides parce et breviter hirtelli demum glabrescentes, obsolete plurinervi (nervi 3 subcarinatis prominentibus), basi breve attenuati breve stipitati, apice in rostrum ad 4 mm longum subcylindricum marginibus scabrum profunde bidentatum abrupte abeuntes, crura anguste lanceolata 0.7-1 mm longa in sicca subdivergentia.

Nom. Jap. Hie-suge; Matsumae-suge.

Hab. Saghalien, Kuriles, Hokkaido, Honshiu, Shikoku and ?Kiushiu.

Distrib. Corea, Manchuria, Amur, Kamtchatka and Eastern Siberia.

var. *recurvifolia* KÜKENTHAL, l. c.

Differt a typo foliis angustioris demum arcuatim recurvatis.

Hab. Hokkaido.

249. *Carex laticeps* C. B. CLARKE ex FRANCH. in Nouv. Arch. l. c. IX. (1897) 178 et in Journ. Linn. Soc. XXXVI. (1903) 293; KÜKENTH. in ENGL. Pflanzenr. IV. 20 (1909) 635; OHWI in Mem. Coll. Sci. Kyoto Imp. Univ. Ser. B. V. 3 (1930) 256.

C. Hancei C. B. CLARKE in Journ. Linn. Soc. l. c. 288.

Nom. Jap. Chûgoku-suge.

Hab. Honshiu.

Distrib. Corea.

250. *Carex subdita* OHWI in Mem. Coll. Sc. Kyoto, B. V. (1930) 259 et Journ. Jap. Bot. VII. 5 (1931) 167; MAK. & NEM. Fl. of Jap. 2.-ed. (1931) 1455.

Nom. Jap. Ao-hie-suge.

Hab. Honshiu, Shikoku and Kiushiu.

251. *Carex Mayebarana* OHWI l. c. 256 et l. c. 167; MAK. & NEM. Fl. of Jap. 2.-ed. (1931) 1437.

Nom. Jap. Ke-hie-suge.

Hab. Kiushiu.

252. *Carex nankaiensis* HONDA in Botan. Magaz. Tokyo XLIV. (1930) 409; MAK. & NEM. Fl. of Jap. 2.-ed. (1931) 1440.

Nom. Jap. Nankai-suge.

Hab. S. Honshiu.

253. *Carex kiyozumiensis* AKIYAMA (Fig. 151) in Botan. Magaz. Tokyo XLV. (1931) 472.

Utriculi squamas vix superantes vel aequantes vix patuli membranacei oblongo-ovati subinflato-trigoni 5-6 mm longi dilute stramineo-

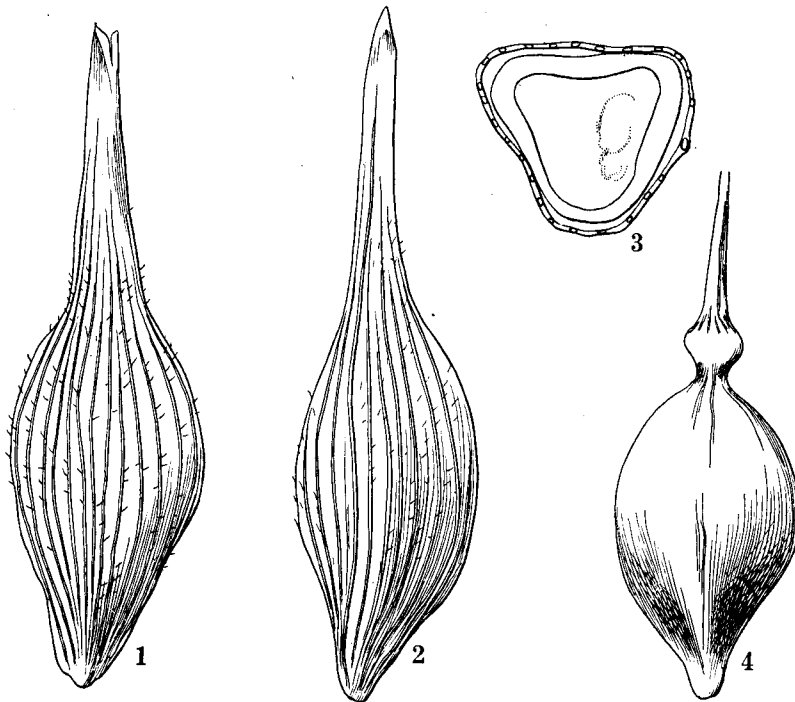


Fig. 151. *Carex kiyozumiensis* AKIYAMA

1. Utricle seen from dorsal side, $\times 14$. 2. The same, from lateral side, $\times 14$. 3. The same with nut, transversely cut, $\times 14$. 4. Nut, $\times 14$.

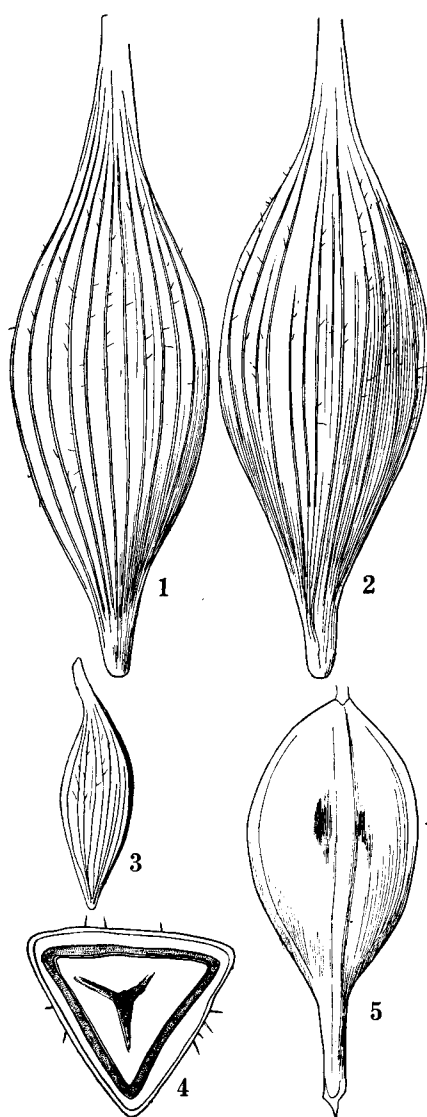


Fig. 152. *Carex macrandrolepis*
LÉV. et VNT.

1. Utricle seen from dorsal side, $\times 14$.
2. The same, from ventral side, $\times 14$.
3. The same, from lateral side, $\times 14$.
4. The same with nut, transversely cut, $\times 14$.
5. Nut, $\times 14$.

virides parce pubescentes, praeter carinas obsolete nervosi, basi attenuati vix 0.3 mm longe stipitati, apice in rostrum 2.5 mm longum inferne subtumens ore hyalino bidentatum desinentes.

Nom. Jap. Shiro-juzu-suge.

Hab. Honshiu.

254. *Carex macrandrolepis* LÉVEILLÉ et VANIOT (Fig. 152) in FEDDE, Repert. V. (1908) 241; KÜKENTH. in ENGL. Pflanzenr. IV. 20 (1909) 766; NAKAI, Fl. Korean. II. (1911) 330; OHWI in Mem. Coll. Sc. Kyoto Ser. B. V. (1930) 255.

C. distantiflora NAKAI in FEDDE, Repert. XIV. (1914) 245.

Utriculi squamas superantes suberecti tenuiter membranacei ellipsoidei trigoni 6 mm longi 2 mm lati virides plurinervi, nervis tenuis vix 25 parce pubescentes, basi longe attenuati stipitati, apice in rostrum longum excurvum ore bidentatum sensim attenuati.

Nom. Jap. Kata-suge.

Hab. Honshiu.

Distrib. Corea.

255. *Carex pilosa* SCOPOLI, Fl. carn. ed. 2. II. (1772) 226; KUNTH, Enum. pl. II. (1837) 452; BOOTT, Illustr. IV. (1867) 215; FRANCH. in Nouv. Arch. l. c. IX. (1897) 198; MATSUM. Ind. pl. Japon. II. 1. (1905) 125; KÜKENTH. l. c. 636; MAK. &

NEM. Fl. of Jap. 1.-ed. (1925) 1360; MIYABE & KUDO, Fl. of Hokkaid. & Saghal. II. (1931) 266.

C. nemorensis J. F. GMEL. Syst. (1791) 143.

C. pilosa β . *Beckeri* C. A. MEY. in CLAUS, Beitr. Pflanzenkunde russ. Reich. VIII. (1851) 162.

C. falcata FR. SCHM. Reis. (1868) 194, non TURCZ.

C. hakodatensis LÉVEILLÉ et VANIOT in Bull. Soc. bot. France LI. (1904) 206.

Nom. Jap. Ke-suge; Hanamagari-suge.

Hab. Saghalien, Hokkaido and Honshiu.

Distrib. Corea, Manchuria, Amur and Europe.

var. *auriculata* (FRANCH.) KÜKENTH. in ENGL. Pflanzenr. IV. 20 (1909) 637; MAK. & NEM. Fl. of Jap. (1925) 1360.

C. auriculata FRANCH. in Bull. Soc. philom. Paris 7. sér. X. (1886) 106 et Nouv. Arch. Mus. Paris 3. sér. IX. (1898) 199; LÉVEILLÉ et VANIOT in Bull. Soc. Géogr. bot. (1903) 505; MATSUM. Ind. pl. Japon. II. 1. (1905) 100, non L. H. BAILEY.

Differt a typo utriculis paullo brevioribus orbicularibus parce pilosis costatis in rostrum latius excurvum ore late hyans contractis.

Nom. Jap. Sapporo-suge.

Hab. Hokkaido.

256. *Carex papulosa* BOOTT (Fig. 153) in Mem. Amer. Acad. n. ser. VI. (1858-59) 418; MIQ. Prol. Fl. Jap. (1866-67) 357; FRANCH. et SAV. Enum. pl. Jap. II. (1879) 147 et 575; KÜKENTH. l. c. 637; NAKAI, Fl. Korean. II. (1911) 330; MAK. & NEM. Fl. of Jap. 1.-ed. (1925) 1360; OHWI in Mem. Coll. Sc. Kyoto Ser. B. V. (1930) 291; MIYABE & KUDO, Fl. of Hokkaid. & Saghal. II. (1931) 266.

C. flectens BOOTT, Illustr. IV. (1867) 171 t. 581; FRANCH. in Nouv. Arch. X. (1898) 42.

C. grandisquama FRANCH. in Bull. Soc. Paris 8. sér. VII. (1895) 51 et l. c. 41 t. 1, fig. 1; MATSUM. l. c. 113.

C. Sekimotoi HONDA in Botan. Magaz. Tokyo XLIII. (1929) 543; MAK. & NEM. Fl. of Jap. 2.-ed. (1931) 1452.

Utriculi squamas aequantes vel superantes suberecti membranacei, textis e 2-3 stratis cellularum constantibus, fusiformi-elliptici trigoni 5-7 mm longi 2 mm lati brunneo-virides parce fusco-maculati superne

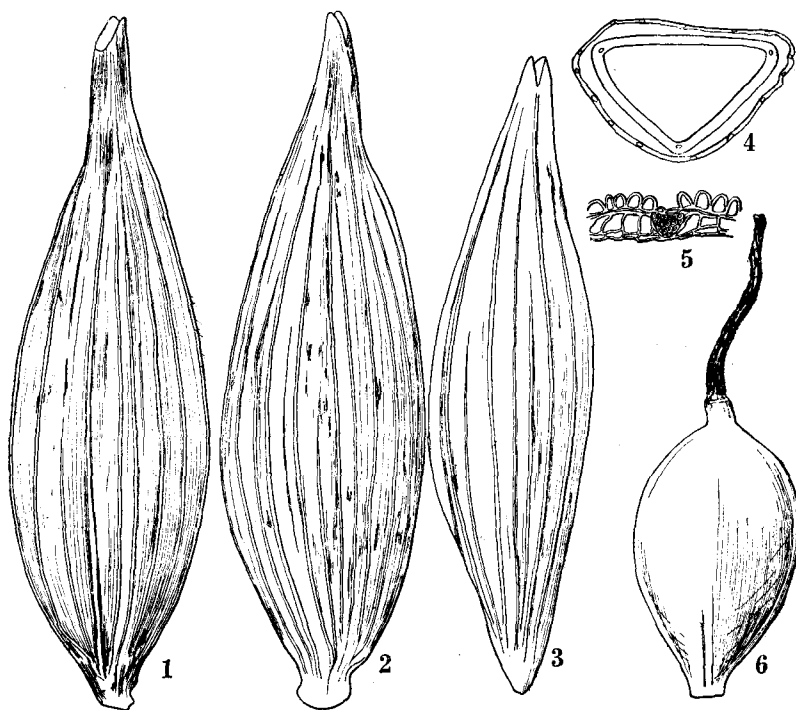


Fig. 153. *Carex papulosa* BOOTT

1. Utricle seen from dorsal side, $\times 14$. 2. The same, from ventral side, $\times 14$. 3. The same, from lateral side, $\times 14$. 4. The same with nut, transversely cut, $\times 14$. 5. Portion of the wall of the utricle, transversely cut, $\times$ ca. 150. 6. Nut, $\times 14$.

dense albo-papilloso fere 15-nervosi, in parte nervorum epapilloso, basi attenuati breviter dilatato-stipitati, apice in rostrum longum conicum ore hyalino oblique sectum integrum vel emarginatum sensim abeuntes.

Nom. Jap. Yezo-tsuri-suge; Hiroba-yachi-suge.

Hab. Hokkaido, Honshiu and Kiushiu.

Distrib. Corea.

forma *laxiflora* KÜKENTH. l. c. 638.

Spiculae femineae *laxiflorae*.

Hab. Honshiu.

forma *paupercula* KÜKENTH. l. c.

Spiculae femineae *laxi- et pauci-(4-) florae*.

Hab. Hokkaido and Honshiu.

257. *Carex parciflora* BOOTT, in Mem. Amer. Acad. n. ser. VI. (1858-59) 418; MIQ. Prol. Fl. Jap. (1866-67) 357; FRANCH. et SAV. Enum. pl. Japon. II. (1879) 147 et 575; FRANCH. in Nouv. Arch. X. (1898) 46; MIYABE & KUDO, Fl. of Hokkaid. & Saghal. II. (1931) 267.

C. Jackiana BOOTT, Subsp. *parciflora* KÜKENTH. in ENGL. Pflanzenr. IV. 20 (1909) 638; MAK. & NEM. Fl. of Jap. (1925) 1347.

C. Glehnii FR. SCHM. Reis. (1868) 194 t. VII, fig. 16-21.

C. pleiorhiza LÉVEILLÉ et VANIOT in Bull. Soc. bot. France LI. (1904) 205.

Nom. Jap. Glehn-suge.

Hab. Saghalien, Hokkaido and Honshiu.

forma *ochrolepis* (FRANCH.) MIYABE et KUDO l. c.

C. ochrolepis FRANCH. in Nouv. Arch. l. c. t. 2, fig. 2; MATSUM. Ind. pl. Jap. II. 1. (1905) 123.

C. Jackiana Ssp. *parciflora* forma *ochrolepis* KÜKENTH. l. c.; MAK. & NEM. l. c.

Hab. Hokkaido.

forma *subsessilis* OHWI, in Mem. Coll. Sci. Kyoto Imp. Univ. Ser. B. V. 3 (1930) 290.

C. oligostachys var. *subsessilis* KÜKENTH. ex MATSUM. Ind. pl. Jap. II. 1. (1905) 123.

Folia ad 9 mm lata. Utriculi 7-8 mm longi nuce fere triplo longiores.

Nom. Jap. Mugi-suge.

Hab. Honshiu.

var. *Vanioti* OHWI l. c.

C. Vanioti LÉV. in Bull. Soc. Agric. Sarthe (1901) 17 et in Bull. Acad. intern. Géogr. bot. (1902) 108.

C. filipes var. *Vanioti* KÜKENTH. in ENGL. Pflanzenr. IV. 20 (1909) 641.

Nom. Jap. Nagahono-kojuzusuge.

Hab. Honshiu.

258. *Carex macroglossa* FRANCHET et SAVATIER (Fig. 154), Enum. pl. Japon. II. (1879) 148 et 576; FRANCH. l. c. 45 t. 2, fig. 1; MIYABE & KUDO, l. c. 267.

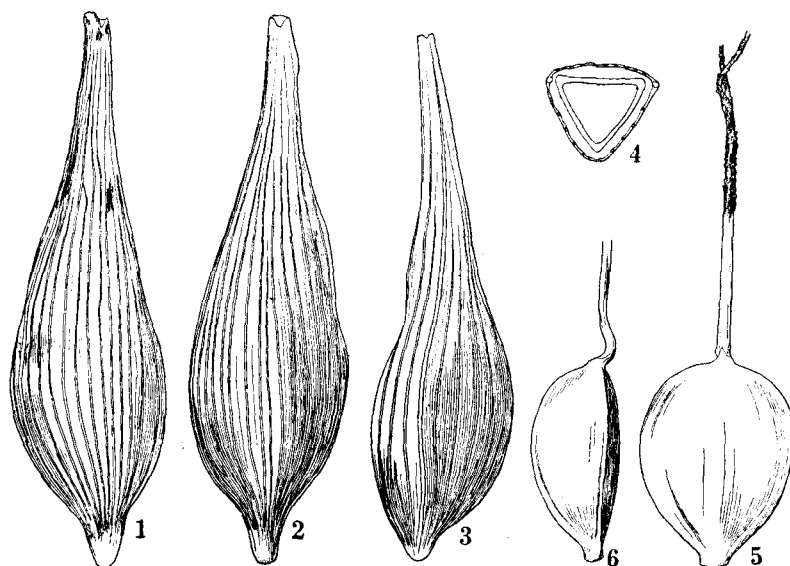


Fig. 154. *Carex macroglossa* FRANCH. et SAV.

1. Utricle seen from dorsal side, $\times 14$. 2. The same, from ventral side, $\times 14$. 3. The same, from lateral side, $\times 14$. 4. The same with nut, transversely cut, $\times 14$. 5. Nut seen from dorsal side, $\times 14$. 6. The same, from lateral side, $\times 14$.

C. Jackiana Subsp. *parciflora* KÜKENTH. var. *macroglossa* KÜKENTH. l. c. 638; MAK. & NEM. l. c.

C. Jackiana var. *macroglossa* KÜKENTH. ex MATSUM. Ind. pl. Jap. II. 1. (1905) 115.

C. jacens C. B. CLARKE in Kew Bull. add. ser. VIII. (1908) 80.

Utriculi squamas subduplo superantes subereti membranacei fusi-formi-elliptici trigoni 5–6 mm longi ad 2 mm lati brunneo-virides (in sicca brunnei) glabri fere 20–25-nervosi (2 nervi latelales prominentes), basi spongiosa breviter attenuati 0.5 mm longe stipitati, apice in rostrum cylindricum ore hyalino oblique sectum bidentulum sensim abeuntes.

Nom. Jap. Ko-juzu-suge.

Hab. Hokkaido and Honshiu.

Distrib. Corea.

259. *Carex gagaensis* AKIYAMA (Fig. 155), in Journ. Facult. Sc. Hokkaido Imp. Univ. Ser. V. I. 2 (1931) 61, Pt. XIV. fig. 8.

Utriculi squamas duplo vel triplo superantes suberecti membranacei ovato-lanceolati 5 mm longi brunneo-virides trigoni plurinervosi, basi

attenuati obconico-stipitati apice in rostrum longissimum excurvum ore bidentulum sensim abeuntes.

Nom. Jap. Ao-juzu-suge.

Hab. Honshiu.

260. *Carex filipes* FRANCHET et SAVATIER (Fig. 156, 1-7), Enum. pl. Japon. II. (1879) 148 et 576; FRANCH. in Nouv. Arch. Mus. Paris 3. sér. X. (1898) 68 t. 7, fig. 2; MATSUM. Ind. pl. Japon. II. 1. (1905) 109 p. p.; KÜKENTH. in ENGL. Pflanzenr. IV. 20 (1909) 639; MAK. & NEM. Fl. of Jap. (1925) 1341.

Utriculi squamas superantes suberecti membranacei, textis ex 1-3 stratis cellularum compositis, ovati obtuse trigoni 4-5 mm longi 2 mm lati virides glabri plurinervi, nervis vix 20, basi attenuati breve stipitati, apice in rostrum longum (vix 1.5 mm) subcylindricum subexcurvum ore hyalino oblique sectum demum emarginato-bidentulum intus parce scabrum abeuntes.

Nom. Jap. Tamatsuri-suge.

Hab. Honshiu and Shikoku.

var. *Rouyana* (FRANCH.) KÜKENTH. (Fig. 156, 8-10) l. c. 640; MAK. & NEM. l. c.

C. Rouyana FRANCH. in Bull. Soc. 51 et Nouv. Arch. X. 67 t. 7, fig. 1.

C. filipes MATSUM. l. c.

Differt a typo spiculis 3 distantibus, terminalis masculinis oblongis, lateralibus 2 femineis 5-6-floris longe capillari-pedunculatis. Utriculi ut forma typica.

Nom. Jap. Hosoe-no-mugi-suge.

Hab. Honshiu.

Distrib. Central China.

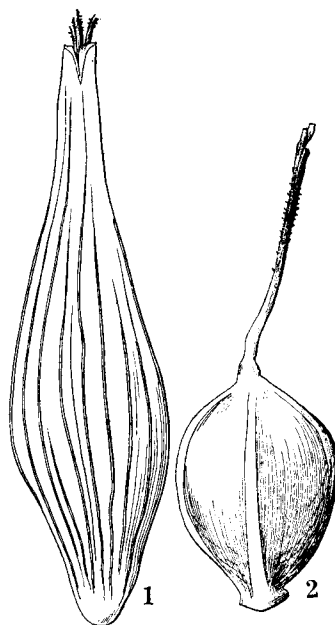


Fig. 155. *Carex gagaensis* AKIYAMA

1. Utricle, $\times 14$. 2. Nut, $\times 14$.

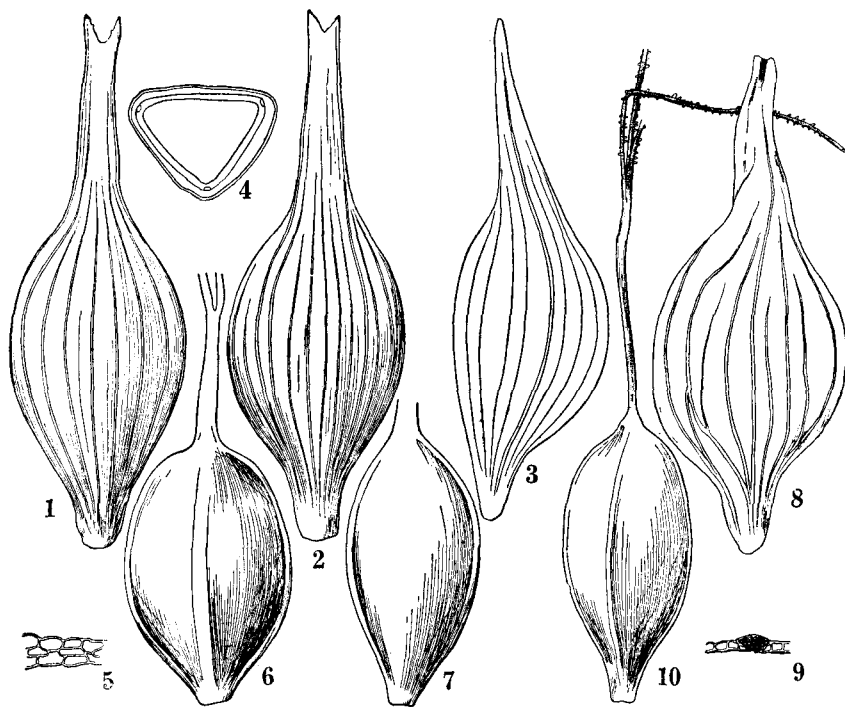


Fig. 156. 1-7. *Carex filipes* FRANCH. et SAV.

1. Utricle seen from dorsal side, $\times 14$. 2. The same, from ventral side, $\times 14$. 3. The same, from lateral side, $\times 14$. 4. The same with nut, transversely cut, $\times 14$. 5. Portion of the wall of the utricle, transversely cut, $\times$ ca. 100. 6. Nut seen from ventral side, $\times 14$. 7. The same, from lateral side, $\times 14$.

8-10. *Carex filipes* var. *Rouyana* KÜKENTH.

8. Utricle, $\times 14$. 9. Portion of the wall of the utricle, transversely cut, $\times$ ca. 75. 10. Nut, $\times 14$.

var. *oligostachys* KÜKENTH. l. c. 641; NAKAI, Fl. Korean. II. (1911) 330; MAK. & NEM. Fl. of Jap. (1925) 1341.

C. oligostachys MEINSHAUSEN ex MAXIM. in Bull. Acad. St.-Petersb. XXXI. (1887) 117 et in Acta Horti petropol. l. c. 363; FRANCH. in Nouv. Arch. l. c. 68; KOMAROV, Fl. Manshur. l. c. 377.

Differt a typo foliis ad 8 mm latis, utriculis squamas subdupol superantibus 6 mm longis ovato-lanceolatis sensim rostratis.

Nom. Jap. Mugi-suge.

Hab. Honshiu.

Distrib. Corea and Manchuria.

261. *Carex arisanensis* HAYATA

var. *tremula* OHWI in Mem. Coll. Sci. Kyoto Imp. Univ. Ser. B. V. 3 (1930) 255.

Nom. Jap. Hime-juzu-suge.

Hab. Kiushiu.

262. *Carex villosa* BOOTT, in A. GRAY, Narr. Exped. PERRY II. (1857) 327 et Illustr. IV. (1867) 203; FRANCH. et SAV. l. c. 142 p. p.; FRANCH. in Nouv. Arch. X. 44; MATSUM. l. c. 137; KÜKENTH. l. c. 641; NAKAI, Fl. Korean. II. (1911) 330; MAK. & NEM. l. c.; OHWI, in Mem. Coll. Sc. Kyoto Imp. Univ. Ser. B. V. (1930) 288; MIYABE & KUDO, Fl. of Hokkaid. & Saghal. II. (1931) 268.

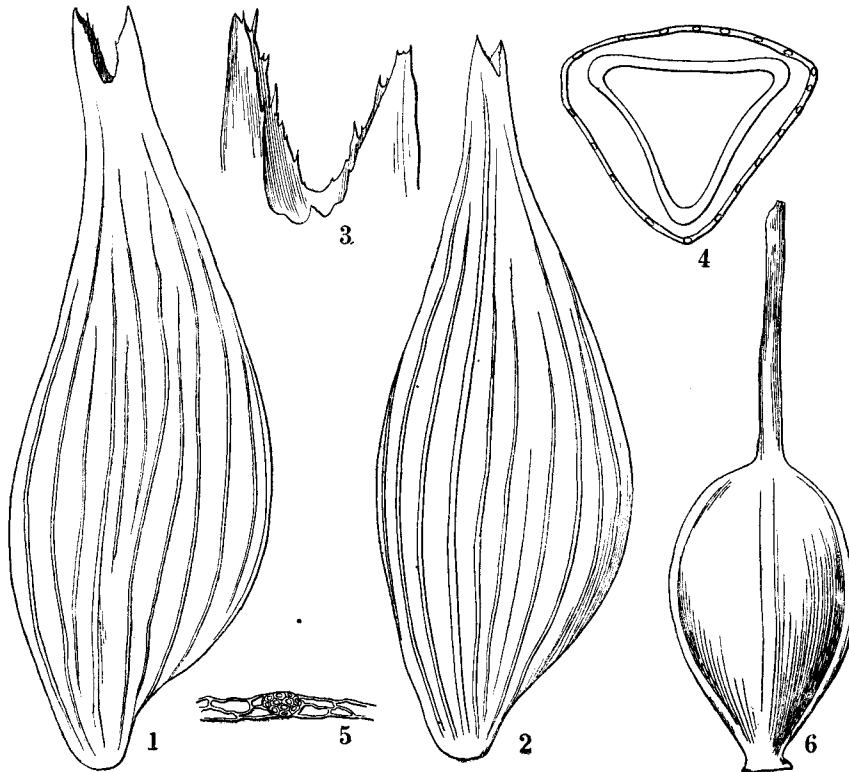


Fig. 157. *Carex villosa* var. *straminea* AKIYAMA

1. Utricle seen from dorsal side, $\times 14$. 2. The same, from lateral side, $\times 14$. 3. Apical portion of the beak, $\times 35$. 4. Utricle with nut, transversely cut, $\times 14$. 5. Portion of the wall of the utricle, transversely cut, $\times$ ca. 150. 6. Nut, $\times 14$.

C. villosa var. *Wrightii* FRANCH. et SAV. l. c. 567.

C. drymophila var. *reducta* KÜKENTH. l. c. 755.

Nom. Jap. Hatabe-suge.

Hab. Hokkaido and Honshiu.

var. *straminea* AKIYAMA (Fig. 157) in Journ. Facult. Sc. Hokkaido Imp. Univ. Ser. V. I. 2 (1931) 60.

Utriculi squamas longe superantes subpatuli membranacei, textis ex 1-2 stratis cellularum constantibus, 6 mm longi straminei nitidi glabri multinervi subsessiles, apice in rostrum mediocre latum grosse bidentatum intus scabrum subabrupte contracti.

Nom. Jap. Komoro-suge.

Hab. Honshiu.

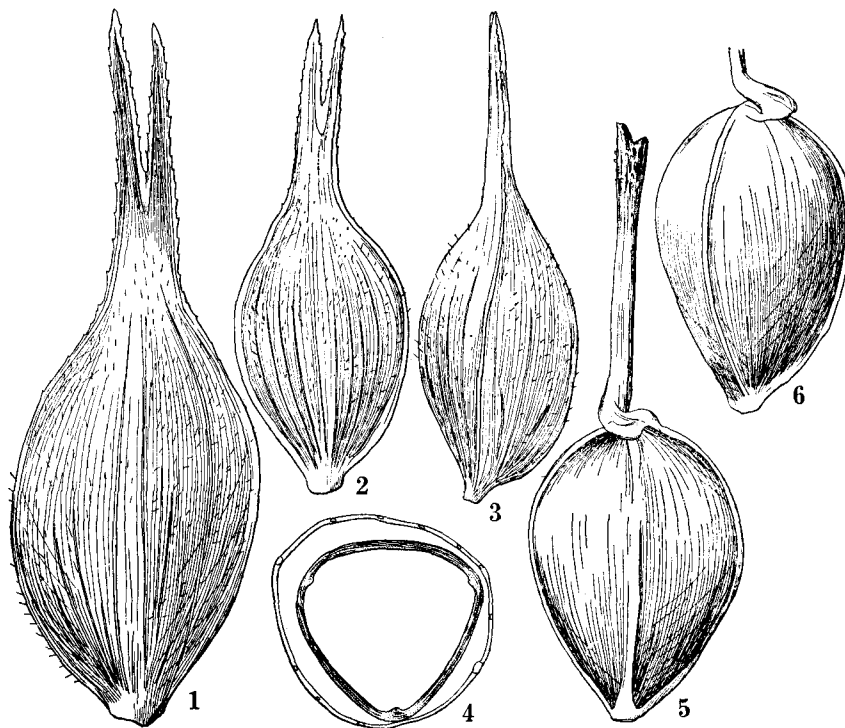


Fig. 158. *Carex tenuistachya* NAKAI

1. Utricle seen from dorsal side, $\times 14$.
2. The same, from ventral side, $\times 7$.
3. The same, from lateral side, $\times 7$.
4. The same with nut, transversely cut, $\times 14$.
5. Nut seen from ventral side, $\times 14$.
6. The same, from lateral side, $\times 14$.

Sect. 40. *Spirostachyae* DREJER (p. 44)

263. *Carex tenuistachya* NAKAI (Fig. 158) in Botan. Magaz. Tokyo XXXVI. (1922) 127; MAK. & NEM. Fl. of Jap. (1925) 1373.

Utriculi squamas superantes erecti membranacei vel subcoriacei ovati inflato-trigoni vix 7 mm longi 2.5 mm lati brunneo-virides pubescentes obsolete plurinervi, nervis 10–15 (2 nervi marginales prominentes), basi contracta breve stipitati, marginibus superne scabri, apice in rostrum longum et latum marginibus scabrum ore valde bidentatum abrupte desinentes; crura vix 1 mm longa anguste lanceolata intus scabra in sicca patentia.

Nom. Jap. Chûzenji-suge.

Hab. Honshiu.

264. *Carex daisenensis* NAKAI (Fig. 159) in Botan. Magaz. Tokyo XXXIII. (1919) 41; MAK. & NEM. Fl. of Jap. (1925) 1338.

Utriculi squamas superantes suberecti membranacei ellipsoidei subinflato-trigoni 5.5 mm longi fere 1.5 mm lati virides hirtelli fere 20-nervi, basi longe attenuati vix 0.8 mm longe stipitati, nervis marginalibus prominentibus ad apicem hirtellis, apice in rostrum cylindricum 2 mm longum ore bidentulum sensim abeuntes.

Nom. Jap. Daisen-suge.

Hab. Honshiu.

265. *Carex Oederi* RETZ. Fl. Scand. Prodr. (1779) 179; KÜKENTH. in ENGL. Pflanzenr. IV. 20 (1909) 673.

var. *viridula* KÜKENTHAL (Fig. 160) l. c. 674; MAK. & NEM. l. c. 1358; MIYABE & KUDO, l. c. 268.

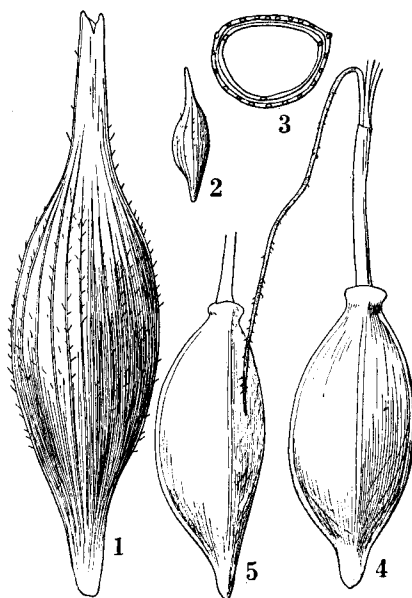


Fig. 159. *Carex daisenensis* NAKAI

1. Utricle seen from dorsal side, $\times 14$.
2. The same, from lateral side, $\times 3$.
3. The same with nut, transversely cut, $\times 14$.
4. Nut seen from ventral side, $\times 14$.
5. The same, from lateral side, $\times 14$.

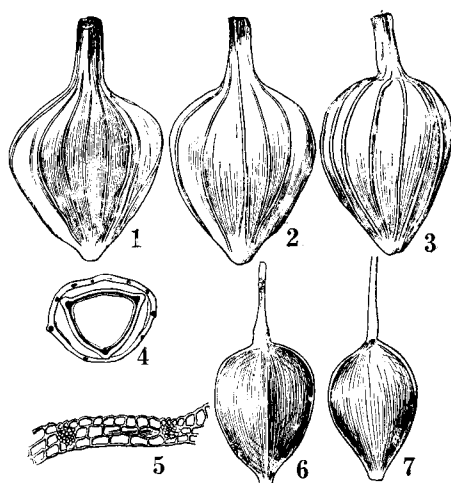


Fig. 160. *Carex Oederi* var.
viridula KÜKENTH.

1. Utricle seen from dorsal side $\times 14$.
2. The same, from ventral side, $\times 14$.
3. The same, from lateral side, $\times 14$.
4. The same with nut, transversely cut, $\times 14$.
5. Portion of the wall of the utricle, transversely cut, $\times$ ca. 100.
6. Nut seen from ventral side, $\times 14$.
7. The same, from lateral side, $\times 14$.

C. viridula MICHX. Fl. Bor. Amer. II. (1803) 170.

C. Oederi FRANCH. in Nouv. Arch. X. 56; MATSUM. Ind. pl. Jap. II. 1. (1905) 123, non RETZ.

C. flava var. *viridula* BAILEY in Mem. Torr. bot. Club I. (1889) 31.

Utriculi squamas superantes suberecti membranacei, textis e 3 stratis cellularum compositis, orbiculato-ovati vel obovati trigoni valde inflati ad 2.5 mm longi 1.5 mm lati stramineo-virentes vix 10-nervosi, basi contracta brevissime stipitati, apice in rostrum ad 1 mm longum cylindricum (0.2–0.3 mm in diametro) apiculatim rectum ferrugineum ore bidentatum subsensim abeuntes.

Nom. Jap. Yezo-sawa-suge.

Hab. Saghalien, Kuriles and Hokkaido.

Distrib. Kamtchatka and North America.

266. *Carex vernicosa* FRANCHET ap. C. B. CLARKE in Kew, Bull. Add. Ser. VIII. (1908) 84.

Sect. 41. *Pseudo-cypereae* TUCKERMAN (p. 44)

267. *Carex pseudo-cyperus* LINNAEUS, Spec. pl. ed. 1. (1753) 978; FRANCH. in Nouv. Arch. X. (1898) 59; KÜKENTH. in ENGLER's Botan. Jahrb. XXVII. (1899) 549 et ENGL. Pflanzenr. IV. 20 (1909) 695; MATSUM. Ind. pl. Jap. II. 1. (1905) 129; MAK. & NEM. Fl. of Jap. (1925) 1362; MIYABE & KUDO, Fl. of Hokkaid. & Saghal. II. (1931) 268.

Syn. *C. reversa* GILIB.

C. longibracteata DULAC.

Hab. Hokkaido.

Distrib. Siberia, Europe, North Africa, North America and New Zealand.

268. *Carex brachystachya*
(REGEL et MAACK) AKIYAMA
(Fig. 161) comb. nov.

C. pseudocyperus var. *brachystachya* REGEL. et MAACK,
Tent. Fl. Ussuri. (1861) 165 t.
XII, fig. 13-17.

C. capricornis MEINSH. ex
MAXIM. in Mélang. bot. XII.
(1887) 569 (incl. var. *capitata*) et
in Acta Horti petropol. XVIII.
(1901) 365; FRANCH. in Nouv.
Arch. X. 79; KOMAROV, Fl. Man-
shur. I. (1901) 379; MAKINO, in
Botan. Magaz. Tokyo XII. (1898)
(14); MATSUM. l.c. 104; KÜKENTH.
in ENGL. Pflanzenr. IV. 20 (1909)
697, fig. 119; NAKAI, Fl. Korean.
II. (1911) 331; MAK. & NEM.
Fl. of Jap. 1.-ed. (1925) 1335;
MIYABE & KUDO, Fl. of Hokkaido
& Saghal. II. (1931) 269.

Utriculi squamas triplo su-
perantes demum divaricati vel
reflexi membranacei subulato-
lanceolati compresso-trigoni 6-10
mm longi ad 2 mm lati stramineo-
virides nitidi glabri vix 20-
nervosi, basi rotundati et lineari-cylindrico (0.2 mm in diametro et
ad 1 mm longe) stipitati, apice in rostrum perlongum rectum ore
profunde bifurcatum subsensim attenuati, crura subulata ad 2 mm
longa arcuatim recurva.

Nom. Jap. Jôrô-suge.

Hab. Hokkaido and Honshiu.

Distrib. Corea and Manchuria.

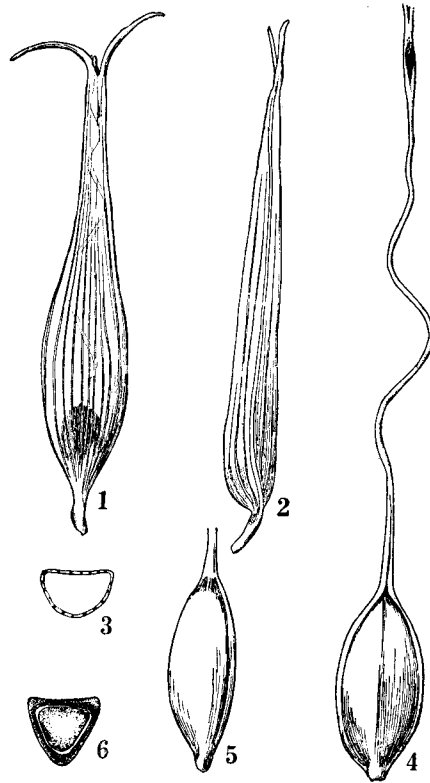


Fig. 161. *Carex brachystachya*
AKIYAMA

1. Utricle seen from dorsal side, $\times 7$.
2. The same, from lateral side, $\times 7$.
3. The same, transversely cut, $\times 7$.
4. Nut seen from ventral side, $\times 14$.
5. The same, from lateral side, $\times 14$.
6. The same, transversely cut, $\times 14$.

Sect. 42. *Physocarpae* DREJER (p. 45)Subsect. 1. *Lupulinae* TUCKERMAN (p. 45)

269. *Carex Michauxiana* BOECK. (Fig. 162) in *Linnaea* XLI. (1877) 336; FRANCH. in *Nouv. Arch.* X. (1898) 81, non DEW.; LÉVEILLÉ et VANIOT in *Bull. Soc. Géogr. bot.* XI. (1902) 178; MATSUM. *Ind. pl.* Jap. II. 1. (1905) 120; KÜKENTH. in *ENGL. Pflanzenr.* IV. 20 (1909) 705; MAK. & NEM. *Fl. of Jap.* 1.-ed. (1925) 1354; MIYABE & KUDO, *Fl. of Hokkaido & Saghal.* II. (1931) 269.

Utriculi squamas duplo vel triplo superantes demum subdivaricati subcoriacei, textis e 4-7 stratis cellularum concretis, lineari-oblongi obtuse trigoni 10-13 mm longi 2.5-3 mm lati flavo-virides (demum flaves) nitidi glabri plurinervi, nervis vix ad 25 castaneis, basi spongiosa attenuati vel contracti breve stipitati, apice in rostrum longissimum subulatum marginibus parce scabrum ore profunde vel leviter bifurcatum intus laevem vel parce scabrum sensim abeuntes.

Nom. Jap. Mitake-suge.

Hab. Hokkaido and Honshiu

Distrib. North America.

forma asiatica (HULTÉN)

C. Michauxiana Subsp. *asiatica* HULTÉN, *Fl. Kamtch. I.* (1927) 207, fig. 14; MIYABE & KUDO, *Fl. of Hokkaido & Saghal. II.* (1931) 269.

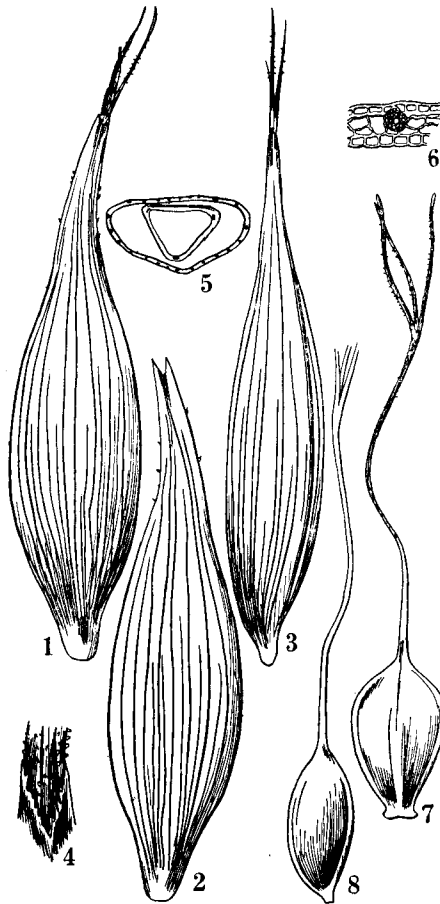


Fig. 162. *Carex Michauxiana* BOECK.

1. Utricle seen from dorsal side, $\times 7$.
2. The same, from ventral side, $\times 7$.
3. The same, from lateral side, $\times 7$.
4. Apical portion of the beak, $\times 14$.
5. Utricle with nut, transversely cut, $\times 7$.
6. Portion of the wall of the utricle, transversely cut, $\times$ ca. 100.
7. Nut seen from ventral side, $\times 7$.
8. The same, from lateral side, $\times 7$.

Spicula masculina saepe (non semper) pedunculata spiculas femineas superantia.

Hab. Kuriles, Hokkaido and Honshiu.

Distrib. Kamtchatka.

270. *Carex Idzuroei* FRANCHET et SAVATIER (Fig. 163), Enum. pl. Japon. II. (1879) 155 et 583; FRANCH. in Nouv. Arch. Mus. Paris 3. sér. X. (1898) 80; MATSUM. Ind. pl. Japon. II. 1. (1905) 114; KÜKENTH. in ENGL. Pflanzenr. IV. 20 (1909) 708, fig. 121 C-E; MAK. & NEM. Fl. of Jap. (1925) 1346.

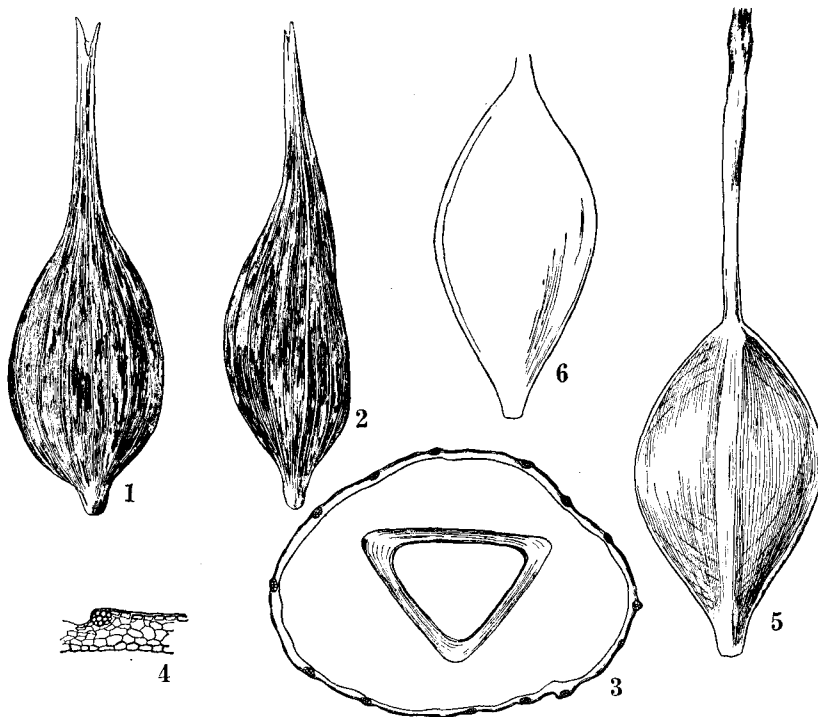


Fig. 163. *Carex Idzuroei* FRANCH. et SAV.

1. Utricle seen from dorsal side, $\times 7$. 2. The same, from lateral side, $\times 7$. 3. The same with nut, transversely cut, $\times 14$. 4. Portion of the wall of the utricle, transversely cut, $\times$ ca. 50. 5. Nut, $\times 14$. 6. The same, from lateral side, $\times 14$.

Utriculi squamas 2-3-plo superantes oblique patentis subcoriacei, textis e 4-7 stratis cellularum constantibus, ovato-conici inflato-trigoni 9-12 mm longi 3.5 mm lati brunneo-olivacei glabri multi-(ad 30-) costati, basi rotundati 0.5 mm longe stipitati, apice in rostrum longum latumque

conicum marginibus laeve ore hyalino grosse bidentatum subsensim attenuati, crura lanceolata 0.7 mm longa.

Nom. Jap. Uma-suge.

Hab. Honshiu, Shikoku and Kiushiu.

Distrib. Eastern China.

Subsect. 2. *Tentaculatae* TUCKERMAN (p. 45)

271. *Carex Dickinsii* FRANCHET et SAVATIER (Fig. 164), Enum. pl. Japon. II. (1879) 153 et 581; FRANCH. in Nouv. Arch. X. 80; MATSUM. l. c. 107; KÜKENTH. l. c. 711, fig. 122 A-C; NAKAI, Fl. Korean. II. (1911) 331; MAK. & NEM. Fl. of Jap. 1.-ed. (1925) 1339.

C. retrorsa BOECK. in Linnaea XLI. (1877) 328 p.p.

C. coreana BAILEY in Mem. Torr. bot. Club. I. (1889) 8, non KOMAR.

Utriculi squamas duplo superantes divaricati demum reflexi subcoriacei late ovati valde inflati vix 10 mm longi ad 5 mm lati stramineo-virides nitidi glabri plurinervi, nervis 15-20, basi contracti 1 mm longe stipitati, apice in rostrum vix 5 mm longum conicum rigide bidentatum abrupte desinentes.

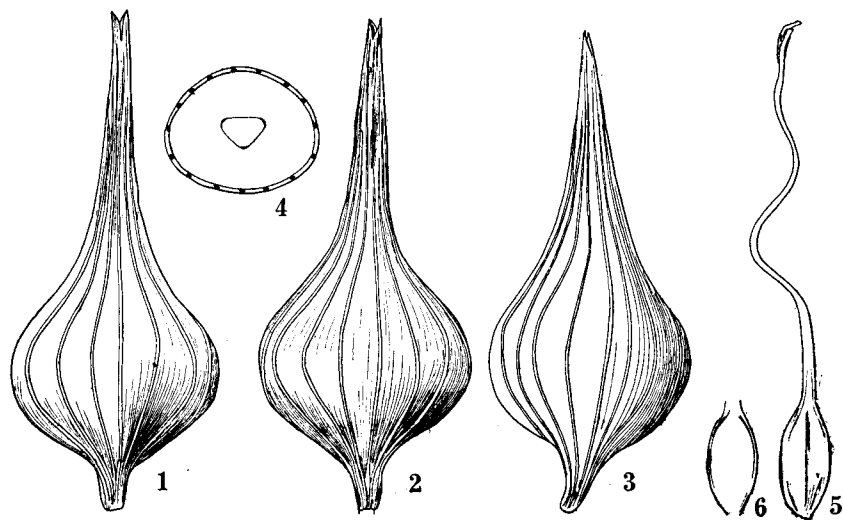


Fig. 164. *Carex Dickinsii* FRANCH. et SAV.

1. Utricle seen from dorsal side, $\times 7$. 2. The same, from ventral side, $\times 7$. 3. The same, from lateral side, $\times 7$. 4. The same with nut, transversely cut, $\times 7$. 5. Nut seen from ventral side, $\times 7$. 6. The same, from lateral side, $\times 7$.

(Figures drawn from an immature specimen)

Nom. Jap. Oni-suge; Mikuri-suge.
 Hab. Honshiu, Shikoku and Kiushiu.
 Distrib. Corea.

Subsect. 3. *Vesicariae* TUCKERMAN (p. 45)

272. *Carex laevirostris* BLYTT (Fig. 165), ex BLYTT et FRIES, in Bot. Notis. (1844) 24; MATSUM. Ind. pl. Japon. II. 1. (1905) 117; KÜKENTH. l. c. 724; NAKAI, Fl. Korean. II. (1911) 331; MAK. & NEM. l. c. 1349; MIYABE & KUDO, Fl. of Hokkaid. & Saghal. II. (1931) 270.

Syn. *C. ampullacea* β . *robusta* WEINM. non SONDER.

C. bullata b. *laevirostris* BLYTT.

C. rhynchophysa C. A. MEY. Ind. sem. Horti petrop. IX. Suppl. (1844) 9; FRANCH. in Nouv. Arch. X. 85.

C. utriculata BOECK. in Linnaea XLI. 318 p.p. non BOOTT.

Utriculi squamas longe superantes et iis latiores suberecti demum divaricati membranacei, textis e 3-4 stratis cellularum concretis, late ovati vel orbiculato-ovati valde inflati 5-7 mm longi 3 mm lati stramineo-virides demum ferruginei nitidi glabri vix 10-nervi (2 nervi marginales prominentes), basi rotundati breve stipitati, apice in rostrum longum tenue ore bifurcatum, segmentis lanceolatis 0.5 mm longis intus scabris, abrupte contracti.

Nom. Jap. Ô-kasa-suge.

Hab. Saghalien, Kuriles, Hokkaido and Honshiu.

Distrib. Corea, Manchuria, Kamtchatka, Siberia and Europe.

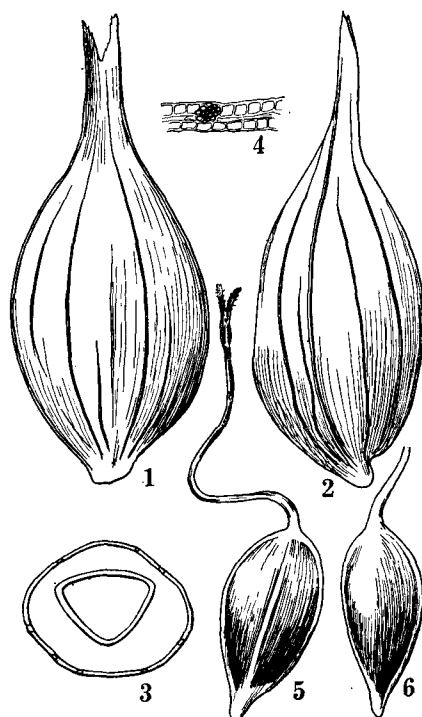


Fig. 165. *Carex laevirostris* BLYTT.

1. Utricle seen from dorsal side, $\times 7$.
2. The same, from lateral side, $\times 7$.
3. The same with nut, transversely cut, $\times 7$.
4. Portion of the wall of the utricle, transversely cut, $\times$ ca. 100.
5. Nut seen from ventral side, $\times 7$.
6. The same, from lateral side, $\times 7$.

273. *Carex rotundata* WAHLENBERG in Vet.-Akad. Handl. XXIV. (1803) 153; FR. SCHM. Reis. (1868) 197; MIYABE & KUDO, Fl. of Hokkaid. & Saghal. II. (1931) 269; OHWI in Mem. Coll. Sc. Kyoto Imp. Univ. Ser. B. VI. 5 (1931) 245.

C. rostrata Subsp. *rotundata* KÜKENTH. l. c. 723; MAK. & NEM. Fl. of Jap. (1925) 1366.

C. ruesanensis KUDO, Fl. Paramushir. (1922) 83.

Nom. Jap. Karafuto-kasa-suge; Ruesan-suge; Konuma-suge.

Hab. Saghalien and Kuriles.

Distrib. Korea, Kamtchatka, Ochotsk, Arctic, Siberia, North Europe and Arctic America.

274. *Carex vesicaria* LINNAEUS (Fig. 166), Spec. pl. ed. 1. (1753) 979; FRANCH. l. c. 84; KOMAR. Fl. Manshur. I. (1901) 380; MATSUM.

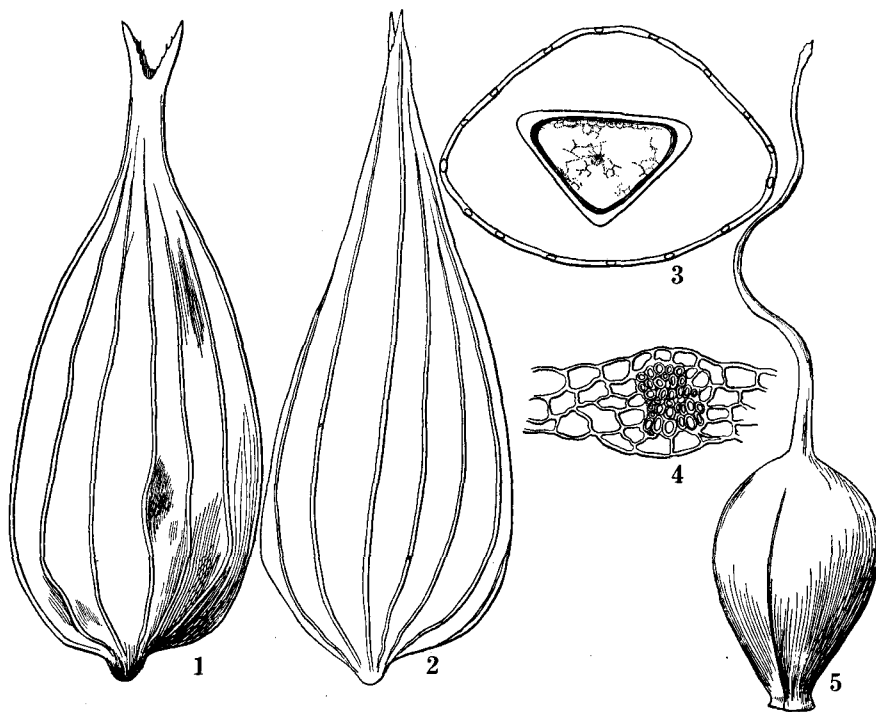


Fig. 166. *Carex vesicaria* L.

1. Utricle seen from dorsal side, $\times 14$.
2. The same, from lateral side, $\times 14$.
3. The same with nut, transversely cut, $\times 14$.
4. Portion of the wall of the utricule, transversely cut, $\times$ ca. 200.
5. Nut, $\times 14$.

l. c. 317; KÜKENTH. l. c. 725, fig. 124 H; NAKAI, Fl. Korean. II. (1911) 332; KUDO, Fl. Paramushir. (1922) 84; MAK. & NEM. Fl. of Jap. 1.-ed. (1925) 1375; MIYABE & KUDO, Fl. of Hokkaid. & Saghal. II. (1931) 271.

C. inflata HUDS. Fl. angl. ed. 1. (1762) 354, non SUTER.

C. vesicaria a. *calcifoenum* LAESTAD, in Loca parall. (1831) 88.

C. monile DEW. in Amer. Journ. of Sc. XLIX. (1845) 47 fig. 116.

C. Vaseyi DEW. l. c. (2. ser.) XXIX. (1860) 347.

Utriculi squamis multo longiores latioresque oblique patentibus subcoriacei, textis e 3-4 stratis cellularum constantibus, ovato-conici inflato-trigoni 6-8 mm longi flavo-virides demum straminei nitidi glabri plurinervi, basi rotundati brevissime stipitati, apice in rostrum mediocre conicum bifurcatum subsensim attenuati, crura subpatentia lanceolata.

Nom. Jap. Oni-naruko-suge.

Hab. Saghalien, Kuriles, Hokkaido and Honshiu.

Distrib. Corea, Manchuria, Kamtchatka, widely in China, Siberia and Europe.

forma *elator* ANDERSS. in Bot. Notis. (1849), cf. Flora XXXIII. (1850) 300; KÜKENTH. in ENGL. Pflanzenr. IV. 20 (1909) 725; MAK. & NEM. Fl. of Jap. 1.-ed. (1925) 1375.

? *C. ventricosa* FRANCH. in Bull. Soc. philom. Paris 8. sér. VII. (1895) 91 et in Nouv. Arch. Mus. Paris 3. sér. X. (1898) 85; MATSUM. Ind. pl. Japon. II. 1. (1905) 137.

Hab. Honshiu.

var. *monile* BOECK. in Linnaea XLI. (1877) 320; KÜKENTH. l. c. 726; MAK. & NEM. l. c.; MIYABE & KUDO, l. c.

C. monile TUCKERM. Enum. Meth. (1843) 20.

C. vesicaria var. *jejuna* FERNALD in Rhodora III. (1901) 52.

Differt a typo foliis angustis, spiculis femineis cylindricis nonnisi 6-7 mm latis, utriculis demum globoso-ovatis abruptius rostratis.

Nom. Jap. Juzu-naruko-suge.

Hab. Saghalien, Kuriles and Hokkaido.

Distrib. North America.

var. *tenuistachya* KÜKENTHAL in Botan. Centralb. LXXVII. (1899) 58 et in ENGL. Pflanzenr. IV. 20 (1909) 726; MIYABE & KUDO, l. c.

C. vesicata MEINSH. in Acta Horti petrop. XVIII. (1901) 367.

C. vesicaria FR. SCHM. Reis. (1868) 197, non L.

Nom. Jap. Hosobo-naruko-suge.

Hab. Saghalien and Hokkaido.

Distrib. Manchuria, Kamtchatka and Siberia.

275. *Carex saxatilis* LINNAEUS, Spec. pl. ed. 1. (1753) 976; KUDO, Fl. Paramushir. (1922) 85; MIYABE & KUDO, Fl. of Hokkaid. & Saghal. II. (1931) 272.

C. pulla GOOD. in Trans. Linn. Soc. III. (1797) 78 t. 14.

C. fusca SCHKUHR, Riedgr. I. (1801) 64 t. Cc, fig. 88.

C. vesicaria Subsp. *pulla* ANDERSS. Cyper. Scand. (1849) 19.

C. vesicaria Subsp. *saxatilis* KÜKENTH. in ENGL. Pflanzenr. IV. 20 (1909) 727.

Nom. Jap. Chishima-naruko-suge.

Hab. Kuriles.

Distrib. Kamtchatka, Siberia, Europe, and North America.

Sect. 43. *Paludosae* FRIES (p. 46)

276. *Carex riparia* CURT. Fl. lond. IV. (1783) t. 60; SCHKUHR, Riedgr. I. (1801) 122 t. Qq et Rr, fig. 105 et II. (1806) 84; KÜKENTH. in ENGL. Pflanzenr. IV. 20 (1909) 735.

var. *rugulosa* KÜKENTHAL l. c. 736; MAK. & NEM. Fl. of Jap. 1.-ed. (1925) 1365; MIYABE & KUDO, Fl. of Hokkaid. & Saghal. II. (1931) 272.

C. rugulosa KÜKENTH. in Bull. Herb. Boiss. 2. sér. IV. (1904) 58.

Nom. Jap. Ô-kugu.

Hab. Hokkaido and Honshiu.

277. *Carex scabrifolia* STEUDEL (Fig. 167), Synops. Cyper. (1855) 237; KÜKENTH. in ENGL. Pflanzenr. IV. 20 (1909) 737; NAKAI, Fl. Korean. II. (1911) 332; MAK. & NEM. Fl. of Jap. (1925) 1366; MIYABE & KUDO, l. c.

C. Pierotii MIQ. in Ann. Mus. lugd. batav. II. (1865-66) 148; FRANCH. et SAV. Enum. pl. Jap. II. (1879) 154; FRANCH. in Nouv. Arch. Mus. Paris 3. sér. X. (1898) 90; KOMAROV, Fl. Manshur. I. (1901) 386.

C. suberea BOOTT, Illustr. IV. (1867) 165 t. 546.

C. Malinvandi LÉVEILLÉ et VANIOT in Bull. Soc. bot. France LI. (1904) 204.

C. Yabei LÉVEILLÉ et VANIOT in Bull. Soc. d'Agr. de la Sarthe LX. (1905) 79.

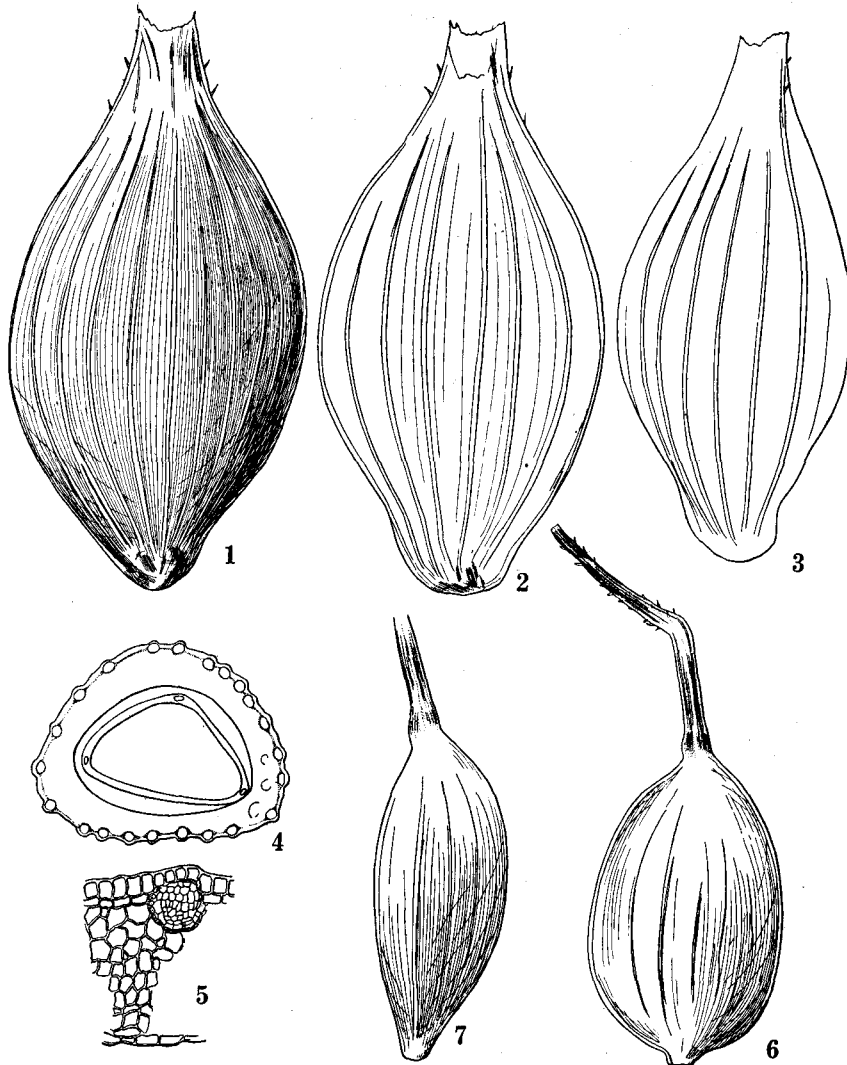


Fig. 167. *Carex scabrifolia* STEUD.

1. Utricle seen from dorsal side, $\times 14$. 2. The same, from ventral side, $\times 14$. 3. The same, from lateral side, $\times 14$. 4. The same with nut, transversely cut, $\times 14$. 5. Portion of the wall of the utricle, transversely cut, $\times$ ca. 100. 6. Nut seen from dorsal side, $\times 14$. 7. The same, from lateral side, $\times 14$.

Utriculi squamas duplo superantes oblique patentis suberosi, textis e vix 10 stratis cellularum compositis, late oblongo-elliptici subturgido-trigoni vix 6 mm longi 3 mm lati brunnei opaci glabri impresso(?) - nervosi, nervis 20-23, basi contracta brevissime stipitati, apice in rostrum breve latum ore hyalino breviter bifurcatum subabrupte desinentes.

Nom. Jap. Shio-kugu ; Hama-kugu.

Hab. Hokkaido, Honshiu, Shikoku, Kiushiu and Riukius.

Distrib. Corea, Manchuria and China.

278. *Carex tsuishikarensis* KOIDZUMI et OHWI in MIYABE & KUDO, Fl. of Hokkaido & Saghalien, II. (1931) 273.

C. rotundata MIYABE & KUDO, Mater. Fl. Hokkaid. n. 113 in Trans. Sapporo nat. Hist. Soc. VII. (1918) 29, non WAHL.

Nom. Jap. Horomui-kugu.

Hab. Hokkaido.

279. *Carex pumila* THUNBERG (Fig. 168), Fl. Japon. (1784) 39 ; BOOTT in A. GRAY, Pl. Jap. (1859) 322 et Illustr. IV. (1867) 217 ; MIQ. Prol. Fl. Jap. (1865-66) 81, 357 ; FRANCH. et SAV. Enum. pl. Japon. II. (1879) 153 ; FRANCH. in Nouv. Arch. X. (1898) 89 ; MATSUM. Ind. pl. Jap. (1905) 129 ; KÜKENTH. in ENGL. Pflanzenr. IV. 20 (1909) 738, fig. 126, et ENGL. Bot. Jahrb. XXVII. (1899) 551 ; KOM. Fl. Manshur. I. (1901) 385 ; NAKAI, Fl. Korean. II. (1911) 333 ; HAYATA, Icon. pl. Formos. VI. (1916) 131, fig. 43 ; MAK. & NEM. Fl. of Japan 1.-ed. (1925) 1363 ; MIYABE & KUDO, Fl. of Hokkaid. & Saghal. II. (1931) 273.

C. littorea LABILL. Nov. Holl. Pl. II. (1806) 69 t. 219.

C. Urvillei BONGN. ex DUPERREY, Voy. (1828) 157.

C. nutans var. *pumila* BOECK. in Linnaea XLI. (1877) 298.

C. Krullii BOECK. in Flora LXV. (1882) 59.

C. sepulta R. PHIL. in Anal. Univ. Chile XCIII. (1896) 494.

C. pumila Subsp. *littorea* KÜKENTH. in ENGLER's Bot. Jahrb. XXVII. (1899) 551.

Utriculi squamas superantes demum oblique patentis suberosi, textis e 8-12 stratis cellularum concretis, ovato-oblongi turgido-trigoni 5-8 mm longi 3 mm lati et alti aurantiacei demum fusco-tincti opaci glabri tenuiter impresso-nervosi (nervi vix 25), basi contracti breviter stipitati, apice in rostrum subbreve latum marginibus interdum scabrum

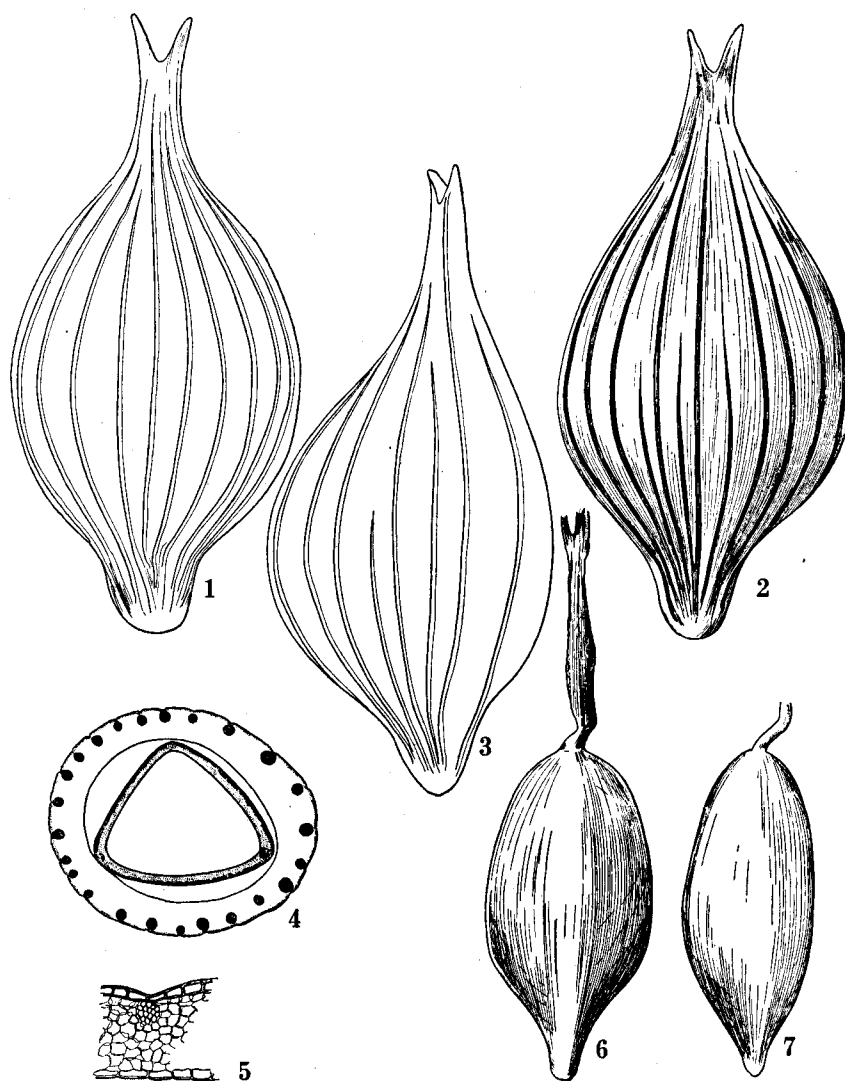


Fig. 168. *Carex pumila* THUNB.

1. Utricle seen from dorsal side, $\times 14$. 2. The same, from ventral side, $\times 14$. 3. The same, from lateral side, $\times 14$. 4. The same with nut, transversely cut, $\times 14$. 5. Portion of the wall of the utricle, transversely cut, $\times$ ca. 75. 6. Nut seen from dorsal side, $\times 14$. 7. The same, from lateral side, $\times 14$.

grosse bifurcatum subsensim attenuati, crura vix patentia lanceolata ad 0.5 mm longa.

Nom. Jap. Kôbô-shiba.

Hab. Widely distributed in Japanese Empire.

Distrib. Manchuria, China, Australia, New Zealand and South America.

280. *Carex nutans* HOST, Gram. Austr. I. (1801) 61 t. 83; KÜKENTH. in ENGL. Pflanzenr. IV. 20 (1909) 740.

var. *platyrhyncha* (FRANCH. et SAV.) KÜKENTHAL l. c. 740; MAK. & NEM. Fl. of Jap. 1.-ed. (1925) 1357; MIYABE & KUDO, Fl. of Hokkaid. & Saghal. II. (1931) 274.

C. platyrhyncha FRANCHET et SAVATIER, Enum. pl. Japon. II. (1879) 154 et 582; FRANCH. l. c. 90; MATSUM. l. c. 126.

C. nutans var. *japonica* FRANCH. et SAV. l. c.

Nom. Jap. Seitaka-kôbô-shiba.

Hab. Saghalien, Hokkaido and Honshiu.

Distrib. China.

Sect. 44. *Hirtae* TUCKERMAN (p. 46)

281. *Carex hebecarpa* C. A. MEY. in Mém. Acad. St.-Pétersb. I. (1831) 223 t. 12; KÜKENTH. in ENGL. Pflanzenr. IV. 20 (1909) 744.

var. *ligulata* (NEES) FRANCHET (Fig. 169) in Nouv. Arch. Mus. Paris 3. sér. X. (1898) 70; KÜKENTH. l. c. 745; HAYATA, Icon. pl. Formos. VI. (1916) 133, fig. 42 f-i; MAK. & NEM. Fl. of Jap. (1925) 1345.

C. ligulata NEES in WIGHT, Contr. Bot. India (1834) 127; FRANCH. l. c. 69.

C. lachnosperma var. *β. major* WALL. List. pl. East Ind. Comp. (1828) 118 (n. sol.).

C. breviculmis THWAIT. Enum. pl. Zeyl. (1864) 356, non R. BR.

C. Keiskei MIQ. in Ann. Mus. lugd.-batav. II. (1865-66) 148.

C. Thwaitesii HANCE in Journ. of Bot. V. (1867) 235.

C. Wallichiana BOECK. in Linnaea XLI. (1877) 310 p. p.

C. bakanensis LÉVEILLÉ et VANIOT in Bull. Soc. bot. France LI. (1904) 203.

C. hebecarpa MATSUM. l. c. 113, non C. A. MEYER.

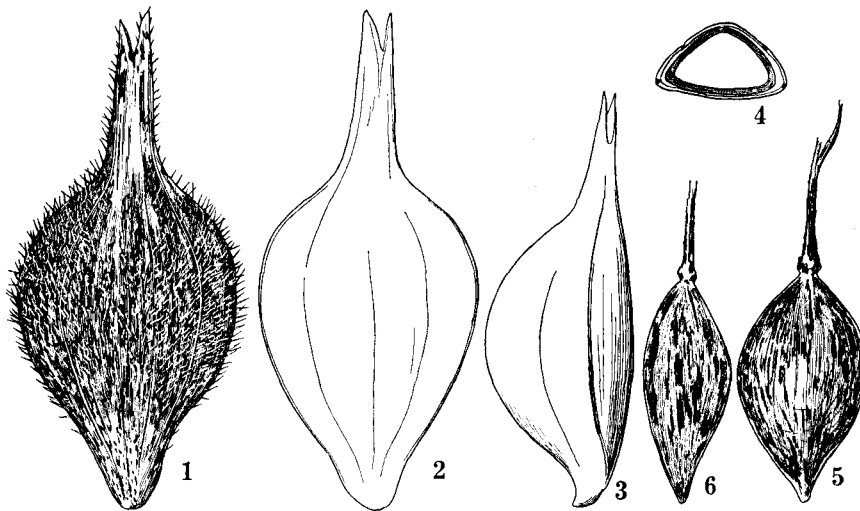


Fig. 169. *Carex hebecarpa* var. *ligulata* FRANCH.

1. Utricle seen from dorsal side, $\times 14$. 2. The same, from ventral side, $\times 14$. 3. The same, from lateral side, $\times 14$. 4. The same with nut, transversely cut, $\times 14$. 5. Nut seen from dorsal side, $\times 14$. 6. The same, from lateral side, $\times 14$.

Utriculi squamas superantes suberecti subdistichi mox decidui submembranacei ovato-(vel obovato-) elliptici obtuse trigoni 5 mm longi 2.2 mm lati brunneo-olivacei fusco-maculati dense albo-hirti paucinervi, nervis marginalibus prominentibus, basi attenuati cuneato-stipitati apice in rostrum sublongum conicum marginibus scabrum ore bidentatum et scabrum abrupte desinentes.

Nom. Jap. Satsuma-suge.

Hab. Shikoku and Kiushiu.

Distrib. Formosa, Southern and Central China, Himalaya and Ceylon.

var. *Maubertiana* FRANCH. in Nouv. Arch. Mus. 3. sér. X. (1928) 70.

forma *latifolia* MAKINO in Bot. Magaz. Tokyo XXVI. (1912) 294 ; MAK. & NEM. Fl. of Jap. 1.-ed. (1925) 1345.

Culmus validus. Folia 7-12 mm lata rigida magis appropinquata. Spiculæ femineae densiores dense congestae. Utriculi breviori late ovati, rostrum excurvum.

Nom. Jap. Tenjiku-suge ; Tenjiku-yoshi.

Hab. Cult. (Honshiu).

282. *Carex lasiocarpa* EHRH. in Hannoev. Magaz. IX. (1784) 132 et in Beitr. III. (1788) 73; KÜKENTH. in ENGL. Pflanzenr. IV. 20 (1909) 747.

var. *occultans* KÜKENTH. (Fig. 170) l. c.; MAK. & NEM. Fl. of Jap. 1350; MIYABE & KUDO, Fl. of Hokkaido & Saghal. II. (1931) 274, non FRANCH.

C. filiformis FRANCH. et SAV. Enum. pl. Japon. II. (1879) 153; FRANCH. in Nouv. Arch. Mus. Paris 3. sér. X. (1898) 88; KOMAROV, Fl. Manshur. I. (1901) 385, non L.

C. filiformis var. *occultans* FRANCH. l. c. 89.

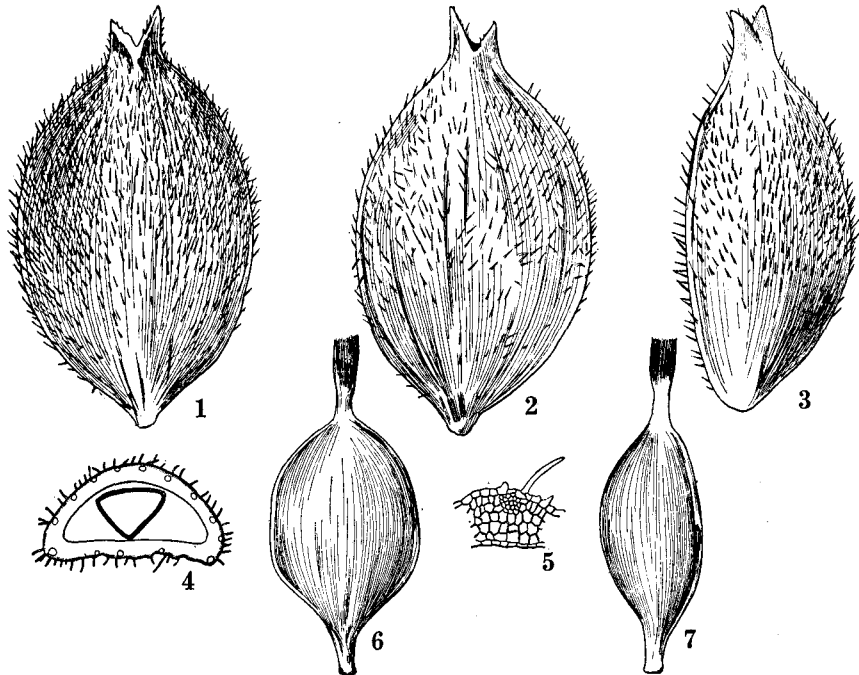


Fig. 170. *Carex lasiocarpa* var. *occultans* KÜKENTH.

1. Utricle seen from dorsal side, $\times 14$. 2. The same, from ventral side, $\times 14$. 3. The same, from lateral side, $\times 14$. 4. The same with nut, transversely cut, $\times 14$. 5. Portion of the wall of the utricle, transversely cut, $\times$ ca. 50. 6. Nut seen from dorsal side, $\times 14$. 7. The same, from lateral side, $\times 14$.

Utriculi squamas superantes demum oblique patentes coriacei, textis e 6-7 stratis cellularum compositis, oblongo-ovati vel ovati sub-inflato-trigoni 4-5 mm longi vix 2.5 mm lati stramineo-virides griseo-hirto-tomentosi demum fere glabrescentes, obsolete plurinervi (nervi vix 14 et 2 nervi marginales prominentes) basi contracta brevissime stipitati, apice in rostrum breve profunde bifurcatum subabrupte desinentes.

Nom. Jap. Itoba-birôdo-suge; Mujina-suge.

Hab. Saghalien, Kuriles and Hokkaido.

Distrib. Manchuria, Amur, Ussuri and China.

283. *Carex Myabei* FRANCHET (Fig. 171) in Bull. Soc. philom. Paris 8. sér. VII. (1895) 52 et Nouv. Arch. Mus. Paris 3. sér. X. (1898) 88; MIYABE & KUDO, Fl. of Hokkaido & Saghal. II. (1931) 275.

C. saruensis FRANCH. l. c. VIII. t. 12, fig. 1 et X. 85.

C. Wallichiana PRESC. var. *Miyabei* KÜKENTH. ex MATSUM. Ind. pl. Japon. II. 1. (1905) 138 et in ENGL. Pflanzenr. IV. 20 (1909) 749; NAKAI, Fl. Korean. II. (1911) 334; MAK. & NEM. Fl. of Jap. (1925) 1376.

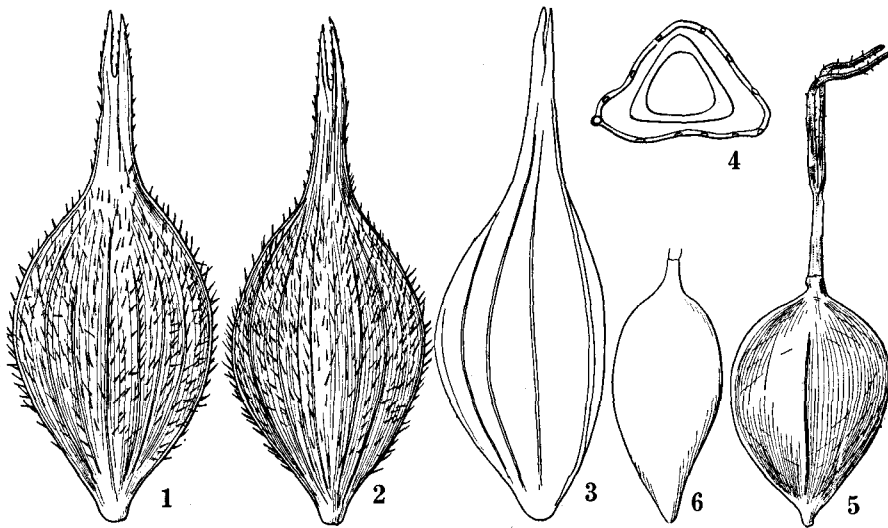


Fig. 171. *Carex Myabei* FRANCH.

1. Utricle seen from dorsal side, $\times 14$.
2. The same, from ventral side, $\times 14$.
3. The same, from lateral side, $\times 14$.
4. The same with nut, transversely cut, $\times 14$.
5. Nut seen from frontal side, $\times 14$.
6. The same, from lateral side, $\times 14$.

Utriculi squamas superantes et iis latiores suberecti tenuiter coriacei oblongo-ovati subturgido-trigoni 4.5–5 mm longi 2 mm lati cinereo-brunnei dense hirti evidentius nervosi (nervi 12–16), basi spongiosi breve attenuati brevissime stipitati, apice in rostrum longum cylindricum marginibus scabrum ore grosse bifurcatum abrupte desinentes, crura 0.5 mm longa intus scabra.

Nom. Jap. Birôdo-suge.

Hab. Hokkaido, Honshiu and Kiushiu.

Distrib. Corea.

284. *Carex Koidzumii* HONDA (Fig. 172) in Botan. Magaz. Tokyo XLV. (1931) 3; MIYABE & KUDO, Fl. of Hokkaido & Saghal. II. (1931) 275; MAKINO & NEMOTO, Fl. of Jap. 2.-ed. (1931) 1432.

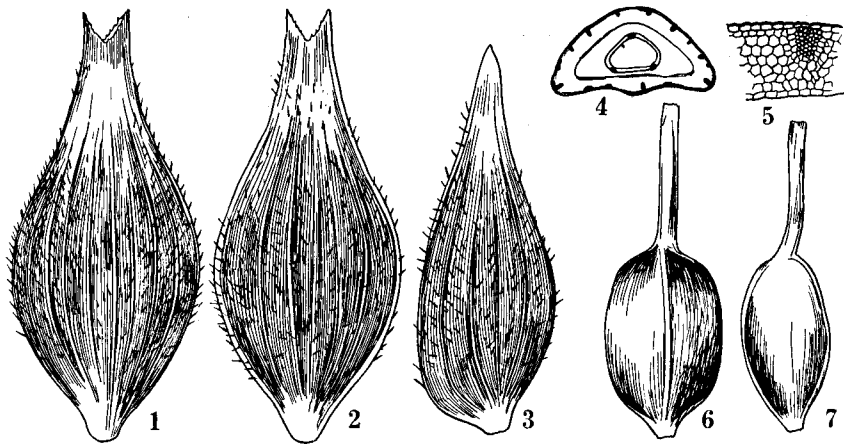


Fig. 172. *Carex Koidzumii* HONDA

1. Utricle seen from dorsal side, $\times 14$. 2. The same, from ventral side, $\times 14$. 3. The same, from lateral side, $\times 14$. 4. The same with nut, transversely cut, $\times 14$. 5. Portion of the wall of the utricle, transversely cut, $\times$ ca. 75. 6. Nut seen from frontal side, $\times 14$. 7. The same, from lateral side, $\times 14$.

C. striata MICHX. var. *japonica* KOIDZUMI in Botan. Magaz. Tokyo XXIX. (1915) 388 (art. japon.); MAK. & NEM. Fl. of Jap. (1925) 1370.

Utriculi squamis paullo longiores et latiores suberecti coriacei, textis e 8–10 stratis cellularum constantibus, ovati subturgido-trigoni in medio ventris longitudinaliter elevatis percursi, 4–4.5 mm longi ad 2 mm lati brunneo-olivacei undique pubescentes, basi contracti breviter

stipitati, apice in rostrum breve latum ore grosse bifurcatum intus scabrum subabrupte abeuntes.

Nom. Jap. Yachi-kugu.

Hab. Hokkaido and Honshiu.

285. *Carex glabrescens* OHWI in Mem. Coll. Sc. Kyoto Imp. Univ. Ser. B. VI. 5 (1931) 245.

C. Wallichiana var. *Miyabei* forma *glabrescens* KÜKENTH. in ENGL. Pflanzenr. IV. 20 (1909) 749; NAKAI, Fl. Korean. II. (1911) 334.

C. drymophila var. *udensis* KÜKENTH. l. c. 755 p.p.; NAKAI, l. c.

C. drymophila var. *pilifera* KÜKENTH. l. c. 756; NAKAI, l. c.

Nom. Jap. Sunaji-suge.

Hab. Honshiu.

Distrib. Corea.

286. *Carex orthostachys* C. A. MEYER in LEDEB. Fl. alt. IV. (1833) 231 t. 324; MIYABE & KUDO, Fl. of Hokkaido & Saghalien, II. (1931) 275.

C. orthostachys var. *genuina* MAXIM. Primit. Fl. amur. (1859) 316.

C. aristata BOECK. in Linnaea XLI. (1877) 315 p. p.; FRANCH. Nouv. Arch. l. c. 82 p.p.

C. trichocarpa var. *orthostachys* KÜKENTH. in Botan. Centralb. LXXVII. 92.

C. amurensis var. *mandschurica* KÜKENTH. l. c. 95.

C. glaberrima MEINSH. in Acta Hort. petrop. XVIII. 369 p. p.

C. Raddei KOMAROV, Fl. Mansh. I. 381, non KÜKENTH.

C. aristata var. *hirtaeformis* LÉVEILLÉ et VANIOT in Bull. Acad. intern. Géogr. bot. le Mans 3. sér. XI. (1902) 68.

C. aristata var. *orthostachys* C. B. CLARKE in Journ. Linn. Soc. XXXVI. (1903) 272 p. p.; MATSUM. Ind. pl. Jap. II. 1. (1905) 100.

C. aristata Subsp. *orthostachys* KÜKENTH. in ENGL. Pflanzenr. IV. 20. 753, fig. 128 F; MAK. & NEM. l. c. 1331.

Nom. Jap. Ke-kasa-suge.

Hab. Saghalien, Kuriles and Hokkaido.

Distrib. Northern China and Siberia.

287. *Carex drymophila* TURCZANIMOW, in Bull. Soc. Nat. Moscou (1838) 104 (n. sol.); KOMAROV, Fl. Manshur. I. (1901) 383; KÜKENTH. in ENGL. Pflanzenr. IV. 20 (1909) 755, fig. 128 J-K; MAK. & NEM. Fl.

of Jap. (1925) 1340; MIYABE & KUDO, Fl. of Hakkaid. & Saghal. II. (1931) 276.

C. orthostachys TREV. in LEDEB. Fl. ross. IV. (1852) 316 p. p.

C. orthostachys var. TURCZ. in Fl. baic.-dahur. II. 1. (1856) 284.

C. orthostachys var. γ . *drymophila* MAXIM. Prim. Fl. amur. (1859) 316.

C. amurensis var. δ . *drymophila* KÜKENTH. in Bot. Centralb. LXXVII. (1899) 96.

C. pseudo-hirta MEINSH. l. c. 371 p. p.

C. Turczanimowiana var. *Beaurepairei* LÉVEILLÉ et VANIOT in Bull. Soc. d'Agr. de la Sarthe LX. (1905) 79.

Nom. Jap. Yezo-kasa-suge.

Hab. Saghalien and Hokkaido.

Distrib. Manchuria, China, Ussuri, Amur, Kamtchatka, Ajan and East Siberia.

var. *akanensis* KÜKENTHAL l. c. 756; NAKAI, Fl. Korean. II. (1911) 335; MAK. & NEM. l. c.; MIYABE & KUDO, l. c.

C. orthostachys var. *hirtaeformis* MAXIM. Prim. Fl. Amur. (1859) 316; FR. SCHM. Fl. Sachal. (1868) 198, non PERS.

C. Bongardiana FR. SCHM. l. c. 197.

C. akanensis FRANCH. in Bull. Soc. philom. Paris 8. sér. VII. (1895) 51 et Nouv. Arch. l. c. 83; MATSUM. l. c. 98.

C. hirta FRANCH. in Nouv. Arch. l. c. 86, non L.

C. amurensis KÜKENTH. in Centralb. LXXVII. (1899) 94.

Differt a typo foliis densiore pilosis, spiculis femineis 3-7 cm longis, utriculis parce hirtis vel glabris.

Nom. Jap. Akan-kasa-suge.

Hab. Saghalien and Hokkaido.

Distrib. Corea, Manchuria, Amur, Dahuria and Kamtchatka.

IV. TABLES SHOWING THE GEOGRAPHICAL DISTRIBUTION OF SPECIES, VARIETIES AND FORMS, WITHIN AND WITHOUT THE JAPANESE EMPIRE.

Species	Localities in the Japanese Empire, Formosa and Corea excepted							Regions other than those mentioned in the left-side columns
	Saghalien	Kuriles	Hokkaido	North. Honshu	Centr. Honshu	South. Honshu	Shikoku	
<i>Carex accrescens</i> OHWI	+		+					{ Corea; Manchuria; Kamtchatka; E. Siberia.
<i>C. aequialta</i> KÜKENTH.					+			
<i>C. albata</i> BOOTT				+	+	+	+	Corea; Amur; Manchuria.
<i>f. laxiuscula</i> (KÜKENTH.)			+		+	+		
var. <i>Franchetiana</i> (OHWI)							+	Corea.
<i>C. alliformis</i> C.B. CLARKE							+	
<i>C. amami-oshimensis</i> AKIYAMA							+	{ Kamtchatka; Ochotsk; Amur; Ussuri; Siberia.
<i>C. amblyolepis</i> TRAUTV. et MEY.	+	+						
<i>C. angustisquama</i> FRANCH.				+	+	+		Pacific N. America.
<i>C. aperta</i> BOOTT			+	+				
<i>C. aphanandra</i> FR. et SAV.							+	Corea.
<i>C. aphanolepis</i> FR. et SAV.				+	+	+	+	
<i>C. aphyllopus</i> KÜKENTH.				+	+	+	+	{ Corea; Kamtchatka; Ochotsk; Amur; Ussuri. Corea; C. China.
var. <i>aristata</i> OHWI						+		
var. <i>paludicola</i> OHWI					+			{ N. China; E. Mongolia; Manchuria; Siberia.
<i>C. appendiculata</i> KÜKENTH.	+		+					
<i>C. arenicola</i> FR. SCHM.	+	+	+	+	+	+		{ Corea; Manchuria; Kamtchatka; E. Siberia.
<i>C. arisanensis</i> var. <i>tremula</i> OHWI							+	
<i>C. Arnellii</i> CHRIST.	+							{ Corea; Manchuria; Kamtchatka; E. Siberia.
<i>C. arrhyncha</i> FRANCHET	+		+					
<i>C. atrata</i> L.			+	+				{ Corea; Manchuria; Kamtchatka; E. Siberia.
<i>C. atro-viridis</i> OHWI							+	
<i>C. Augustinowiczii</i> MEINSH.	+	+	+	+				{ Corea; Manchuria; Kamtchatka; E. Siberia.
var. <i>macrogyne</i> OHWI	+							
<i>C. autumnalis</i> OHWI							+	E. Asia; ? Kamtchatka.
<i>C. blepharicarpa</i> FRANCH.	+	+	+	+	+	+	+	

The mark + denotes the occurrence of species in the respective regions

Localities in the Japanese Empire, Formosa and Corea excepted	Saghalien	Kuriles	Hokkaido	North. Honshu	Centr. Honshu	South. Honshu	Shikoku	Kiushiu	Riukius	Regions other than those mentioned in the left- side columns
Species										
form. <i>distenta</i> KÜKENTH.	+									
var. <i>stenocarpa</i> OHWI				+						
<i>C. bostrychostigma</i> MAXIM.						+	+			{Corea; S. & E. Asia; Manchuria; India.
<i>C. brachystachya</i> AKIYAMA			+	+	+					Corea; Manchuria.
<i>C. Brownii</i> TUCKERM.			+	+	+	+	+	+		Corea; New Zealand; Australia.
<i>C. brunnea</i> THUNB.				+	+	+	+	+	+	{Formosa; Corea; Mascarena; India; Australia.
<i>C. brunnescens</i> var. <i>sphaerostachya</i> KÜKENTH.	+	+	+	+	+					{Kamtchatka; Siberia; Turkestan; E. Europe; N. America.
<i>C. Buxbaumii</i> WAHLENB.	+	+	+							{Siberia; Europe; Africa; N. America; Australia.
<i>C. caespitosa</i> L.	+		+	+						{Corea; Manchuria; Siberia; Caucasus; N. & C. Europe; N. America.
var. <i>elongata</i> OHWI	+									
var. <i>minuta</i> KÜK.	+	+	+							
<i>C. canescens</i> L.	+	+	+	+	+					{Corea; Manchuria; Kamtchatka; Siberia; Kashmir; Caucasus; Europe; N. & S. America; Australia.
var. <i>fallax</i> F. KURTZ.	+		?							Europe; Greenland; N. America.
var. <i>robustior</i> BLYTT.										{N. & S. America; Europe; Australia.
var. <i>sublobiacea</i> LAESTAD	+									Europe; Greenland; N. America.
<i>C. capillacea</i> BOOTT	+		+	+	+					{Corea; Manchuria; C. China; E. Himalaya; Australia.
var. <i>macrolepis</i> FRANCH.			+	+						
<i>C. capillaris</i> L.	+	+	+							{Corea; Manchuria; Kamtchatka; Asia; Europe; N. America.
<i>C. caryophyllea</i> LATOUR.	+									{Kamtchatka; Siberia; Asia minor; Europe; N. America.
<i>C. cernua</i> BOOTT			+	+	+	+	+	+		{Corea; China; Assam; Tonkin; Himalaya.
<i>C. chilosaccus</i> C.B. CLARKE					?					
<i>C. chinensis</i> RETZ.								+	+	
var. <i>tsushimensis</i> OHWI								+		
var. <i>variegata</i> MAKINO		Cult.								
<i>C. chrysolepis</i> FR. et SAV.					+	+				Formosa.
form. <i>asoensis</i> OHWI								+		
f. <i>variegata</i> OHWI								+		
f. <i>kiushiana</i> OHWI								+		
<i>C. ciliato-marginata</i> NAKAI			+	+	+			+		Corea.

Species	Localities in the Japanese Empire, Formosa and Corea excepted							Regions other than those mentioned in the left-side columns
	Saghalien	Kuriles	Hokkaido	North. Honshu	Centr. Honshu	South. Honshu	Shikoku	
<i>C. cincta</i> FRANCHET			+	+	+	+	+	Corea.
var. <i>laxiflora</i> AKIYAMA			+					
<i>C. cinerascens</i> KÜKENTH.			+	+	+	+	+	Corea.
<i>C. confertiflora</i> BOOTT			+	+	+	+	+	
<i>C. conica</i> BOOTT			+	+	+	+	+	Corea.
var. <i>lanceolata</i> AKIYAMA				+				
var. <i>marginata</i> NAKAI		Cult.						
f. <i>longirostrata</i> KÜKENTH.				+				
f. <i>mollis</i> KÜKENTH.				+			+	
var. <i>rubens</i> KÜKENTH.		+		+				
var. <i>variegata</i> NAKAI		Cult.						
<i>C. conicoides</i> HONDA							+	
<i>C. cucullata</i> OHWI							+	Hongkong.
<i>C. cuneata</i> OHWI			+					
<i>C. curaica</i> KUNTH				+				C. Asia; E. Siberia.
<i>C. curvicolis</i> FR. et SAV.			+	+	+	+	+	
<i>C. cyperoides</i> L.			+					
<i>C. daisenensis</i> NAKAI				+				
<i>C. delicatula</i> C. B. CLARKE				+				
<i>C. descendens</i> KÜKENTH.	+							Kamtchatka; E. Siberia.
<i>C. diandra</i> f. <i>major</i> KOCH.		+	+					
<i>C. Dickinsii</i> FR. et SAV.				+	+	+	+	
<i>C. digama</i> NAKAI				+				
<i>C. discoidea</i> BOOTT							+	
<i>C. dispalata</i> BOOTT	+		+	+	+	+	+	Corea; Manchuria; China.
var. <i>reducta</i> KÜKENTH.	+							
<i>C. dissitiflora</i> FRANCH.			+	+	+	+	+	
<i>C. disticha</i> HUDS.				+				Manchuria; N. China; Siberia.
<i>C. Doen'tzii</i> BOECK.			+	+	+	+	+	
var. <i>trichopoda</i> KÜKENTH.			+					
<i>C. Doiana</i> AKIYAMA							+	
<i>C. Doniana</i> SPRENG.			+	+	+	+	+	{ Formosa; C. & S. China; N. India; Himalaya.

Species	Localities in the Japanese Empire, Formosa and Corea excepted	Saghalien	Kuriles	Hokkaido	North. Honshiu	Centr. Honshiu	South. Honshiu	Shikoku	Kiushiu	Riukius	Regions other than those mentioned in the left- side columns
<i>C. drymophila</i> TURCZ.		+		+							(Corea; Manchuria; Kamtchatka; E. Siberia; China.
var. <i>akanensis</i> KÜKENTH.		+		+							(Corea; Manchuria; Kamtchatka; E. Siberia.
<i>C. Duvaliana</i> FR. et SAV.						+	+				Corea.
<i>C. eleusinoides</i> TURCZ.				+							Kamtchatka; E. Siberia.
<i>C. fibrillosa</i> FR. et SAV.						+	+	+	+	+	C. China.
<i>C. filicina</i> NEES.									+		
<i>C. filiculmis</i> FR. et SAV.						?					Corea.
<i>C. filipes</i> FRANCH. et SAV.						+	+	+	+		
var. <i>oligostachys</i> KÜK.						+					
var. <i>Rouyana</i> KÜKENTH.						+					
<i>C. flavocuspis</i> FR. et SAV.			+	+	+	+					
var. <i>caudatifrons</i> AKIYAMA					+						
var. <i>denticulata</i> KÜK.						+	?				
var. <i>platycarpa</i> KÜK.						+					
var. <i>iwatensis</i> AKIYAMA					+						
<i>C. foliosissima</i> FR. SCHM.				+	+	+			+		
var. <i>brevisquamosa</i> (KOIDZ.)		+		+	+						
var. <i>crassicaulis</i> (FRANCH.)				+	+						
var. <i>latissima</i> OHWI						+			+		
<i>C. forficula</i> FRANCHET		+		+	+	+	+	+	+		Corea; S. Manchuria; N. China.
forma <i>espinulifera</i> AKIY.						+					
<i>C. formosensis</i> LÉV. et VNT.									+		Formosa.
var. <i>vigens</i> OHWI									+		Corea.
var. <i>kabashimensis</i> OHWI									+		
<i>C. Fujitae</i> KUDO			+								
<i>C. fulta</i> FRANCH.					+	+					
<i>C. gagaensis</i> AKIYAMA					+	+					
<i>C. geantha</i> OHWI		+	+	+	+	+					
<i>C. gibba</i> WAHLENB.					+	+	+	+	+		Corea; N. & C. China.
<i>C. gifuensis</i> FRANCHET		+			+	+					Corea.

Species	Localities in the Japanese Empire, Formosa and Corea excepted							Regions other than those mentioned in the left-side columns
	Saghalien	Kuriles	Hokkaido	North. Honshiu	Centr. Honshiu	South. Honshiu	Shikoku	
<i>f. argyrostachys</i> KÜK.				?				Corea.
<i>C. glabrescens</i> OHWI				+				
<i>C. glareosa</i>								
<i>f. elegantissima</i> KÜKENTH.	+							{ Corea; Manchuria; Kamtchatka;
<i>C. globularis</i> L.	+							{ Siberia; Europe.
<i>C. Gmelinii</i> HOOK. et ARN.	+	+	+					{ Kamtchatka; Manchuria; E.
<i>C. grallatoria</i> MAXIM.				+	+	+	+	{ Siberia; N. America.
var. <i>heteroclita</i> KÜK.				+		+	+	
<i>C. grandilimosa</i> AKIYAMA			+	+				
<i>C. gynocrates</i> WORMSKJ		+						{ Kamtchatka; E. & C. Siberia;
<i>C. hakkodensis</i> FRANCH.		+	+	+				{ N. America.
<i>C. hakonensis</i> FR. et S.			+	+				Kamtchatka.
var. <i>capituliformis</i> OHWI				+				Corea.
<i>C. hebecarpa</i> C. A. MEY.								
var. <i>ligulata</i> KÜKENTH.					+	+	+	{ S. & E. Asia; S. India; S. & C.
var. <i>Maubertiana</i>								{ China.
<i>f. latifolia</i> MAKINO		Cult.						
<i>C. heterolepis</i> BUNGE			+	+	+		+	Corea; N. China.
<i>C. Hidewoi</i> OHWI					+			
<i>C. hirtifructus</i> KÜKENTH.					+			
<i>C. hololasius</i> LÉV. et VNT.					+			
<i>C. Honda</i> AKIYAMA					+			
<i>C. hondoensis</i> OHWI					+			
<i>C. humilis</i> LEYSSER			+	+	+		+	Corea; Manchuria.
<i>C. Idzuroei</i> FR. et SAV.				+	+	+	+	E. China.
<i>C. impura</i> OHWI					+			
<i>C. incisa</i> BOOTT			+	+	+	+		Corea.
<i>C. infirma</i> C. B. CLARKE			+					
<i>C. insanae</i> KOIDZUMI			+	+	+			
<i>C. ischnostachya</i> STEUDEL			+	+	+	+	+	Corea.
<i>C. japonica</i> THUNB.			+	+	+	+	+	Corea; Manchuria; China.
<i>C. japonicaeformis</i> NAKAI					+			
<i>C. jizogatakensis</i> LÉVEILLÉ					+			
<i>C. kamikochiana</i> NAKAI					+			

Species	Localities in the Japanese Empire, Formosa and Corea excepted							Regions other than those mentioned in the left-side columns
	Saghalien	Kuriles	Hokkaido	North. Honshiu	Centr. Honshiu	South. Honshiu	Shikoku	
<i>C. kasugayamensis</i> AKIY.				+				
<i>C. kattaiana</i> KÜKENTH.				+				
<i>C. Kinashii</i> LÉV. et VNT.				+				
<i>C. Kingiana</i> LÉV. et VNT.				+	+	+	+	
<i>C. kiotensis</i> FRANCH. et SAV.				+	+	+	+	
<i>C. kiyoziensis</i> AKIYAMA				+				
<i>C. Koidzumii</i> HONDA			+	+				
<i>C. koraginensis</i> MEINSH.	+							Kamtchatka; Ochotsk.
<i>C. koreana</i> KOMAROV				+	+			Corea.
<i>C. Kramerii</i> FR. et SAV.			+	+	+		+	
<i>C. laeviculmis</i> MEINSH.			+	+	+			Kamtchatka; Pacif. N. America.
<i>C. laevirostris</i> BLYTT.	+	+	+	+	+			{ Corea; Manchuria; Kamtchatka; Siberia; Europe.
<i>C. lagopina</i> WAHL.		+	+	+				{ Corea; Kamtchatka; Siberia; Europe.
<i>C. lanceolata</i> BOOTT	+	+	+	+	+	+	+	Corea; Manchuria; E. Siberia.
var. <i>albo-mediana</i>								
MAKINO								
var. <i>subpediformis</i> KÜK.			Cult.	+				C. China.
<i>C. lasiocarpa</i>								
var. <i>occultans</i> FRANCH.	+	+	+					Manchuria; Amur; Ussuri; China.
<i>C. lasiolepis</i> FRANCH.			+	+	+			Corea.
<i>C. laticeps</i> C.B. CLARKE					+			Corea.
<i>C. laxa</i> WAHL.			+	+	+			Manchuria; Amur; N. Europe.
<i>C. leiogona</i> FRANCH.						+		
<i>C. levicuspis</i> OHWI				+				
<i>C. limosa</i> L.	+	+						{ Corea; Manchuria; Amur; Kamtchatka; Siberia; Europe; N. America.
var. <i>fusco-cuprea</i> KÜK.	+	+	+	+	+	+	+	
<i>C. loliacea</i> L.	+		+	+	+			{ Corea; Manchuria; Dahuria; Kamtchatka; Siberia; Europe.
<i>C. lonchophora</i> OHWI					+			
<i>C. longerostrata</i> C. A. MEY.	+	+	+	+	+	+	+	{ Corea; Manchuria; Amur; Kamtchatka; E. Siberia.
var. <i>recurvifolia</i> KÜK.			+					
<i>C. lutchensis</i> OHWI							+	

Species	Localities in the Japanese Empire, Formosa and Corea excepted							Regions other than those mentioned in the left-side columns
	Saghalien	Kuriles	Hokkaido	North. Honshu	Centr. Honshu	South. Honshu	Shikoku	
<i>C. Lyngbyei</i> Ssp. <i>cryptocarpa</i> HULTÉN	+	+	+	+			+	{ Manchuria ; Ochotsk ; Kamtchatka ; N.W.N. America. Corea.
<i>C. Maackii</i> MAXIM. var. <i>nipponica</i> OHWI			+	+	+		+	
<i>C. macrandrolepis</i> LÉV. et VNT.				+	+		+	Corea. { Kamtchatka ; N.E. Asia ; N. America.
<i>C. macrochaeta</i> C.A. MEY.	+	+						
<i>C. macrocephala</i> WILLD. var. <i>Kobomugi</i> MIYABE et KUDO			+	+	+	+	+	Corea ; Ussuri ; N. China.
var. <i>typica</i> MIYABE et KUDO	+	+	+					{ Corea ; China ; Manchuria ; Ussuri ; E. Siberia ; Kamtchatka.
<i>C. macroglossa</i> FR. et SAV.			+	+	+		+	
<i>C. macromollicula</i> NAKAI					+			
<i>C. macloviana</i> D'URV.		+						{ Kamtchatka ; Europe ; N. & S. America ; Sandwich Isl.
<i>C. maculata</i> BOOTT				+	+		+	{ Corea ; S. & E. Asia ; S. India ; S. & E. China.
<i>C. magellanica</i> LAM.				+				{ N. Siberia ; Europe ; N. & S. America.
<i>C. mandshurica</i> MEINSH.	+							N. Corea ; Ussuri.
<i>C. Mariessi</i> C.B. CLARKE				+				
<i>C. Matsumurae</i> FRANCH. var. <i>variegata</i> MAKINO		Cult.				+	+	
<i>C. Maximowiczii</i> MIQ.	+	+	+	+	+	+	+	Corea ; China.
var. <i>Kinashii</i> OHWI				+				
var. <i>levisaccus</i> OHWI				+				
var. <i>minor</i> AKIYAMA				+				
var. <i>pallida</i> AKIYAMA			+					
var. <i>subsessilis</i> OHWI				+				
<i>C. Mayebarana</i> OHWI							+	
<i>C. Mertensii</i> var. <i>urostachys</i> KÜK.	+	+	+	+				
<i>C. metallica</i> LÉV. et VNT.							+	Formosa ; Corea.
<i>C. Meyeriana</i> KUNTH				+	+			
<i>C. Michauxiana</i> BOECK.				+	+			N. America.
f. <i>asiatica</i> (HULTÉN)	+	+	+	+				Kamtchatka.
<i>C. microglochin</i> WAHL.	+							Asia ; Europe ; N. America.

Species	Localities in the Japanese Empire, Formosa and Corea excepted							Regions other than those mentioned in the left-side columns
	Saghalien	Kuriles	Hokkaido	North. Honshiu	Centr. Honshiu	South. Honshiu	Shikoku	
<i>C. microsaccus</i> C.B. CLARKE				?				
<i>C. microtricha</i> FRANCH.	+		+	+	+			
<i>C. Middendorffii</i> FR. SCHM.	+	+	+	+	+	+		Amur; Primorsk; Kamtchatka.
<i>C. mira</i> KÜKENTH.					+			
<i>C. mitoensis</i> OHWI.					+			
<i>C. mitrata</i> FRANCH.					+	+	+	Corea.
var. <i>aristata</i> OHWI					+	+	+	
<i>C. mollicula</i> BOOTT		+	+	+	+	+	+	Corea; N. China.
<i>C. Morrowii</i> BOOTT					+	+	+	
var. <i>albo-marginata</i> MAKINO								
				Cult.				
var. <i>expallida</i> OHWI				Cult.				
var. <i>laxa</i> OHWI							+	
var. <i>virginea</i> FR. et SAV.					+			
<i>C. multifolia</i> OHWI			+	+	+	+	+	
var. <i>glaberrima</i> OHWI						+		
var. <i>globosa</i> OHWI					+			
var. <i>imbecillis</i> OHWI					+			
var. <i>pallidisquama</i> OHWI					+			
var. <i>stolonifera</i> OHWI					+			
<i>C. Myabei</i> FRANCH.			+	+	+		+	Corea.
<i>C. nagasakensis</i> C. B. CLARKE							+	
<i>C. nana</i> BOOTT	+		+	+			+	Corea.
<i>C. nankaiensis</i> HONDA					+			
<i>C. nemostachys</i> STEUDEL						+	+	S. & E. Siberia; S. & C. China.
<i>C. nervata</i> FRANCH. et SAV.		+	+	+	+		+	Corea; Amur.
f. <i>dissita</i> FRANCH.	+		+	+				
var. <i>leiocarpa</i> (FR.)			+	+				
f. <i>Vidalii</i> FR. et SAV.				+				
<i>C. neurocarpa</i> MAXIM.				+	+			{Corea; Manchuria; E. Asia; N. China.
<i>C. niko-montana</i> AKIY.					+			

Species	Localities in the Japanese Empire, Formosa and Corea excepted	Saghalien	Kuriles	Hokkaido	North. Honshiu	Centr. Honshiu	South. Honshiu	Shikoku	Kiushiu	Riukius	Regions other than those mentioned in the left- side columns
<i>C. norvegica</i> WILLD.		+									{ Kamtchatka; E. Siberia; N. America; Europe.
<i>C. nutans</i> var. <i>platyrhyncha</i> KÜK.		+		+							China.
<i>C. oahuensis</i> C. A. MEY. var. <i>Boottiana</i> KÜKENTH.									++		Bonins.
var. <i>robusta</i> FR. et SAV.					+				++		Corea.
<i>C. odontostoma</i> KÜKENTH. var. <i>glabrator</i> OHWI					+				+		
<i>C. Oederi</i> var. <i>viridula</i> KÜKENTH.		+	+	+							Kamtchatka; N. America.
<i>C. Ogawai</i> AKIYAMA					+						
<i>C. Okuboi</i> FRANCHET					+						
<i>C. Oldhamii</i> C. B. CLARKE									+		
<i>C. omiana</i> FRANCH. et SAV.			+	+	+	+					
<i>C. Onoei</i> FRANCHET f. <i>latifolia</i> KÜKENTH.				+	+	+	+	+	+		Corea; Manchuria; Amur; Ussuri.
<i>C. orbicularis</i> var. <i>brachylepis</i> KÜK.				+							{ Manchuria; Mongolia; China; Amur; Siberia.
<i>C. orthostachys</i> C. A. MEY.		+	+	+							
<i>C. oshimensis</i> NAKAI					+						
<i>C. otaruensis</i> FRANCH.				+	+	+	+	+	+		
<i>C. Otayai</i> OHWI					+						
<i>C. oxyandra</i> KUDO var. <i>globosa</i> AKIYAMA		+	+	+	+	+	+	+	+		
var. <i>lanceata</i> OHWI				+	+						
var. <i>pallidior</i> OHWI					+				+		
<i>C. pachygyna</i> FR. et Sav.					+			+			
<i>C. papillaticulmis</i> OHWI					+			+	+		
<i>C. papulosa</i> BOOTT f. <i>laxiflora</i> KÜKENTH.				+	+	+		+			Corea.
f. <i>paupercula</i> KÜKENTH.				+	+						
<i>C. parciflora</i> BOOTT		+		+	+	+					
form. <i>ochrolepis</i> MIY. et KUDO				+							
form. <i>subsessilis</i> OHWI					+						
var. <i>Vanioti</i> OHWI					+						

Species	Localities in the Japanese Empire, Formosa and Corea excepted							Regions other than those mentioned in the left-side columns
	Saghalien	Kuriles	Hokkaido	North. Honshiu	Centr. Honshiu	South. Honshiu	Shikoku	
<i>C. rariflora</i> SMITH.	+	+						{ Kamtchatka; Tschuktchland; Aleutians; N. America; Europe. Lapland.
<i>f. brevipedunculata</i> KÜK.	+							
<i>C. Reinü</i> FRANCH. et SAV.				+	+	+	+	
<i>C. rhizopoda</i> MAXIM.		+	+	+	+	+	+	
<i>var. longior</i> MAXIM.			+	+	+	+	+	
<i>C. riparia</i> <i>var. rugulosa</i> KÜKENTH.			+	+				Central China; India.
<i>C. Rochebrunü</i> FR. et SAV.				+		+		
<i>var. remotaeformis</i> (KOM.)	+		+	+	+	+		
<i>C. rotundata</i> WAHL.	+	+						{ Kamtchatka; N. & E. Siberia; N. Europe; N. N. America. Formosa; Corea; Manchuria; Amur; S. & E. China; E. & N. India; Himalaya. Corea; C. China. Manchuria; Dahuria; Siberia; Caucasus; Europe; N. America. Corea; Manchuria; E. Siberia.
<i>C. Royleana</i> NEES.			+	+	+	+	+	
<i>var. longearistata</i> (KÜK.)				+	+	+		
<i>C. rupestris</i> ALL.	+							
<i>C. sabynensis</i> LESSING	+	+						
<i>C. sachalinensis</i> FR. SCHM.	+	+	+	+	+		+	
<i>C. sacrosancta</i> HONDA				+				
<i>C. sadoensis</i> FRANCH.	+		+	+	+			
<i>var. integra</i> OHWI				+				
<i>C. satsumensis</i> FR. et SAV.				+	+	+	+	
<i>C. Savatieri</i> FRANCH.								
<i>C. saxatilis</i> L.		+						
<i>C. scabrifolia</i> STEUD.			+	+	+	+	+	
<i>C. scabro-aristata</i> AKIY.				+				
<i>C. Schmidtii</i> MEINSH.	+	+						
<i>C. scita</i> MAXIM.	+	+	+	+	+			{ Corea; Manchuria; E. Siberia; Kamtchatka. Kamtchatka.
<i>var. rüshirensis</i> KÜK.			+					
<i>var. scabrinervia</i> KÜK.	+	+	+					{ Corea; Amur; N. Mongolia; E. Siberia. Corea. ?
<i>C. scitaeformis</i> KÜKENTH.				+	?			
<i>C. Sedakowü</i> C. A. MEY.			+	+				
<i>C. semiplena</i> KÜKENTH.	+	+						
<i>var. kirigaminensis</i> OHWI				+				
<i>C. senanensis</i> OHWI				+				

Localities in the Japanese Empire, Formosa and Corea excepted	Saghalien	Kuriles	Hokkaido	North. Honshiu	Centr. Honshiu	South. Honshiu	Shikoku	Kiushiu	Riukius	Regions other than those mentioned in the left- side columns
Species										
<i>C. sendaica</i> FRANCH.				+	+					
<i>C. shakushizawaensis</i> AKIY.					+					
<i>C. sharensis</i> FRANCH.			+	+	+					
<i>C. shimidzensis</i> FRANCH.			+	+	+					Corea.
<i>f. longispicula</i> AKIY.			+	+						
<i>var. nervulosa</i> KÜKENTH.			+							
<i>C. shimotsukensis</i> HONDA					+					
<i>C. shinanoana</i> NAKAI					+					
<i>C. siroumensis</i> KOIDZ.					+					
<i>C. siccata</i> DEWEY			+	?	+	?				
<i>C. siderosticta</i> HANCE			+	+	+	+	+	+		Corea ; Manchuria ; China.
<i>var. bracteosa</i> FRANCH.			+							
<i>C. sikokiana</i> FR. et S.	+		+		+	+	+	+		
<i>var. arimensis</i> OHWI					+					
<i>var. aureo-brunnea</i> OHWI								+		
<i>var. elongata</i> OHWI								+		
<i>var. tenuinervis</i> OHWI								+		
<i>C. sociata</i> BOOTT								+	+	Formosa.
<i>C. soyaensis</i> KÜKENTH.	+		+							
<i>C. sparsiflora</i> STEUD.	+	+	+	+	?	?	+			{ Manchuria ; Amur ; Ussuri ; Kamtchatka ; Siberia ; N. Europe.
<i>var. Petersü</i> KÜK.	+	+								Kamtchatka ; Manchuria.
<i>C. squamoidea</i> AKIY.			+							
<i>C. stellulata</i> GOOD.	+	+	+	+	+	+		+		
<i>C. stenantha</i> FR. et SAV.	+	+	+	+	+	+		+		
<i>var. taisetsuensis</i> AKIY.		+	+							Kamtchatka.
<i>var. yatsugatakensis</i> AKIY.					+					
<i>C. stenostachys</i> FR. et S.					+					
<i>C. stipata</i> MUEHL.	+		+	+	+					N. America.
<i>C. subcernua</i> OHWI								+		
<i>C. subdita</i> OHWI						+	+	+		
<i>C. subphacota</i> NAKAI				+	+			+		Corea.
<i>var. glauca</i> HONDA			+	+						

Localities in the Japanese Empire, Formosa and Corea excepted	Saghalien	Kuriles	Hokkaido	North. Honshu	Centr. Honshu	South. Honshu	Shikoku	Kiushiu	Riukius	Regions other than those mentioned in the left- side columns
<i>C. subspathacea</i> WORMSKJ	+	+								{ N. Europe; N. America; Green- land; N. Asia.
<i>C. subumbellata</i> MEINSH.	+	+								
var. <i>vercunda</i> OHWI				+						
<i>C. succedanea</i> NAKAI					+					
<i>C. Tashiroana</i> OHWI					+					
<i>C. teiogyna</i> var. <i>scabriculum</i> KÜK.								+		Corea.
<i>C. temnolepis</i> FRANCH.				+	+					{ Corea; Manchuria; E. Siberia; Kamtchatka; Europe; N. America.
<i>C. tenella</i> SCHKUHR.	+									
var. <i>brachycarpa</i> KÜK.	+									
var. <i>misera</i> FRANCH.	+		+	+	+					
<i>C. tenuiflora</i> WAHL.	+		+	+	+					{ Corea; Manchuria; Amur; Kamtchatka; E. Siberia; Europe; N. America.
var. <i>macilenta</i> O. LANG.	+		+							Central Norway.
<i>C. tenuiformis</i> LÉV. et VNT.			+							Corea.
<i>C. tenuinervis</i> OHWI										
<i>C. tenuiseta</i> FRANCH.				+	+					
var. <i>brevisquama</i> KOIDZ.					+					
<i>C. tenuissima</i> BOOTT				+	+	+	+	+		Corea; N. & C. China.
<i>C. tenuistachya</i> NAKAI					+			+	?	
<i>C. Thunbergii</i> STEUD.				+	+	+	+	+	+	China.
var. <i>brachysandra</i> MIY. et KUD.		+	+	+						
<i>C. Tobae</i> HONDA										
<i>C. Tolmiei</i> BOOTT		+								{ Kamtchatka; Chuktsch-Penins.; Ajan; N. W. America.
<i>C. traiziscana</i> FR. SCHM.	+	+	+	+	+					Kamtchatka.
<i>C. transversa</i> BOOTT				+	+	+	+	+	+	Corea; E. Asia; E. China.
<i>C. tristachya</i> THUNB.					+	+	+	+		Corea; S. & C. China.
<i>C. tsuishikarensis</i> KOIDZ. et OHWI			+							
<i>C. tumidula</i> OHWI								+		
<i>C. tuminensis</i> KOMAR.	+									Corea; E. Siberia; Kamtchatka.
<i>C. uber</i> OHWI								+	+	
<i>C. uda</i> MAXIM.			+	+						

Localities in the Japanese Empire, Formosa and Corea excepted Species	Saghalien	Kuriles	Hokkaido	North. Honshiu	Centr. Honshiu	South. Honshiu	Shikoku	Kiushiu	Riukius	Regions other than those mentioned in the left- side columns
<i>C. uzenensis</i> KOIDZ.				+						{ Corea; China; Manchuria; Kamtchatka; Siberia; Cauca- sus; Europe; N. America.
<i>C. vernicosa</i> FRANCH.			+							
<i>C. vesicaria</i> L.	+	+	+	+	+					
<i>f. elatior</i> ANDERSS.				+						N. America. { Manchuria; Kamtchatka; Siberia. Corea.
var. <i>monile</i> TUCKERM.	+	+	+							
var. <i>tenuistachya</i> KÜK.	+		+							
<i>C. villosa</i> BOOTT			+					+		E. Siberia.
var. <i>straminea</i> AKIY.					+					
<i>C. vulpi-caudata</i> AKIY.			+							
<i>C. wiluica</i> MEINSH.	+									
var. <i>Yoshinoi</i> OHWI				+						
<i>C. yesoensis</i> KOIDZ.			+							
<i>C. Yoshinoi</i> OHWI					+					

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Carex pseudo-sadoensis AKIYAMA.

× ca. 2/5.



Carex Ogawai AKIYAMA.

× ca. 1/3.