HOKKAIDO UNIVERSITY

Title	CONSPECTUS CARICUM JAPONICARUM
Author(s)	Akiyama, Shigeo
Citation	Journal of the Faculty of Science, Hokkaido Imperial University. Ser. 5, Botany, 2(1), 1-266
Issue Date	1932
Doc URL	http://hdl.handle.net/2115/26216
Type	bulletin (article)
File Information	2(1)_P1-266.pdf

Instructions for use

Hokkaido University Collection of Scholarly and Academic Papers : HUSCAP

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)

CONTENTS

		PAGE
I.	Introduction	1
II.	Key to Subgenera, Sections and Species	5
III.	Enumeration of Species with Descriptions of Utricles	48
IV.	Geographical Distribution of Species in different Regions	237
	Index of Species, Synonyms, Subgenera, Sections and Subsections	251
	Index of Japanese Names	262

I. INTRODUCTION

Since the establishment of the genus *Carex*, by the great LINNAEUS[1] in 1737, the Japanese *Carices* have often been studied and revised by several scholars both at home and abroad. Among the latter, THUNBERG[2] 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).

Journal of Faculty of Science, Hokkaido Imperial University, Ser. V, Vol. II, No. 1, 1932.

C. pumila THUNB. Then follows STEUDEL[1] 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, BOOTT[3] and FRANCHET[4] 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 regretable 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.

January 1932, Sapporo

SHIGEO AKIYAMA
Botanical Institute

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 ±densiflora. Utriculi subturgido-trigoni rostro brevi recto apiculati . . . . . Sect. 2. **Petraeae** p. 6
    II. Pars feminea spiculae ±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 longerostrati.

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 bidenticulati.

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. fulta* FRANCHET (p. 56, Fig. 9)

II. Culmus laevis. Spicula 8–10 mm longa, pars feminea sublaxiflora. 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 plurifoliatus. Utriculi brunneo-virentes. 16. *C. microglochin* WAHL. (p. 58)

B. Culmus paucifoliatus. 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. U riculi 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 albidae. 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. Utricu i marginibus non alati turgidi vel plano-convexi.
      1. Utriculi suberecti ovati dense albo-punctulati in rostrum breve ore subintegrum desinentes.
        * Rhizoma laxe caespitosum. Spiculae plures densiflorae . . . . . Sect. 16. **Canescentes** pp. 11–12
        Rhizoma laxe caespitosum et stolones tenues emittens. Spiculae paucae sublaxiflorae . . . 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 holizontaliter repens fasciculos foliorum sterilium et culmos florentes in sinu recto agens. Spiculae spicam sublaxam 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. **Ovales** 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 gynaecandrae ovales 5–8 mm longae. Squamae cuspidatae albostramineae. 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 gynaecandrae. 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* WAHLENB. (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 subacutae. Utriculi membranacei lanceolato-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 squarrosi basi rotundati. Spiculae 3–5 parum remotiusculae 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 plerumque contracti.

a. Spiculae 3–8 inferiores 1–2 remotae bracteis brevibus suffultae.

I. Spiculae parvulae subglobosae pauciflorae. Utriculi demum subexcurvi ovati 2.5 mm longi utrinque plurinervosi basi subrotundati . . . . . 48. *C. laeviculmis* MEINSH. (p. 81)

II. Spiculae ovatae. Utriculi suberecti lanceolato-ovati 4 mm longi subenervii basi attenuati.

1. Bracteae 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. Bracteae 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 evaginantes raro vaginantes (*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 infericres subradicales pedunculatae).

* Bracteae ima ± foliacea (sed vide *C. Meyerianam*). Spicula terminalis saepius gynaecandra.

§ 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 setacea. 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.

* Bracteae inflorescentiam non superantes semper evaginantes. Squamae femineae atro-fuscae . Sect. 25. **Scitae** p. 24

** Bracteae inflorescentiam superantes interdum vaginantes. Squamae femineae dilutiores. (Utriculi glabri.) . . . . . Sect. 26. **Maximae** p. 25

b. Spiculae femineae laxiores. Bracteae semper vaginantes.

I. Utriculi pubescentes vel hirti vel glabri.

1. Bracteae brachyphyllae. Nux apice mitrata. . . . . Sect. 30. **Mitratae** pp. 26–31

2. Bracteae 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. Bracteae breviter vaginantes (in *C. laxa* longe vaginantes). Utriculi subturgido-trigoni vel compresso-trigoni. Stylus exertus. . . . . Sect. 32. **Limosae** p. 32

** Spiculae femineae laxiflorae erectae. Bracteae longe vaginantes. Utriculi subinflato-trigoni. Stylus haud exertus . . . . . Sect. 33. **Paniceae** p. 33

2. Squamae femineae pallide ferrugineae vel omnimo pallidae. Utriculi stramineo- vel brunneo-virides vere trigoni.

* Caules centrales. Spiculae femineae oblongo-cylindricae subdensiflorae. Bracteae culmum superantes. Utriculi subinflato-trigoni . . . . . Sect. 34. **Griseae** p. 33

** Caules laterales. Spiculae femineae anguste cylindricae laxiflorae. Bracteae 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. Bracteae plerumque vaginantes. Utriculi suberecti ovato-elliptici vel angustiores pallide-virides obsolete nervosi. . . . . Sect. 37. **Hymenochlaenae** pp. 36–39

** Spiculae femineae densiflorae. Bracteae plerumque evaginantes. Utriculi demum divaricati (sed cf. *C. ischnostachya*) ovati brunneo- vel atro-virides plurinervosi. Sect. 38. **Tumidae** pp. 39–41

2. Rostrum utriculi conspicue bidentatum.

* Caules saepe laterales. Bracteae plerumque brachyphyllae. Utriculi rhomboidales vel ovati turgido-trigoni multinervosi. Styli basis incrassata persistens . . . Sect. 39. **Rhomboidales** pp. 41–44

** Caules semper centrales. Bracteae 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. Bracteae squamiformes vix ima foliacea. Utriculi enervii saepe turgiduli . . . . . Subs. 2. *Rigidae* p. 18

II. Culmi graciliores. Folia longe acuminata flaccidiora. Bracteae foliaceae. Utriculi ±nervosi haud turgidi . . . . Subs. 3. *Vulgares* p. 18

b. Culmi aphyllopodi 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. Bracteae breves . . . . . Subs. 4. *Caespitosae* pp. 18–19

2. Rhizoma plerumque stolones longos emittens. Spiculae femineae cylindricae. Bracteae 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) KÜKENTHAL (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 maginibus involuta vel complicata.
   a. Squamae angustae hyalinae . . . . . 59. *C. jijogatakensis* 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. Bracteae 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 foliacea. 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 papillosi . . . . 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 omnimo 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 papillosi 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-papillosi.

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 gynaecandra laterales basi saepe masculinae, pedunculis scabris. Utriculi brunneo-virides. . . 86. *C. subcernua* OHWI (p. 103)

III. Spiculae superiores 3 gynaecandrae femineae 5–6 mm latae, pedunculi spinulosi. Utriculi cinnamomei . . . . . 87. *C. cernua* BOOTT (p. 103, Fig. 54)

b. Utriculi turgido-biconvexi non elevato-papillosi.

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 plurinervosi . . . . . 88. *C. aequialta* KÜKENTH. (p. 104, Fig. 55)

2. Spiculae 4–6 densiflorae demum cernuae. Squamae femineae emarginatae. Utriculi ferrugineo-virentes 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 obtectus. Spicula terminalis gynaecandra. Utriculi ovati minus turgidi, rostrum oblique tortum . . . . . 93. *C. shimidzensis* FRANCHET (p. 107, Fig. 57)

III. Culmus nuda. Spicula terminalis semper 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 cinereo-virides opaci non turgidi.
   a. Culmus humilis. Folia angusta marginibus involuta. Spiculae femineae breves pauciflorae subsessiles. Bracteae subspathaceae.
      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. Bracteae haud spathaceae.
      I. Rhizoma stoloniferum. Culmus basi vaginis purpureis cinctus. Spiculae femineae oblongo-cylindricae 2–8 cm longae. Bracteae culmum superantes. Squamae femineae acuminatae. Utriculi 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. Spiculae femineae ovatae vel oblongae 1–2 cm longae. Bracteae culmo breviores. Squamae femineae subobtusae. Utriculi concavo-convexi . . . 99. *C. Middendorffii* FR. SCHM. (p. 110, Fig. 60)

B. Spiculae plerumque numerosae 2-6-nae. Squamae 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. Spicula terminalis gynaecandra, parte masculina inconspicua. Utriculi elliptici . . . 101. *C. Hidewoi* OHWI (p. 112)

b. Culmus compresso-triqueter sursum scaber. Spicula terminalis gynaecandra. Utriculi ovati . . . . . 102. *C. soyaeensis* KÜKENTHAL (p. 112, Fig. 61)

c. Culmus acutangulus ex toto scaberrimus. Spicula terminalis mere masculina vel gynaecandra. Utriculi ovato-elliptici . . . 103. *C. Augustinowiczii* MEINSH. (p. 113, Fig. 62)

B. Squamae femineae majusculae saepe acuminatae. Utriculi plerumque longiores quam 3mm.

a. Culmus rigidus. Spiculae omnes sessiles. Utriculi plurinervosi.

I. Rhizoma caespitosum. Spiculae 2–3 terminalis masculina. Squamae femineae obtusae muticae. Rostrum utriculi integrum. . . . . 104. *C. Meyeriana* KUNTH (p. 114, Fig. 63)

II. Rhizoma stoloniferum. Spiculae 3–4 terminalis gynaecandra. Squamae femineae cuspidato-aristatae. Rostrum leviter bidentatum . . . . . 105. *C. Buxbaumii* WAHLENBERG (p. 115)

b. Culmus saepe gracilior apice cernuus. Spiculae inferiores ± 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 subaequantes, 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 rigidula. 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* MEINSHAUSEN (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 obovato-oblongi vel elliptici trigoni non inflati plerumque hirtuli.

a. Folia saltem juniora subtus pilosa. Squamae femineae apice emarginatae fuscae mucronatae. Utriculi pallide virides pluricostati 119. *C. gifuensis* FRANCHET (p. 126)

b. Folia semper glaberrima. Squamae femineae 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. Utriculi 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 plurinervosi.

* Spiculae femineae oblongae densiflorae approximatae vel ima remota. Utriculi obovati.

§ Folia erecta. Spiculae 3–4, femineae 6–10 mm longae. Utriculi subinflati . . . . . 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 sublaxiflorae remotiusculae. Utriculi ovato-fusiformes . . . . . 125. *C. microtricha* FRANCHET (p. 131, Fig. 79)

II. Rhizoma vix caespitosum stolones satis longos agens. Folia culmo valde brevia, 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 atrobrunneae comose dissolutae. Utriculi squamas superantes hirtelli distinctius rostrati.

1. Spiculae femineae oblongo-ovatae sessiles vel breviter pedunculatae. Bracteae superiores squamiformes. Utriculi obovati 2.5–3 mm longi evidenter nervosi . . . . . 129. *C. sabynensis* LESSING (p. 133, Fig. 81)

2. Spiculae femineae oblongae exertae pedunculatae. Bracteae 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 marcidae.

° Culmus tenuis. Spiculae obovatae sublaxiflorae.

× 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)

△△ Bracteae 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 sublaxiflorae. Utriculi squamas superantes vel aequantes plerumque multinervosi.

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 carina 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 carina 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 omnimo androgynae . . . . . 148. *C. tumidula* OHWI (p. 142)

b. Squamae femineae fulvae vel pallide rufae vel omnimo pallidae apice truncatae mucronatae. Utriculi ovato- vel obovato-elliptici.
I. Rhizoma tenue plerumque stoloniferum. Folia 1–3 mm lata. (Spiculae superiores ± approximatae. Bracteae tubuloso-vaginantes.)
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. Bracteae 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 plurinervosi breviter 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. Bracteae 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 obtuso 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 subdensiflora. Stigmata brevia 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. Bracteae vix vaginantes . . Subsect. 1. *Mucronatae* p. 34

B. Spiculae plures plus vel minus remotae pedunculatae 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 numerosae plurinae . . . . . Subsect. 4. *Decorae* p. 36
   II. Spiculae laterales mere femineae haud numerosae 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 epapillosi vel papillosi 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 papillosi glabri marginibus laeves vel parce scabri, rostrum breve breviter bifurcatum.

1. Utriculi dense papillosi marginibus laeves . . . . . 191. *C. kattaeana* KÜKENTHAL (p. 168)

2. Utriculi minute papillosi 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. Bracteae 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. nagasakensis*) . . . . . 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 cernuae. Squamae femineae fulvae vel castaneae marginibus latissime albo-hyalinae. Utriculi in rostrum mediocre rectum desinentes . . . . . 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 excurvum 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 ovales basi cuneatim attenuati. Stylus longus.
    I. Spicula terminalis gynaecandra.
      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. *scabriculmis* 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 ovales 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 laxe inclusa . . . 222. *C. Arnellii* CHRIST. (p. 187)

b. Spiculae femineae approximatae breviter pedunculatae. Nux utriculum 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 bidentulum.
    I. Utriculi late ovati 3 mm longi brevirostrati . . . . . 224. *C. Brownii* TUCKERM. (p. 188)
    II. Utriculi ovati 5–6 mm longi longerostrati.
      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, plurinervosi, breviter vel mediocriter 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. Bracteae 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. Bracteae evaginantes. Squamae femineae pallide fulvae vel sordide stramineae.

1. Spiculae inferiores remotae plerumque pedunculatae. Bracteae 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 subreflexi . . . . . 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. Stigmata 3.

I. Spiculae femineae subdensiflorae vel laxiores. Utriculi 3–3.5 mm longi demum divaricati. Nux breviter rostrata apice hastata.

1. Rhizoma oblique caespitosum. Culmus centralis. Spiculae femineae basi breviter masculinae vel sexu distinctae. Squamae femineae longe aristatae.

* Spiculae remotae ima longe pedunculata. Bracteae 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. Bracteae inferiores inflorescentiam superantes . . . . . 242. *C. uber* OHWI (p. 201)

2. Rhizoma dense caespitosum et stoloniferum. Culmus lateralis. Spiculae femineae apice breviter masculinae. Squamae femineae mucronatae. Utriculi plurinervosi.

* 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 coronata . . . . . 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. Spiculae femineae omnes remotae. Nux epapillosa.

* Spiculae femineae subdensiflorae. Caules foliaque glabri.

§ (Clmus 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. Squamae 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 discigerum dilatatum contracta . . . . . 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-cylindrica. 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. Spiculae femineae superiores minus vel plus approximatae sessiles vel breviter pedunculatae erectae.
§ Vaginae basin cingentes brunneae dissolutae. (Culmus centralis. Folia lata. Utriculi fusiformes brunneo-virides glabri).
° Culmus 60–90 cm altus. Folia 4–10 mm lata. Spiculae femineae pluriflorae. . . . . 257. *C. parciflora* 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. Squamae latae albo-marginatae. . . . . 259. *C. gagaensis* AKIYAMA (p. 212, Fig. 155)

§§ Vaginae inferiores aphyllae purpureae integrae.
° Spiculae femineae dissitiflorae. 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 paucinervosi. Styli basis subincrassata.

a. Utriculi in rostrum longum tenue contracti. Subsect. 2. *Tentaculatae.* p. 45

b. Utriculi in rostrum mediocre 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 sublaxiflorae. Bracteae vaginantes. Utriculi lineari-oblongi minus inflati basi spongiosa contracti . . . . . 269. *C. Michauxiana* BOECK. (p. 220, Fig. 162)

B. Rhizoma stoloniferum. Culmus acute triqueter. Bracteae 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. Dickinsii* 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 patentes 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. Bracteae omnes longe vaginantes . . . . . 281. *C. hebecarpa* C. A. MEY. (p. 230, Fig. 169)

b. Culmus nonnisi inferne foliatus. Bracteae 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* TURCZANINOW (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.

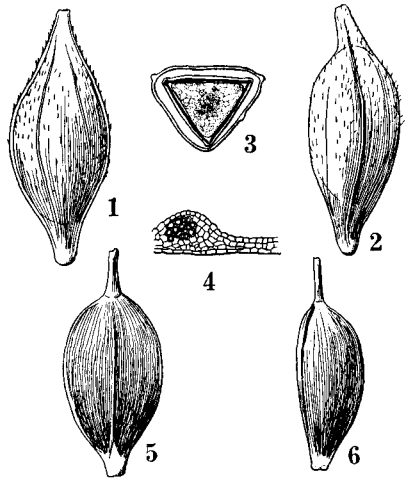


Fig. 1. *Carex grallatoria* MAXIMOWICZ

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

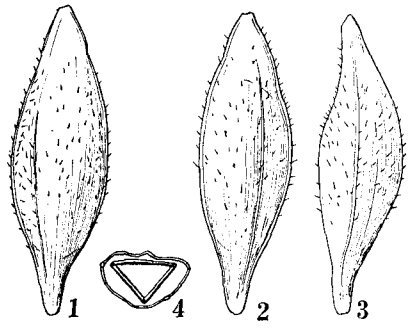


Fig. 2. *Carex grallatoria* var. *heteroclita* KÜKENTH.

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

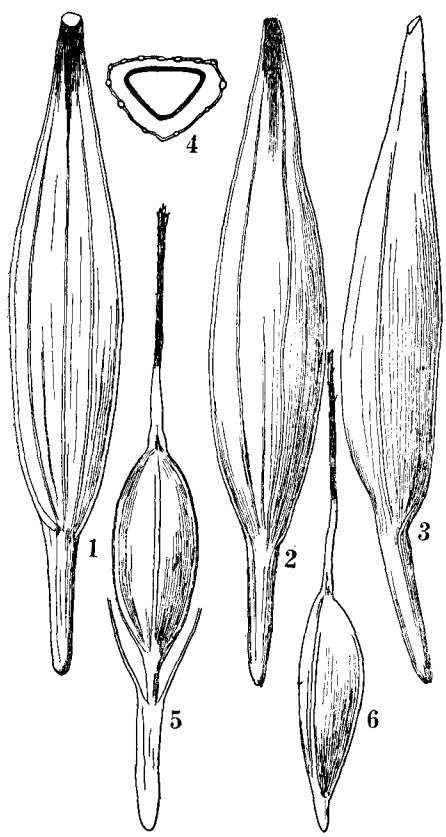


Fig. 3. *Carex hakkodensis* FRANCH.

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.

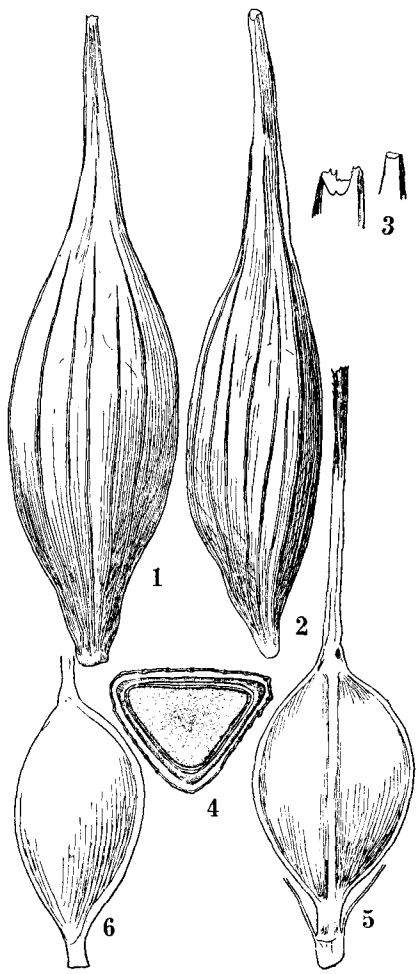


Fig. 4. *Carex rhizopoda* MAXIM.

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 plurinervosi 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 acuminatis. Utriculi ut forma typica.

Nom. Jap. Hoso-shirako-suge.

Hab. Hokkaido, Honshiu and Shikoku.

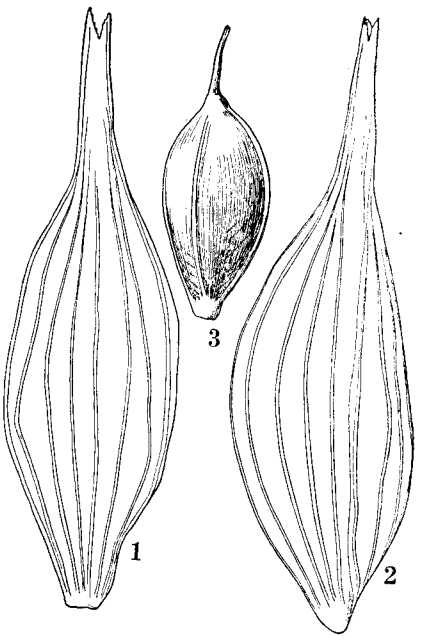


Fig. 5. *Carex rhizopoda* var. *longior* MAXIM.

1. Utricle seen from ventral side, ×14.
2. The same, from lateral side, ×14.
3. Nut, ×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.

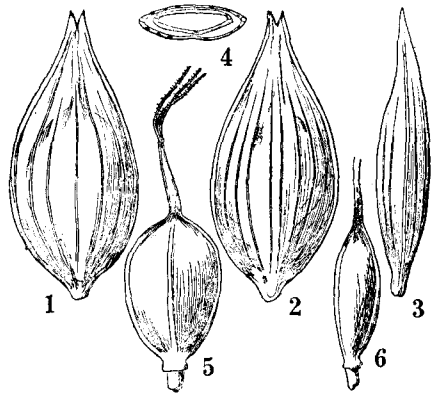


Fig. 6. *Carex Onoei* FRANCH. et SAV.
1. Utricle seen from dorsal side, ×14.
2. The same, from ventral side, ×14.
3. The same, from lateral side, ×14.
4. The same with nut, transversely cut, ×14.
5. Nut seen from ventral side, ×14.
6. The same, from lateral side, ×14.

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 serratulum 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.

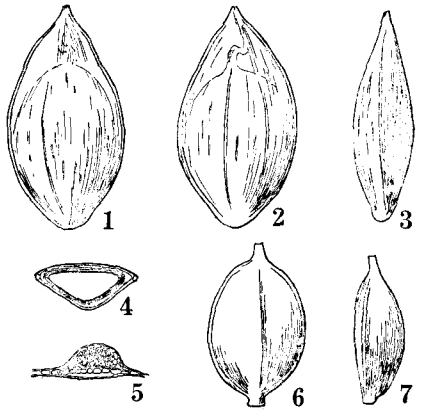


Fig. 7. *Carex Krameri* FRANCH. et SAV.

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. Margin of the same, ×ca. 100.
6. Nut seen from ventral side, ×14.
7. The same, from lateral side, ×14.

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.

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

C. capituliformis MEINSH. in MAXIM. Mélang. 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, juxtamarginalibus 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.

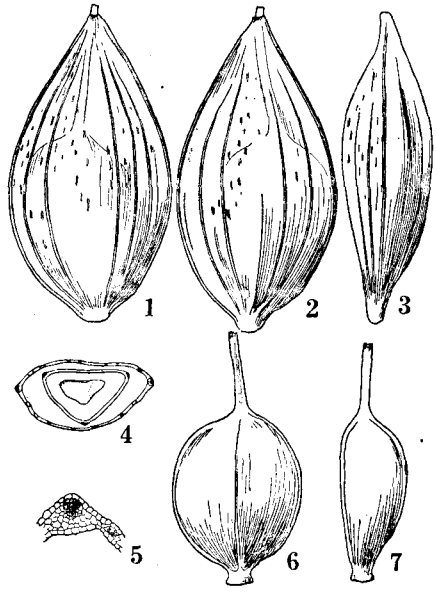


Fig. 8. *Carex nana* BOOTT

1. Utricle seen from dorsal side, ×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. 75.
6. Nut seen from ventral side, ×14.
7. The same, from lateral side, ×14.

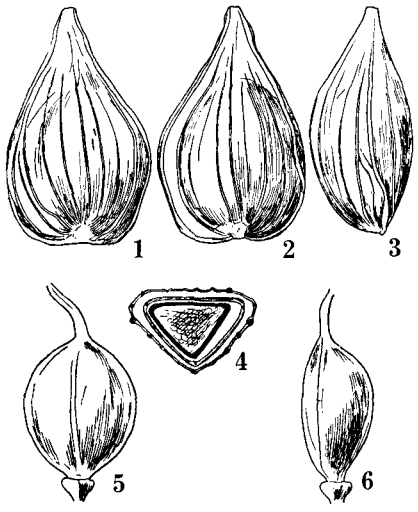


Fig. 9. *Carex fulta* FRANCH.

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.

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 plurinervosi (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.

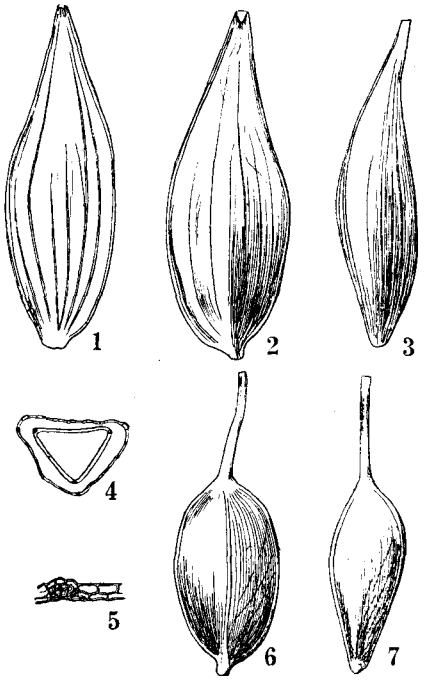


Fig. 10. *Carex uda* MAXIM.

1. Utricle seen from dorsal side, ×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. 75.
6. Nut seen from ventral side, ×14.
7. The same, from lateral side, ×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 plurinervosi, nervis obsoletis vix 12, et 2 marginalibus conspicuis, basi fere attenuati brevissime stipitati, apice in rostrum 0.5 mm longum conicum ore hyalino subemarginatum sensim attenuati.

Nom. Jap. Ô-hari-suge.

Hab. Hokkaido.

Distrib. Corea, Manchuria, Amur and Ussuri.

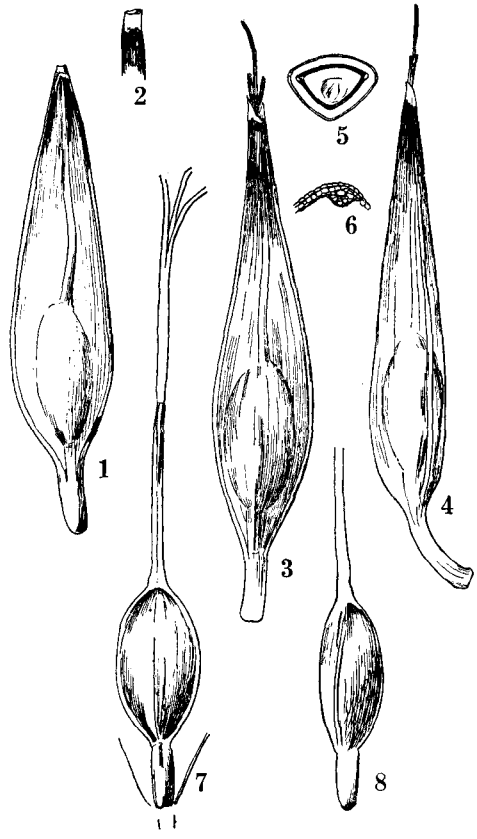


Fig. 11. 1–2. *Carex pyrenaica* WAHL.
1. Utricle seen from dorsal side, ×14.
2. Apical portion of the utricle, ×14.

3–8. *Carex pyrenaica* var. *altior* KÜK.
3. Utricle seen from ventral side, ×14.
4. The same, from lateral side, ×14.
5. The same with nut, transversely cut, ×14.
6. Portion of the wall of the utricle, transversely cut, × ca. 100.
7. Nut seen from dorsal side, ×14.
8. The same, from laterle side, ×14.

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;

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.

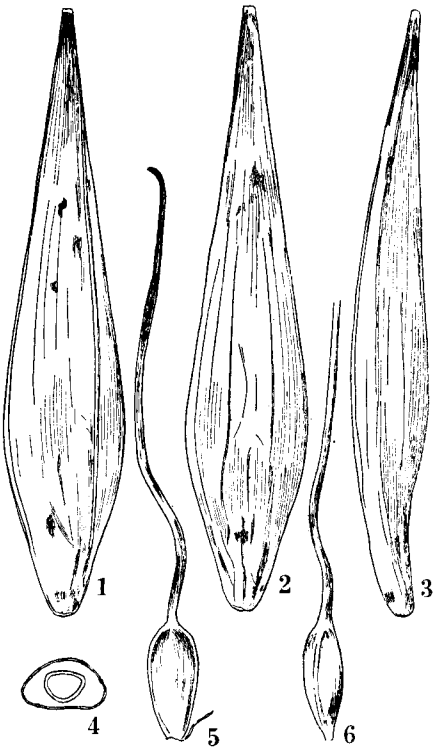


Fig. 12. *Carex pauciflora* LIGHTF.

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

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.

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. leucoglochin EHRH. in L. f., Suppl. (1781) 413.

C. microglochin 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.

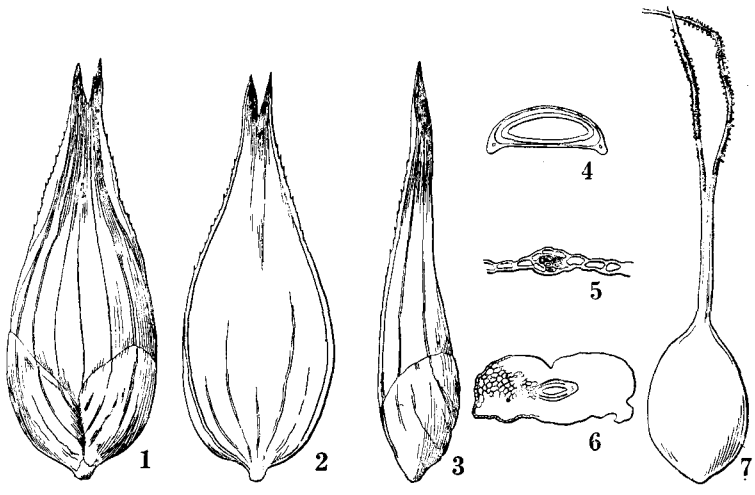


Fig. 13. *Carex arenicola* FR. SCHM.

1. Utricle seen from dorsal side, ×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. Basal portion of the utricle, transversely cut, ×21. 7. Nut, ×14.

C. chaetorrhiza FRANCH. et SAV. l. c. 552 (incl. var. *stenostachys* excl. synon. *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 plurinervosi, 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.-Pétersbourg 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.

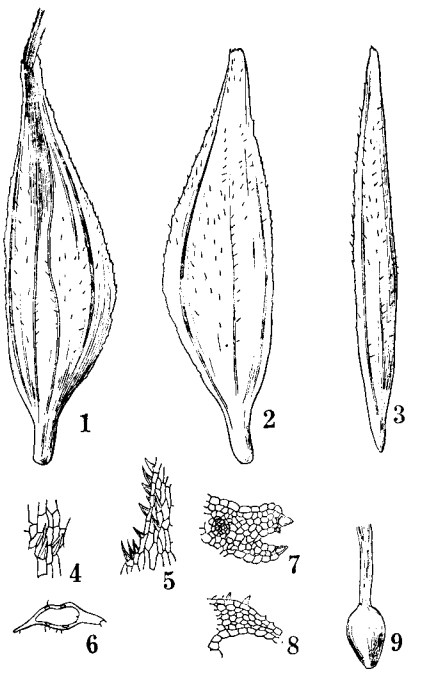


Fig. 14. *Carex accrescens* OHWI (Specimen immature)

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

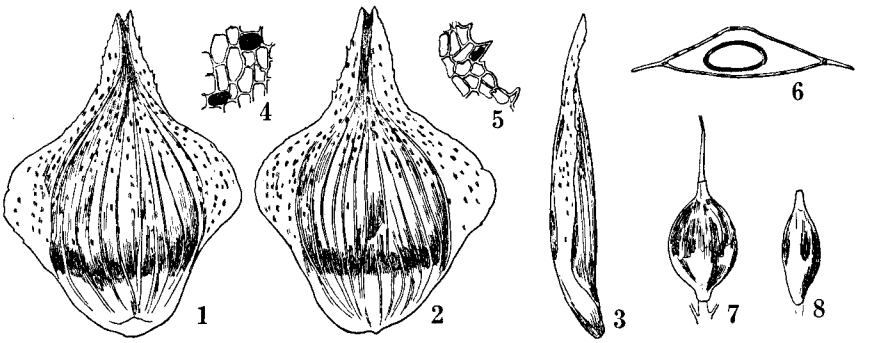


Fig. 15. *Carex neurocarpa* MAXIM.

1. Utricle seen from dorsal side, ×14. 2. The same, from ventral side, ×14. 3. The same, from lateral side, ×14. 4. and 5. Portions of the utricle, ×50. 6. Utricle with nut, transversely cut, ×14. 7. Nut seen from dorsal side, ×14. 8. The same, from lateral side, ×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 plurinervosi, 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 plurinervosi, 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 mediocre rostrati . . . . . *C. albata* var. *Franchetiana* (OHWI)

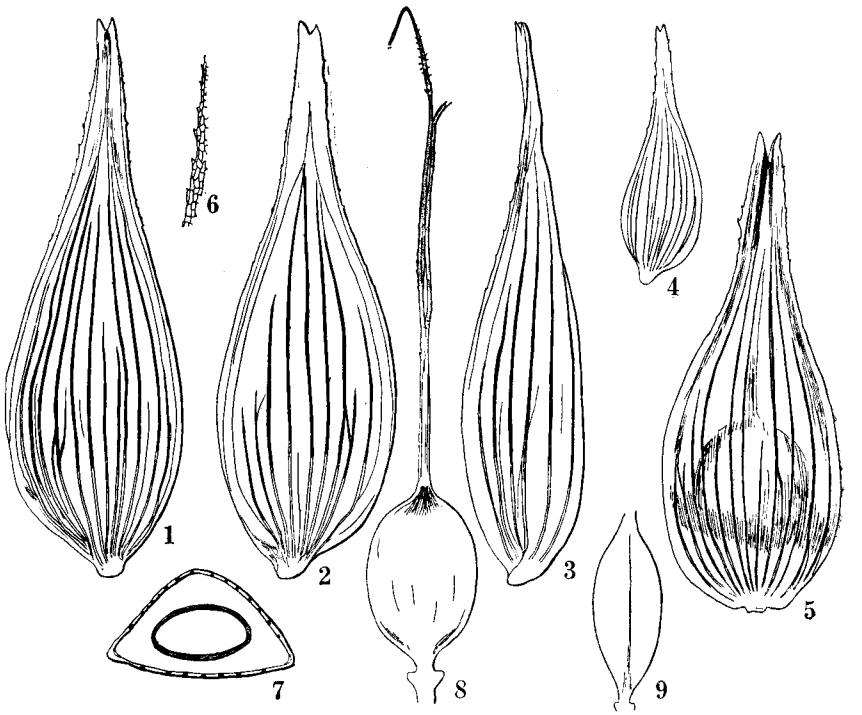


Fig. 16. *Carex albata* BOOTT

1. Utricle seen from dorsal side, ×14. 2. The same, from ventral side, ×14. 3. The same, from lateral side, ×14. 4. and 5. Anomalous forms of the utricles. 6. Margin of the beak, ×30. 7. Utricle with nut, transversely cut, ×14. 8. Nut seen from dorsal side, ×14. 9. The same, from lateral side, ×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 cinerascentes superne dorsalis atro-sanguineo-glandulosi glabri evidentius multinervosi (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-minoborosuge.

Hab. Honshiu.

Distrib. Corea.

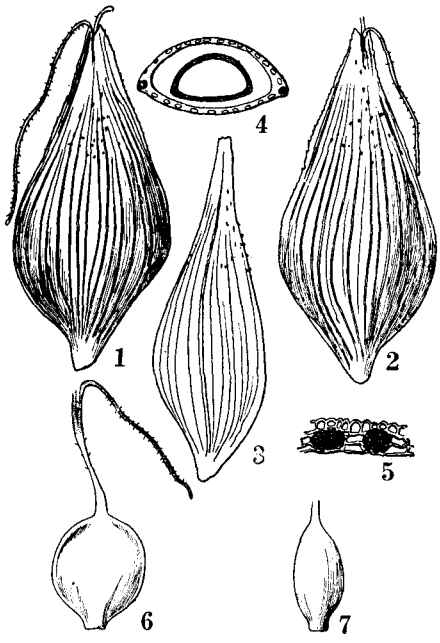


Fig. 17. *Carex succedanea* NAKAI

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 dorsal side, ×14.
7. The same, from lateral side, ×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.

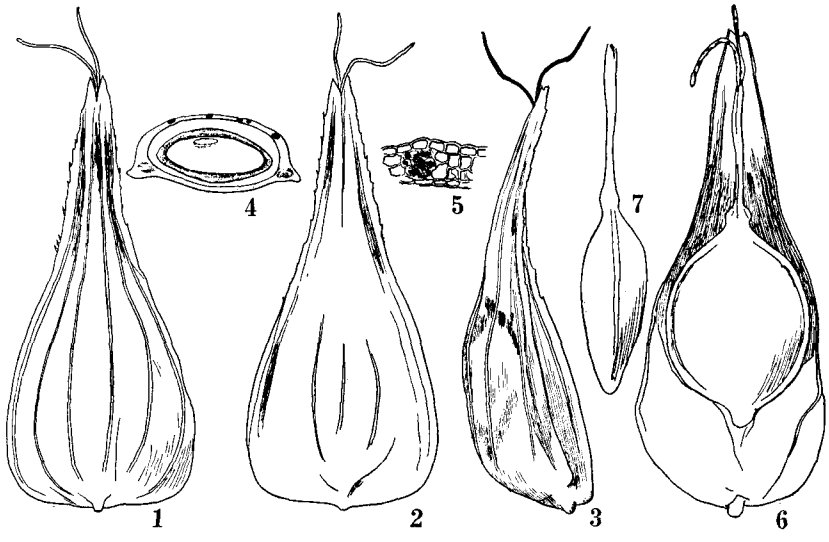


Fig. 18. *Carex stipata* MUEHL.

1. Utricle seen from dorsal side, ×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. 150. 6. Utricle longitudinally cut, showing its spongy base and the nut on the same base, ×14. 7. Nut seen from lateral side, ×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. teretiuscula*; 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, Kashimir, 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.

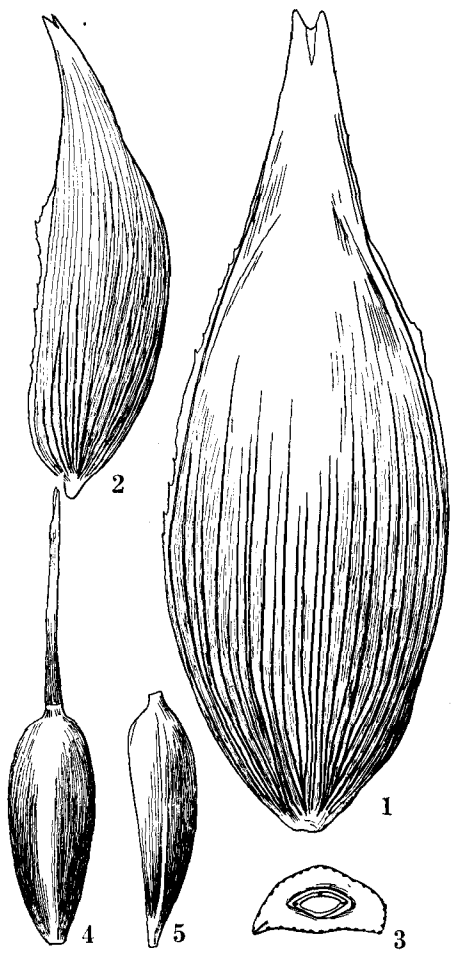


Fig. 19. *Carex macrocephala* var. *Kobomugi* MIYABE et KUDO

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

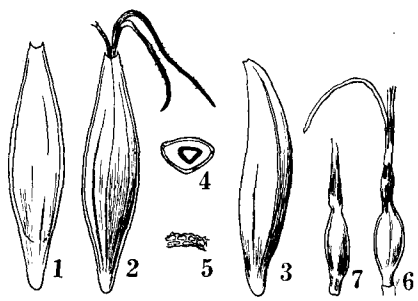


Fig. 20. *Carex digama* NAKAI

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. 75.
6. Nut seen from dorsal side, ×14.
7. The same, from lateral side, ×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 paucinervosi, (2-nervis marginalibus prominentibus), basi longe attenuati stipitati, apice in rostrum breve conicum margine saepe parcissime scabrum ore leviter bidentulum truncati.

Nom. Jap. Sengen-suge.

Hab. Honshiu.

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.

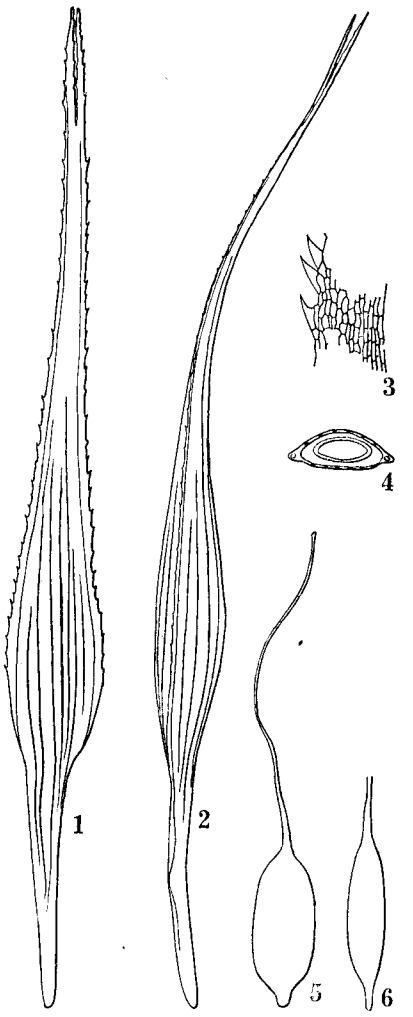


Fig. 21. *Carex cyperoides* L.

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

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.

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.

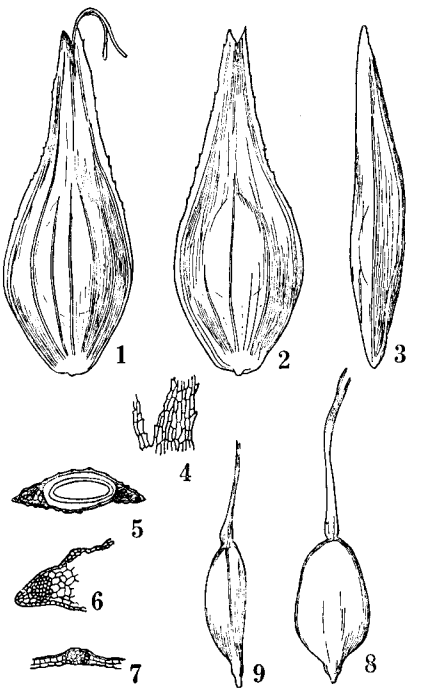


Fig. 22. *Carex Maackii* var. *nipponica* OHWI

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

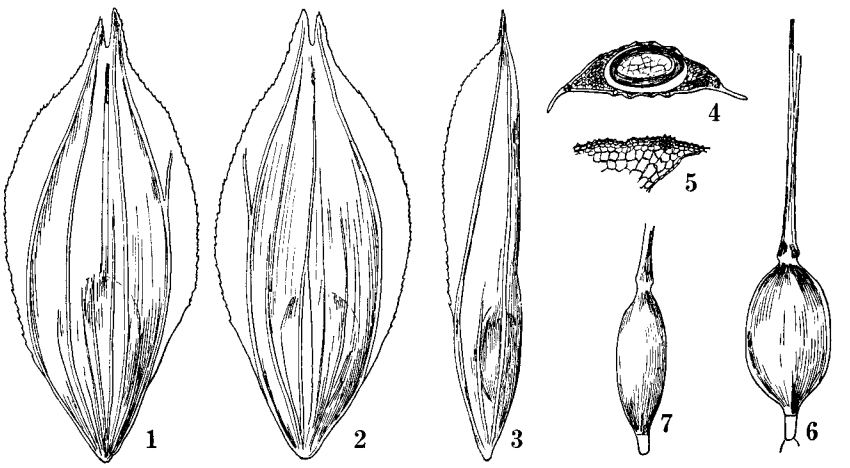


Fig. 23. *Carex planata* FRANCH. et SAV.

1. Utricle seen from dorsal side, ×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 dorsal side, ×14. 7. The same, from lateral side, ×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 plurinervosi, nervis 5–9, basi attenuato-contracti, margine spongiosi 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.

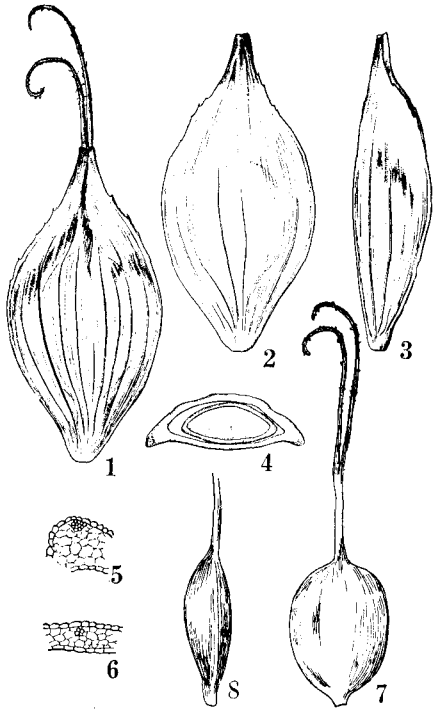


Fig. 24. *Carex lagopina* WAHL.

1. Utricle seen from dorsal side, ×14.
2. The same, from ventral side, ×14.
3. The same, from lateral side, ×14.
4. The same with nut, transversely cut, ×14.
5. and 6. Portions of the wall of the utricle, transversely cut, × ca. 100.
7. Nut seen from dorsal side, ×14.
8. The same, from lateral side, ×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. Susuyá-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 & Sagh. II. (1931) 223.

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

Hab. Saghalien.

Distrib. Ochotsk, Kamtchatka, 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, Kamtchatka, Siberia, Central Asia, Europe, North and South America and Australia.

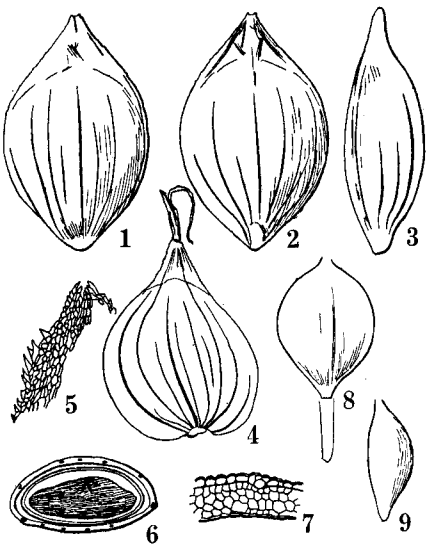


Fig. 25. *Carex canescens* L.

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

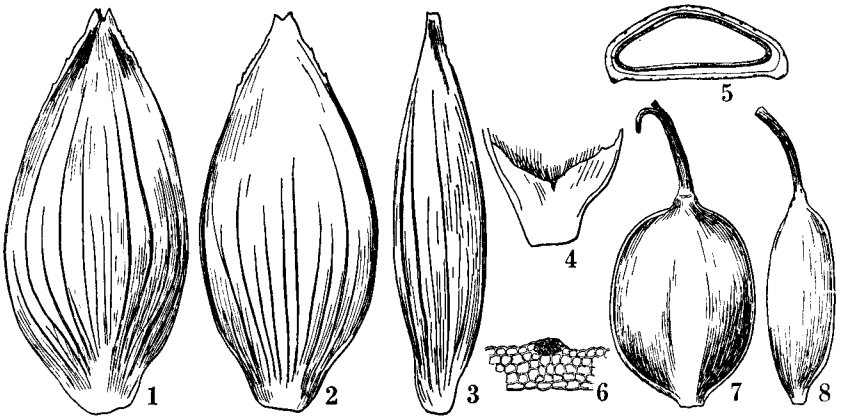


Fig. 26. *Carex traiziscana* FR. SCHM.

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

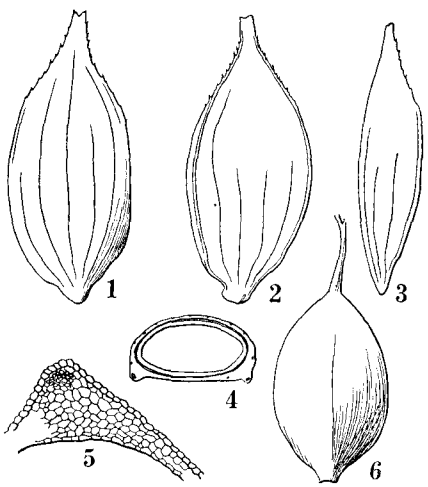


Fig. 27. *Carex brunnescens* var. *sphaerostachya* KÜKENTH.

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 plurinervosi, 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-nervosi, 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.

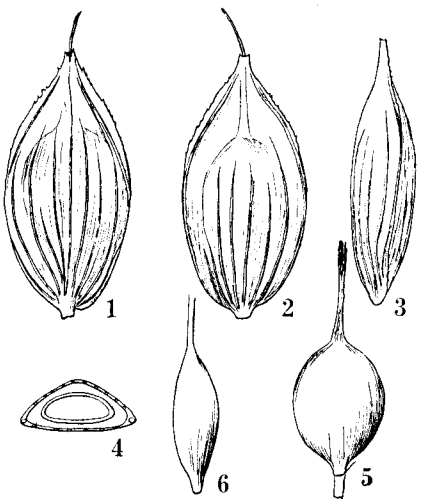


Fig. 28. *Carex tenella* SCHKUHR.
1. Utricle seen from dorsal side, ×14.
2. The same, from ventral side, ×14.
3. The same, from lateral side, ×14.
4. The same with nut, transversely cut, ×14.
5. Nut seen from dorsal side, ×14.
6. The same, from lateral side, ×14.

var. **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. &

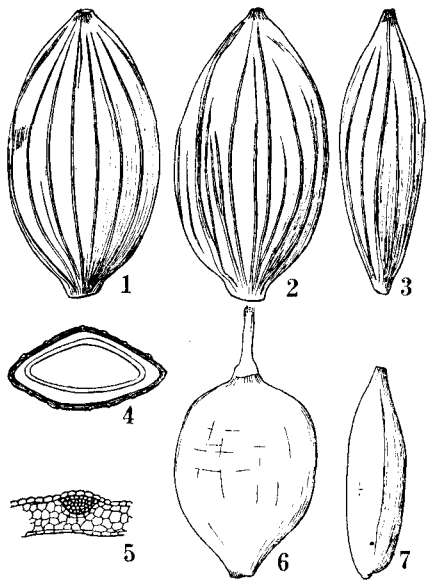


Fig. 29. *Carex tenuiflora* WAHL.

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 dorsal side, ×14.
7. The same, from lateral side, ×14.

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 plurinervosi, 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.

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.

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.

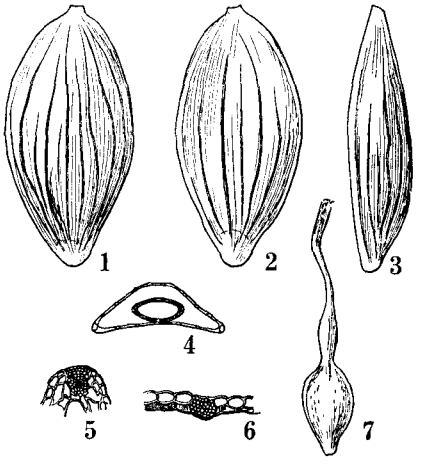


Fig. 30. *Carex arrhyncha* FRANCH.

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. and 6. Portions of the wall of the utricle, transversely cut, × ca. 120.

7. Nut, ×14.

(Figures drawn from an immature specimen)

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 Hokdaido & 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;

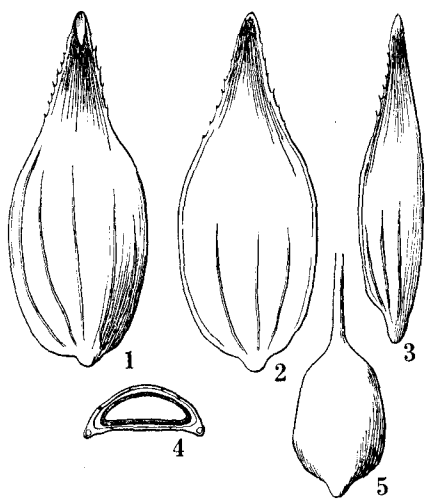


Fig. 31. *Carex stellulata* GOOD.

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. Kamtchatka and Pacific North America.

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

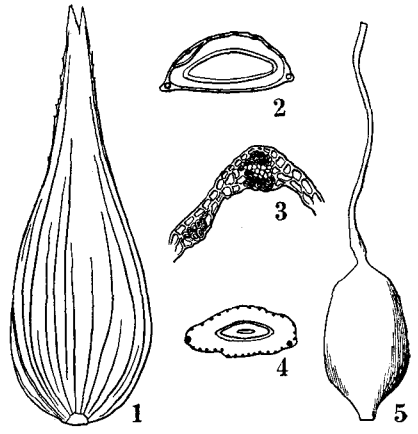


Fig. 32. *Carex omiana* FRANCH. et SAV.

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

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 Hondae** 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 plurinervosi, 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.

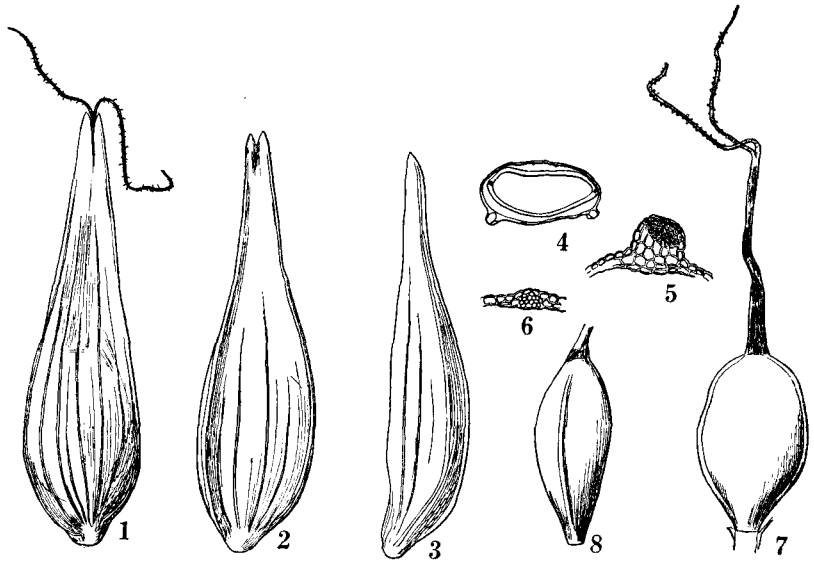


Fig. 33. *Carex Hondae* AKIYAMA

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. and 6. Portions of the wall of the utricle, transversely cut, × ca. 100. 7. Nut seen from dorsal side, ×14. 8. The same, from lateral side, ×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.

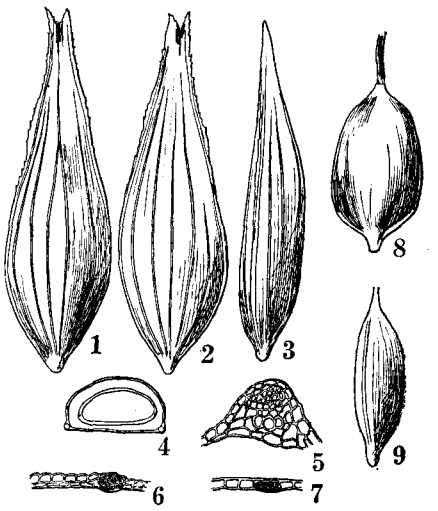


Fig. 34. *Carex Rochebrunii* var. *remotaeformis* (KOMAR.)

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. Marginal portion of the utricle, transversely cut, × ca. 120.
6. and 7. Frontal portions of the wall of the utricle, transversely cut, × ca. 14.
8. Nut seen from dorsal side, ×14.
9. The same, from lateral side, ×14.

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

Hab. Saghalien, Hokkaido and Honshiu.

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

Sect. 19. **Gibbae** KÜKENTH. (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; KÜKENTH. 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.

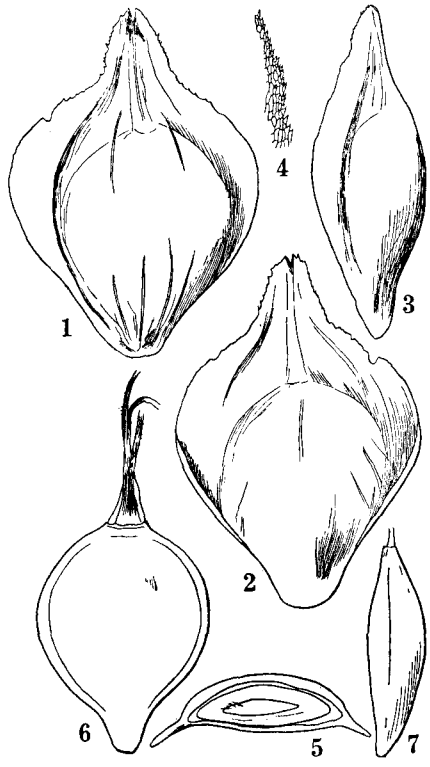


Fig. 35. *Carex gibba* WAHL.

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

C. remota THUNB. 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), 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

longi 1 mm lati stramineo-virentes glabri dorso obsolete ventre evidenter plurinervosi, 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.

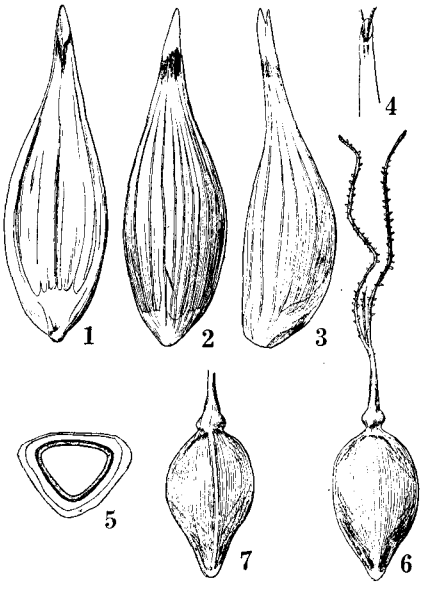


Fig. 36. *Carex satsumensis* FRANCH. et SAV.

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

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.

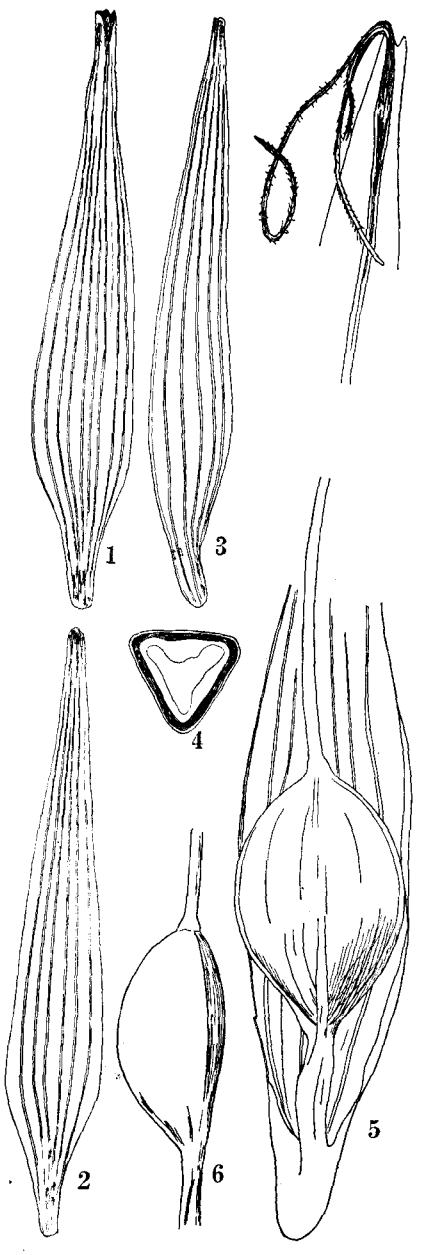
Utriculi squamas duplo vel triplo superantes erecti (vel demum patuli) tenuiter membranacei, textis ex 1 strato cellularum constantibus, lanceolati trigoni 8–12 mm longi 2 mm lati virides apice basique vix fusco-maculati glabri tenuiter plurinervosi (nervis fere 15), basi attenuati vix 1 mm longe stipitati, 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.



Nom. Jap. Hanabi-suge.

Hab. Kiushiu.

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

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

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

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

56. **Carex eleusinoides** TURCZANIMOW, 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. Kamtchatka, Ochotsk, 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

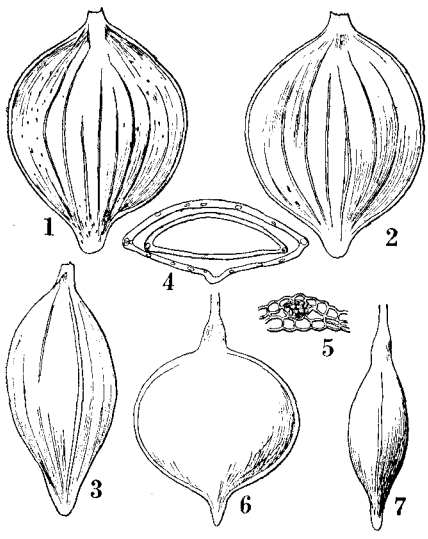


Fig. 38. *Carex Thunbergii* STEUD.

1. Utricle seen from dorsal side, ×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 dorsal side, ×14.
7. The same, from lateral side, ×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 wiluica** MEINSHAUSEN (Fig. 39), ex MAACK, Vilyuisk. Okruge 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 papillosi obsolete nervosi, nervis duobus marginalibus prominentibus, basi contracti brevissime stipitati, apice in rostrum mediocre 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. Kamtchatka 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)

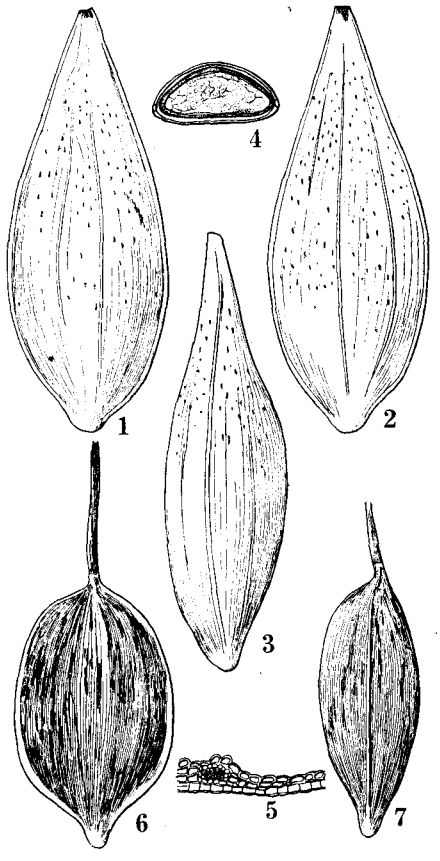


Fig. 39. *Carex wiluica* MEINSH.

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. Portion of the wall of the utricle, transversely cut, × ca. 100.
6. Nut seen from dorsal side, ×14.
7. The same, from lateral side, ×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 papillosi enervii, basi rotundati breve obconico-stipitati, marginati, apice in rostrum brevem integrum apiculati mox decidui.

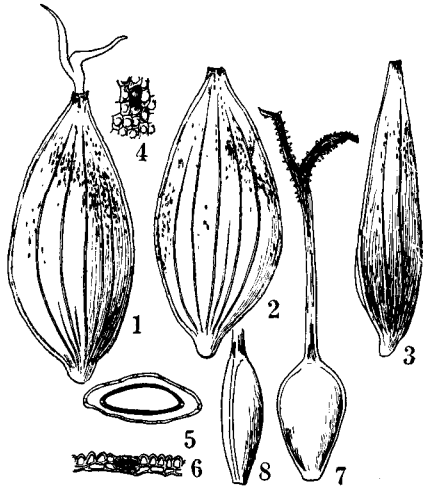


Fig. 40. *Carex caespitosa* L.

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

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.

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

Differt a typo spiculis femineis sublaxifloris 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-

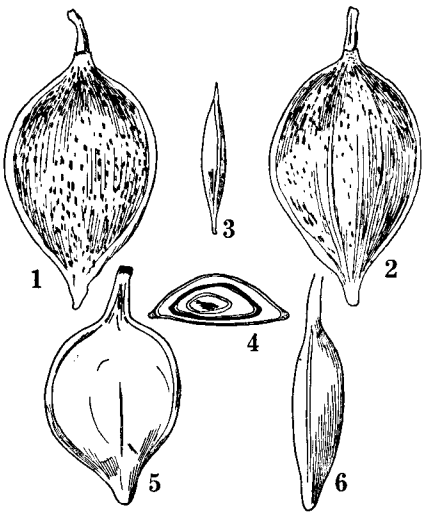


Fig. 41. *Carex caespitosa* var. *minuta*.
1. Utricle seen from dorsal side, ×14.
2. The same, from ventarl side, ×14.
3. The same, from lateral side, ×7.
4. The same with nut, transversely cut, ×14.
5. Nut seen from dorsal side, ×14.
6. The same, from lateral side, ×14.

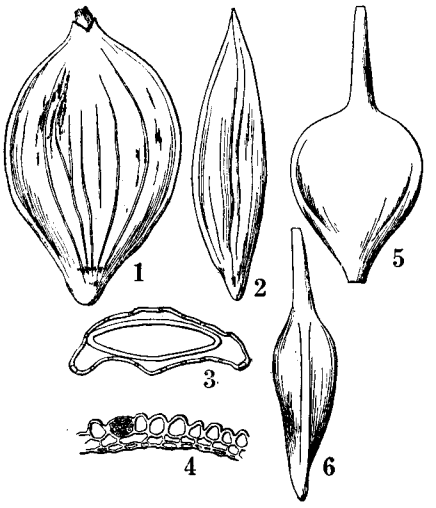


Fig. 42. *Carex vulpi-caudata* AKIYAMA
1. Utricle seen from dorsal side, ×14.
2. The same, from lateral side, ×14.
3. The same with nut, transversely cut, ×14.
4. Portion of the wall of the utricle, transversely cut, × ca. 150.
5. Nut seen from dorsal side, ×14.
6. The same, from lateral side, ×14.

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 papillosi 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.

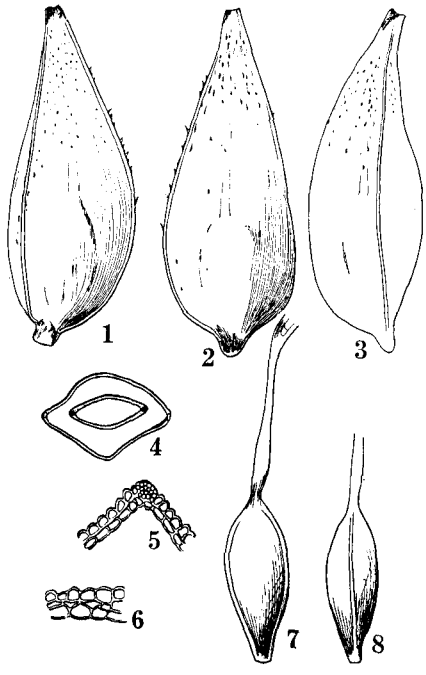


Fig. 43. *Carex aphyllopus* KÜKENTH.

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

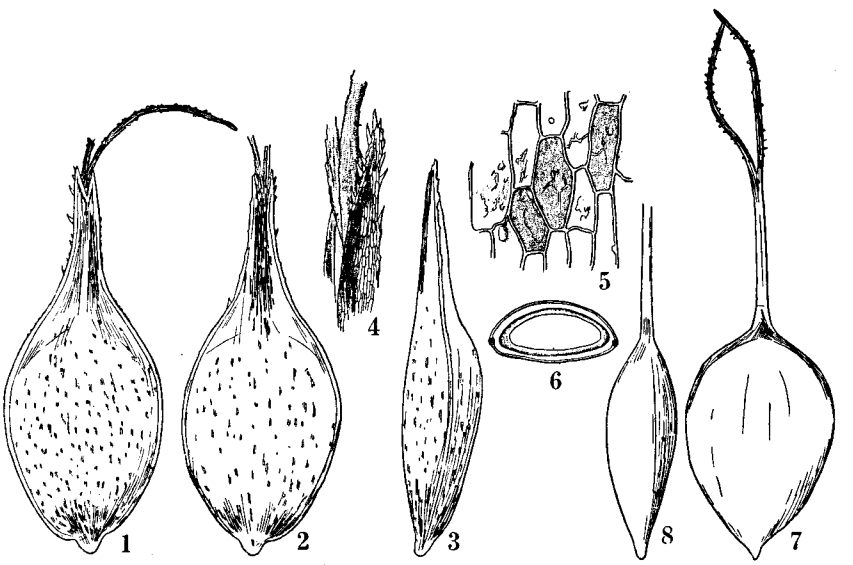


Fig. 44. *Carex forficula* FRANCH.

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

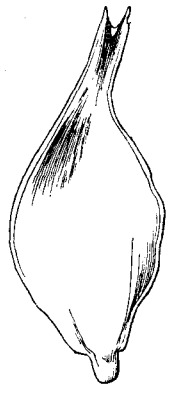


Fig. 45. *Carex forficula* form. *espinulifera* AKIYAMA
Utricule seen from dorsal side ×14.

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. forsicula* KÜKENTH. 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 constantibus, ovales vel subobovati plano-convexi 3–3.5 mm longi 1.5 mm lati stramineo-virides saepe purpureo-lineolati vel punctulati (apice et basi densiores) resinosi glabri enervii basi attenuato-contracta brevissime stipitati, marginati marginibus 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. Noukawa, 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, ovales 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-

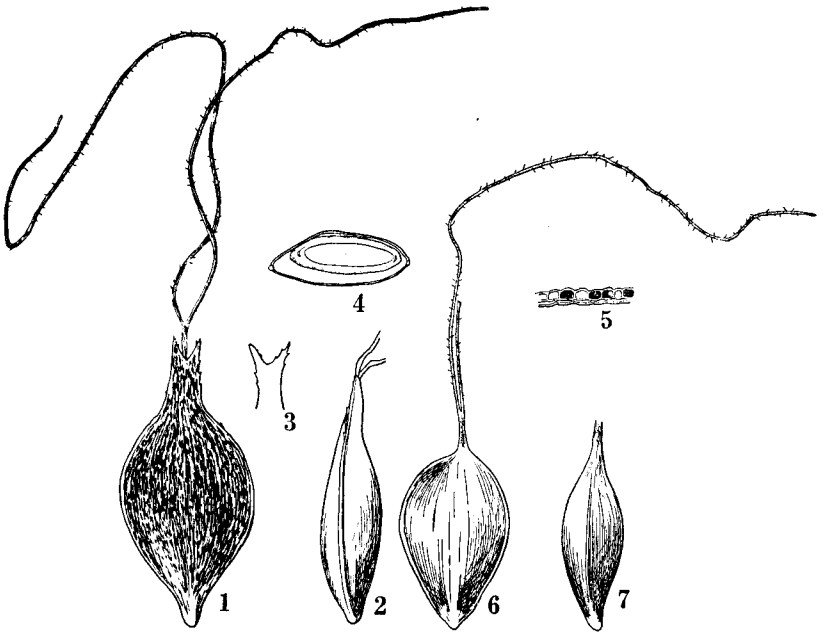


Fig. 46. *Carex sadoensis* FRANCH. et SAV.

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

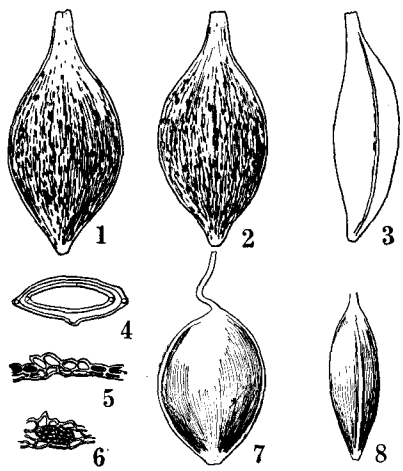


Fig. 47. *Carex phacota* SPRENG.

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. and 6. Portions of the wall of the utricle, transversely cut, × ca. 100.
7. Nut seen from dorsal side, ×14.
8. The same, from lateral side, ×14.

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 atro-fusco densissime striolati dense glandulosi, in partibus glandis cellulis saepe ferrugineis, enervii rarius paucinervosi glabri, basi attenuati breviter stipitati, cinereo-marginati, marginibus nervis

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.

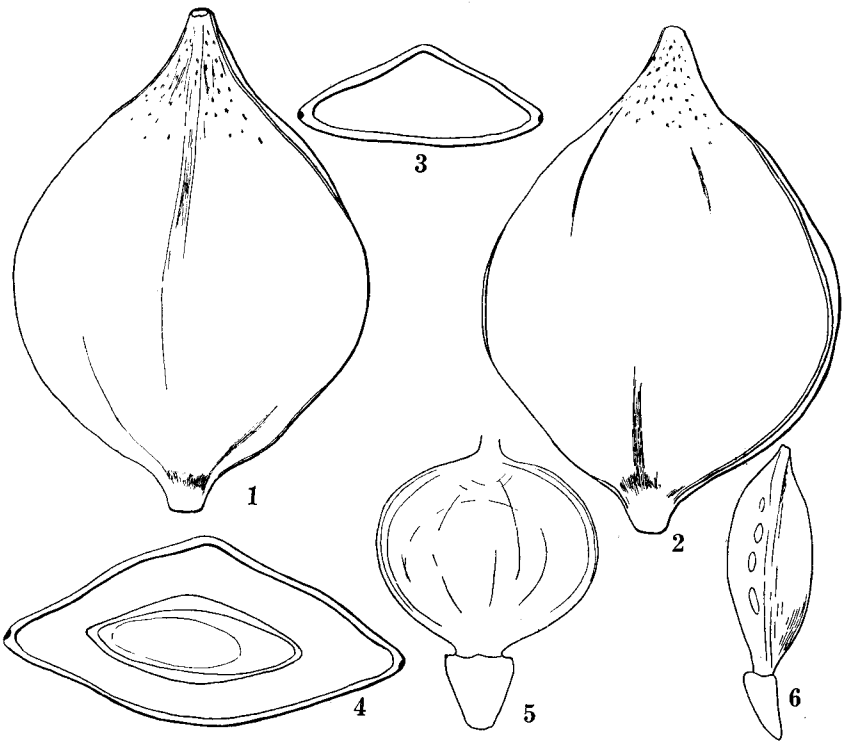


Fig. 48. *Carex Maximowiczii* MIQ.

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

Nom. Jap. Hoshinashi-gôso.

Hab. Honshiu.

var. **Kinashii** OHWI l. c.

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

Utriculi elongato-ovati sparsius papillosi 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. Chabo-gôso (nov.)

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

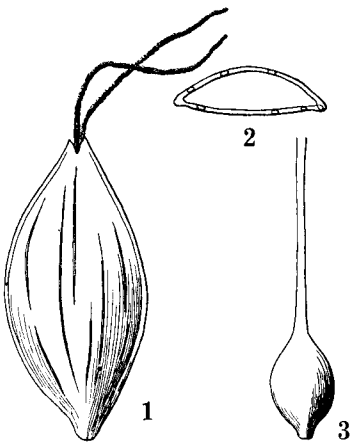


Fig. 49. *C. Maximowiczii* var. *minor* AKIYAMA

1. Utricle, ×14.
2. The same, transversely cut, ×14.
3. Nut, ×14.

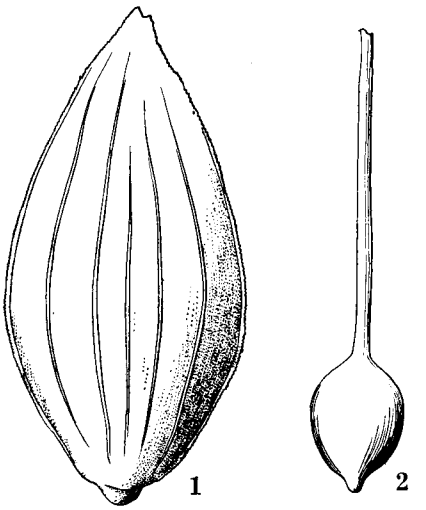


Fig. 50. *C. Maximowiczii* var. *pallida* AKIYAMA

1. Utricle, ×14. 2. Nut, ×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-papillosi enervii vel obsolete paucinervosi 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.

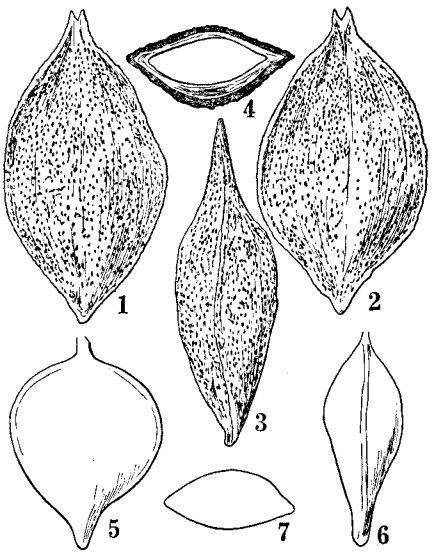


Fig. 51. *Carex cincta* FRANCH.

1. Utricle seen from dorsal side, ×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.
7. The same, transversely cut, ×14.

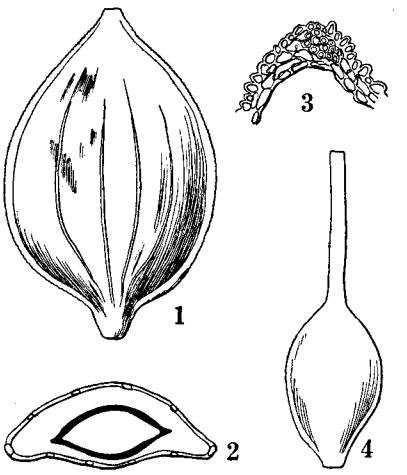


Fig. 52. *Carex cincta* var. *laxiflora* AKIYAMA

1. Utricle, ×14.
2. The same with nut, transversely cut, ×14.
3. Portion of the wall of the utricle, transversely cut, × ca. 120.
4. Nut, ×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-papillosi 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.

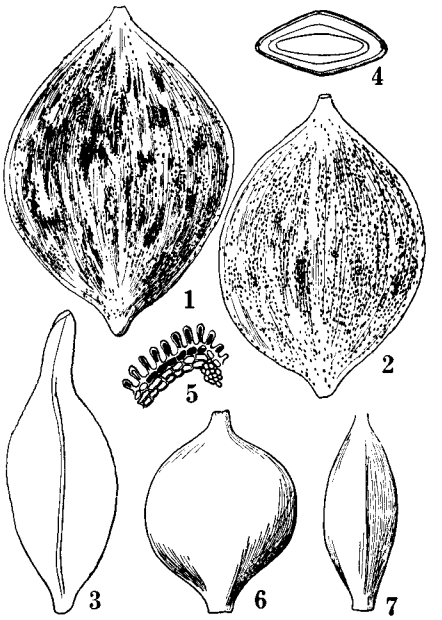


Fig. 53. *Carex subphacota* NAKAI

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 dorsal side, ×14.
7. The same, from lateral side, ×14.

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

Utriculi densissime papillosi 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;

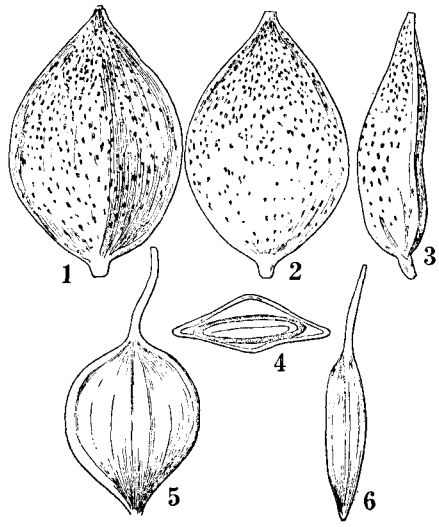


Fig. 54. *Carex cernua* BOOTT

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.

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. l. c. 117, non SPRENG.

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

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

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

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 ferruginec-fusci dense fusco-sanguineo-punctulati plurinervosi, 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.

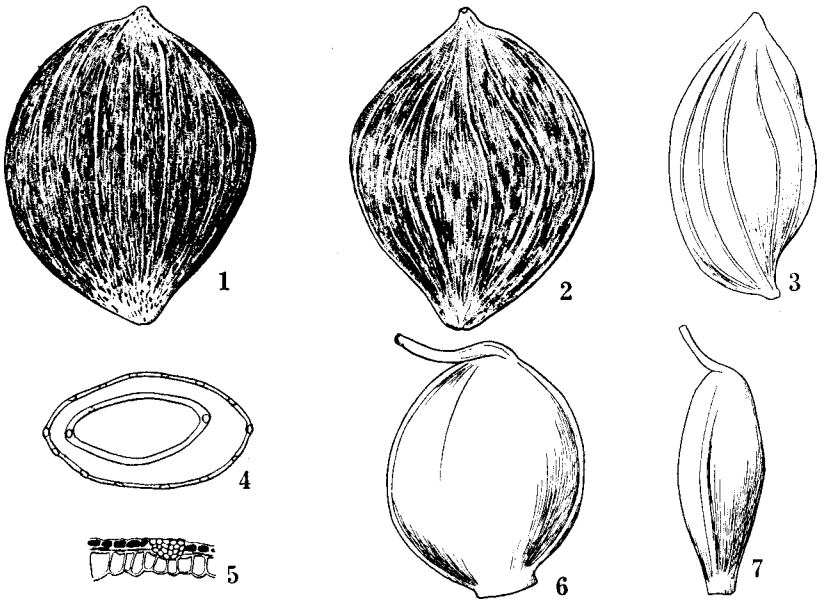


Fig. 55. *Carex aequialta* KÜKENTH.

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 seen from dorsal side, ×14. 7. The same, from lateral side, ×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 fuscescentes.

Hab. Honshiu and Shikoku.

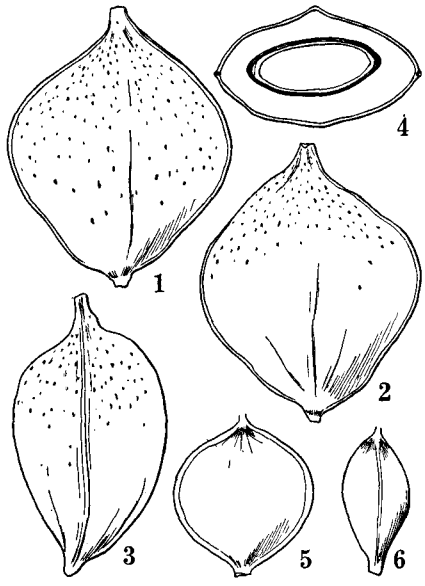


Fig. 56. *Carex kiotensis* FRANCH. et SAV.

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.

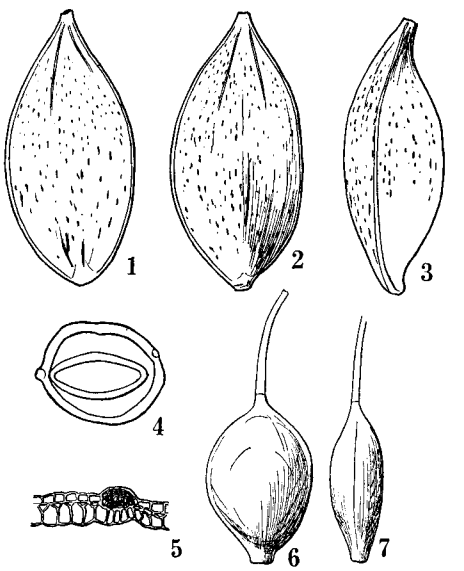


Fig. 57. *Carex shimidzensis* FRANCH.

1. Utricle seen from dorsal side, ×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 dorsal side, ×14.
7. The same, from lateral side, ×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 paucinervosi 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, ovales 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. Yarame-suge; Yezo-suge.

Hab. Saghalien, Kuriles, Hokkaido and Honshiu.

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

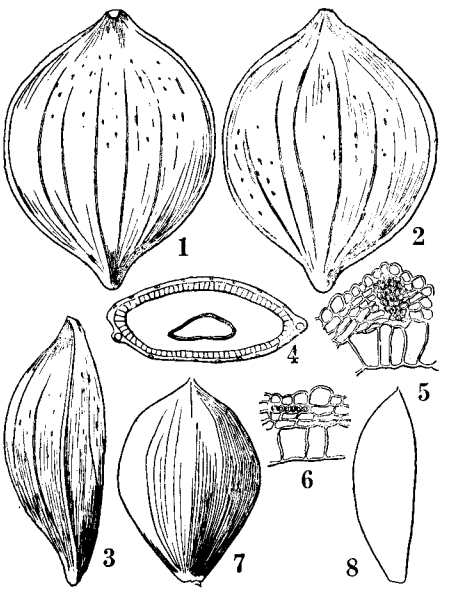


Fig. 58. *Carex Lyngbyei* Subsp. *cryptocarpa* HULT.

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. and 6. Portions of the wall of the utricle, transversely cut, × ca. 100.
7. Nut seen from dorsal side, ×14.
8. The same, from lateral side, ×14.

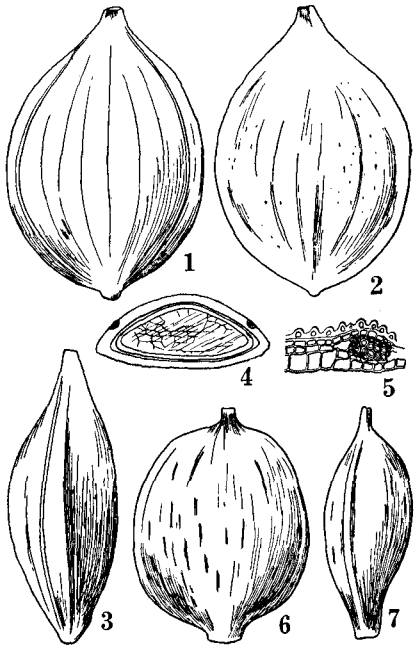


Fig. 59. *Carex prinocarpa* FRANCH.

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. Portion of the wall of the utricle, transversely cut, × ca. 100.
6. Nut seen from dorsal side, ×14.
7. The same, from lateral side, ×14.

98. **Carex prinocarpa** FRANCHET (Fig. 59) in Bull. Soc. philom. Paris 8. sér. VII. (1895) 87 et in Nouv. Arch. Mus. Paris 3. šér. 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 paucinervosi, 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.

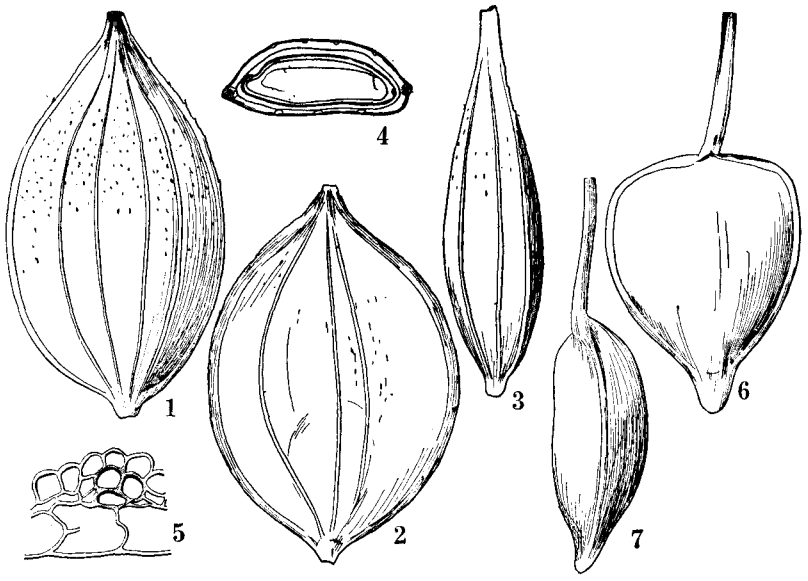


Fig. 60. *Carex Middendorffii* FR. SCHM.

1. Utricle seen from dorsal side, ×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. 200. 6. Nut seen from dorsal side, ×14. 7. The same, from lateral side, ×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.

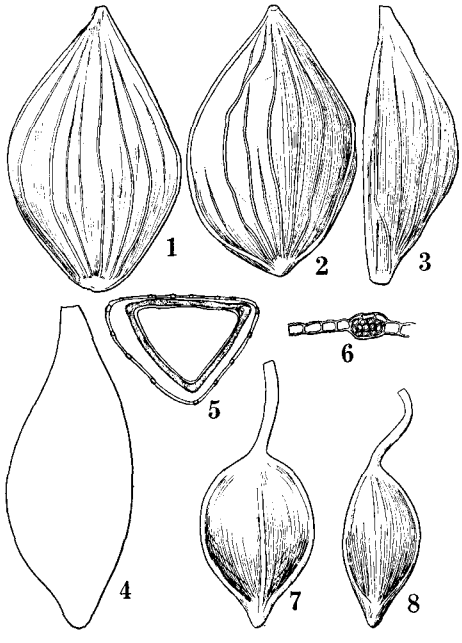


Fig. 61. *Carex soyaeensis* KÜKENTH.

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

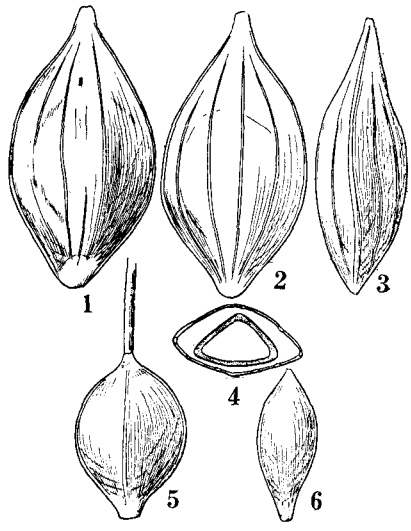


Fig. 62. *Carex Augustinowiczii* MEINSH.
1. Utricle seen from dorsal side, ×14.
2. The same, from ventral side, ×14.
3. The same, from lateral side, ×14.
4. The same with nut, transversely cut, ×14.
5. Nut seen from dorsal side, ×14.
6. The same, from lateral side, ×14.

Utriculi squamis longiores latioresque demum oblique patentes membranacei ovato-elliptici compresso-trigoni demum subinflati vix 3 mm longi 1.5 mm lati stramineo-virides (dense punctulati) glabri vix 10-nervosi (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. **macrogyna** 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.

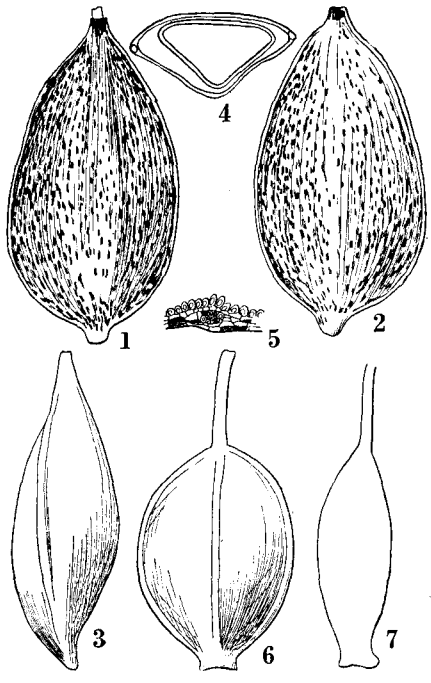


Fig. 63. *Carex Meyeriana* KUNTH

1. Utricle seen from dorsal side, ×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. 75.
6. Nut seen from ventral side, × 14.
7. The same, from lateral side, ×14.

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 papillosi purpureo-granulosi 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; Shira-kawa-suge.

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.

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.

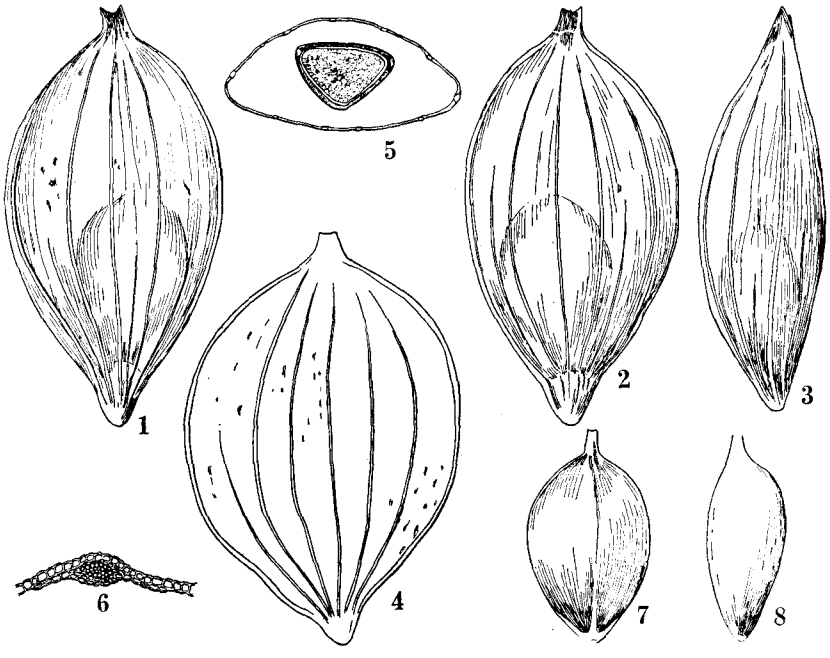


Fig. 64. *Carex Gmelinii* HOOK. et ARN.

1. Utricle seen from dorsal side, ×14. 2. The same, from ventral side, ×14. 3. The same, from lateral side, ×14. 4. Anomalous form of an utricle, seen from dorsal side, ×14. 5. Utricle with nut, transversely cut, ×14. 6. Portion of the wall of the utricle, transversely cut, × ca. 100. 7. Nut seen from ventral side, ×14. 8. The same, from lateral side, ×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, ovales vel subobovati compresso-trigoni vix inflati 4–5 mm longi 2–3 mm lati 1.3 mm alti straminei punctulati utrinque tenuiter quinqua-nervosi (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.

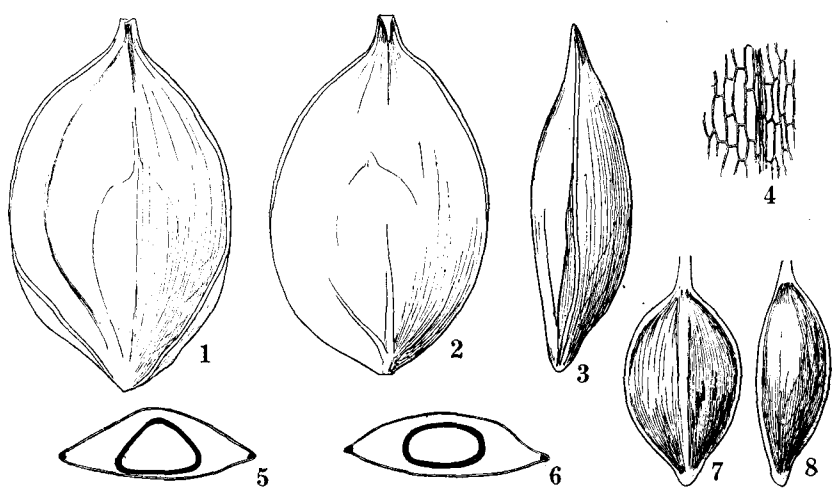


Fig. 65. *Carex atrata* L.

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

Utriculi squamis paullo breviores sed latiores erecti tenuiter membranacei, textis ex 1-(raro 2-) strato cellularum compositis, late ovales vel obovati compresso-trigoni raro biconvexi 3.5 mm longi 2–2.5 mm lati flavescentes primo emaculati dein purpureo-maculati demum omnimo 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.

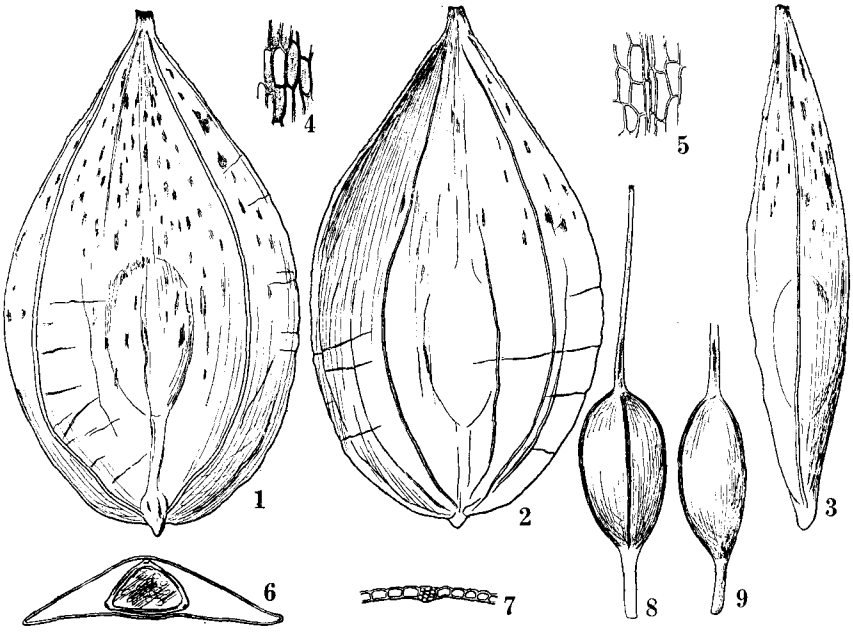


Fig. 66. *Carex Mertensii* var. *urostachys* KÜKENTH.

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

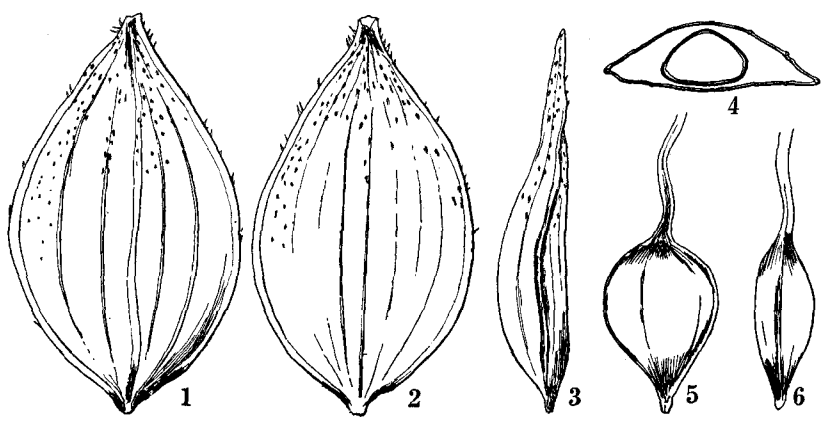


Fig. 67. *Carex angustisquama* FRANCH.

1. Utricle seen from dorsal side, ×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.

(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 obsoletissime 10- et marginibus conspicue 2-nervosi, 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. Hakkaido 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 basilares 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

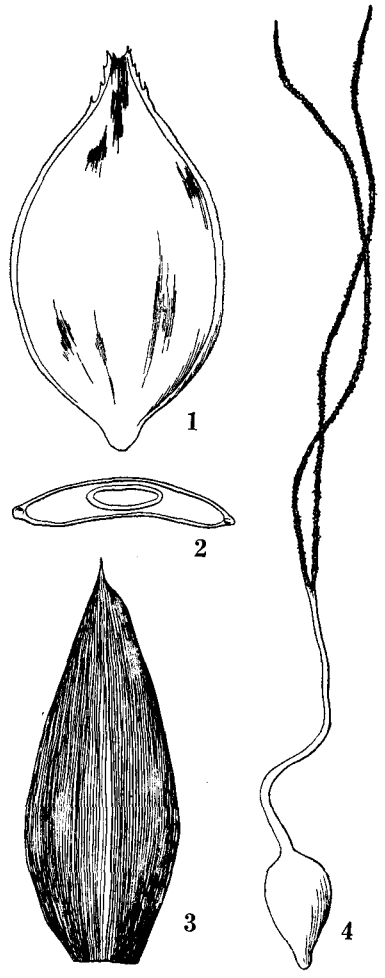


Fig. 68. *C. pseudo-sadoensis* AKIYAMA.
1. Utricle, ×14.
2. The same with nut, transversely cut, ×14.
3. Scale of the female flower, ×14.
4. Nut, ×14.

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.-Pétersb. 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.

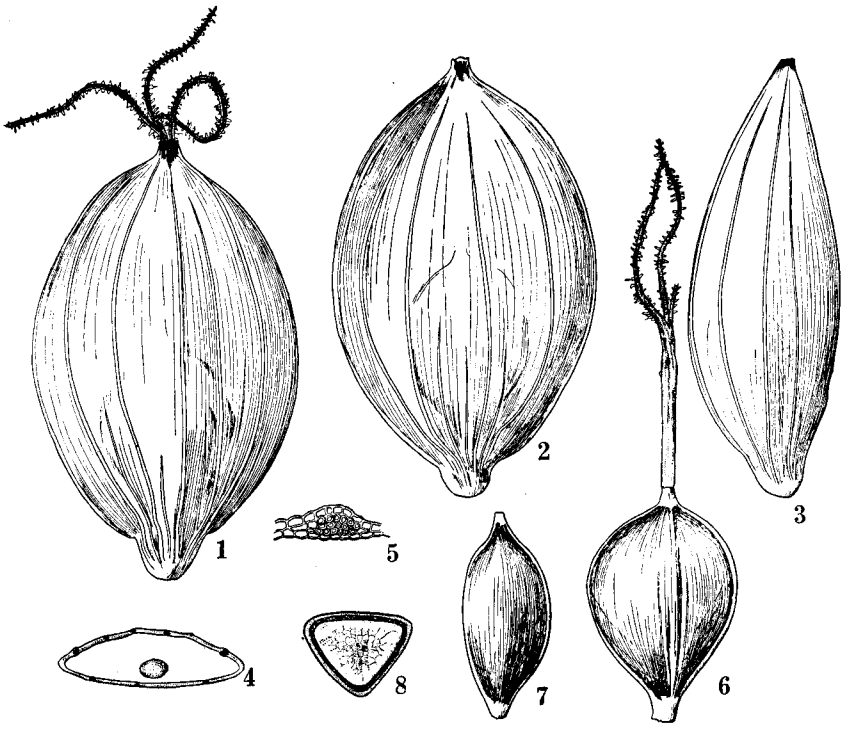


Fig. 69. *Carex flavocuspis* FRANCH. et SAV.

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

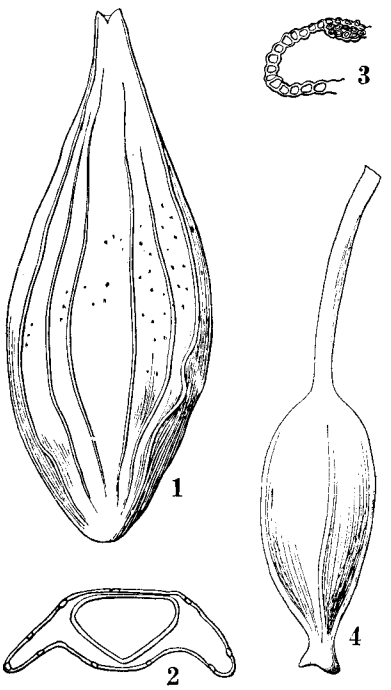


Fig. 70. *Carex flavocuspis* var. *iwatensis* AKIYAMA

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.

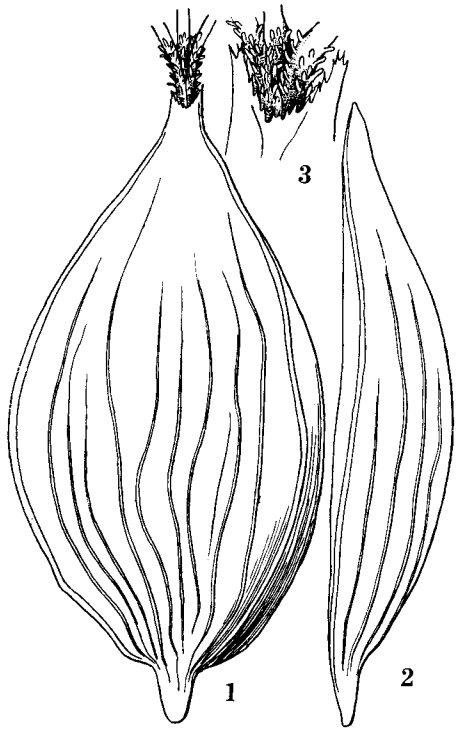


Fig. 71. *C. flavocuspis* var. *caudatifrons* AKIYAMA

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. Chairo-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 Mélang. 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.

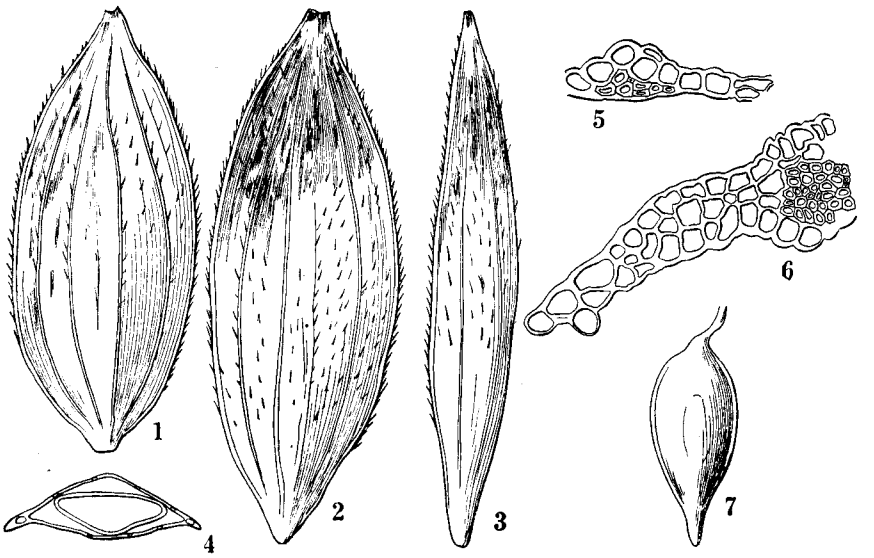


Fig. 72. *Carex scita* MAXIM.

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

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

C. dicuspis LÉVEILLÉ et VANIOT, 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.

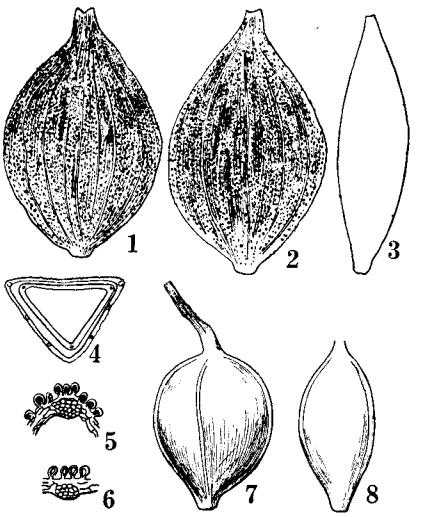


Fig. 73. *Carex maculata* BOOTT

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. and 6. Portions of the wall of the utricle, transversely cut, × ca. 100.
7. Nut seen from ventral side, ×14.
8. The same, from lateral side, ×14.

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-papillosi, 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.

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, Kamtchatka, 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.

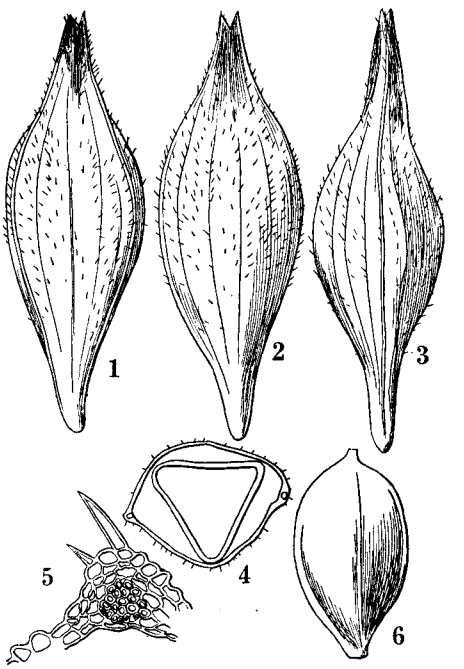


Fig. 74. *Carex oxyandra* KUDO

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. 250.
6. Nut, ×14.

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 Kiushiu.

var. **lanceata** (KÜKENTH.) OHWI (Fig. 75, 1–3) l. c. 276.

C. Wrightii var. *lanceata* KÜKENTH. l. c. 443.

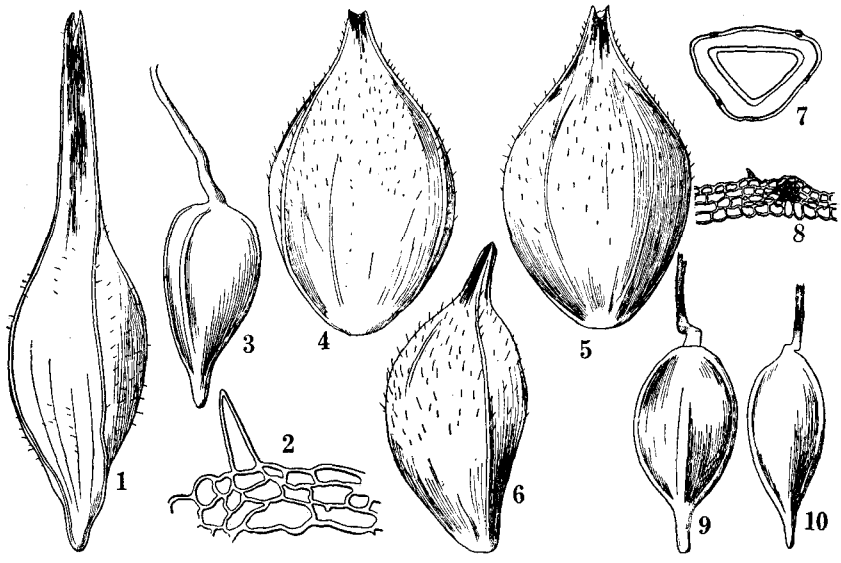


Fig. 75. 1–3. *Carex oxyandra* var. *lanceata* OHWI
4–10. *Carex oxyandra* var. *globosa* AKIYAMA

1. Utricle, ×14. 2. Portion of the wall of the utricle, transversely cut, × ca. 300. 3. Nut, ×14. 4. Utricle seen from dorsal side, ×14. 5. The same, from ventral side, ×14. 6. The same, from lateral side, ×14. 7. The same with nut, transversely cut, ×14. 8. Portion of the wall of the utricle, transversely cut, × ca. 120. 9. Nut seen from ventral side, ×14. 10. The same, from lateral side, ×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 ovales 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. Kamtchatka, 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 percursos 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.

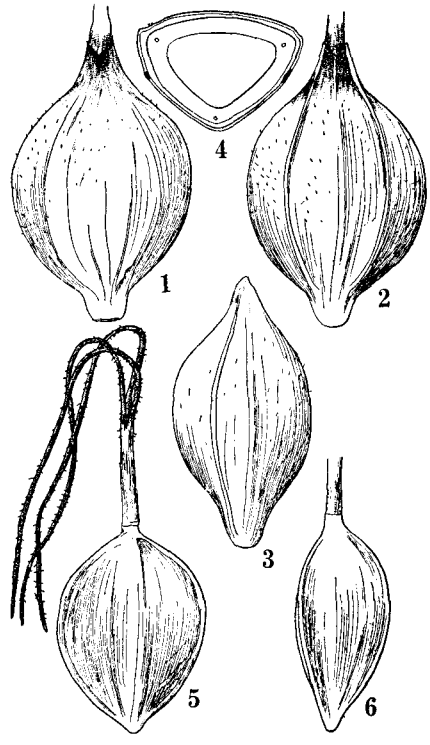


Fig. 76. *Carex pseudo-Wrightii* HONDA

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. Nut seen from ventral side, ×14.
6. The same, from lateral side, ×14.

Sect. 30. **Mitratae** KÜKENTHAL (p. 25)

123. **Carex caryophyllea** LATOURETTE, Chlor. lugdun. (1785) 27; KÜKENTH. in ENGL.

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.

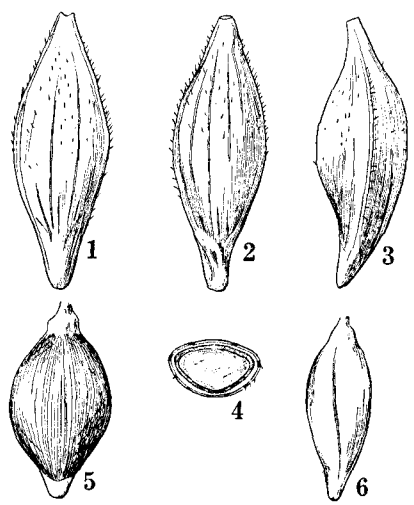


Fig. 77. *Carex nervata* FRANCH. et SAV.

1. Utricle seen from dorsal side, ×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.

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.

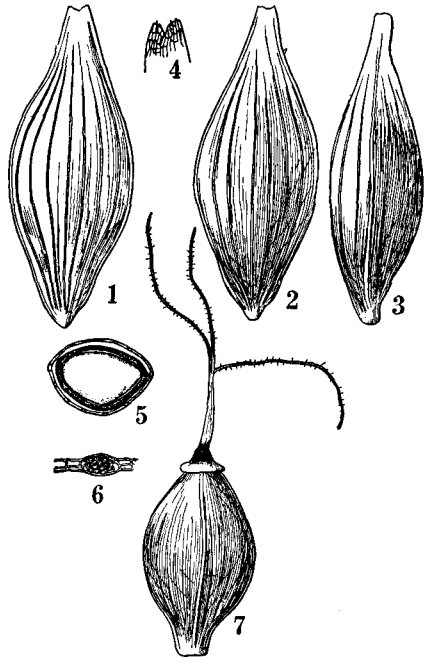


Fig. 78. *Carex nervata* form. *leiocarpa* MIY. & KUD.

1. Utricle seen from dorsal side, ×14.
2. The same, from ventral side, ×14.
3. The same, from lateral side, ×14.
4. Apex of the beak, ×20.
5. Utricle with nut, transversely cut, ×14.
6. Portion of the wall of the utricle, transversely cut, ×ca. 100.
7. Nut, ×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.

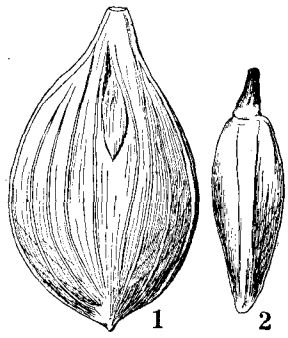


Fig. 79. *Carex microtricha* FRANCH.
1. Utricle ×14. 2. Nut, ×14.

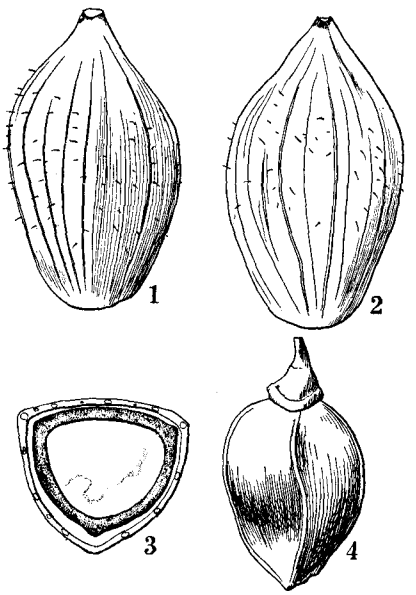


Fig. 80. *Carex squamoidea* AKIYAMA.
1. Utricle seen from dorsal side, ×14.
2. The same, from ventral side, ×14.
3. The same with nut, transversely cut, ×14.
4. Nut, ×14.

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 plurinervosi, basi subrotundati, apice in rostrum breve conicum ore subemarginatum 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 plurinervosi, 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

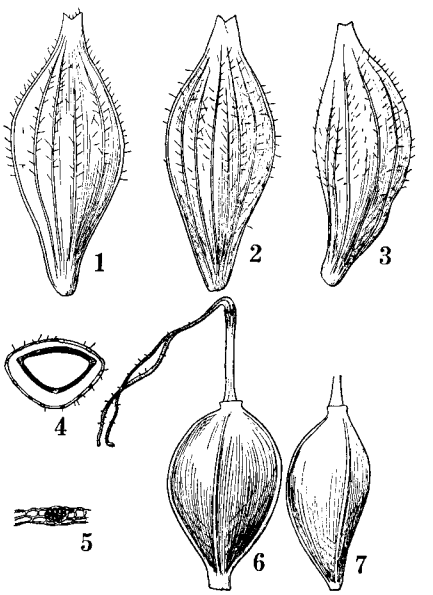


Fig. 81. *Carex sabynensis* LESSING.

1. Utricle seen from dorsal side, ×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.

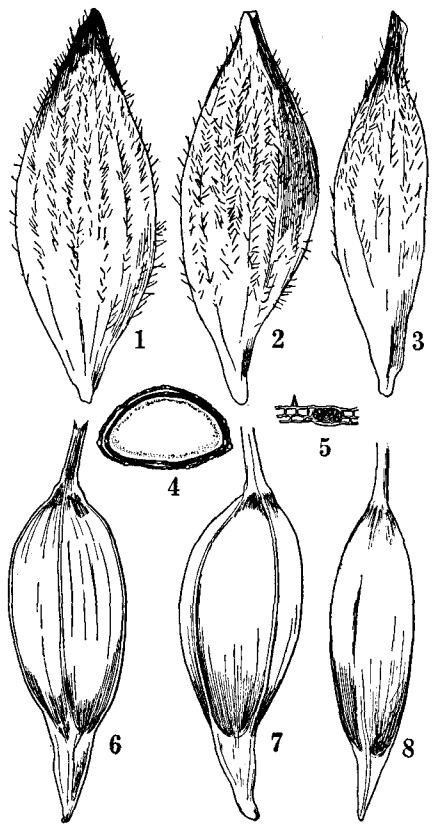


Fig. 82. *Carex blepharicarpa* FRANCH.

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. Portion of the wall of the utricle, transversely cut, × ca. 100.
6. Nut seen from dorsal side, ×14.
7. The same, from ventral side, ×14.
8. The same, from lateral side, ×14.

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); 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-

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. **Carx Royleana** NEES v. ESENBECK (Fig. 83), ex WIGHT, Cotr. 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.

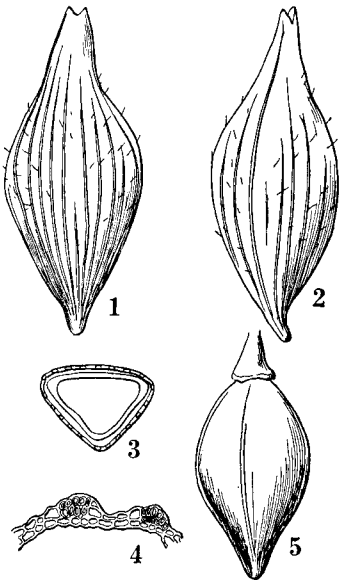


Fig. 83. *Carex Royleana* NEES.

1. Utricle seen from dorsal side, ×14.
2. The same, from lateral side, ×14.
3. The same with nut, transversely cut, ×14.
4. Portion of the wall of the utricle, transversely cut, × ca. 100.
5. Nut, ×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 plurinervosi (nervis vix 20) nervis 2 carinatis percursis 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* KÜKENTHAL, 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 subaequantes 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 plurinervosi, basi attenuata longe stipitati, apice attenuata in rostrum breve latum conicum ore hyalino subemarginatum abeuntes.

Nom. Jap. Hime-ao-suge.

Hab. Riukius.

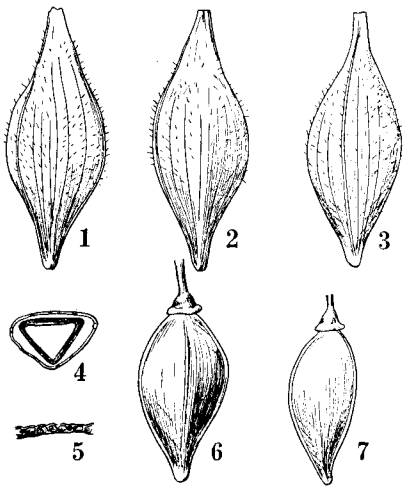


Fig. 84. *Carex discoidea* BOOTT.

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. 75.
6. Nut seen from ventral side, ×14.
7. The same, from lateral side, ×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 subaequantes 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-)nervosi, basi attenuati breviter alato-stipitati, apice in rostrum breve latum conicum ore hyalino subemarginatum apiculatim abeuntes.

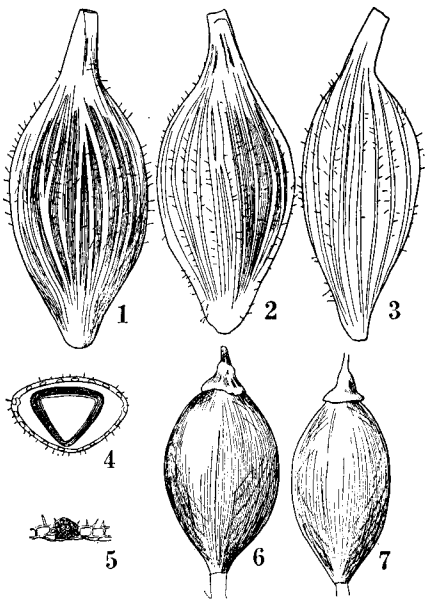


Fig. 85. *Carex fibrillosa* FRANCH. et SAV.

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. Portion of the wall of the utricle, transversely cut, × ca. 100.
6. Nut seen from dorsal side, ×14.
7. The same, from lateral side, ×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. multifiliculmis 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

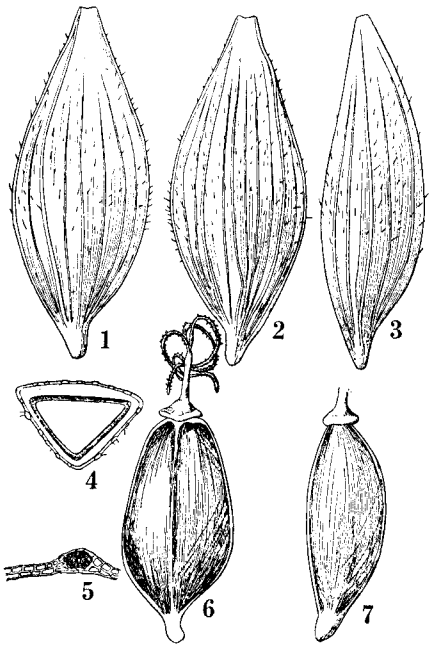


Fig. 86. *Carex pudica* HONDA

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.

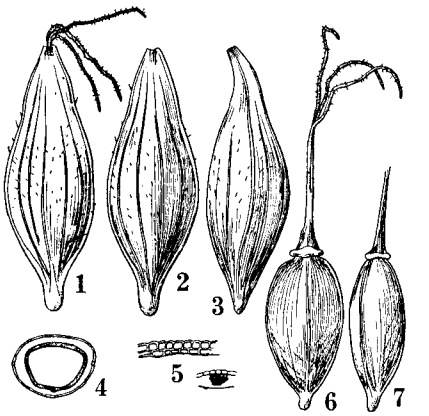


Fig. 87. *Carex mitrata* FRANCH.

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 multinervosi 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).

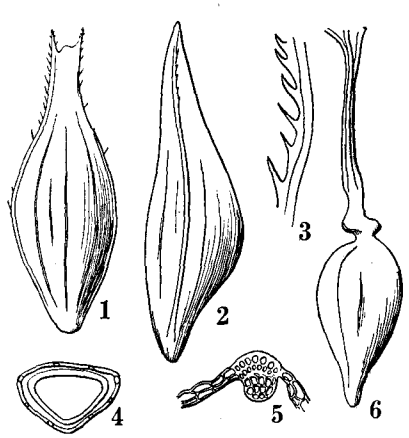


Fig. 88. *Carex scabro-aristata* AKIYAMA

1. Utricle seen from dorsal side, ×14.
2. The same, from lateral side, ×14.
3. Portion of margin of the utricle, × ca. 120.
4. Utricle with nut, transversely cut, ×14.
5. Portion of the wall of the utricle, transversely cut, × ca. 120.
6. Nut, ×14.

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.

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 multinervosi, 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.

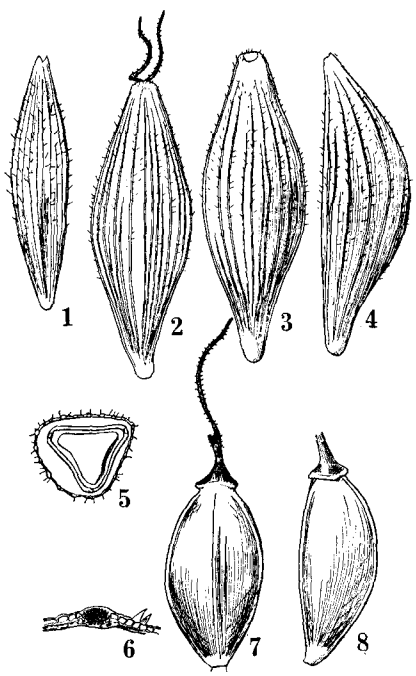


Fig. 89. 1. Utricle of *Carex tristachya* THUNB. 2–8. *Carex pocilliformis* BOOTT. 2. Utricle seen from dorsal side, ×14. 3. The same, from ventral side, ×14. 4. The same, from lateral side, ×14. 5. The same with nut, transversely cut, ×14. 6. Portion of the wall of the utricle, transversely cut, × ca. 100. 7. Nut seen from ventral side, ×14. 8. The same, from lateral side, ×14.

C. tristachya var. *pocilliformis* KÜKENTH. 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** (KÜKENTH.) 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.

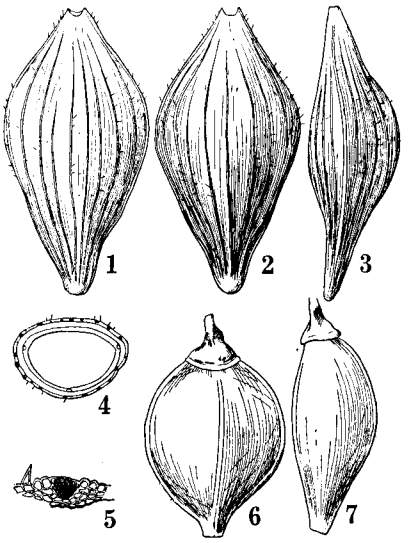


Fig. 90. *Carex cucullata* OHWI

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.

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. **vigens** (KÜKENTH.) OHWI l. c. 271.

C. mitrata var. *vigens* KÜKENTH. l. c. 471.

Hab. Kiushiu.

Distrib. Corea.

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 subintegris, 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.

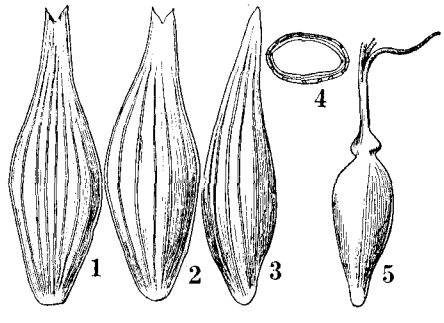


Fig. 91. *Carex tenuissima* BOOTT

1. Utricle seen from dorsal side, ×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.

Utriculi squamas superantes suberecti membranacei subobovato-elliptici obtuse trigoni 2.5–3 mm longi 1 mm lati pallide virides glabri 10–15-nervosi, 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.

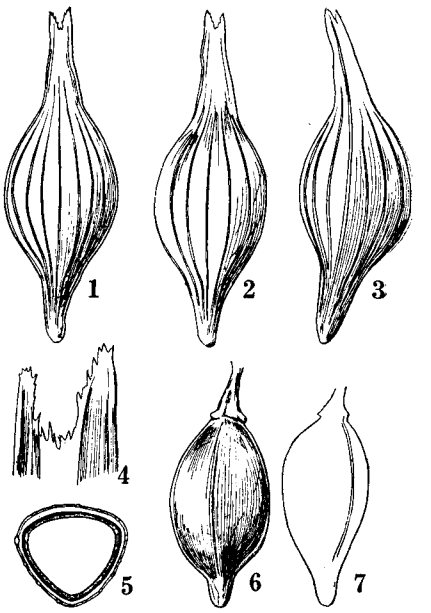


Fig. 92. *Carex sikokiana* FRANCH. et SAV.

1. Utricle seen from dorsal side, ×14.
2. The same, from ventral side, ×14.
3. The same, from lateral side, ×14.
4. Apical portion of the beak of the utricle, × ca. 60.
5. Utricle with nut, transversely cut, ×14.
6. Nut seen from ventral side, ×14.
7. The same, from lateral side, ×14.

Utriculi squamas subsuperantes suberecti membranacei subobovato-elliptici medio inflati trigoni ad 4 mm longi 1.5 mm lati pallide virides glabri 15-nervosi, 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, Hohshiu, 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.

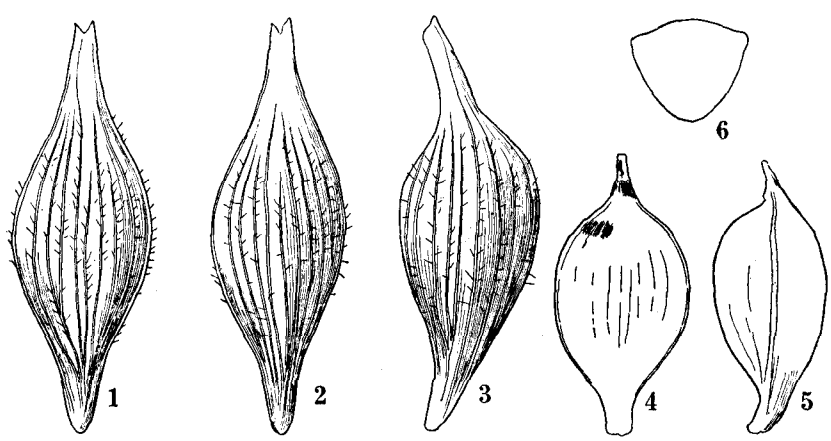


Fig. 93. *Carex Duvaliana* FRANCH. et SAV.

1. Utricle seen from dorsal side, ×14. 2. The same, from ventral side, ×14. 3. The same, from lateral side, ×14. 4. Nut seen from dorsal side, × 14. 5. The same, from lateral side, × 14. 6. The same, transversely cut, ×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. Hilgendorfiana 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 plurinervosi (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-nervosi (2 nervi marginales prominentes), basi ob-

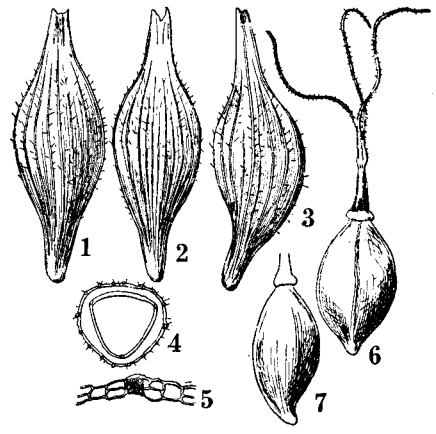


Fig. 94. *Carex pisiformis* BOOTT

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. 120.
6. Nut seen from ventral side, ×14.
7. The same, from lateral side, ×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 subaequantes suberecti membranacei, textis e 2 stratis cellularum compositis, ovato-elliptici fere 3 mm longi 1 mm lati stramineo-virides nitidi parce pubescentes vel glabrescentes plurinervosi (nervi 2 marginales apice attingeri prominentes), basi abrupte attenuati vix 1 mm longe stipitati, apice in

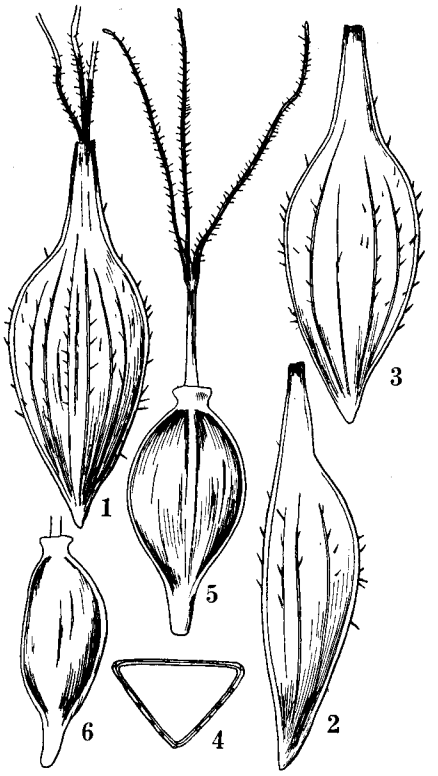


Fig. 96. *Carex oshimensis* NAKAI

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.

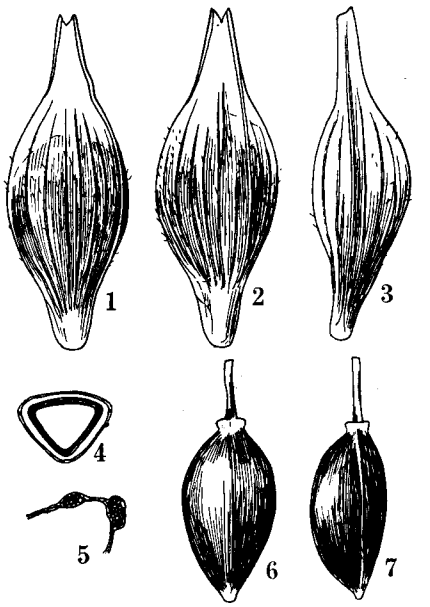


Fig. 95. *Carex sachalinensis* FR. SCHM.

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. 75.
6. Nut seen from ventral side, ×14.
7. The same, from lateral side, ×14.

rostrum longum marginibus saepe scabrum conicum ore hyalino leviter bidentatum abrupte abeuntes.

Nom. Jap. Ô-ito-suge; Gongen-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 plurinervosi (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.

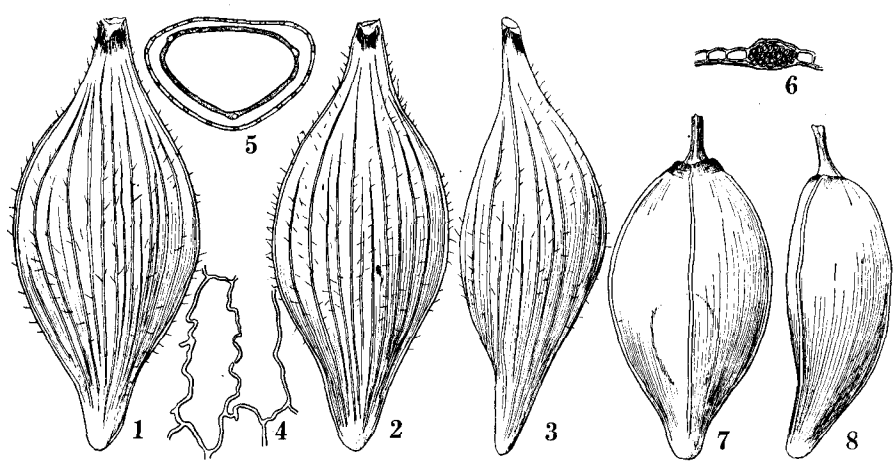


Fig. 97. *Carex Reinii* FRANCH. et SAV.

1. Utricle seen from dorsal side, ×14. 2. The same, from ventral side, ×14. 3. The same, from lateral side, ×14. 4. Portion of the surface of the utricle, × ca. 250. 5. Utricle with nut, transversely cut, ×14. 6. Portion of the wall of the utricle, transversely cut, × ca. 100. 7. Nut seen from ventral side, ×14. 8. The same, from lateral side, ×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 plurinervosi (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.

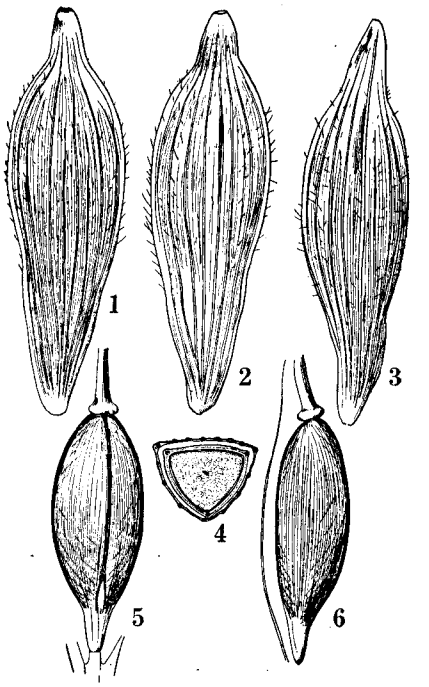


Fig. 98. *Carex multifolia* OHWI

1. Utricle seen from dorsal side, ×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.

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 plurinervosi, 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

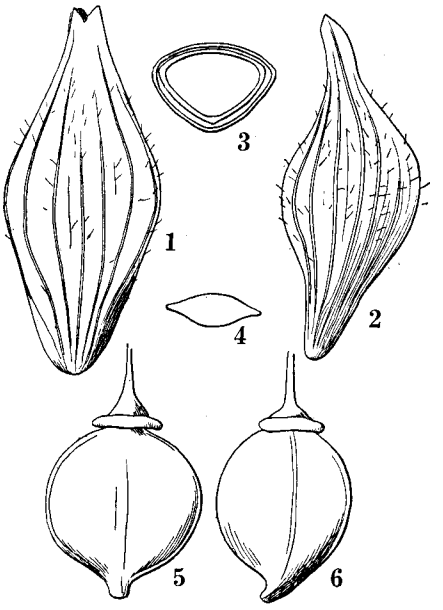


Fig. 99. *Carex conicoides* HONDA

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

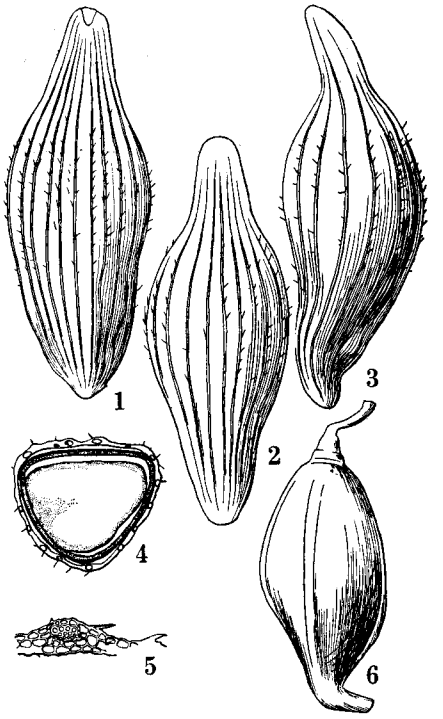


Fig. 100. *Carex conica* BOOTT

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.

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 plurinervosi, 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.

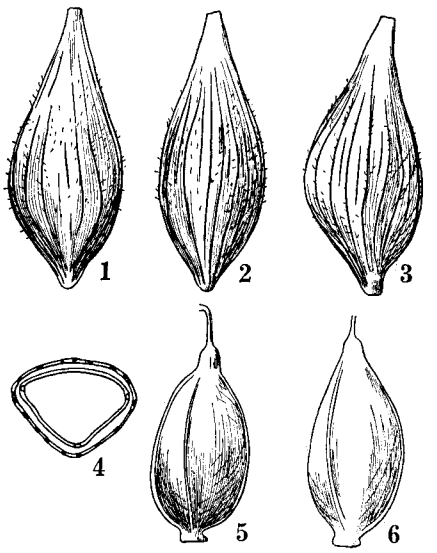


Fig. 101. *Carex conica* var. *rubens* KÜKENTH.

1. Utricle seen from dorsal side, ×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.

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. Fuiri-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 plurinervosi parcissime et obsoletissime pubescentes, basi in stipitem obliquum attenuati, margine minute scabri, apice in rostrum brevissimum excurvum ore integrum apiculati.

Nom. Jap. Satsuma-kansuge.

Hab. Kiushiu.

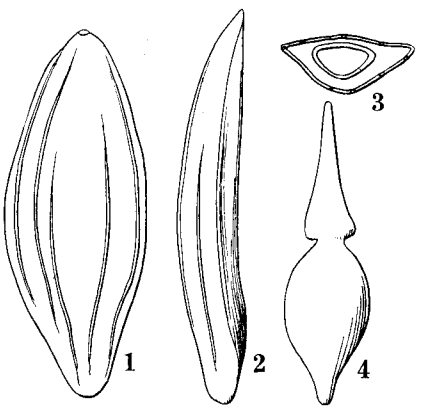


Fig. 102. *Carex Doiana* AKIYAMA

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

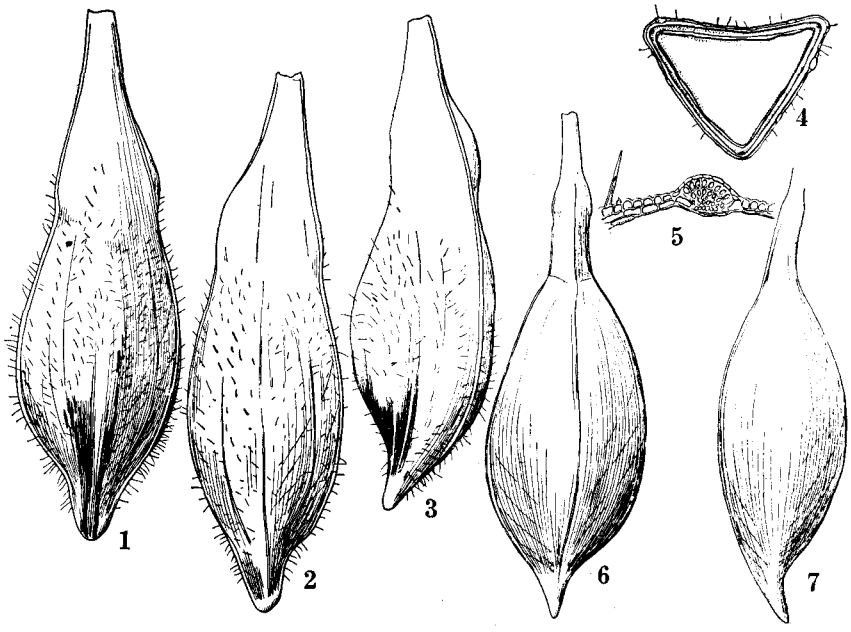


Fig. 103. *Carex lasiolepis* FRANCH.

1. Utricle seen from dorsal side, ×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.

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.

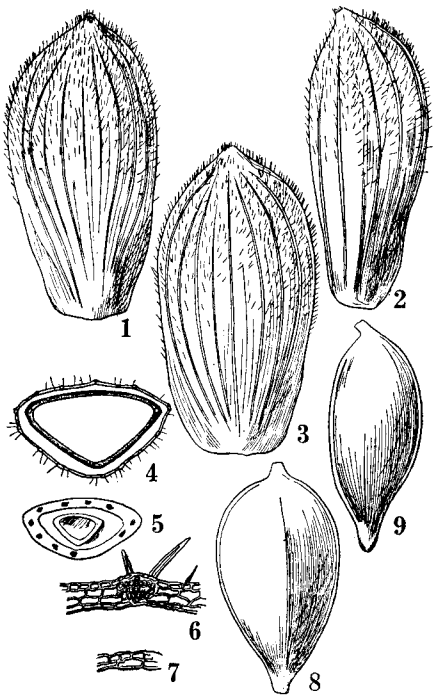


Fig. 104. *Carex lanceolata* BOOTT

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. Basal portion of the utricle, transversely cut, ×14.
6. and 7. Portions of the wall of the utricle, transversely cut, × ca. 100.
8. Nut seen from ventral side, ×14.
9. The same, from lateral side, ×14.

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.

Folia longitudinaliter albo-striolata.

Nom. Jap. Fuiri-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. Kamtchatka, Tschuktchland, 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.

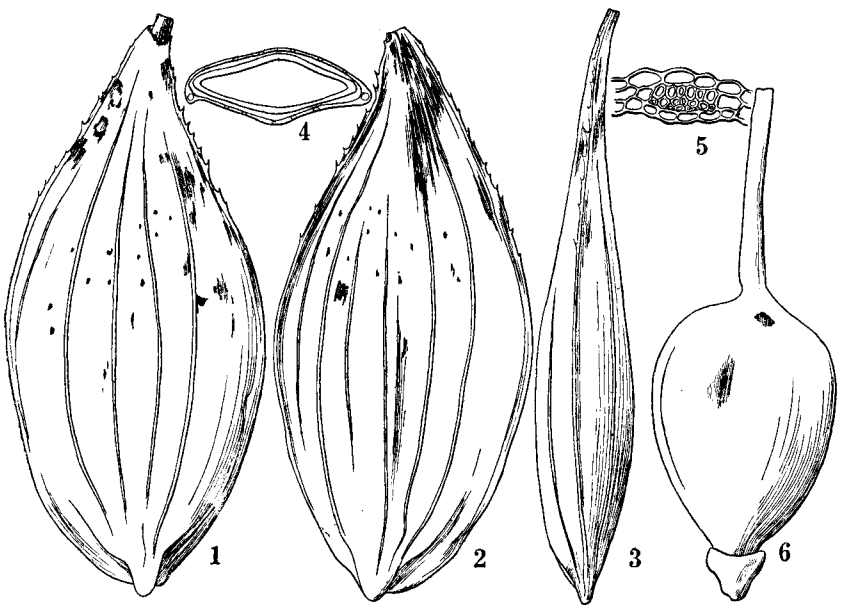


Fig. 105. *Carex grandilimosa* AKIYAMA

1. Utricle seen from dorsal side, ×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. 200. 6. Nut, ×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.

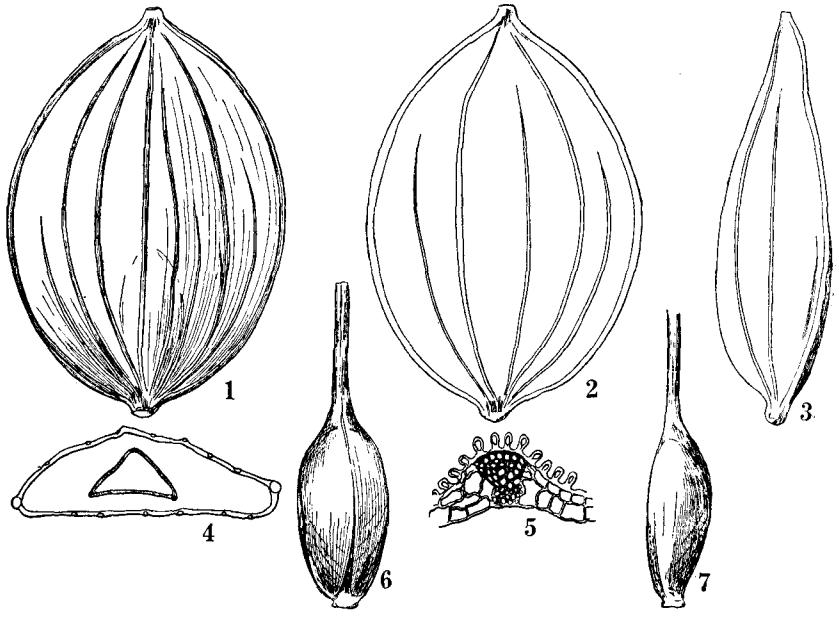


Fig. 106. *Carex limosa* var. *fusco-cuprea* KÜKENTH.

1. Utricle seen from dorsal side, ×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. 200. 6. Nut seen from dorsal side, ×14. 7. The same, from lateral side, ×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 papillosi 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 papillosi glabri obsolete 2–3 striati basi rotundati late obconico 0.5 mm longe stipitati, marginibus nervis

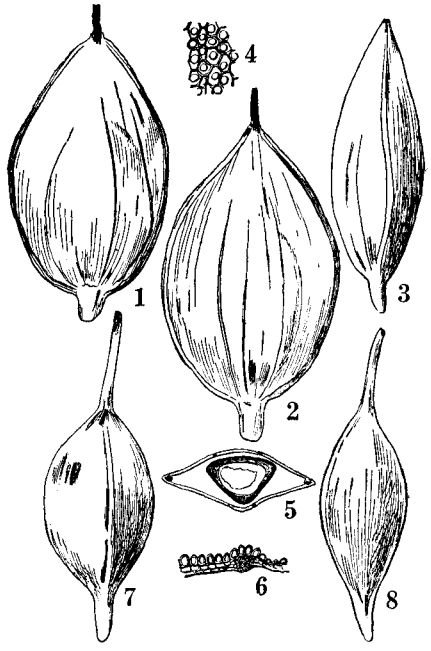


Fig. 107. *Carex magellanica* LAM.

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

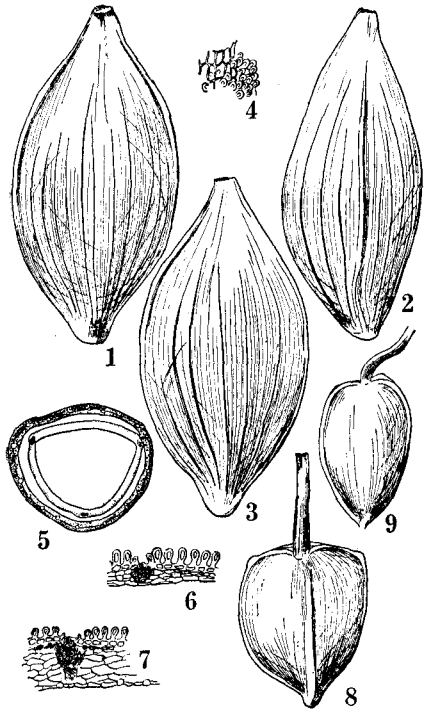


Fig. 108. *Carex laxa* WAHL.

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

Nom. Jap. Musen-suge.

Hab. Kuriles (Insl. Paramushir).

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 papillosi (sed superficiebus nervorum epapillosi), 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.

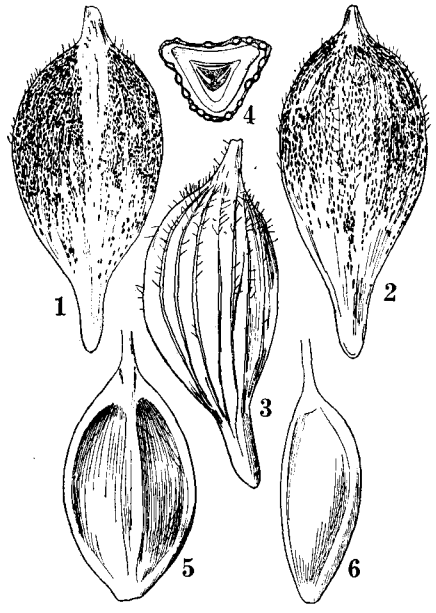


Fig. 109. *Carex ciliato-marginata* NAKAI

1. Utricle seen from dorsal side, ×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. 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.

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.

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. Sasanoha-suge.

Hab. Honshiu and Shikoku.

Sect. 36. **Frigidae** 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.

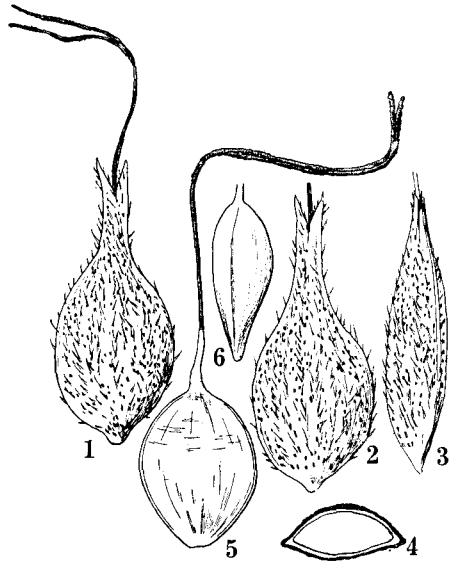


Fig. 110. *Carex Doenitzii* BOECK.
1. Utricle seen from dorsal side, ×14.
2. The same, from ventral side, ×14.
3. The same, from lateral side, ×14.
4. The same, transversely cut, ×14.
5. Nut seen from dorsal side, ×14.
6. The same, from lateral side, ×14.

C. plocamostyla MAXIM. in Mélang. biolog. XII. (1887) 565; FRANCH. in Nouv. Arch. Mus. Paris 3. sér. IX. (1897) 140.

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).

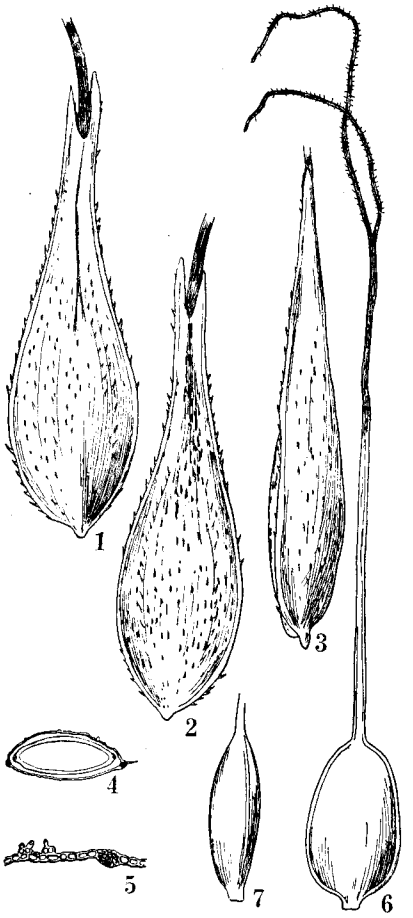


Fig. 111. *Carex Okuboi* FRANCH.

1. Utricle seen from dorsal side, ×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. 75.
6. Nut seen from dorsal side, ×14.
7. The same, from lateral side, ×14.

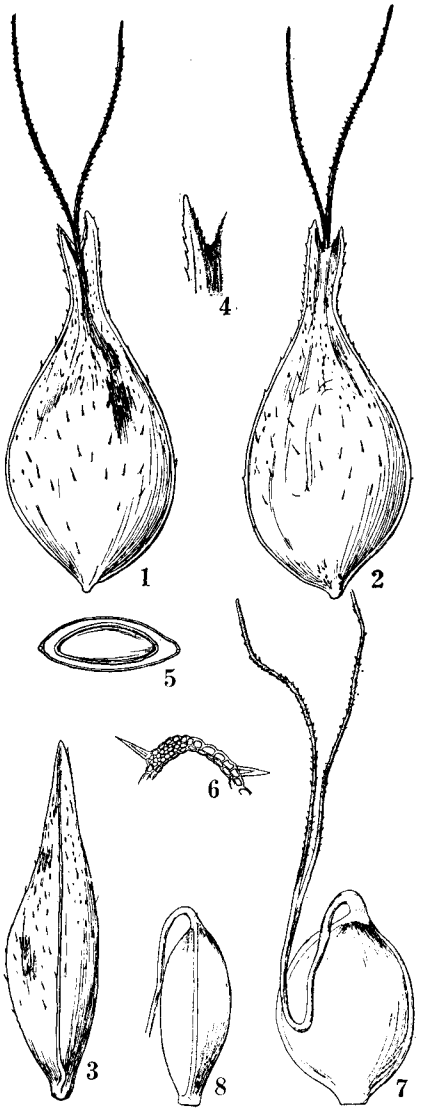


Fig. 112. *Carex shakushizawaensis* AKIYAMA

1. Utricle seen from dorsal side, ×14.
2. The same, from ventral side, ×14.
3. The same, from lateral side, ×14.
4. Portion of the beak, ×21.
5. Utricle with nut, transversely cut, ×14.
6. Portion of the wall of the utricle, transversely cut, × ca. 100.
7. Nut seen from dorsal side, ×14.
8. The same, from lateral side, ×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 papillosi 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 kattaeana** 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,

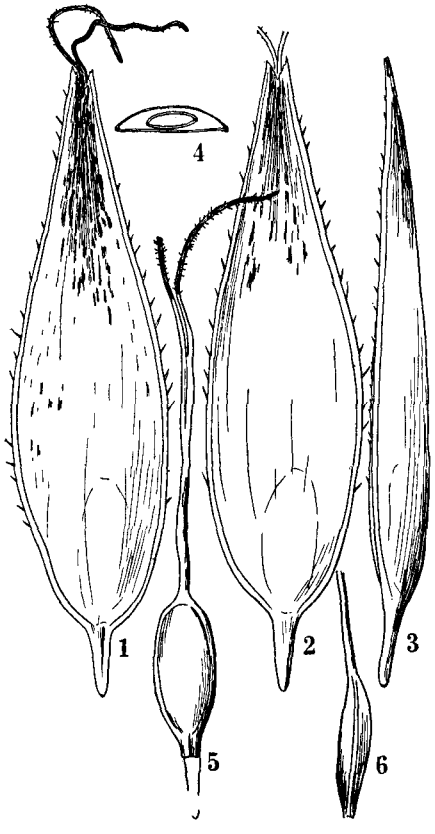


Fig. 113. *Carex uzenensis* KOIDZUMI

1. Utricle seen from dorsal side, ×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.

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 linearicylindrico stipitati, in stipitem marginibus incrassati et hirto-

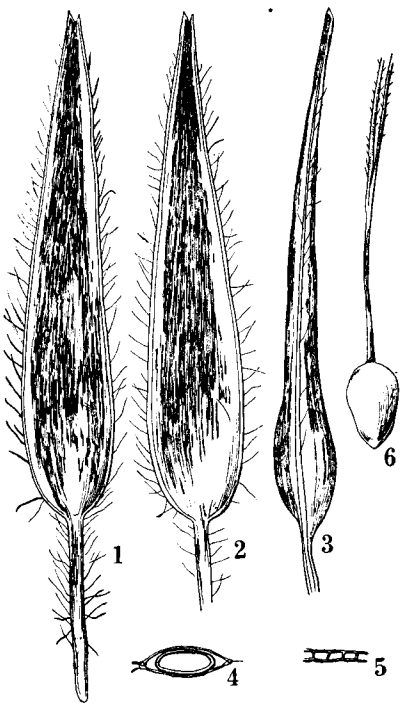


Fig. 114. *Carex podogyna* FRANCH.

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 wall of the utricle, transversely cut, × ca. 75.
6. Nut, ×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.

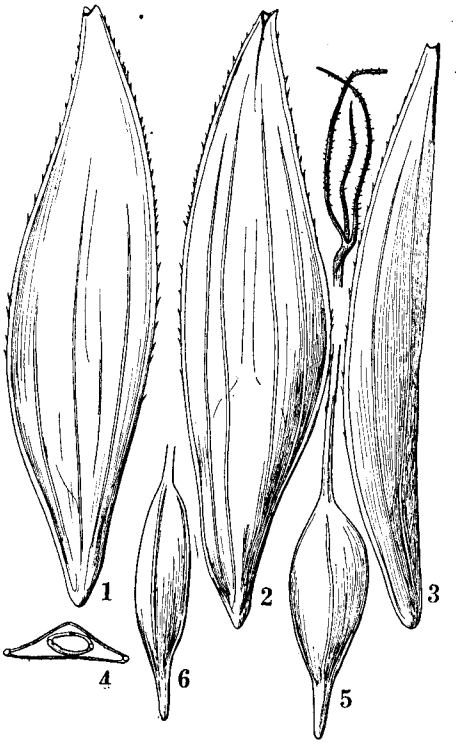


Fig. 115. *Carex tenuiseta* FRANCH.

1. Utricle seen from dorsal side, ×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.

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; KÜKENTH. 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 plurinervosi (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 atro-purpurei 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 membranacei, textis ex 1–2 stratis cellularum compositis, anguste lanceolati trigoni 4–5 mm longi 1.2 mm lati

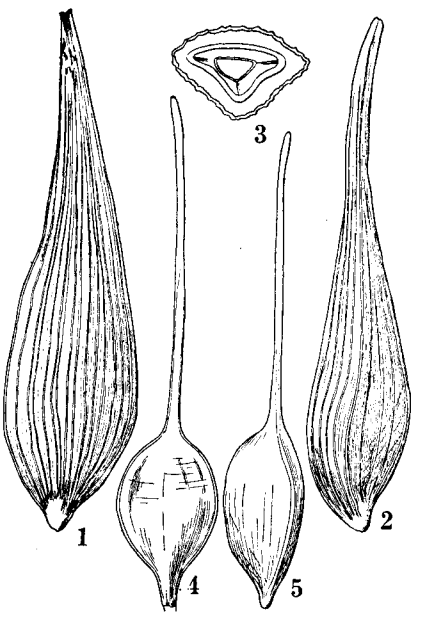


Fig. 116. *Carex Savatieri* FRANCH.

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

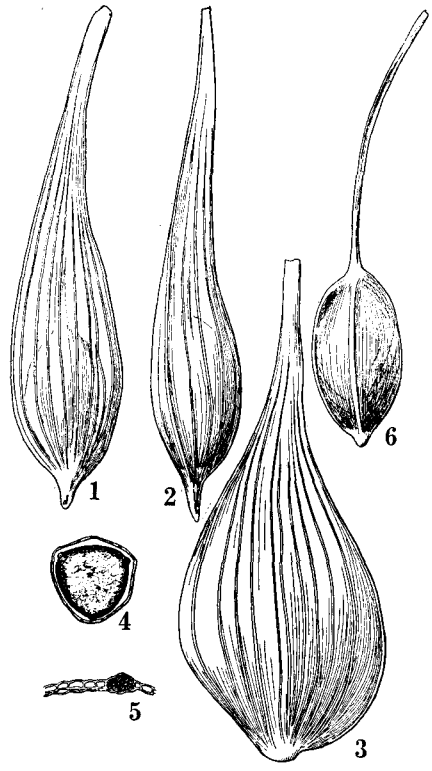


Fig. 117. *Carex curvicollis* FRANCH. et SAV.

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

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 marcidae. 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

longis, sublaxiflorae 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. Bracteae 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 plurinervosi, 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.

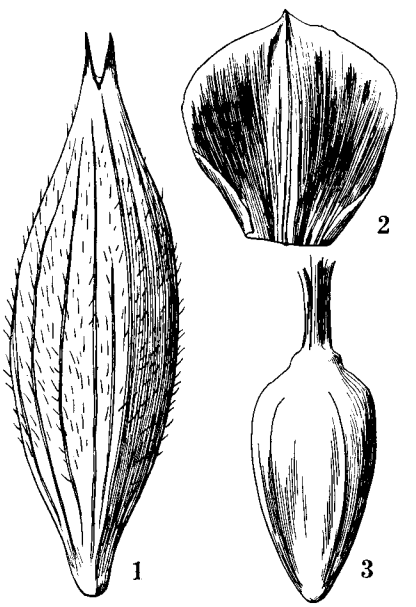


Fig. 118. *Carex Ogawai* AKIYAMA
1. Utricle, ×14.
2. Scale of the female flower, ×14.
3. Nut, ×14.

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-nervosi

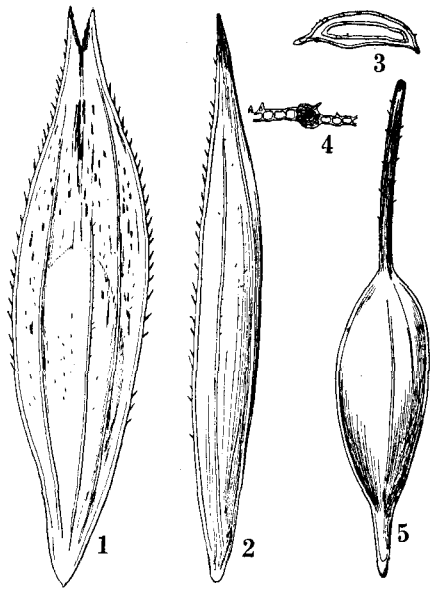


Fig. 119. *Carex siroumensis* KOIDZUMI

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

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 plurinervosi 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.

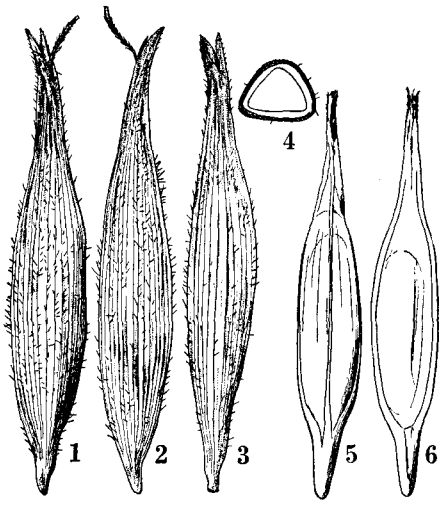


Fig. 120. *Carex chrysolepis* FRANCH. et SAV.
1. Utricle seen from dorsal side, ×14.
2. The same, from ventral side, ×14.
3. The same, from lateral side, ×14.
4. The same with nut, transversely cut, ×14.
5. Nut seen from frontal side, ×14.
6. The same, from another side, ×14.

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

(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.

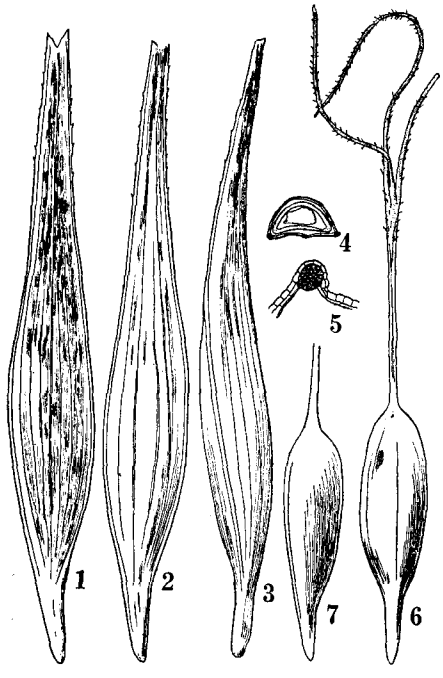


Fig. 121. *Carex stenantha* FRANCH. et SAV.

1. Utricle seen from dorsal side, ×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 dorsal side, ×14.
7. The same, from lateral side, ×14.

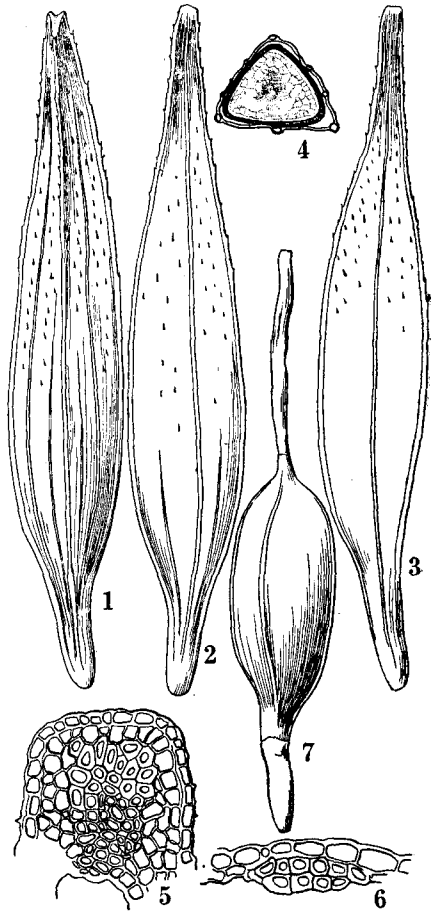


Fig. 122. *Carex stenantha* var. *taisetsuensis* AKIYAMA

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. and 6. Portions of the wall of the utricle, transversely cut, × ca. 250.
7. Nut, ×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.

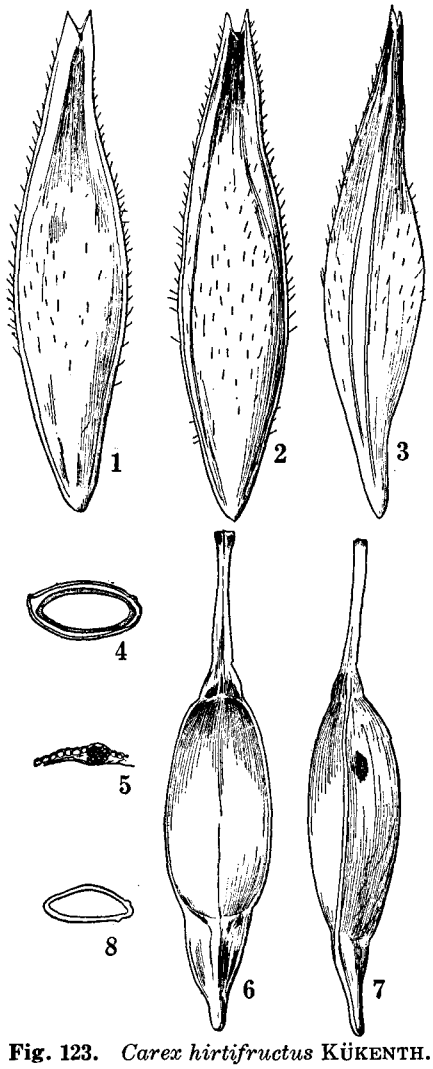


Fig. 123. *Carex hirtifructus* KÜKENTH.

1. Utricle seen from dorsal side, ×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. 75.
6. Nut seen from dorsal side, ×14
7. The same, from lateral side, ×14.
8. The same, transversely cut, ×14.

C. odontostoma var. *sejuncta* KÜKENTH. apud MATSUM. Ind. pl. Japon. II. 1. (1905) 123 (nom. sol.)

C. blepharicarpa var. *hirtifructus* OHWI, l. c. VI. (1931) 247.

Utriculi squamas longe superantes suberecti membranacei, textis e 1–2 stratis cellularum concretis, ovato-oblongi trigoni (interdum 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 stipitati, marginibus hispidi, apice in rostrum longum ore oblique sectum demum leviter bidentatum subabrupte abeuntes.

Nom. Jap. Tsukuba-suge.

Hab. Honshiu.

Sect. 37. Hymenochlaenae DREJER (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 mediocre 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.

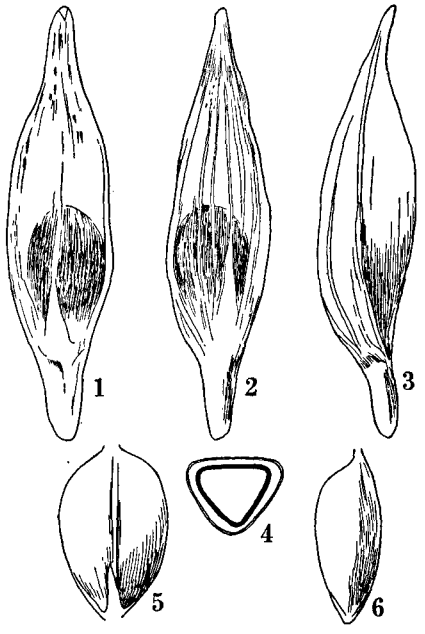


Fig. 124. *Carex capillaris* L.

1. Utricle seen from dorsal side, ×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.

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.

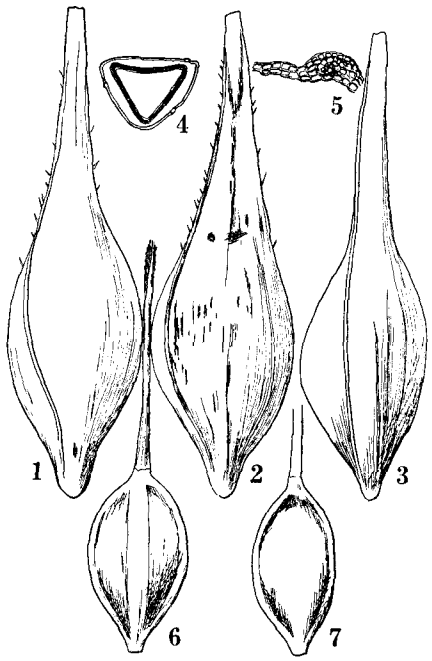


Fig. 125. *Carex koreana* KOMAR.

1. Utricle seen from dorsal side, ×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. 75.
6. Nut seen from ventral side, ×14.
7. The same, from lateral side, ×14.

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. Manshur. I. (1901) 374; LÉVEILLÉ et 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

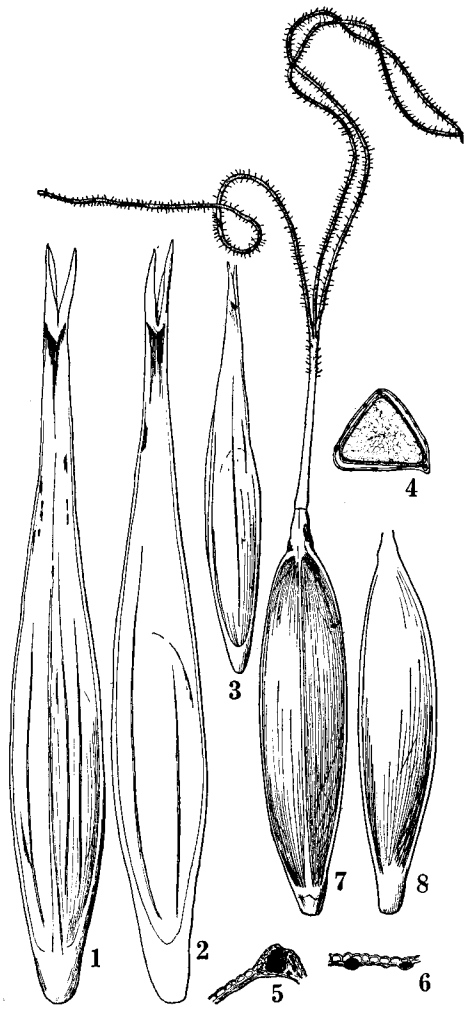


Fig. 126. *Carex bostrychostigma* MAXIM.

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

longum rotundati, apice in rostrum 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 Manchuria.

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 superantes erecti membranacei 2.5–3.5 mm longi ellipsoidei trigoni virides glabri obsolete nervosi, basi attenuati 0.5 mm longe stipitati, marginati, apice in rostrum excurvum marginibus laevem vel scabrum ore bidentatum abeuntes.

Nom. Jap. Miyama-ao-suge.

Hab. Honshiu.

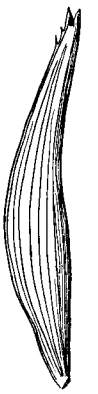


Fig. 127. *Carex niko-montana* AKIYAMA
Utricle, ×14.

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.

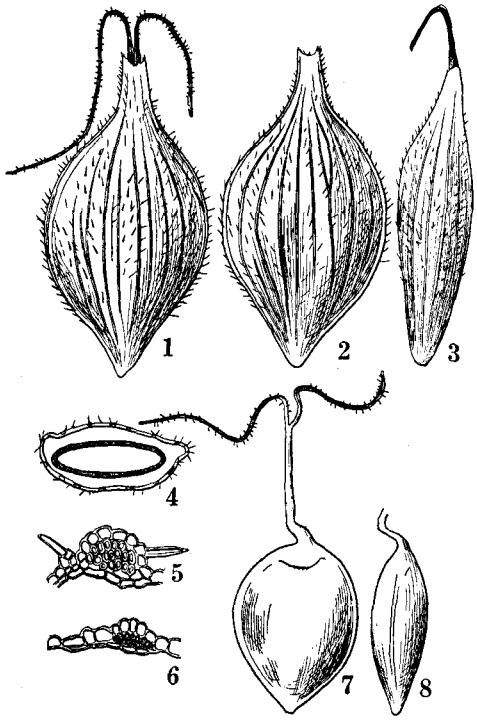


Fig. 128. *Carex brunnea* THUNB.

1. Utricle seen from dorsal side, ×14.
2. The same, from ventral side, ×14.
3. The same, from lateral side, ×14.
4. The same with nut, transversely cut, ×14.
5. and 6. Portions of the wall of the utricle, transversely cut, × ca. 100.
7. Nut seen from dorsal side, ×14.
8. The same, from lateral side, ×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, ovales 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-nervosi, 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, Philippins 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. **scabriculmis** 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.

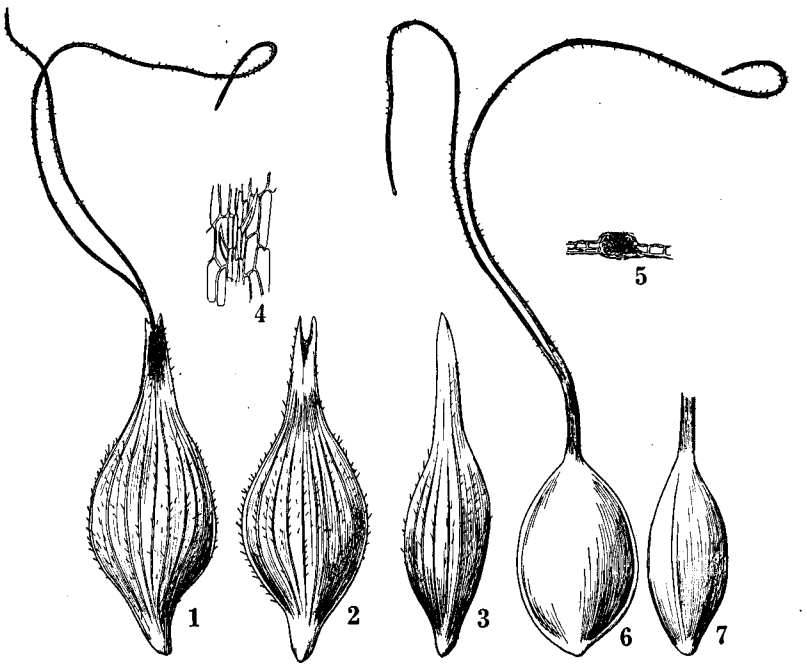


Fig. 129. *Carex teiogyna* var. *scabriculmis* KÜKENTH.

1. Utricle seen from dorsal side ×14. 2. The same, from ventral side, ×14. 3. The same, from lateral side, ×14. 4. Portion of the surface of the utricle, × ca. 100. 5. Portion of the wall of the utricle, transversely cut, × ca. 100. 6. Nut seen from dorsal side, ×14. 7. The same, from lateral side, ×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 mumerosis hispidi, mediocriter longe stipitati, apice in rostrum tenue marginibus viride ore bidentatum intus scabrum abrupte contracti.

Nom. Jap. Hime-nakiri-suge.

Hab. Honshiu.

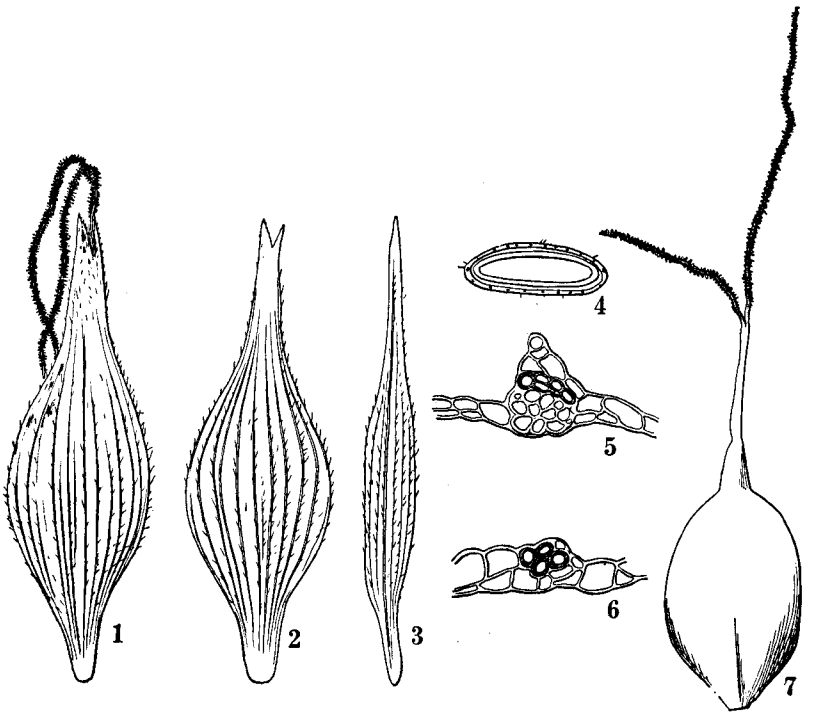


Fig. 130. *Carex kasugayamensis* AKIYAMA

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

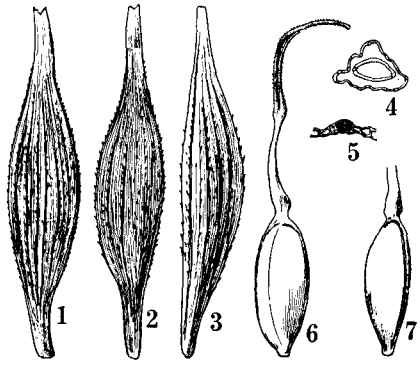


Fig. 131. *Carex sacrosancta* HONDA

1. Utricle seen from dorsal side, ×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. 75.
6. Nut seen from dorsal side, ×14.
7. The same, from lateral side, ×14.

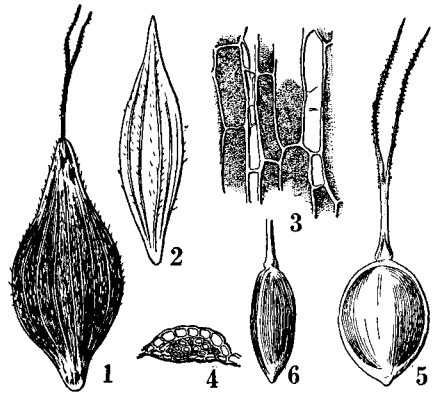


Fig. 132. *Carex amami-oshimensis* AKIYAMA

1. Utricle seen from dorsal side, ×14.
2. The same, from lateral side, ×14.
3. Portion of the surface of the utricle, ×ca. 200.
4. Portion of the wall of the utricle, transversely cut, × ca. 100.
5. Nut seen from dorsal side, ×14.
6. The same, from lateral side, ×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 plurinervosi, 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. Turczanimowiana 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-

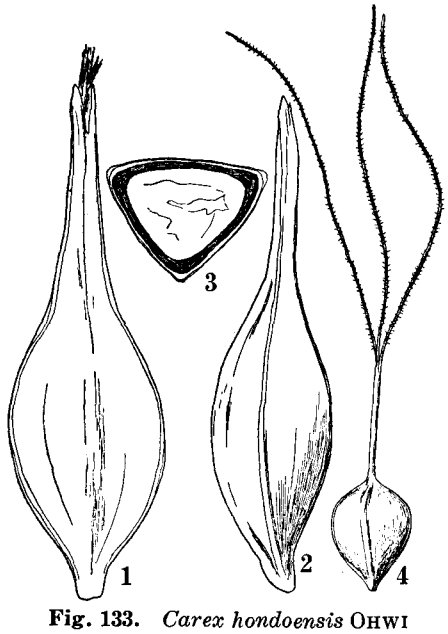


Fig. 133. *Carex hondoensis* OHWI

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

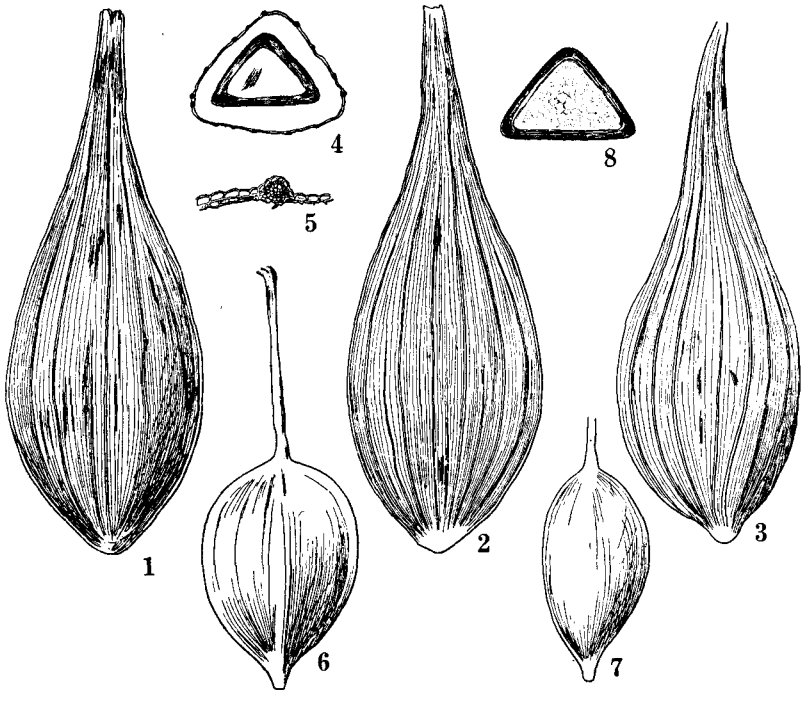


Fig. 134. *Carex ischnostachya* STEUD.

1. Utricle seen from dorsal side, ×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. 75. 6. Nut seen from dorsal side, ×14. 7. The same, from lateral side, ×14. 8. The same, transversely cut, ×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.

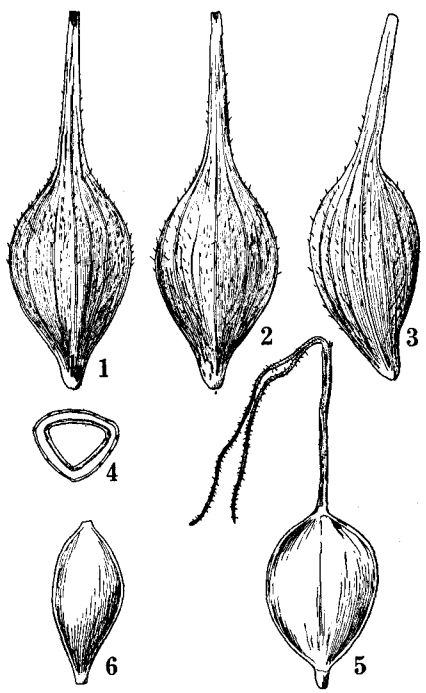


Fig. 135. *Carex nemostachys* STEUD.

1. Utricle seen from dorsal side, ×7.
2. The same, from ventral side, ×7.
3. The same, from lateral side, ×7.
4. The same with nut, transversely cut, ×7.
5. Nut seen from dorsal side, ×7.
6. The same, from lateral side, ×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 plurinervosi, 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. *niigatensis*) ; 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*).

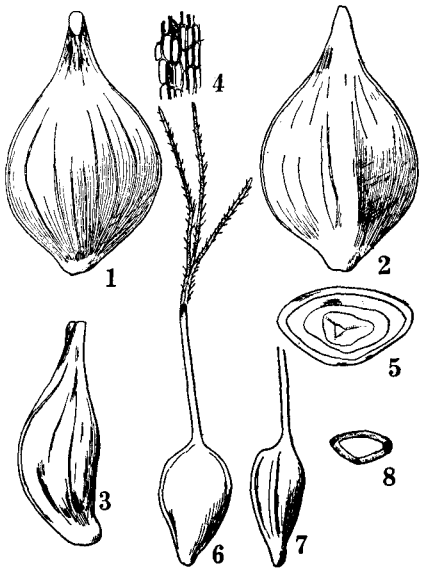


Fig. 136. *Carex dispalata* BOOTT

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

Utriculi squamis longiores et latiores primo erecti demum oblique patentes 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

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.

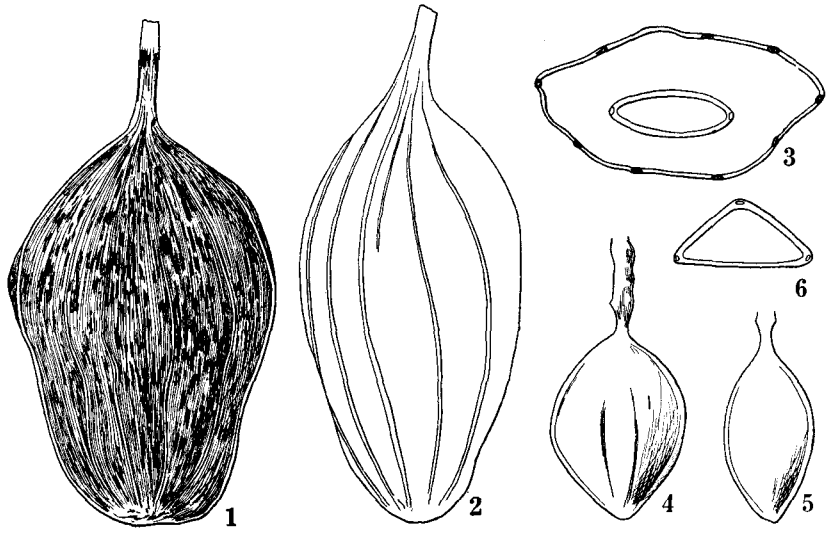


Fig. 137. *Carex confertiflora* BOOTT

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

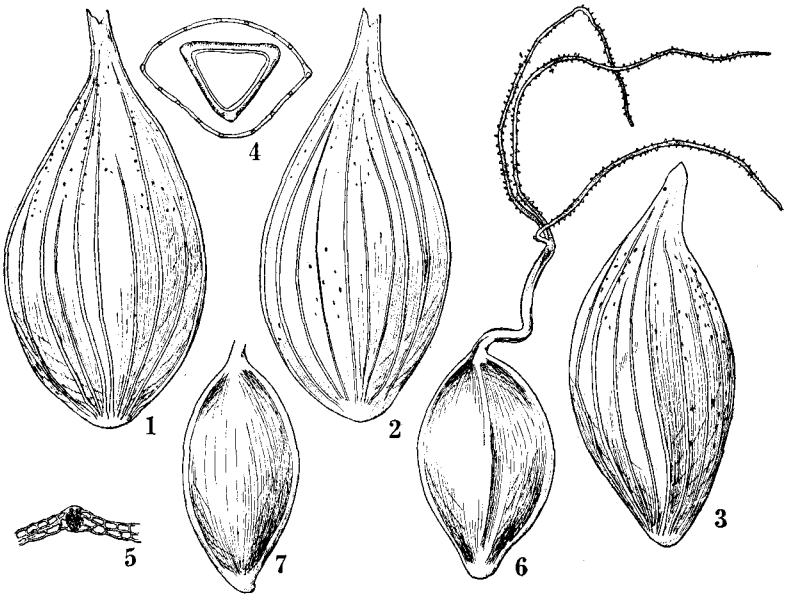


Fig. 138. *Carex alliiformis* C. B. CLARKE

1. Utricle seen from dorsal side, ×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.

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-nervosi (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.

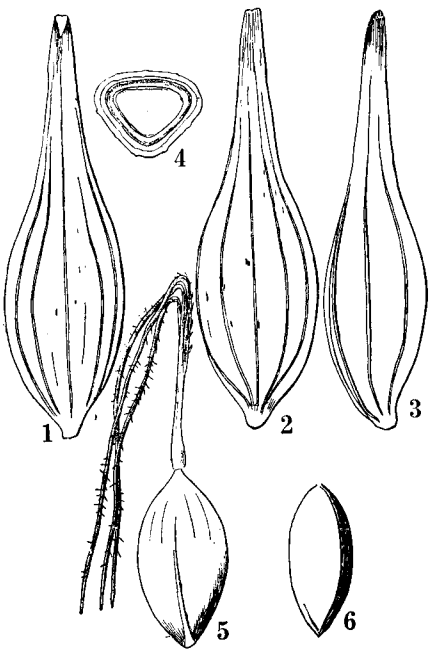


Fig. 139. *Carex japonica* THUNB.

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.

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

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; E-nashi-higo-kusa.

Hab. Hokkaido and Honshiu.
Distrib. Corea.

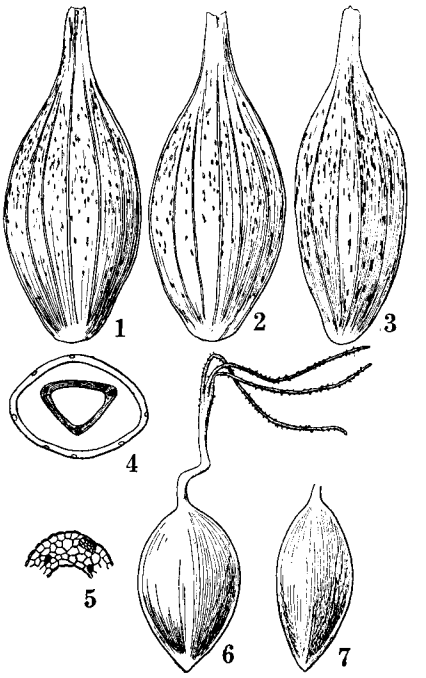


Fig. 140. *Carex aphanolepis* FRANCH. et SAV.

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. 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.

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.

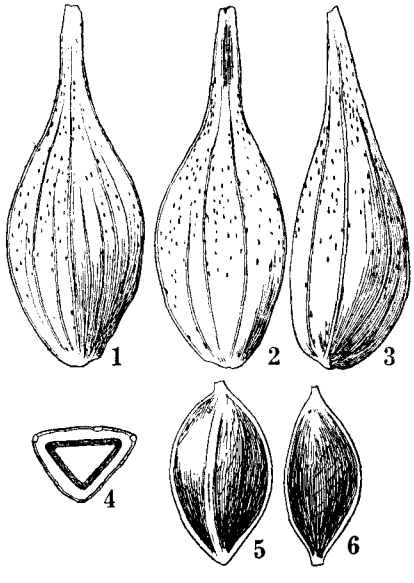


Fig. 141. *Carex Doniana* SPRENG.

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. 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 patentes 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 plurinervosi (nervi 2 marginales prominentes), basi contracti

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.

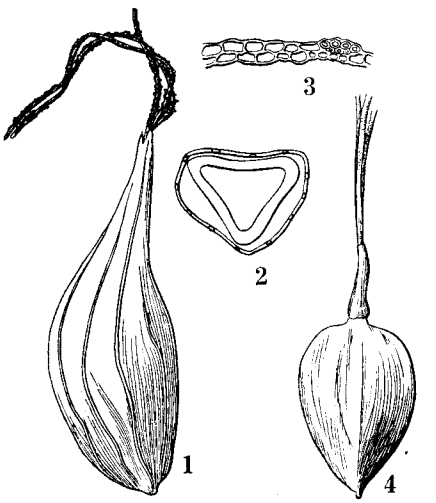


Fig. 142. *Carex planiculmis* KOMAR.

1. Utricle, ×14.
2. The same with nut, transversely cut, ×14.
3. Portion of the wall of the utricle, transversely cut, × ca. 200.
4. Nut, ×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

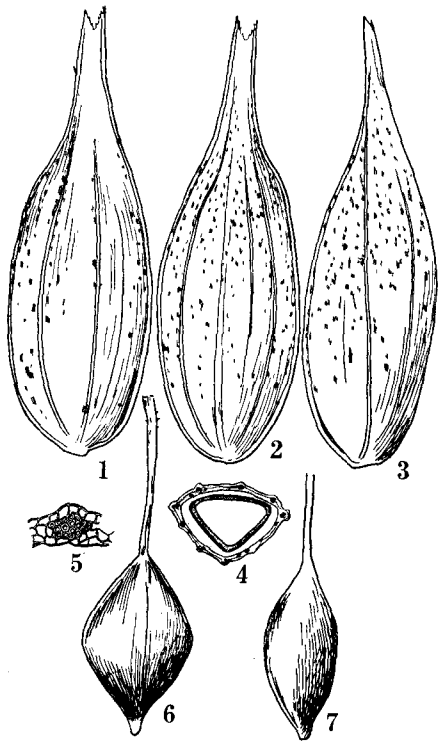


Fig. 143. *Carex mollicula* BOOTT

1. Utricle seen from dorsal side, ×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 dorsal side, ×14.
7. The same, from lateral side, ×14.

(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.

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

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.

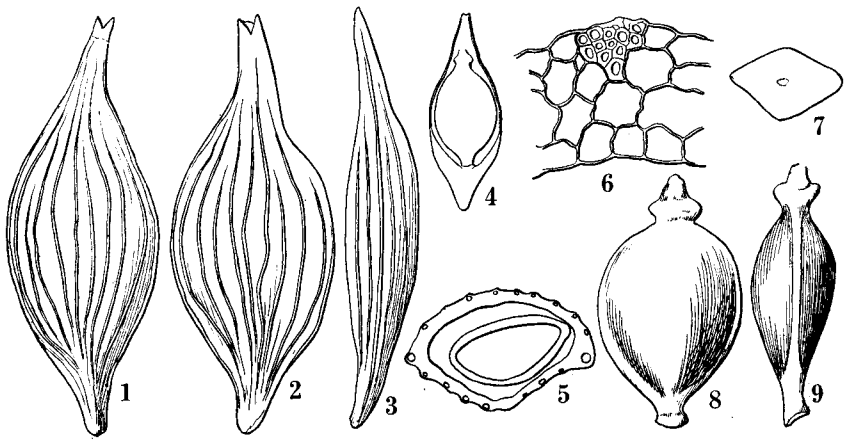


Fig. 144. *Carex Matsumurae* FRANCH.

1. Utricle seen from dorsal side, ×14. 2. The same, from ventral side, ×14. 3. The same, from lateral side, ×14. 4. The same, longitudinally cut, ×7. 5. The same with nut, transversely cut, ×14. 6. Portion of the wall of the utricle, transversely cut, × ca. 250. 7. Basal portion of the utricle, transversely cut, ×14. 8. Nut seen from dorsal side, ×14. 9. The same, from lateral side, ×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

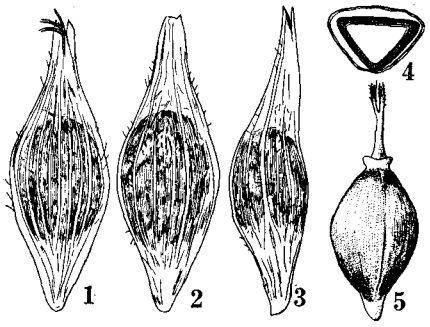


Fig. 145. *Carex chinensis* RETZ.

1. Utricle seen from dorsal side, ×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.

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. Fuiri-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* KÜKENTH. 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

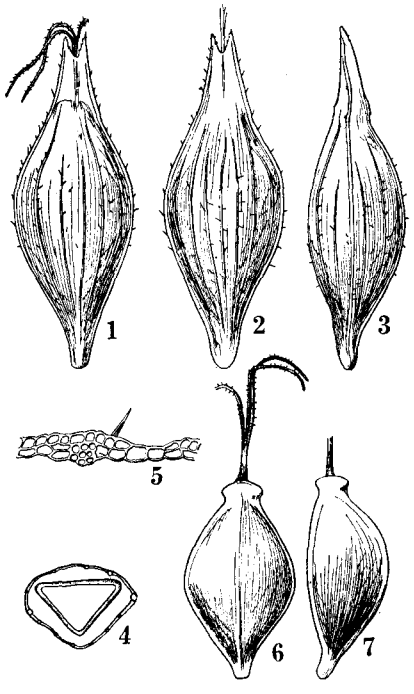


Fig. 146. *Carex sociata* BOOTT

1. Utricle seen from dorsal side, ×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. 120.
6. Nut seen from ventral side, ×14.
7. The same, from lateral side, ×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 plurinervosi (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

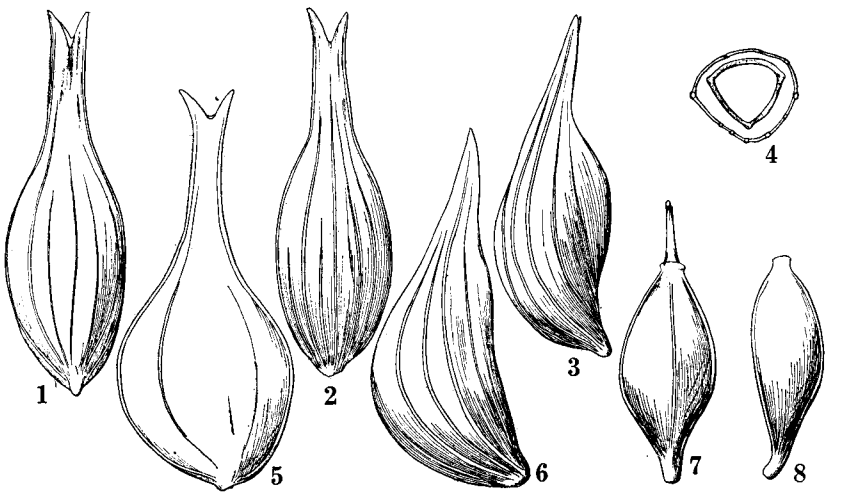


Fig. 147. *Carex Morrowii* BOOTT

1. and 5. Utricle seen from dorsal side, ×14. 2. The same, from ventral side, ×14. 3. and 6. The same, from lateral side, ×14. 4. Utricle with nut, transversely cut, ×14. 7. Nut seen from ventral side, ×14. 8. The same, from lateral side, ×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 cinerascentes glabri dorso pauci ventre plurinervosi, 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. Fuiri-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 insaniae** KOIDZUMI (Fig. 149), Fl. Symbol. Orient.-asiat. (1930) 44; MIYABE & KUDO, Fl. of Hokkaid. and Saghal. II. (1931) 265.

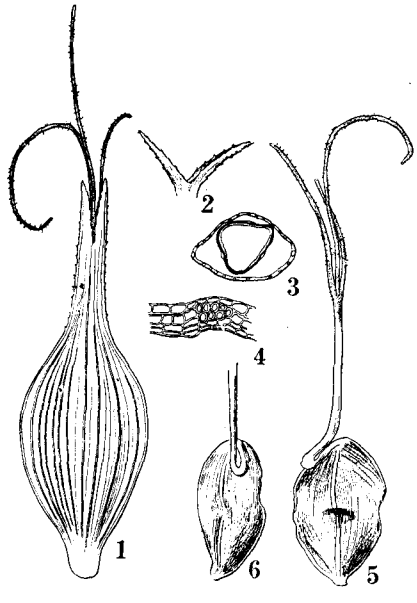


Fig. 148. *Carex oahuensis* var. *robusta* KÜKENTH.

1. Utricle seen from dorsal side, ×7.
2. Apical portion of the beak, ×7.
3. Utricle with nut, transversely cut, ×7.
4. Portion of the wall of the utricle, transversely cut, ×ca. 75.
5. Nut seen from dorsal side, ×7.
6. The same, from lateral side, ×7.

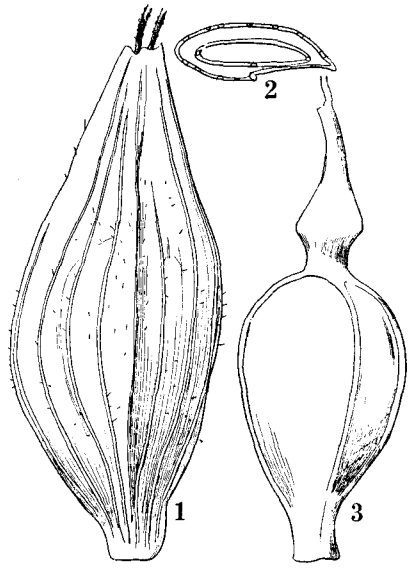


Fig. 149. *Carex insaniae* KOIDZUMI

1. Utricle, ×14.
2. The same with nut, transversely cut, ×14.
3. Nut, ×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 patentes subcoriacei ovati vel late ovati trigoni vix turgidi 4–5 mm longi ad 2 mm lati stramineo-virides fuscescentes parce pubescentes 15–20-nervosi, 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.-Pétersb. 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.

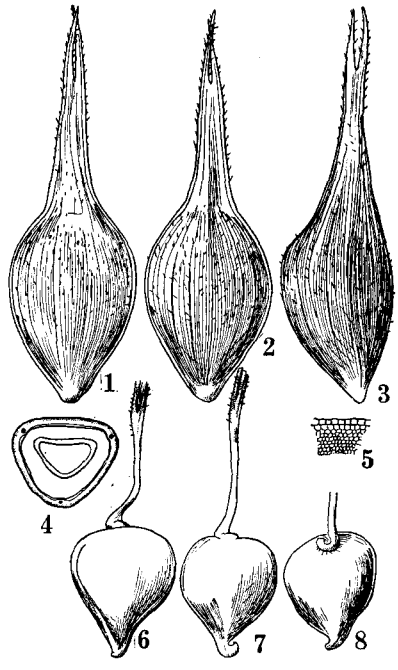


Fig. 150. *Carex longerostrata* C. A. MEYER

1. Utricle seen from dorsal side, ×7.
2. The same, from ventral side, ×7.
3. The same, from lateral side, ×7.
4. The same with nut, transversely cut, ×7.
5. Basal portion of the wall of the utricle, transversely cut, × ca. 50.
6. Nut seen from dorsal side, ×7.
7. The same, from ventral side, ×7.
8. The same, from lateral side, ×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 plurinervosi (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-

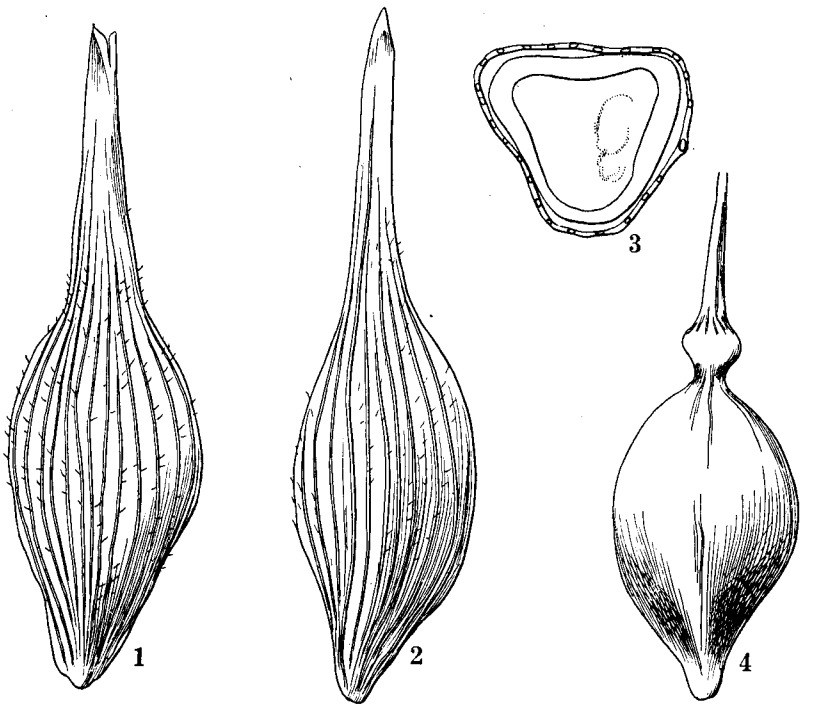


Fig. 151. *Carex kiyozumiensis* AKIYAMA

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

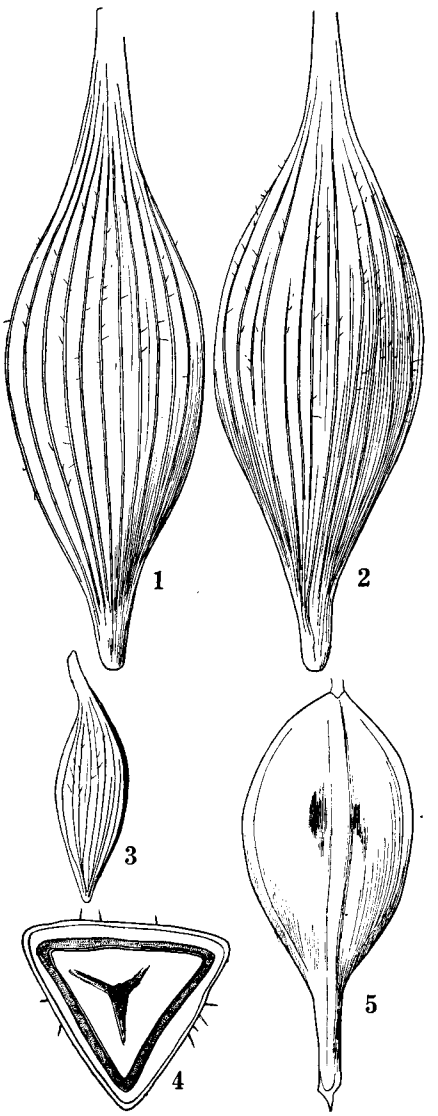


Fig. 152. *Carex macrandrolepis* LÉV. et VNT.

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.

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 plurinervosi, 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

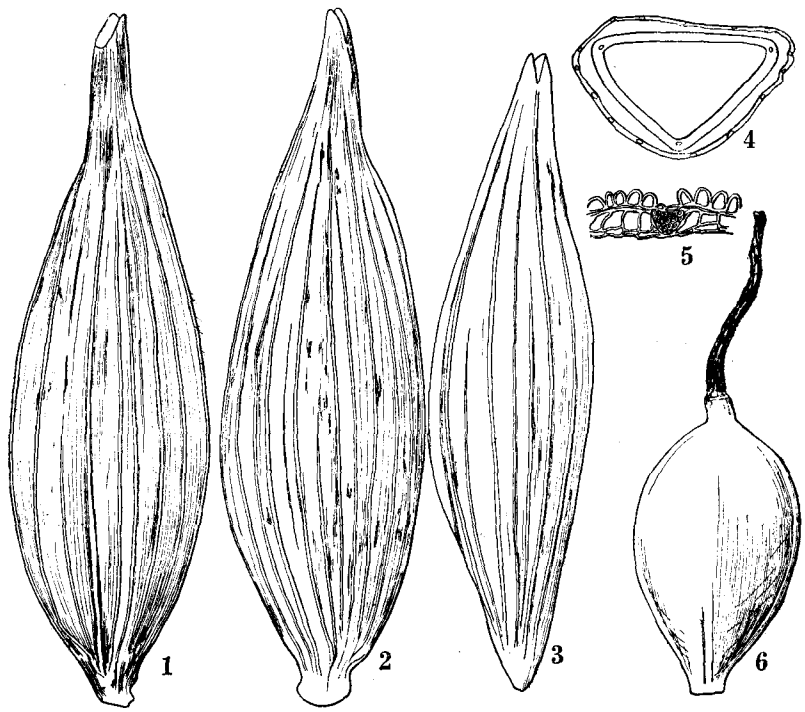


Fig. 153. *Carex papulosa* BOOTT

1. Utricle seen from dorsal side, ×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. 150. 6. Nut, ×14.

dense albo-papillosi fere 15-nervosi, in parte nervorum epapillosi, 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.

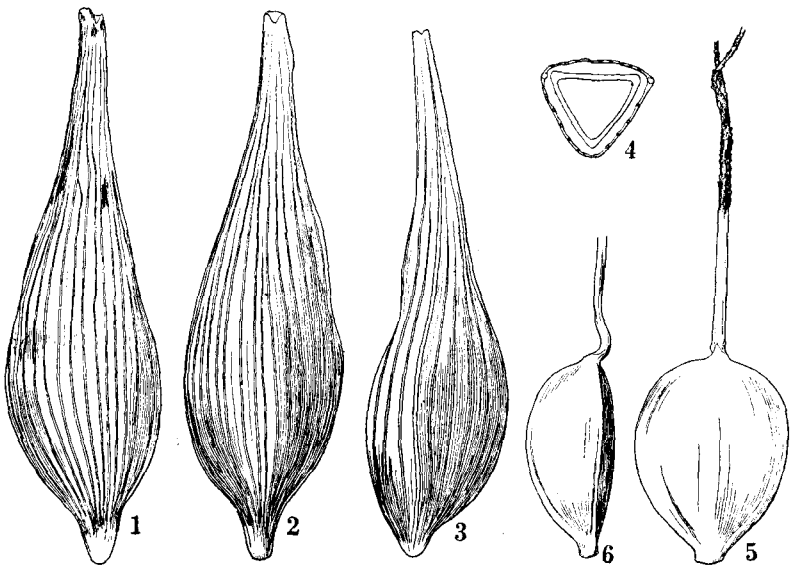


Fig. 154. *Carex macroglossa* FRANCH. et SAV.

1. Utricle seen from dorsal side, ×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.

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 fusiformi-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.

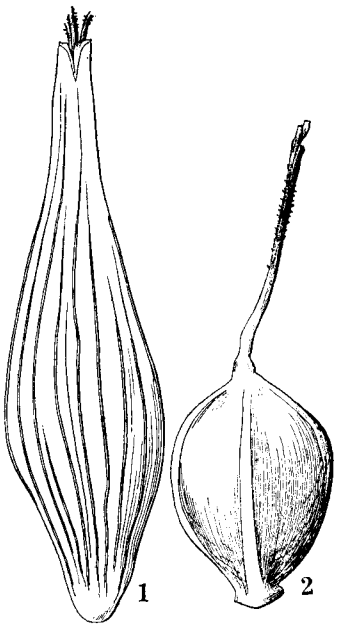


Fig. 155. *Carex gagaensis* AKIYAMA
1. Utricle, ×14. 2. Nut, ×14.

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 plurinervosi, 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.

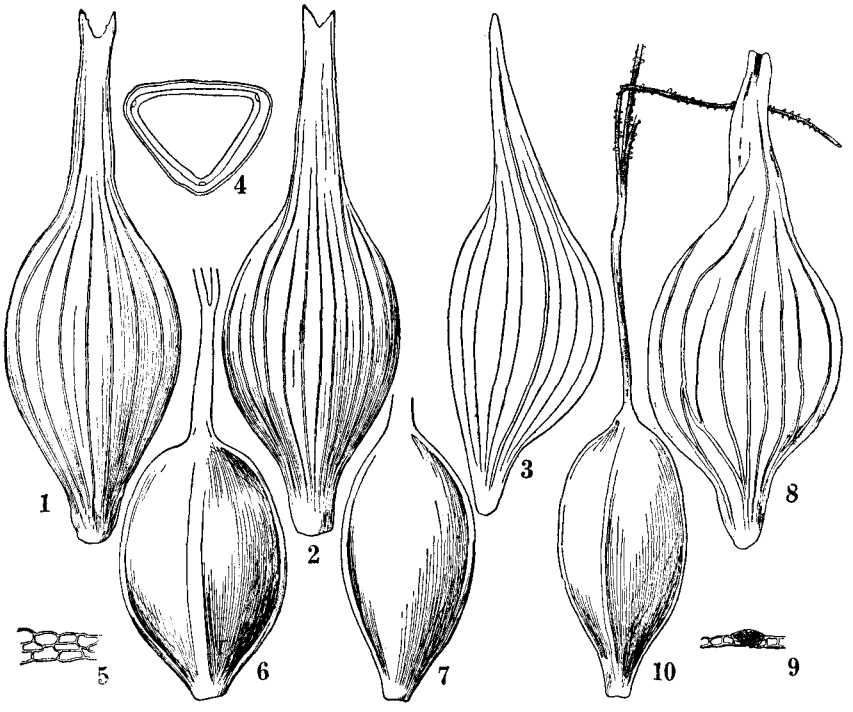


Fig. 156. 1–7. *Carex filipes* FRANCH. et SAV.

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. 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.

8–10. *Carex filipes* var. *Rouyana* KÜKENTH.

8. Utricle, ×14. 9. Portion of the wall of the utricle, transversely cut, × ca. 75. 10. Nut, ×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.-Pétersb. 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.

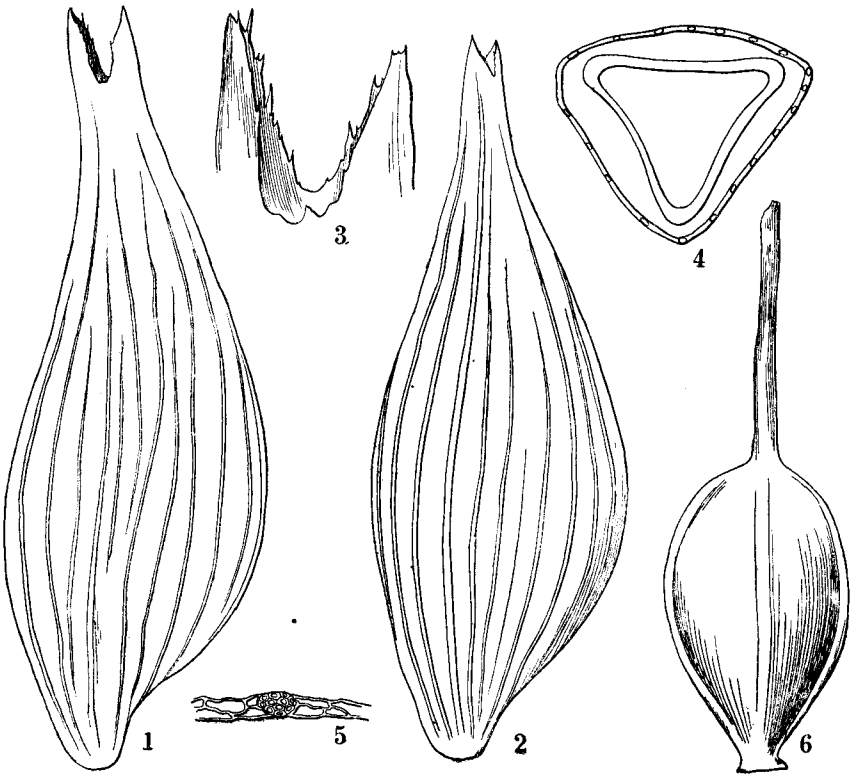


Fig. 157. *Carex villosa* var. *straminea* AKIYAMA

1. Utricle seen from dorsal side, ×14. 2. The same, from lateral side, ×14. 3. Apical portion of the beak, ×35. 4. Utricle with nut, transversely cut, ×14. 5. Portion of the wall of the utricle, transversely cut, × ca. 150. 6. Nut, ×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 multinervosi subsessiles, apice in rostrum mediocre latum grosse bidentatum intus scabrum subabrupte contracti.

Nom. Jap. Komoro-suge.

Hab. Honshiu.

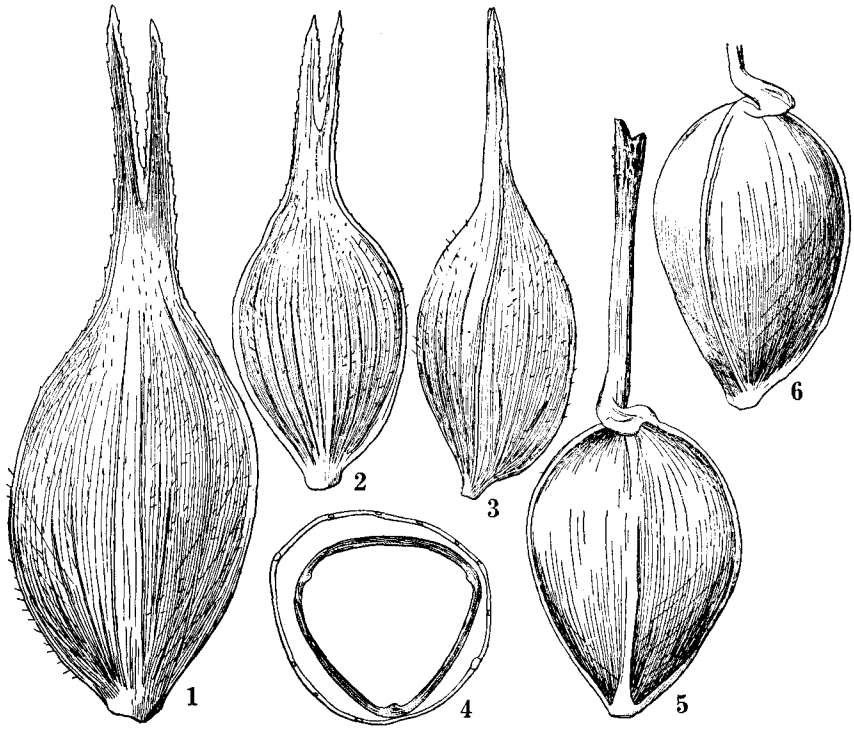


Fig. 158. *Carex tenuistachya* NAKAI

1. Utricle seen from dorsal side, ×14. 2. The same, from ventral side, ×7. 3. The same, from lateral side, ×7. 4. The same with nut, transversely cut, ×14. 5. Nut seen from ventral side, ×14. 6. The same, from lateral side, ×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 plurinervosi, 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-nervosi, 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.

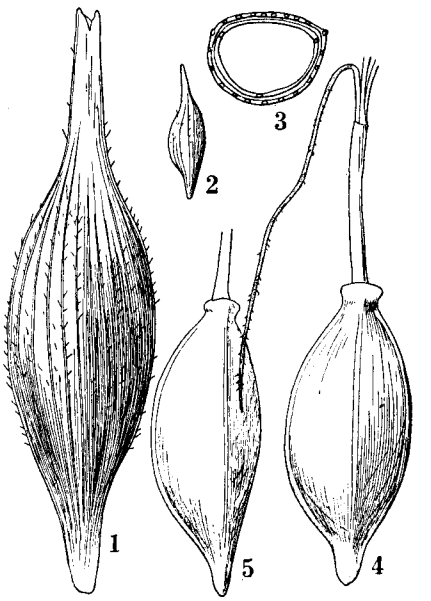


Fig. 159. *Carex daisenensis* NAKAI

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

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.

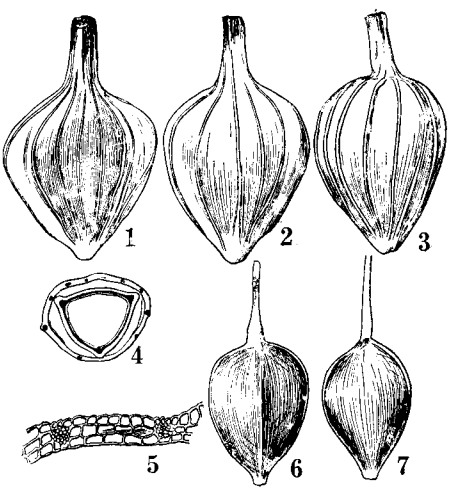


Fig. 160. *Carex Oederi* var. *viridula* KÜKENTH.

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 seen from ventral side, ×14.
7. The same, from lateral side, ×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. Manshur. 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.

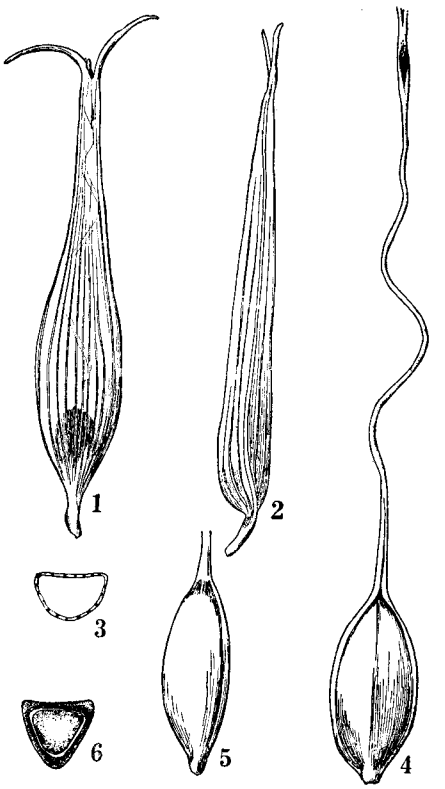


Fig. 161. *Carex brachystachya* AKIYAMA

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

Utriculi squamas triplo superantes 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.

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.

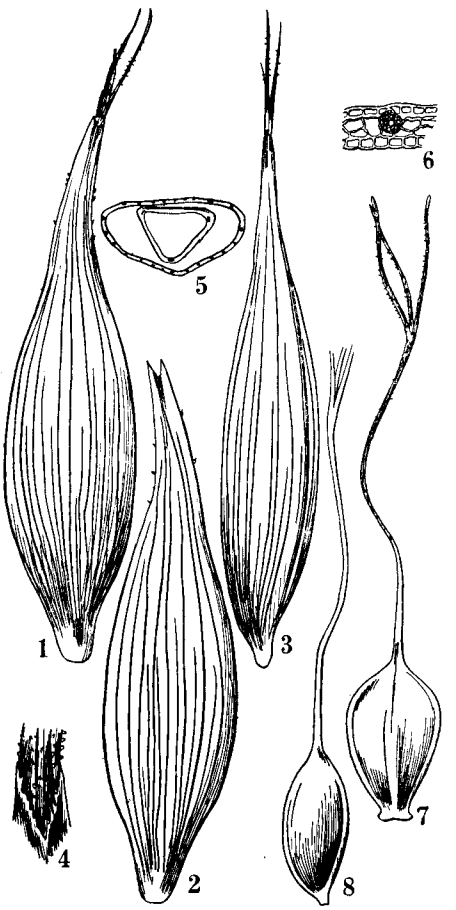


Fig. 162. *Carex Michauxiana* BOECK.

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

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 plurinervosi, 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.

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.

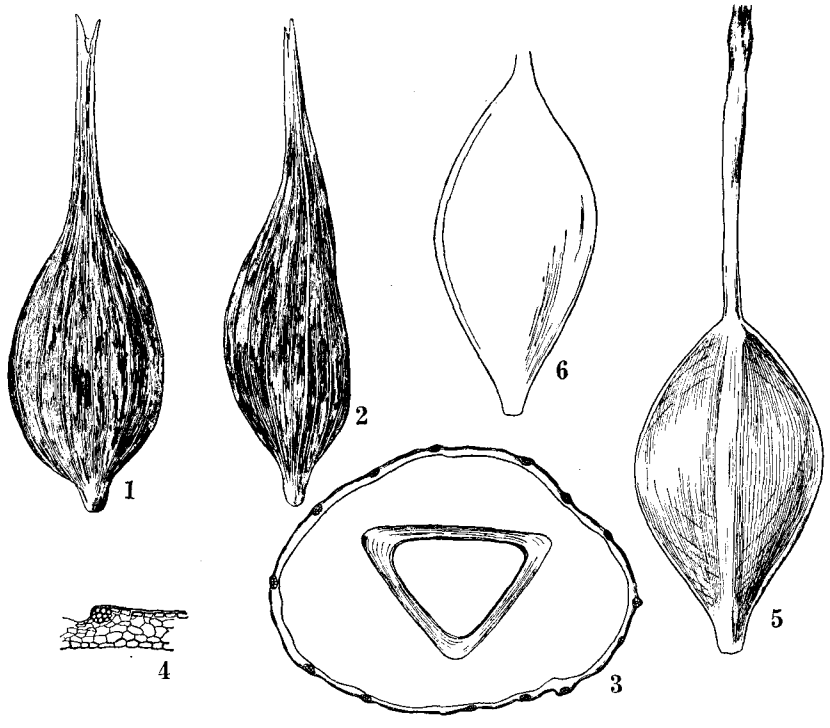


Fig. 163. *Carex Idzuroei* FRANCH. et SAV.

1. Utricle seen from dorsal side, ×7. 2. The same, from lateral side, ×7. 3. The same with nut, transversely cut, ×14. 4. Portion of the wall of the utricle, transversely cut, × ca. 50. 5. Nut, ×14. 6. The same, from lateral side, ×14.

Utriculi squamas 2–3-plo superantes oblique patentes 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 plurinervosi, nervis 15–20, basi contracti 1 mm longe stipitati, apice in rostrum vix 5 mm longum conicum rigide bidentatum abrupte desinentes.

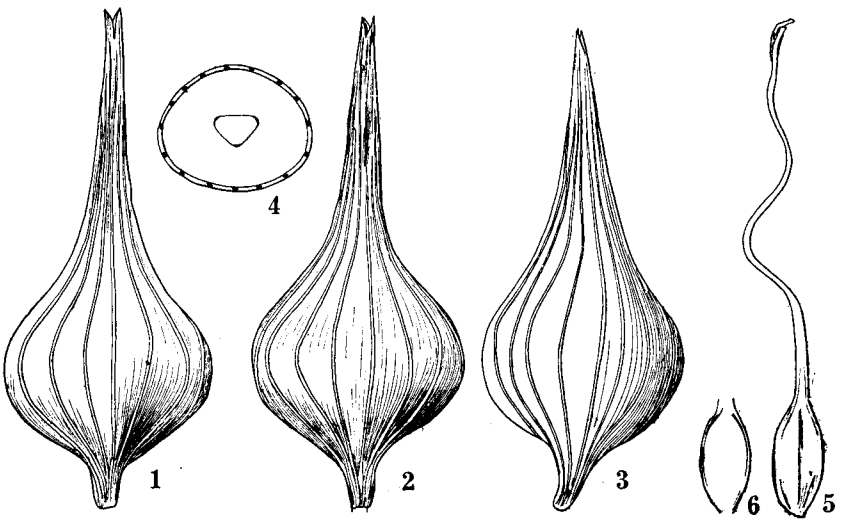


Fig. 164. *Carex Dickinsii* FRANCH. et SAV.

1. Utricle seen from dorsal side, ×7. 2. The same, from ventral side, ×7. 3. The same, from lateral side, ×7. 4. The same with nut, transversely cut, ×7. 5. Nut seen from ventral side, ×7. 6. The same, from lateral side, ×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-nervosi (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.

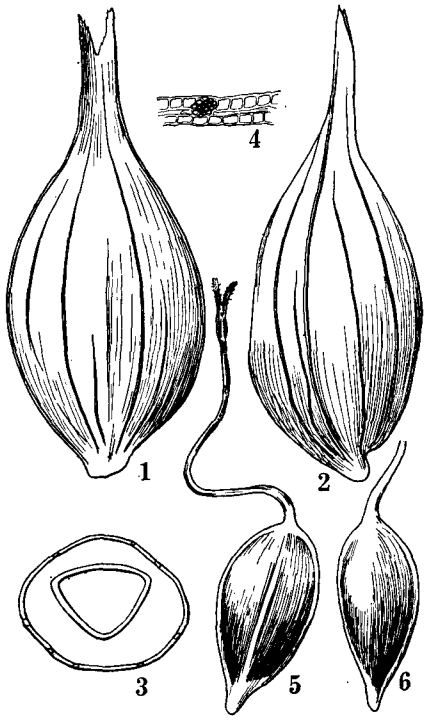


Fig. 165. *Carex laevirostris* BLYTT.

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

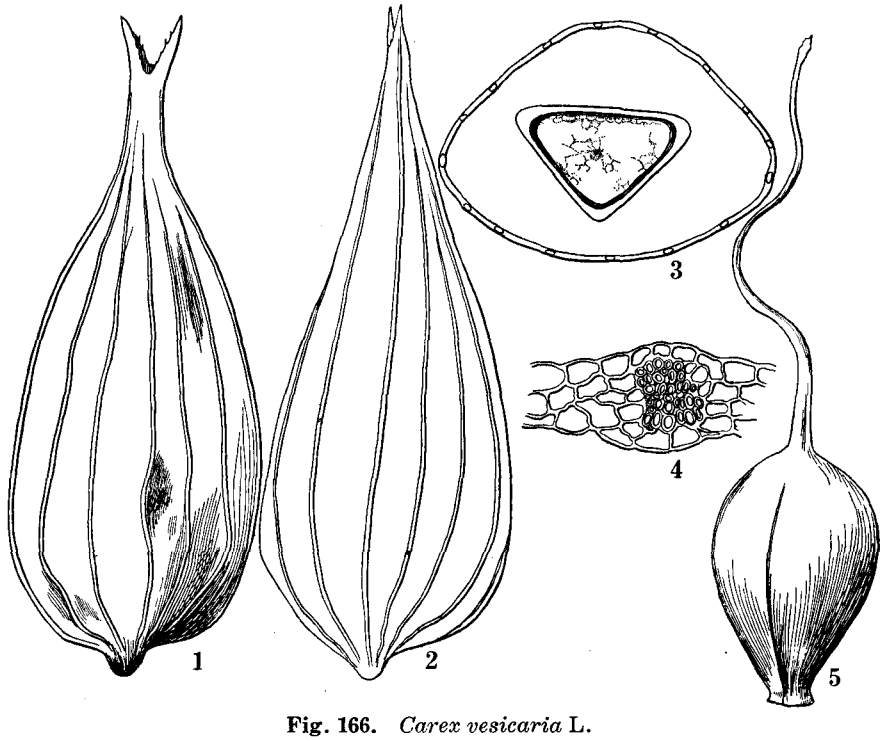


Fig. 166. *Carex vesicaria* L.

1. Utricle seen from dorsal side, ×14. 2. The same, from lateral side, ×14. 3. The same with nut, transversely cut, ×14. 4. Portion of the wall of the utricle, transversely cut, × ca. 200. 5. Nut, ×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 α. 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 patentes subcoriacei, textis e 3–4 stratis cellularum constantibus, ovato-conici inflato-trigoni 6–8 mm longi flavo-virides demum straminei nitidi glabri plurinervosi, 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 **elatior** 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.

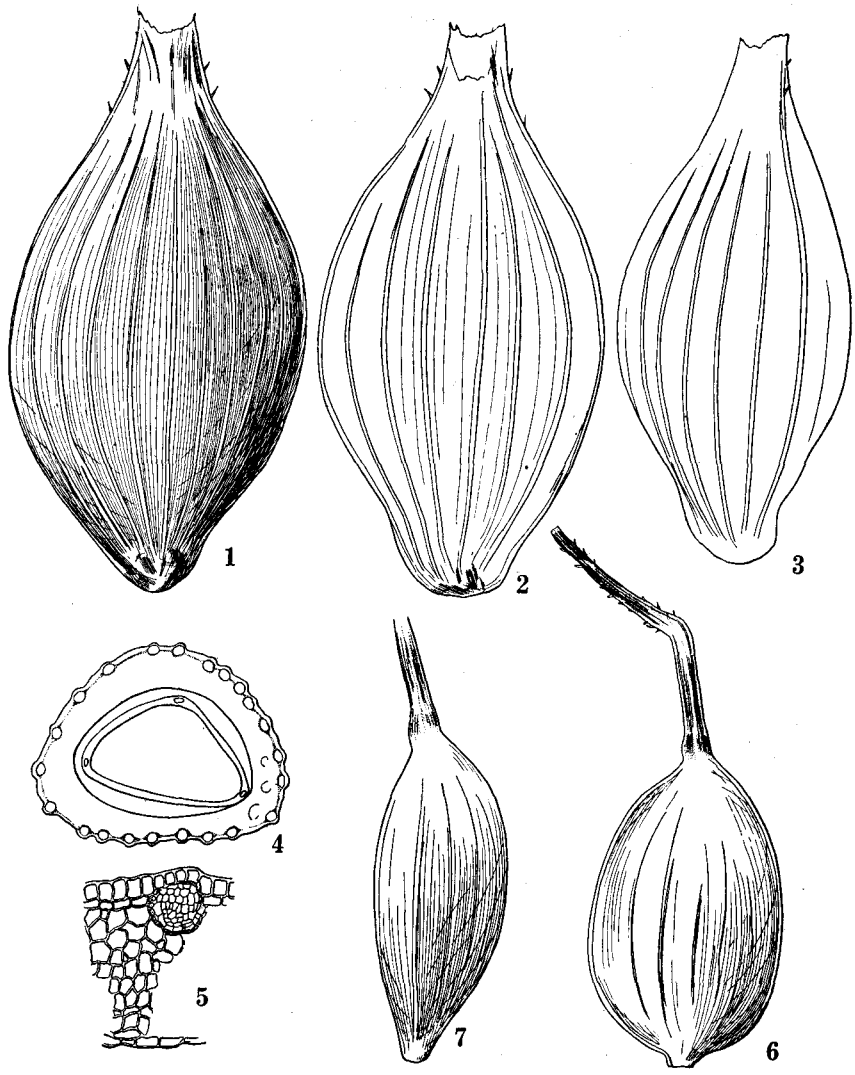


Fig. 167. *Carex scabrifolia* STEUD.

1. Utricle seen from dorsal side, ×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 dorsal side, ×14. 7. The same, from lateral side, ×14

Utriculi squamas duplo superantes oblique patentes 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 patentes 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

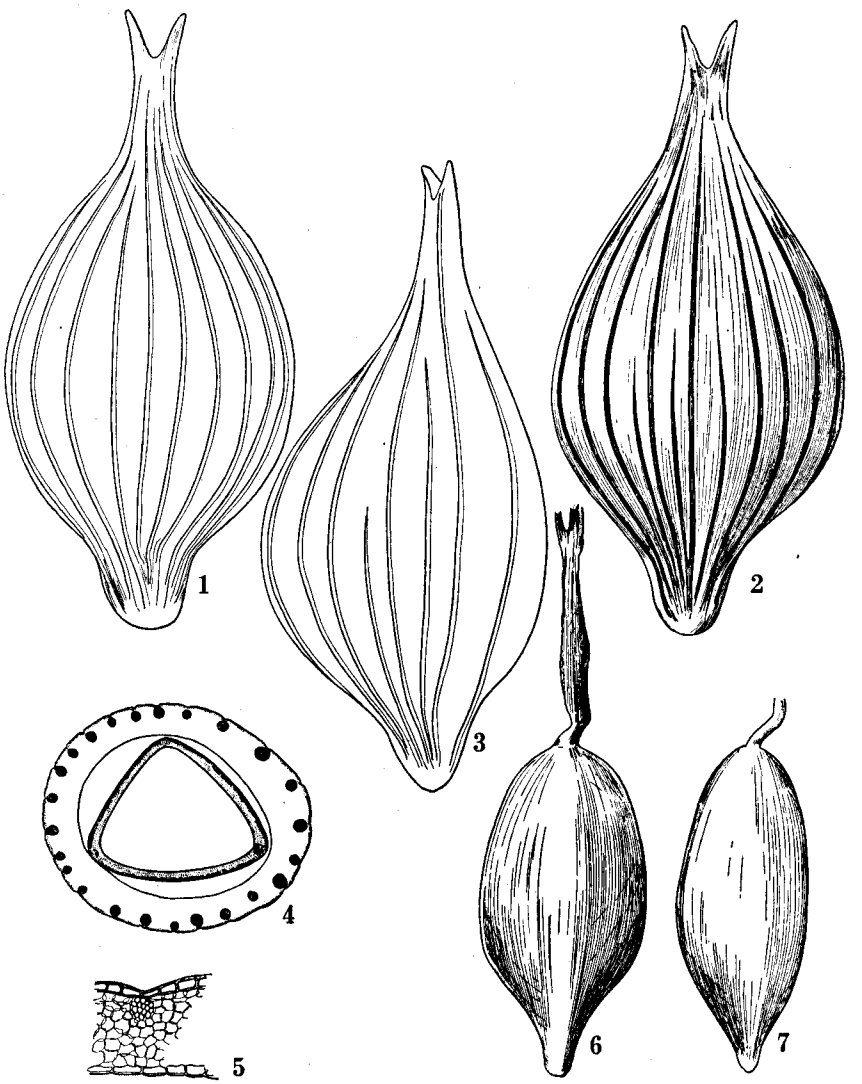


Fig. 168. *Carex pumila* THUNB.

1. Utricle seen from dorsal side, ×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. 75. 6. Nut seen from dorsal side, ×14. 7. The same, from lateral side, ×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.

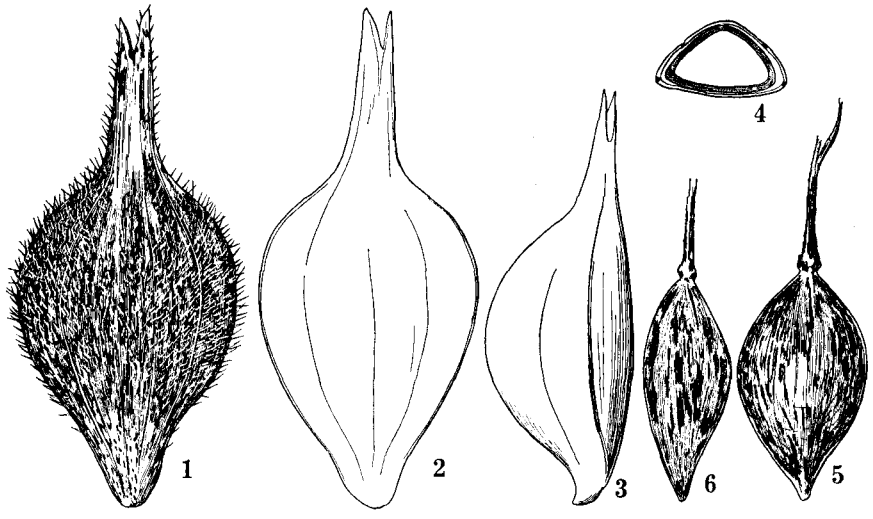


Fig. 169. *Carex hebecarpa* var. *ligulata* FRANCH.

1. Utricle seen from dorsal side, ×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 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 pauci-nervosi, 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. Spiculae 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.

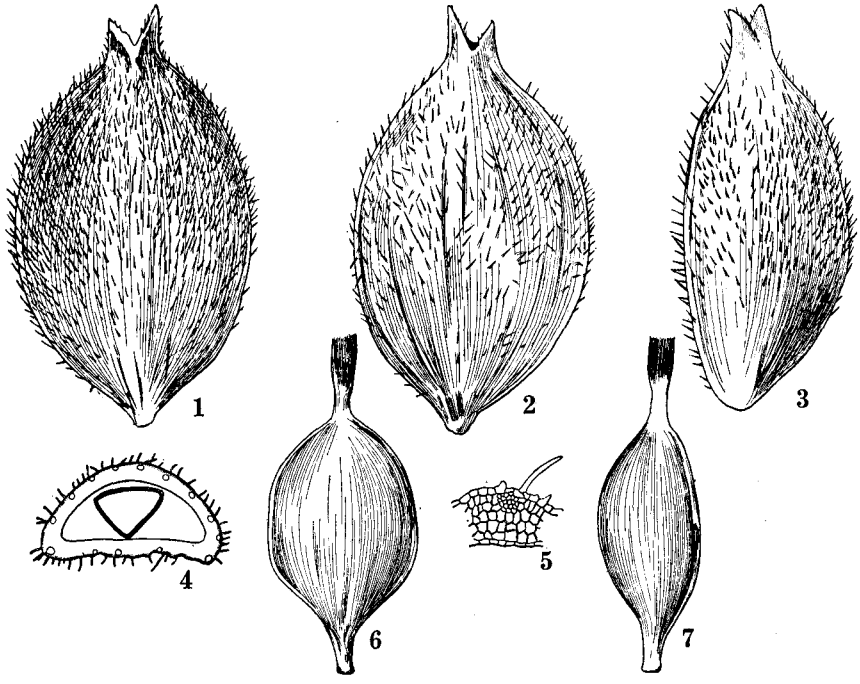


Fig. 170. *Carex lasiocarpa* var. *occultans* KÜKENTH.

1. Utricle seen from dorsal side, ×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. 50. 6. Nut seen from dorsal side, ×14. 7. The same, from lateral side, ×14.

Utriculi squamas superantes demum oblique patentes coriacei, textis e 6–7 stratis cellularum compositis, oblongo-ovati vel ovati subinflato-trigoni 4–5 mm longi vix 2.5 mm lati stramineo-virides griseo-hirto-tomentosi demum fere glabrescentes, obsolete plurinervosi (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.

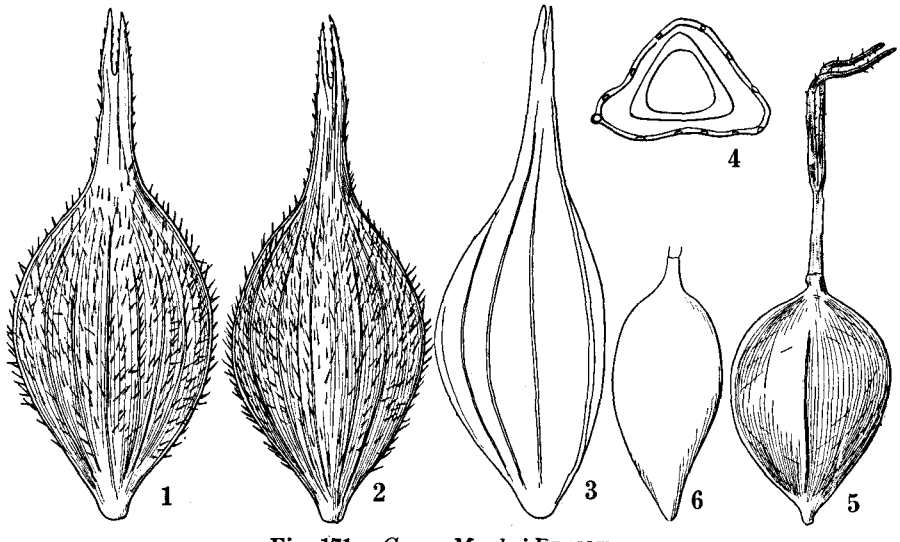


Fig. 171. *Carex Myabei* FRANCH.

1. Utricle seen from dorsal side, ×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 frontal side, ×14. 6. The same, from lateral side, ×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.

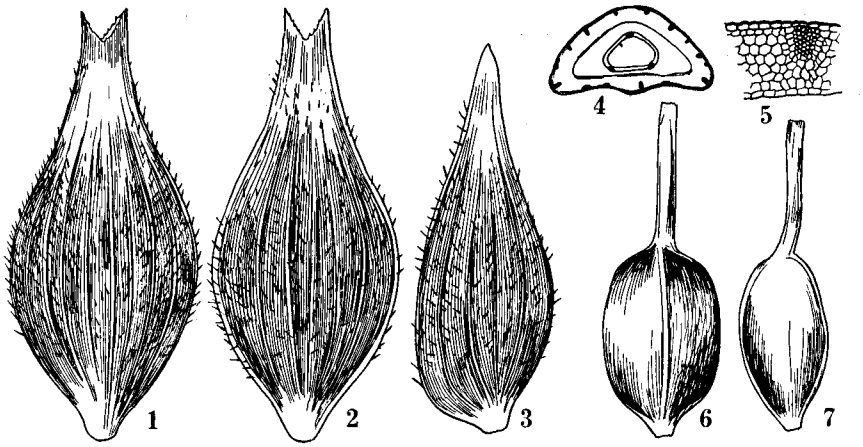


Fig. 172. *Carex Koidzumii* HONDA

1. Utricle seen from dorsal side, ×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. 75. 6. Nut seen from frontal side, ×14. 7. The same, from lateral side, ×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. *Beaurepairoei* 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	Saghalien	Kuriles	Hokkaido	North. Honshiu	Centr. Honshiu	South. Honshiu	Shikoku	Kiushiu	Riukius	Regions other than those mentioned in the left-side columns
Carex accrescens OHWI	+		+							{Corea; Manchuria; Kamtchatka; E. Siberia.
C. aequialta KÜKENTH.					+					
C. albata BOOTT			+	+	+	+		+		Corea; Amur; Manchuria.
f. *laxiuscula* (KÜKENTH.)			+		+	+				
var. *Franchetiana* (OHWI)								+		Corea.
C. alliiformis C.B. CLARKE									+	
C. amami-oshimensis AKIYAMA								+		
C. amblyolepis TRAUTV. et MEY.	+	+								{Kamtchatka; Ochotsk; Amur; Ussuri; Siberia.
C. angustisquama FRANCH.			+	+	+					
C. aperta BOOTT		+	+							Pacific N. America.
C. aphanandra FR. et SAV.								+	+	
C. aphanolepis FR. et SAV.			+	+	+	+				Corea.
C. aphyllopus KÜKENTH.			+	+	+		+			
var. *aristata* OHWI					+					
var. *paludicola* OHWI					+					
C. appendiculata KÜKENTH.	+		+							{Corea; Kamtchatka; Ochotsk; Amur; Ussuri.
C. arenicola FR. SCHM.	+	+	+	+	+	+				Corea; C. China.
C. arisanensis var. *tremula* OHWI							+	+		
C. Arnellii CHRIST.	+									{N. China; E. Mongolia; Manchuria; Siberia.
C. arrhyncha FRANCHET	+		+							
C. atrata L.			+		+					
C. atro-viridis OHWI								+		
C. Augustinowiczii MEINSH.	+	+	+	+						{Corea; Manchuria; Kamtchatka; E. Siberia.
var. *macrogyna* OHWI	+									
C. autumnalis OHWI							+			
C. blepharicarpa FRANCH.	+	+	+	+	+	+		+		E. Asia; ? Kamtchatka.

The mark + denotes the occurrence of species in the respective regions

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
form. *distenta* KÜKENTH.	+									
var. *stenocarpa* OHWI					+					
C. bostrychostigma MAXIM.						+	+			Corea; S. & E. Asia; Manchuria; India.
C. brachystachya AKIYAMA			+	+	+					Corea; Manchuria.
C. Brownii TUCKERM.			+	+	+	+	+	+	+	Corea; New Zealand; Australia.
C. brunnea THUNB.				+	+	+	+	+	+	Formosa; Corea; Mascarena; India; Australia.
C. brunnescens var. *sphaerostachya* KÜKENTH.	+	+	+	+	+					Kamtchatka; Siberia; Turkestan; E. Europe; N. America.
C. Buxbaumii WAHLENB.	+	+	+							Siberia; Europe; Africa; N. America; Australia.
C. caespitosa L.	+		+	+						Corea; Manchuria; Siberia; Caucasus; N. & C. Europe; N. America.
var. *elongata* OHWI	+									
var. *minuta* KÜK.	+	+	+							
C. canescens L.	+	+	+	+	+					Corea; Manchuria; Kamtchatka; Siberia; Kashimir; Caucasus; Europe; N. & S. America; Australia.
var. *fallax* F. KURTZ.	+		?							Europe; Greenland; N. America.
var. *robustior* BLYTT.										N. & S. America; Europe; Australia.
var. *subloliacea* LAESTAD	+									Europe; Greenland; N. America.
C. capillacea BOOTT	+		+	+	+					Corea; Manchuria; C. China; E. Himalaya; Australia.
var. *macrolepis* FRANCH.			+	+						
C. capillaris L.	+	+	+							Corea; Manchuria; Kamtchatka; Asia; Europe; N. America.
C. caryophyllea LATOUR.	+									Kamtchatka; Siberia; Asia minor; Europe; N. America.
C. cernua BOOTT			+	+	+	+	+	+		Corea; China; Assam; Tonkin; Himalaya.
C. chilosaccus C.B. CLARKE					+?					
C. chinensis RETZ.								+	+	
var. *tsushimensis* OHWI								+		
var. *variegata* MAKINO		Cult.								
C. chrysolepis FR. et SAV.						+	+			Formosa.
form. *asoensis* OHWI								+		
f. *variegata* OHWI								+		
f. *kiushiana* OHWI								+		
C. ciliato-marginata NAKAI				+	+	+		+		Corea.

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
C. cincta FRANCHET			+	+	+	+		+		Corea.
var. *laxiflora* AKIYAMA			+							
C. cinerascens KÜKENTH.			+	+	+	+		+		Corea.
C. confertiflora BOOTT			+	+	+		+	+		
C. conica BOOTT			+	+	+	+	·	+		Corea.
var. *lanceolata* AKIYAMA					+					
var. *marginata* NAKAI		Cult.								
f. *longirostrata* KÜKENTH.					+					
f. *mollis* KÜKENTH.					+			+		
var. *rubens* KÜKENTH.			+		+					
var. *variegata* NAKAI		Cult.								
C. conicoides HONDA								+		
C. cucullata OHWI									+	Hongkong.
C. cuneata OHWI				+						
C. curaica KUNTH					+					C. Asia; E. Siberia.
C. curvicollis FR. et SAV.			+	+	+	+	+		+	
C. cyperoides L.			+							
C. daisenensis NAKAI					+					
C. delicatula C. B. CLARKE					+					
C. descendens KÜKENTH.	+									Kamtchatka; E. Siberia.
C. diandra f. *major* KOCH.		+	+							
C. Dickinsii FR. et SAV.				+	+	+	+	+		
C. digama NAKAI					+					
C. discoidea BOOTT									+	
C. dispalata BOOTT	+		+	+	+	+	+	+		Corea; Manchuria; China.
var. *reducta* KÜKENTH.	+									
C. dissitiflora FRANCH.			+	+	+	+		+		
C. disticha HUDS.					+					Manchuria; N. China; Siberia.
C. Doen'tzii BOECK.			+	+	+		+			
var. *trichopoda* KÜKENTH.				+						
C. Doiana AKIYAMA								+		
C. Doniana 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
C. drymophila TURCZ.	+		+							Corea; Manchuria; Kamtchatka; E. Siberia; China.
var. *akanensis* KÜKENTH.	+		+							Corea; Manchuria; Kamtchatka; E. Siberia.
C. Duvaliana FR. et SAV.					+	+				Corea.
C. eleusinoides TURCZ.			+							Kamtchatka; E. Siberia.
C. fibrillosa FR. et SAV.					+	+	+	+	+	C. China.
C. filicina NEES.								+		
C. filiculmis FR. et SAV.					?					Corea.
C. filipes FRANCH. et SAV.					+	+	+	+		
var. *oligostachys* KÜK.					+					
var. *Rouyana* KÜKENTH.					+					
C. flavocuspis FR. et SAV.		+	+	+	+					
var. *caudatifrons* AKIYAMA				+						
var. *denticulata* KÜK.					+?					
var. *platycarpa* KÜK.					+					
var. *iwatensis* AKIYAMA				+						
C. foliosissima FR. SCHM.			+	+	+			+		
var. *brevisquamosa* (KOIDZ.)	+		+	+						
var. *crassicaulis* (FRANCH.)			+	+						
var. *latissima* OHWI					+			+		
C. forficula FRANCHET	+		+	+	+	+	+	+		Corea; S. Manchuria; N. China.
forma *espinulifera* AKIY.					+					
C. formosensis LÉV. et VNT.								+		Formosa.
var. *vigens* OHWI								+		Corea.
var. *kabashimensis* OHWI								+		
C. Fujitae KUDO		+								
C. fulta FRANCH.				+	+					
C. gagaensis AKIYAMA				+	+					
C. geantha OHWI		+	+	+	+					
C. gibba WAHLENB.				+	+	+	+	+		Corea; N. & C. China.
C. gifuensis FRANCHET	+			+	+					Corea.

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
f. *argyrostachys* KÜK.					?					
C. glabrescens OHWI					+					Corea.
C. glareosa										
f. *elegantissima* KÜKENTH.	+									
C. globularis L.	+									Corea; Manchuria; Kamtchatka; Siberia; Europe.
C. Gmelinii HOOK. et ARN.	+	+	+							Kamtchatka; Manchuria; E. Siberia; N. America.
C. grallatoria MAXIM.					+	+	+	+		
var. *heteroclita* KÜK.					+		+	+		
C. grandilimosa AKIYAMA			+?		+					
C. gynocrates WORMSKJ		+								Kamtchatka; E. & C. Siberia; N. America.
C. hakkodensis FRANCH.		+	+	+	+					Kamtchatka.
C. hakonensis FR. et S.			+	+	+					
var. *capituliformis* OHWI					+					Corea.
C. hebecarpa C. A. MEY.										
var. *ligulata* KÜKENTH.						+	+	+		S. & E. Asia; S. India; S. & C. China.
var. *Maubertiana*										
f. *latifolia* MAKINO		Cult.								
C. heterolepis BUNGE			+	+	+			+		Corea; N. China.
C. Hidewoi OHWI					+					
C. hirtifructus KÜKENTH.					+					
C. hololasius LÉV. et VNT.					+					
C. Hondae AKIYAMA					+					
C. hondoensis OHWI					+					
C. humilis LEYSSER			+	+	+			+		Corea; Manchuria.
C. Idzuroei FR. et SAV.				+	+	+	+	+		E. China.
C. impura OHWI					+					
C. incisa BOOTT			+	+	+	+				Corea.
C. infirma C. B. CLARKE			+							
C. insaniae KOIDZUMI			+	+	+					
C. ischnostachya STEUDEL			+	+	+	+	+	+	+	Corea.
C. japonica THUNB.			+	+	+	+	+	+		Corea; Manchuria; China.
C. japonicaeformis NAKAI					+					
C. jizogatakensis LÉVEILLÉ					+					
C. kamikochiana NAKAI					+					

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
C. kasugayamensis AKIY.					+					
C. kattaeana KÜKENTH.					+					
C. Kinashii LÉV. et VNT.					+					
C. Kingiana LÉV. et VNT.				+	+	+		+		
C. kiotensis FRANCH. et SAV.				+	+	+	+	+		
C. kiyozumiensis AKIYAMA					+					
C. Koidzumii HONDA			+		+					
C. koraginensis MEINSH.	+									Kamtchatka; Ochotsk.
C. koreana KOMAROV				+	+					Corea.
C. Krameri FR. et SAV.			+	+	+	+		+		
C. laeviculmis MEINSH.			+	+	+					Kamtchatka; Pacif. N. America.
C. laevirostris BLYTT.	+	+	+	+	+					Corea; Manchuria; Kamtchatka; Siberia; Europe.
C. lagopina WAHL.		+	+		+					Corea; Kamtchatka; Siberia; Europe.
C. lanceolata BOOTT	+		+	+	+	+	+	+		Corea; Manchuria; E. Siberia.
var. *albo-mediana* MAKINO		Cult.								
var. *subpediformis* KÜK.				+						C. China.
C. lasiocarpa var. *occultans* FRANCH.	+	+	+							Manchuria; Amur; Ussuri; China.
C. lasiolepis FRANCH.			+	+	+					Corea.
C. laticeps C.B. CLARKE					+					Corea.
C. laxa WAHL.			+	+	+					Manchuria; Amur; N. Europe.
C. leiogona FRANCH.							+			
C. levicuspis OHWI				+						
C. limosa L.	+	+								Corea; Manchuria; Amur; Kamtchatka; Siberia; Europe; N. America.
var. *fusco-cuprea* KÜK.	+	+	+	+	+	+	+			
C. loliacea L.	+		+	+	+					Corea; Manchuria; Dahuria; Kamtchatka; Siberia; Europe.
C. lonchophora OHWI					+					
C. longerostrata C. A. MEY.	+	+	+	+	+	+	+	+		Corea; Manchuria; Amur; Kamtchatka; E. Siberia.
var. *recurvifolia* KÜK.			+							
C. lutchensis OHWI									+	

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
C. Lyngbyei Ssp. *cryptocarpa* HULTÉN	+	+	+	+				+		Manchuria; Ochotsk; Kamtchatka; N.W.N. America.
C. Maackii MAXIM.				+	+					Corea.
var. *nipponica* OHWI			+	+	+			+		
C. macrandrolepis LÉV. et VNT.					+	+		+		Corea.
C. macrochaeta C.A. MEY.	+	+								Kamtchatka; N.E. Asia; N. America.
C. macrocephala WILLD.										
var. *Kobomugi* MIYABE et KUDO			+	+	+	+	+	+		Corea; Ussuri; N. China.
var. *typica* MIYABE et KUDO	+	+	+							Corea; China; Manchuria; Ussuri; E. Siberia; Kamtchatka.
C. macroglossa FR. et SAV.			+	+	+	+		+		
C. macromollicula NAKAI					+					
C. macloviana D'URV.		+								Kamtchatka; Europe; N. & S. America; Sandwich Insl.
C. maculata BOOTT					+	+		+		Corea; S. & E. Asia; S. India; S. & E. China.
C. magellanica LAM.					+					N. Siberia; Europe; N. & S. America.
C. mandshurica MEINSH.	+									N. Corea; Ussuri.
C. Mariessi C.B. CLARKE					+					
C. Matsumurae FRANCH.						+	+	+		
var. *variegata* MAKINO		Cult.								
C. Maximowiczii MIQ.		+	+	+	+	+	+	+		Corea; China.
var. *Kinashii* OHWI					+					
var. *levisaccus* OHWI					+					
var. *minor* AKIYAMA					+					
var. *pallida* AKIYAMA			+							
var. *subsessilis* OHWI					+					
C. Mayebarana OHWI								+		
C. Mertensii var. *urostachys* KÜK.		+	+	+	+					
C. metallica LÉV. et VNT.								+	+	Formosa; Corea.
C. Meyeriana KUNTH				+	+					
C. Michauxiana BOECK.				+	+					N. America.
f. *asiatica* (HULTÉN)		+	+	+	+					Kamtchatka.
C. microglochin WAHL.		+								Asia; Europe; N. America.

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
C. microsaccus C.B. CLARKE				?						
C. microtricha FRANCH.	+		+	+	+					
C. Middendorffii FR. SCHM.	+	+	+	+	+		+			Amur; Primorsk; Kamtchatka.
C. mira KÜKENTH.					+					
C. mitoensis OHWI.					+					
C. mitrata FRANCH.					+	+		+		Corea.
var. *aristata* OHWI					+		+	+		
C. mollicula BOOTT		+	+	+	+	+	+	+		Corea; N. China.
C. Morrowii BOOTT					+	+	+	+		
var. *albo-marginata* MAKINO		Cult.								
var. *expallida* OHWI		Cult.								
var. *laxa* OHWI								+		
var. *virginea* FR. et SAV.					+					
C. multifolia OHWI			+	+	+	+	+	+		
var. *glaberrima* OHWI							+			
var. *globosa* OHWI					+					
var. *imbecillis* OHWI					+					
var. *pallidisquama* OHWI					+					
var. *stolonifera* OHWI					+					
C. Myabei FRANCH.			+	+	+			+		Corea.
C. nagasakensis C. B. CLARKE								+		
C. nana BOOTT	+		+	+				+		Corea.
C. nankaiensis HONDA						+				
C. nemostachys STEUDEL							+	+		S. & E. Siberia; S. & C. China.
C. nervata FRANCH. et SAV.		+	+		+	+		+		Corea; Amur.
f. *dissita* FRANCH.	+		+		+					
var. *leiocarpa* (FR.)			+		+					
f. *Vidalii* FR. et SAV.					+					
C. neurocarpa MAXIM.				+	+					Corea; Manchuria; E. Asia; N. China.
C. niko-montana 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
C. norvegica WILLD.	+									Kamtchatka; E. Siberia; N. America; Europe.
C. nutans var. *platyrhyncha* KÜK.	+		+							China.
C. oahuensis C. A. MEY.										
var. *Boottiana* KÜKENTH.								+	+	Bonins.
var. *robusta* FR. et SAV.					+			+	+	Corea.
C. odontostoma KÜKENTH.								+		
var. *glabrior* OHWI					+					
C. Oederi var. *viridula* KÜKENTH.	+	+	+							Kamtchatka; N. America.
C. Ogawai AKIYAMA					+					
C. Okuboi FRANCHET					+					
C. Oldhamii C. B. CLARKE								+		
C. omiana FRANCH. et SAV.		+	+	+	+					
C. Onoei FRANCHET			+	+	+	+	+	+		Corea; Manchuria; Amur; Ussuri.
f. *latifolia* KÜKENTH.				+	+					
C. orbicularis var. *brachylepis* KÜK.			+							
C. orthostachys C.A. MEY.	+	+	+							Manchuria; Mongolia; China; Amur; Siberia.
C. oshimensis NAKAI					+					
C. otaruensis FRANCH.			+	+	+	+	+	+		
C. Otayai OHWI					+					
C. oxyandra KUDO	+	+	+	+	+		+	+		
var. *globosa* AKIYAMA			+	+						
var. *lanceata* OHWI					+					
var. *pallidior* OHWI								+		
C. pachygyna FR. et Sav.					+		+			
C. papillaticulmis OHWI					+		+	+		
C. papulosa BOOTT			+	+	+			+		Corea.
f. *laxiflora* KÜKENTH.					+					
f. *paupercula* KÜKENTH.			+		+					
C. parciflora BOOTT	+		+	+	+					
form. *ochrolepis* MIY. et KUDO			+							
form. *subsessilis* OHWI				+						
var. *Vanioti* OHWI				+						

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
C. pauciflora LIGHT.	+	+	+	+	+					Kamtchatka; Siberia; Asia Minor; Europe; N. America.
C. perangusta CHWI								+		
C. persistens CHWI					+					
var. *Takeuchii* CHWI					+					
C. phacota SPRENG.					+	+		+		S. China; India.
C. pilosa SCOP.	+		+	+						Corea; Manchuria; Amur; Europe.
var. *auriculata* KÜKENTH.			+							
C. pisiformis BOOTT	+		+	+	+					Corea; S. China.
C. planata FRANCH. et SAV.			+	+	+		+	+		
C. planiculmis KOMAROV			+	+	+					Corea; Manchuria.
C. pocilliformis BOOTT					+	+	+	+		
C. podogyna FRANCH.			+	+	+		+			
f. *aristodentata* KÜKENTH.				+						
C. polyschoena LÉV. et VNT.								+		Corea; Manchuria.
C. praestabilis OHWI					+					
C. Prescottiana BOOTT			+		+			+		Himalaya.
var. *fuscescens* KÜK.				+	+			+		
? var. *fusco-cinnamomea* KÜKENTH.					+					
C. prinocarpa FRANCH.	+		+							
C. pseudocuraica FR. SCHM.	+	+	+							E. Siberia; Amur; Ussuri; Baical.
C. pseudo-cyperus L.			+							Siberia; Kashimir; Europe; N. Africa; N. America; New Zealand.
C. pseudo-loliacea FR. SCHM.	+	+	+							
f. *sejuncta* KÜKENTH.	+		+							
C. pseudo-sadoensis AKIY.				+						
C. pseudo-Wrightii HONDA					+					
C. pudica HONDA					+					
C. pumila THUNB.	+	+	+	+	+	+	+	+	+	Formosa; Corea; China; Manchuria; Australia; New Zealand; S. America.
C. pyrenaica WAHL.		+	+	+	+					Kamtchatka; E. Siberia; Asia Minor; N. America; New Zealand.
var. *altior* KÜKENTH.			+	+	+					
C. rara var. *biwensis* KÜK.					+	+		+		Corea; C. China.
C. Ramenskii KOMAROV	+									Kamtchatka.

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
C. rariflora SMITH.	+	+								Kamtchatka; Tschuktchland; Aleutians; N. America; Europe.
f. *brevipedunculata* KÜK.	+									Lapland.
C. Reinii FRANCH. et SAV.				+	+	+	+	+		
C. rhizopoda MAXIM.		+	+	+	+	+	+	+		
var. *longior* MAXIM.			+	+	+	+	+			
C. riparia var. *rugulosa* KÜKENTH.			+	+						
C. Rochebrunii FR. et SAV.					+		+			Central China; India.
var. *remotaeformis* (KOM.)	+		+	+	+	+				
C. rotundata WAHL.	+	+								Kamtchatka; N. & E. Siberia; N. Europe; N. N. America.
C. Royleana NEES.			+	+	+	+	+	+	+	Formosa; Corea; Manchuria; Amur; S. & E. China; E. & N. India; Himalaya.
var. *longearistata* (KÜK.					+	+	+			Corea; C. China.
C. rupestris ALL.	+									Manchuria; Dahuria; Siberia;
C. sabynensis LESSING	+		+							Caucasus; Europe; N. America.
C. sachalinensis FR. SCHM.	+	+	+	+	+			+		Corea; Manchuria; E. Siberia.
C. sacrosancta HONDA					+					
C. sadoensis FRANCH.	+		+	+	+					
var. *integra* OHWI					+					
C. satsumensis FR. et SAV.					+	+	+	+		
C. Savatieri FRANCH.										
C. saxatilis L.		+								Kamtchatka; Tschuktchland; N. Siberia Europe; N. America.
C. scabrifolia STEUD.			+	+	+	+	+	+	+	Corea; China; Manchuria.
C. scabro-aristata AKIY.					+					
C. Schmidtii MEINSH.	+		+							Corea; Manchuria; E. Siberia; Kamtchatka.
C. scita MAXIM.	+	+	+	+	+					Kamtchatka.
var. *rüshirensis* KÜK.			+							
var. *scabrinervia* KÜK.	+	+	+							
C. scitaeformis KÜKENTH.					+?					
C. Sedakowii C. A. MEY.			+		+					Corea; Amur; N. Mongolia; E. Siberia.
C. semiplena KÜKENTH.	+		+							Corea. ?
var. *kirigaminensis* OHWI					+					
C. senanensis OHWI					+					

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
C. sendaica FRANCH.				+	+					
C. shakushizawaensis AKIY.					+					
C. sharensis FRANCH.			+	+	+					
C. shimidzensis FRANCH.			+	+	+					Corea.
f. *longispicula* AKIY.			+	+						
var. *nervulosa* KÜKENTH.			+							
C. shimotsukensis HONDA					+					
C. shinanoana NAKAI					+					
C. siroumensis KOIDZ.					+					
C. siccata DEWEY			+?		+?					
C. siderosticta HANCE			+	+	+	+	+	+		Corea; Manchuria; China.
var. *bracteosa* FRANCH.			+							
C. sikokiana FR. et S.	+		+		+	+	+	+		
var. *arimensis* OHWI					+					
var. *aureo-brunnea* OHWI								+		
var. *elongata* OHWI								+		
var. *tenuinervis* OHWI								+		
C. sociata BOOTT								+	+	Formosa.
C. soyaeensis KÜKENTH.	+		+							
C. sparsiflora STEUD.	+	+	+	+?	?+					Manchuria; Amur; Ussuri; Kamtchatka; Siberia; N. Europe.
var. *Petersü* KÜK.	+	+								Kamtchatka; Manchuria.
C. squamoidea AKIY.			+							
C. stellulata GOOD.	+	+	+	+	+	+		+		
C. stenantha FR. et SAV.	+	+	+	+	+	+		+		
var. *taisetsuensis* AKIY.		+	+							Kamtchatka.
var. *yatsugatakensis* AKIY.					+					
C. stenostachys FR. et S.					+					
C. stipata MUEHL.	+		+	+	+					N. America.
C. subcernua OHWI								+		
C. subdita OHWI						+	+	+		
C. subphacota NAKAI				+	+			+		Corea.
var. *glauca* HONDA			+		+					

Localities in the Japanese Empire, Formosa and Corea excepted / Species	Saghalien	Kuriles	Hokkaido	North. Honshiu	Centr. Honshiu	South. Honshiu	Shikoku	Kiushiu	Rinkius	Regions other than those mentioned in the left-side columns
C. subspathacea WORMSKJ	+		+							{N. Europe; N. America; Greenland; N. Asia.
C. subumbellata MEINSH.	+		+							
var. *vercunda* OHWI					+					
C. succedanea NAKAI					+					
C. Tashiroana OHWI					+					
C. teiogyna var. *scabriculmis* KÜK.								+		Corea.
C. temnolepis FRANCH.				+	+					
C. tenella SCHKUHR.	+									{Corea; Manchuria; E. Siberia; Kamtchatka; Europe; N. America.
var. *brachycarpa* KÜK.	+									
var. *misera* FRANCH.	+		+	+	+					
C. tenuiflora WAHL.	+		+	+	+					{Corea; Manchuria; Amur; Kamtchatka; E. Siberia; Europe; N. America.
var. *macilenta* O. LANG.	+		+							Central Norway.
C. tenuiformis LÉV. et VNT.			+							Corea.
C. tenuinervis OHWI										
C. tenuiseta FRANCH.			+	+						
var. *brevisquama* KOIDZ.					+					
C. tenuissima BOOTT			+		+	+	+	+		Corea; N. & C. China.
C. tenuistachya NAKAI					+			+?		
C. Thunbergii STEUD.			+	+	+	+	+	+	+	China.
var. *brachysandra* MIY. et KUD.		+	+		+					
C. Tobae HONDA										
C. Tolmiei BOOTT		+								{Kamtchatka; Chuktsch-Penins.; Ajan; N. W. America.
C. traiziscana FR. SCHM.	+	+	+	+	+					Kamtchatka.
C. transversa BOOTT				+	+	+	+	+	+	Corea; E. Asia; E. China.
C. tristachya THUNB.					+	+	+	+		Corea; S. & C. China.
C. tsuishikarensis KOIDZ. et OHWI			+							
C. tumidula OHWI							+			
C. tuminensis KOMAR.	+									Corea; E. Siberia; Kamtchatka.
C. uber OHWI							+	+		
C. uda MAXIM.			+		+					

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
C. uzenensis KOIDZ.				+						
C. vernicosa FRANCH.			+							
C. vesicaria L.	+	+	+	+	+					Corea; China; Manchuria; Kamtchatka; Siberia; Caucasus; Europe; N. America.
f. *elatior* ANDERSS.				+						
var. *monile* TUCKERM.	+	+	+							N. America.
var. *tenuistachya* KÜK.	+		+							Manchuria; Kamtchatka; Siberia.
C. villosa BOOTT			+					+		Corea.
var. *straminea* AKIY.					+					
C. vulpi-caudata AKIY.			+							
C. wiluica MEINSH.	+									E. Siberia.
var. *Yoshinoi* OHWI				+						
C. yesoensis KOIDZ.			+							
C. Yoshinoi OHWI					+					

Index of Species, Synonyms, Subgenera, Sections and Subsections

Adopted Species are printed in Romans; Synonyms, Subgenera, Sections and Subsections, in *Italics*.

Acutae FRIES. ..... (*p.14*), p.86
Arenariae KUNTH ..... (*p.8*), p.61
Atratae KUNTH ..... (*p.14*), p.112
Bicolores TUCKERM. ..... (*p.17*), p.86
Caespitosae FRIES ..... (*p.17*), p.89
Callistachys AS. et GR. ..... (*p.6*), p.57
Canescentes FRIES ..... (*p.9*), p.72
Capillares AS. et GR. ..... (*p.37*), p.178
Capitellatae MEINSH. ..... (*p.6*), p.52
Carex accrescens OHWI (*p.10*), n. 22, p.61
C. acrogyna LÉV. et VNT. ... n. 116, p.125
C. acuta TURCZ.
var. *appendiculata* TRAUTV... n. 68, p.92
C. acutiformis
FRANCH..... n. 228, p.191
C. aequialta KÜK. ... (*p.21*), n. 88, p.104
C. akanensis FRANCH..... n. 287, p.236
C. alba SCOP.
Ssp. *ussuriensis* MIYABE
et MIYAKE .... n. 159, p.73
C. albata BOOTT. ..... (*p.10*), n. 25, p.63
var. Franchetiana (OHWI) ... n. 25, p.64
form. laxiuscula (KÜK.) ..... n. 25, p.64
C. alliiformis C.B. CL. (*p.40*), n. 231, p.193
C. alliiformis HAYATA ..... n. 221, p.187
C. alopeculoides D. DON
var. *chlorostachya* C.B.
CLARKE..... n. 225, p.196
C. alta FRANCH.
var. *brevior* LÉV. et VNT..... n. 52, p.84
var. *Rochebrunii* FRANCH. ... n. 51, p.83
C. alterniflora FRANCH. ..... n. 154, p.145
C. amami-oshimensis
AKIYAMA ... (*p.38*), n. 220, p.186
C. amblyolepis TRAUTV.
et MEY. (*p.25*), n. 121, p.129
C. amphora FRANCH. et SAV.. n. 156, p.147
C. ampullacea GOOD.
β. *robusta* WEINM..... n. 272, p.223
C. amurensis KÜK..... n. 287, p.236
var. γ. *mandshurica* KÜK. . n. 286, p.235
var. δ. *drymophila* KÜK.... n. 287, p.236
C. angustisquama FR. (*p.24*), n. 109, p.118
C. aperta BOOT. ..... (*p.18*), n. 61, p.88
C. aphanandra FRANCH.
et SAV. (*p.27*), n. 132, p.136
C. aphanolepis
FRANCH. et SAV. (*p.40*), n. 233, p.195
C. aphyllopus KÜKENTH. (*p.19*), n. 70, p.93
var. aristata OHWI..... n. 70, p.93
var paludicola OHWI ..... n. 70, p.93
C. appendiculata KÜK. . (*p.19*), n. 68, p.92
C. arcuata FRANCH. ..... n. 237, p.197
C. arenicola FR. SCHM. .. (*p.9*), n. 18, p.59
C. argyrostachys LÉV.
et VNT..... n. 119, p.126
C. arisanensis HAYATA
var. tremula OHWI . (*p. 44*), n. 261, p.215
C. aristata R. BR.
var. *hirtaeformis*
LÉV. et VNT. .... n. 286, p.235
var. *orthostachys*
C.B. CLARKE .... n. 286, p.235
Ssp. *orthostachys* KÜKENTH. n. 286, p.235
C. aristata BOECK. ..... n. 286, p.235
C. Arnellii CHRIST. .. (*p.38*), n. 222, p.187
C. Arnellii KÜK. ..... n. 223, p.187
C. arrhyncha FRANCH . (*p.12*), n. 43, p.78
C. artinux C. B. CLARKE .... n. 136, p.138
—— ..... n. 136, p.138
C. asperifolia STEUD. ..... n. 214, p.182
C. assimilis STEUD. ..... n. 214, p.182
C. atrata L. ..... (*p.24*), n. 107, p.116
forma *castanea* MAKINO ... n. 107, p.116
β. *magellanica* WAHL. .... n. 179, p.161
C. atronucula HAYATA ..... n. 241, p.201
C. atroviridis OHWI .. (*p.31*), n. 164, p.152
C. Augustinowiczii
MEINSH. ... (*p.23*), n. 103, p.112
var. macrogyna OHWI .... n. 103, p.113
C. auriculata FRANCH..... n. 255, p.209

C. autumnalis OHWI . (*p.38*), n. 275, p.183
C. bakanensis LÉV. et VNT. . n. 281, p.230
C. baviensis FRANCH. ..... n. 235, p.196
C. bidentula FRANCH. ..... n. 103, p.113
C. bispicata HOOK. et ARN. . n. 248, p.206
C. biwensis FRANCH. ..... n. 9, p.54
C. blepharicarpa FR. . (*p.27*), n. 130, p.134
form. distenta KÜKENTH. . n. 130, p.135
var. *hirtifructus* OHWI .... n. 207, p.178
var. stenocarpa OHWI ..... n. 130, p.135
C. Bodinieri FRANCH. ..... n. 214, p.182
C. Bongardiana FR. SCHM. .. n. 287, p.236
C. bostrychostigma MAXIM... (*p.37*), n. 211, p.180
C. brachysandra FRANCH. .... n. 60, p.88
C. brachystachya AK. (*p.44*), n. 268, p.219
C. breviculmis BOOTT. ..... n. 131, p.135
C. breviculmis FRANCH. ..... n. 132, p.136
——— ..... n. 133, p.136
——— ..... n. 134, p.137
——— ..... n. 135, p.137
C. breviculmis R. BR.
Ssp. *Royleana* KÜKENTH... n. 131, p.136
form. *aphanandra* KÜK.. n. 132, p.136
form. *discoidea* KÜK. ... n. 134, p.137
form. *fibrillosa* KÜK. .... n. 135, p.137
form. *filiculmis* KÜK. ... n. 133, p.136
var. *Kingiana* KÜK. ..... n. 138, p.139
——— ..... n. 139, p.139
form. *longearistata* KÜK. n. 131, p.136
form. *Wardiana* KÜK. .. n. 134, p.137
——— ..... n. 136, p.138
C. breviculmis THWAIT. ..... n. 281, p.230
C. Brownii TUCKERM. (*p.39*), n. 224, p.188
var. *transversa* KÜKENTH.. n. 225, p.188
C. Brownii MATSUM. ..... n. 225, p.188
C. brunnea THUNB. .. (*p.38*), n. 214, p.182
var. *sendaica* KÜKENTH. .. n. 216, p.183
C. brunnescens POIR.
var. sphaerostachya KÜKENTH. (*p.12*), n. 40, p.75
var. *gracilior* BRITTON .....n. 40, p.75
var. *gracilis* KÜKENTH. ..... n. 40, p.75
var. *vitilis* ASCHERS. et GRAEBN. ..... n. 40, p.75
C. bullata SCHKUHR.
b. *laevirostris* BLYTT. ..... n. 272, p.223
C. Buxbaumii WAHL. . (*p.23*), n. 105, p.114
C. Buxbaumii FRANCH. ..... n. 102. p.112
C. caespitosa L. ..... (*p.19*), n. 65, p.90
var. elongata OHWI ..... n. 65, p.90
var. minuta KÜKENTH. ..... n. 65, p.91
C. caespitosa THUNB. ..... n. 60, p.87
C. calcitrapa FRANCH. ..... n. 33, p.70
C. camtschatense KUNTH ... n. 248, p.206
C. Candolleana LÉV. et VNT. n. 133, p.136
C. canescens L. ..... (*p.12*), n. 38, p.73
var. fallax F. KURTZ. ..... n. 38, p.74
var. robustior BLYTT. ..... n. 38, p.74
var. subloliacea LAEST. ..... n. 38, p.74
var. *vitilis* CHRIST. ..... n. 40, p.75
var. *vulgaris* BAILEY ..... n. 40, p.75
C. capillacea BOOTT .... (*p.7*), n. 11, p.54
var. macrolepis FRANCH. .... n. 11, p.55
C. capillaris L. ..... (*p.37*), n. 209, p.179
var. *paludosa* FR. SCHM. .. n. 208. p.179
C. capituliformis MEINSH. ..... n. 8, p.54
C. capricornis MEINSH. ..... n. 268, p.219
var. *capitata* MEINSH. ..... n. 268, p.219
C. cardioglochis LÉV. et VNT. . n. 77, p.95
C. caryophyllea LATOUR. (*p.26*), n. 123, p.129
Ssp. *nervata* KÜKENTH. ... n. 124, p.130
form. *dissita* FRANCH. .. n. 124, p.131
form. *leiocarpa* FRANCH. n. 124, p.131
form. *Vidalii* (FRANCH. et SAV.) ... n. 124, p.130
var. *microtricha* KÜK. .. n. 125, p.131
var. *microtricha* KÜK. .. n. 136, p.138
C. caulorrhiza LÉV. et VNT. .. n. 69, p.92
C. cernua BOOTT ..... (*p.21*), n. 87, p.103
C. cernua FRANCH. ..... n. 93. p.107
C. chaetorrhiza FR. et SAV. ... n. 18, p.60
var. *stenostachys* FRANCH. et SAV. ..... n. 18, p.60
C. chilosaccus C. B. CL. (*p.20*), n. 75, p.94
C. chinensis RETZ. ... (*p.41*), n. 240, p.199
var. tsushimensis OHWI ... n. 240, p.200
var. variegata MAKINO ... n. 240, p.200
C. chinensis KÜKENTH. ..... n. 241, p.201
C. chlorostachys D. DON .... n. 235, p.196
C. chrysolepis FR. et S. (*p.36*) n. 203, p.174
form. asoensis OHWI. ..... n. 203, p.175
var. *glabrior* OHWI ..... n. 206, p.177
var. kiushiana OHWI ..... n. 203, p.175
var. *modesta* LÉV. et VNT. n. 188, p.166
var. *odontostoma* OHWI ... n. 206, p.177

form. variegata OHWI ..... n. 203, p.175
C. ciliato-marginata NAKAI ..... (*p.33*), n. 184, p.163
C. ciliolata FRANCH. ..... n. 114, p.124
C. cincta FRANCH. .... (*p.21*), n. 84, p.101
var. laxiflora AKIYAMA ..... n. 84, p.102
var. *subphacota* KÜKENTH. . n. 85, p.103
C. cinerascens KÜKENTH. (*p.20*), n. 72, p.94
C. circinata KUDO ..... n. 1, p.48
C. Commersoniana KUNTH ... n. 214, p.182
C. confertiflora BOOTT (*p.39*), n. 229, p.191
C. conica BOOTT ..... (*p.31*), n. 169, p.153
var. *leucolepis* FR. et SAV. . n. 169, p.154
var. lanceolata AKIYAMA .. n. 169, p.154
form. longirostrata KÜK. . n. 169, p.154
form. mollis KÜKENTH. .... n. 169, p.154
var. rubens KÜKENTH. .... n. 169, p.154
forma *rubens* KÜK ..... n. 169, p.154
var. variegata NAKAI ..... n. 169, p.155
C. conicoides HONDA .. (*p.31*), n. 167, p.152
C. coreana BAILEY ..... n 271, p.222
C. crassinervia FRANCH. .... n. 104, p.114
C. cryptocarpa C. A. MEY. .... n. 97, p.109
C. cucullata OHWI ... (*p.29*), n. 149, p.142
C. cuneata OHWI .... (*p.30*), n. 157, p.148
C. curaica KUNTH ..... (*p.9*), n. 19, p.60
C. curaica FRANCH. et SAV. ... n. 18, p.59
C. curtiglumis C. B. CLARKE n. 102, p.112
C. curvicollis FR. et S. .(*p.35*), n. 200, p.172
C. curvicollis KÜK. ..... n. 199, p.171
C. cyperoides L. ..... (*p.11*). n. 31, p.69
C. daisenensis NAKAI . (*p.44*), n. 264, p.217
C. delicatula C. B. CL. (*p.32*), n. 175, p.158
C. descendens KÜKENTH. (*p.19*), n. 88, p.89
C. Deweyana KÜKENTH. ..... n. 49, p.81
C. diandra FRANCH. ..... n. 28, p.67
C. diandra SCHRANK. form. major KOCH. ... (*p.10*), n. 28, p.66
C. Dickinsii FR. et SAV. .(*p.45*), n. 271, p.222
C. dicraea C. B. CLARKE ..... n. 188, p.166
C. dicuspis LÉV. et VNT. .... n. 114, p.124
C. dicuspis FRANCH. ..... n. 188, p.166
C. digama NAKAI ..... (*p.11*), n. 30, p.68
C. dimorpholepis FRANCH. et SAV. .... n. 87, p.104
C. discoidea BOOTT ... (*p.27*). n. 134, p.137
C. discolor BOECK. ..... n. 169, p.154
C. dispalata BOOTT ... (*p.39*), n. 228, p.190
var. reducta KÜKENTH. ... n. 228, p.191
C. dissitiflora FRANCH. . (*p.14*), n. 54, p.85
C. distantiflora NAKAI ..... n. 254, p.208
C. disticha HUDS. ..... (*p.10*), n. 23, p.62
C. Doenitzii BOECK. .. (*p.34*), n. 188, p.165
var. *Okuboi* KÜKENTH. .... n. 189, p.166
var. trichopoda KÜKENTH. . n. 188, p.166
C. Doiana AKIYAMA .. (*p.30*), n. 170. p.155
C. Doniana SPRENG. .. (*p.40*), n. 235, p.196
C. drymophila TURCZ. . (*p.47*), n. 287, p.235
var. akanensis KÜKENTH. .. n. 287, p.236
var. *pilifera* KÜKENTH. ... n. 285, p.235
var. *reducta* KÜKENTH. ... n. 262, p.216
var. *udensis* KÜKENTH. ... n. 285, p.235
C. Duvaliana FR. et SAV. (*p.30*), n. 155, p.147
var. *alterniflora* KÜKENTH. n. 154, p.145
form. *parviflora* KÜKENTH. n. 155, p.147
C. echinata BOECK. ..... n. 46, p.80
C. eleusinoides TURCZ. .. (*p.18*), n. 56, p.86
var. *flaccidior* FR. SCHM. .. n. 103, p.113
C. explens KÜKENTH. ..... n. 211, p.180
C. Fabei HANCE. ..... n. 214, p.182
C. falcata FR. SCHM. ..... n. 255, p.209
C. Fauriei FRANCH. ..... n. 246, p.205
C. Fauriei FRANCH. ..... n. 247, p.205
C. ferruginea var. FR. SCHM. n. 204, p.175
C. fibrillosa FR. et SAV. (*p.27*), n. 135, p.137
C. filicina NEES. ..... (*p.14*), n. 55, p.85
C. filiculmis FR. et SAV. (*p.27*), n. 132, p.136
C. filiformis FRANCH. et SAV. n. 282, p.232
var. *occultans* FRANCH. ... n. 282, p.232
C. filipes FR. et SAV. . (*p.44*), n. 260, p.213
var. oligostachys KÜKENTH. n. 260, p.214
var. Rouyana KÜKENTH. .. n. 260, p.213
var. *Vaniotii* KÜKENTH. ... n. 257, p.211
C. filipes MATSUM. ..... n. 260, p.213
C. flabellata LÉV. et VNT. .... n. 89, p.105
C. flaccidior MIY. et KUD. .. n. 103, p.113
C. flava L. var. *viridula* BAILEY ..... n. 265, p.218
C. flavocuspis FR. et S. (*p.25*), n. 113, p. 20
var. caudatifrons AKIYAMA n. 113, p.123
var. denticulata (KÜKENTH.) n. 113, p.122
var. iwatensis AKIYAMA ... n. 113, p.123
var. platycarpa KÜKENTH. . n. 113, p.122
C. flectens BOOTT ..... n. 256, p.209
C. flexilis D. DON ..... n. 214, .p182

C. floribunda MEINSH. ..... n. 172, p.157
C. foliosissima FR. SCHM. (*p.42*), n. 244, p.203
var. brevisquamosa(KOIDZ.) n. 244, p.203
var. crassicaulis (FRANCH.). n. 244, p.203
var. latissima OHWI ..... n. 244, p.203
C. foliosissima FR. ..... n. 163, p.151
var. *temnolepis* KÜKENTH. . n. 166, p.152
C. forficula FR. et SAV. . (*p.20*), n. 78, p.95
form. espinulifera AKIYAMA.. n. 78, p.96
var. *espinulosa* KÜKENTH.... n. 74, p.94
C. formosensis LÉV.
et VNT. .... (*p.29*), n. 150, p.143
var. vigens OHWI ..... n. 150, p.143
var. kabashimensis OHWI . n. 150, p.144
C. forsicula KÜKENTH..... n. 78, p.96
C. Franchetiana LÉV. et VNT. n. 214, p.182
C. Fujitae KUDO ..... (*p.33*), n. 180, p.162
C. fulta FRANCH. ..... (*p.7*), n. 13, p.56
C. funicularis FRANCH. ..... n. 104, p.114
C. fusca SCHKUHR. ..... n. 275, p.226
C. fuscescens BOECK..... n. 89, p.106
C. fusco-fibrosa OHWI ..... n. 248, p.206
C. gagaensis AKIYAMA (*p.43*), n. 259, p.212
C. ganzuensis FRANCH. ..... n. 113, p.120
C. Gaudichaudiana KUNTH
var. *Thunbergii* KÜKENTH. .. n. 60, p.87
form. *brachysandra* KÜK. ... n. 59, p.88
C. geantha OHWI ..... (*p.28*), n. 139, p.139
C. Gendrei LÉV. et VNT. ..... n. 240, p.199
C. Gentiliana LÉV. et VNT. .. n. 179, p.161
C. gentilis FRANCH.
var. *oshimensis* KÜKENTH. . n. 220, p.186
C. gibba WAHL. ..... (*p.13*), n. 52, p.83
C. gifuensis FRANCH. . (*p.25*), n. 119, p.126
form. argyrostachys KÜK. . n. 119, p.126
C. glaberrima MEINSH. ..... n. 286, p.235
C. glabrescens OHWI . (*p.47*), n. 285, p.235
C. glareosa WAHL.
form. elegantissima KÜK.(*p.11*), n. 36, p.72
C. Glehnii FR. SCHM..... n. 257, p.211
C. globularis L. ..... (*p.25*), n. 118, p.126
C. Gmelinii HOOK. et ARN.(*p.24*),n. 106, p.115
C. gracilipes MIQ..... n. 82, p.98
C. gracilis R. BR. ..... n. 214, p.182
C. grallatoria MAXIM. .... (*p.6*), n. 3, p.48
var. heteroclita KÜK. ..... n. 3, p.49
C. grandilimosa AKIY. (*p.32*), n. 177, p.159
C. grandisquama FRANCH. .. n. 256, p.209
C. Guffroyana LÉV. et VNT. .. n. 89, p.106
C. gynocrates WORMSKJ .. (*p.5*), n. 1, p.48
C. hakkodensis FRANCH. .. (*p.6*), n. 4, p.49
C. hakodatensis LÉV. et VNT. n. 255, p.209
C. hakonensis FR. et SAV. . (*p.7*), n. 8, p.53
var. capituliformis OHWI ..... n. 8, p.54
var. *Onoei* OHWI ..... n. 6, p.52
C. hakonensis OHWI ..... n. 7, p.53
C. Hancei C. B. CLARKE..... n. 249, p.206
C. Hayatae LÉV. et VNT. .... n. 130, p.134
C. hebecarpa C. A. MEY.
var. ligulata KÜK. .. (*p.46*), n. 281, p.230
var. *Maubertiana* FRANCH.
form. latifolia MAKINO .. n. 281, p.231
C. hebecarpa MATSUM. ..... n. 239, p.198
C. hebecarpa MATSUM. ..... n. 281, p.230
C. heleochariformis LÉV. et VNT. n. 7, p.53
C. Heribaudiana LÉV et VNT. n. 125, p.131
——— n. 131, p.136
——— n. 136, p.138
C. heteroclita FRANCH. ..... n. 3, p.49
C. heterolepis BUNGE ... (*p.20*), n. 74, p.94
C. hexasticha REINW. ..... n. 82, p.98
C. Hidewoi OHWI .... (*p.23*), n. 101, p.112
C. Hilgendorfiana BOECK. ... n. 155, p.147
C. hirta FRANCH. ..... n. 287, p.236
C. hirtifructus KÜK... (*p.36*), n. 207, p.177
C. hololasius LÉV. et VNT.(*p.29*), n. 152, p.144
C. Hondae AKIYAMA .... (*p.13*), n. 50, p.81
C. hondoensis OHWI .. (*p.39*), n. 223, p.187
C. humilis LEYSSER ... (*p.32*), n. 173, p.158
C. Idzuroei FR. et SAV. (*p.45*), n. 270, p.221
C. impura OHWI ..... (*p.20*), n. 76, p.94
C. incisa BOOTT ..... (*p.21*), n. 80, p.98
C. indistinctum LÉV. et VNT. n. 158, p.148
C. infirma C. B. CL. .. (*p.35*), n. 198, p.171
C. inflata HUDS. ..... n. 274, p.225
C. insaniae KOIDZ. ... (*p.42*), n. 246, p.204
C. intermedia GOOD. ..... n. 23, p.62
C. ischnantha STEUD. ..... n. 214, p.182
C. ischne C. B. CLARKE ..... n. 136, p.138
C. ischnostachya STEUD. (*p.39*). n. 226, p.189
C. jacens C. B. CLARKE (*p.28*), n. 140, p.139
C. Jackiana BOOTT
var. *macroglossa* KÜK. .... n. 258, p.212
Ssp. *parciflora* KÜKENTH.. n. 257, p.211
form. *ochrolepis* KÜK. .. n. 257, p.211

var. *macroglossa* KÜK. .... n. 258, p.212
C. japonica THUNB. .. (*p.40*), n. 232, p.194
var. *alopeculoides* FRANCH. n. 235, p.196
var. *alopeculoides* LÉV. et VNT. .... n. 228, p.191
var. *aphanolepis* KÜKENTH. n. 233, p.195
var. *chlorostachys* KÜK. ... n. 235, p.196
——— n. 236, p.197
form. *naipiangensis* LÉV. .. n. 236, p.197
β. *gracilis* FRANCH. ..... n. 232, p.194
var. *humilis* FRANCH. ..... n. 233, p.195
β. *minor* BOOTT ..... n. 232, p.194
var. *naipiangensis* LÉV. .. n. 236, p.197
C. japonica BOOTT ..... n. 235, p.196
C. japonicaeformis NAKAI (*p.40*),n. 234, p.196
C. jijogatakensis LÉV. et VNT. .... (*p.18*), n. 59, p.87
C. kamikawensis FRANCH. .. n. 129, p.133
C. kamikochiana NAKAI (*p.33*), n. 183, p.163
C. kasugayamensis AK. (*p.38*), n. 218, p.184
C. kattaeana KÜK. ... (*p.35*), n. 191, p.168
C. Keiskei MIQ. ..... n. 281, p.230
C. kelungensis HAYATA ..... n. 150, p.143
C. Kinashii LÉV. et VNT. (*p.19*), n. 67, p.92
C. Kinashii LÉV. et VNT. .... n. 89, p.106
C. Kingiana LÉV. et VNT. (*p.28*), n. 138, p.139
C. Kingiana LÉV. et VNT. ... n. 143, p.141
C. kiotensis FR. et SAV. . (*p.22*), n. 90, p.106
C. kiushiana OHWI ..... n. 203, p.175
C. kiyozumiensis AKIY. (*p.43*), n. 253, p.207
C. Kobomugi OHWI ..... n. 29, p.99
C. Koidzumii HONDA . (*p.47*), n. 2 4, p.234
C. koraginensis MEINSH. (*p.25*), n. 115, p.124
C. koreana KOMAR. ... (*p.37*), n. 210, p.179
C. korsakoviensis LÉV. ..... n. 160, p.148
C. Krameri FR. et SAV. ... (*p.7*) n. 7, p.53
C. Krullii BOECK. ..... n. 279, p.228
C. Ktausipali MEINSH. ..... n. 204, p.175
C. lachnosperma WALL. var. β. *major* WALL. ..... n. 281, p.230
C. laeviculmis MEINSH. . (*p.13*), n. 48, p.81
C. laevirostris BLYTT. .(*p.45*), n. 272, p.223
C. lagopina WAHL. ..... (*p.11*), n. 35, p.72
C. lagopodioides FRANCH. et SAV. .... n. 33, p.70
C. lanceolata BOOTT .. (*p.32*), n. 172, p.156
var. albo-mediana MAKINO. n. 172, p.157
var. *nana* LÉV. et VNT. ... n. 173, p.158
var. subpediformis KÜK. .. n. 172, p.158
C. lasiocarpa EHRH. var. occultans FR. .. (*p.47*), n. 282, p.232
C. lasiolepis FRANCH. . (*p 32*), n. 171, p.155
C. laticeps C. B. CL. .. (*p.42*), n. 249, p.206
C. laticuspis FRANCH. ..... n. 106, p.116
C. latinervia LÉV. et VNT. .... n. 74, p.94
C. latitans LÉV. et VNT ..... n. 116, p.125
C. laxa WAHL. ..... (*p.33*), n. 181, p.162
C. Leersii WILLD. ..... n. 46, p.77
C. leiogona FRANCH. ... (*p.20*), n. 73, p.94
C. lenta D. DON ..... n. 214, p.182
C. lenticularis D. DON ..... n. 82, p.98
C. lepidopristis LÉV. et VNT. . n. 84, p.101
C. leucochlora BUNGE ..... n. 131, p.135
C. leucoglochin EHRH. ..... n. 17, p.59
C. levicuspis OHWI ... (*p.35*), n. 192, p.168
C. ligata FRANCH. ..... n. 149, p.142
C. ligata BOOTT
var. *cucullata* KÜKENTH. .. n. 149, p.143
var. *formosensis* KÜKENTH. n. 150, p.143
var. *strictior* KÜKENTH. ... n. 241, p.201
C. ligulata NEES. ..... n. 281, p.230
C. limosa L. ..... (*p.32*), n. 178, p.160
var.fusco-cuprea KÜKENTH. n. 178, p.160
var. *rariflora* WAHL. ..... n. 176, p.158
C. limosa FRANCH. ..... n. 176, p.160
C. littorea LABILL. ..... n. 279, p.228
C. loliacea L. ..... (*p.13*). n. 45, p.79
C. lonchophora OHWI . (*p.27*), n. 141, p.139
C. longerostrata MEY. (*p.42*), n. 248, p.205
var. recurvifolia KÜKENTH. n. 248, p.206
C. longibracteata DULAC. .... n. 267, p.218
C. longisquamata MEINSH. .. n. 172, p.157
C. lucida FRANCH. ..... n. 129, p.133
C. lutchensis OHWI ... (*p.29*), n. 151, p.144
C. Lyngbyei HORNEM.
var. *prinocarpa* KÜKENTH. . n. 98, p.110
Ssp. cryptocarpa HULT. (*p.22*), n. 97, p.109
C. Lyngbyei KÜKENTH. .... n. 97, p.109
C. Maackii MAXIM. ..... (*p.11*), n. 33, p.70
var. nipponica OHWI ..... n. 33, p.70
C. macilenta FRIES. ..... n. 42, p.78
C. macrandrolepis LÉV. et VNT. (*p.43*), n. 254, p.208
C. macrocephala WILLD.
var. Kobomugi MIYABE et KUDO .(*p.10*), n. 29, p.67

var. typica
MIYABE et KUDO (*p.10*), n. 29, p.67
C. macrocephala A. GRAY. .... n. 29, p.67
C. macrochaeta MEY. . (*p.24*), n. 112, p.120
var. *paramushirensis* KUDO n. 111, p.120
Ssp. *flavocuspis* KÜKENTH. n. 113, p.120
var. *denticulata* KÜKENTH. n. 113, p.122
var. *platycarpa* KÜKENTH. n. 113, p.122
C. macrochlamys FRANCHET. n. 181, p.162
C. macroglossa
FRANCH. et SAV. (*p.43*), n. 258, p.211
C. macromollicula NAK. (*p.39*), n. 238, p.198
C. macloviana D'URV. .. (*p.11*), n. 32, p.69
C. maculata BOOTT ... (*p.25*), n. 116, p.125
form. viridans KÜK. ..... n. 116, p.126
C. magellanica LAM. .. (*p.33*), n. 179, p.161
C. makinoensis FRANCH. .... n. 203, p.174
C. malacocarpa LÉV. et VNT. n. 116, p.125
C. Malinvandi LÉV. et VNT. . n. 277, p.226
C. mandshurica MEINSH. (*p.25*), n. 117, p.126
C. Mariessi C. B. CL. . (*p.28*), n. 144, p.141
C. Matsumurae FR. ... (*p.41*),n. 239, p.198
var. variegata MAKINO ... n. 239, p.200
C. mauritanica STEUD. ..... n. 214, p.182
C. Maximowiczii MIQ... (*p.21*), n. 83, p.99
var. Kinashii OHWI ..... n. 83, p.100
var. levisaccus OHWI ..... n. 83, p.100
var. minor AKIYAMA ..... n. 83, p.100
var. pallida AKIYAMA ..... n. 83, p.101
var. subsessilis OHWI ..... n. 83, p.100
C. Maximowiczii BOECK. ... n. 222, p.187
C. Mayebarana OHWI . (*p.43*), n. 251, p.207
C. Mertensii PRESC.
var. urostachys KÜK. (*p.24*), n. 108, p.118
C. Mertensii FRANCH. ..... n. 108, p.118
C. metallica LÉV. et VNT. (*p.38*), n. 221, p.186
C. Meyeriana KUNTH . (*p.23*), n. 104, p.114
C. micans BOOTT ..... n. 116, p.125
C. Michauxiana BOECK. (*p.45*), n. 269, p.220
Ssp. *asiatica* HULT. ..... n. 269, p.220
form. asiatica (HULT.) ..... n. 269, p.220
C. Michelii HOST.
var. β. BOOTT ..... n. 248, p.206
C. microglochin WAHL. .. (*p.7*), n. 16, p.58
C. microglochin MIYABE ..... n. 17, p.59
C. microsaccus C. B. CL. (*p.18*), n. 58, p.87
C. microtricha FRANCH. (*p.26*), n. 125, p.131
C. Middendorffii FR. SCH. (*p.23*), n. 99, p.110
C. minuta FRANCH. ..... n. 65, p.91
C. mira KÜKENTH. ... (*p.34*), n. 187, p.165
C. mitoensis OHWI .... (*p.22*), n. 94, p.108
C. mitrata FRANCH. .. (*p.28*), n. 143, p.140
var. aristata OHWI ..... n. 143, p.141
var. *vigens* KÜK. ..... n. 150, p.143
C. mollicula BOOTT ... (*p.41*), n. 237, p.197
C. monile DEW. ..... n. 274, p.225
C. monile TUCKERM. ..... n. 274, p.225
C. montana L.
var. *oxyandra* FR. et SAV. . n. 120, p.127
C. Morrowii BOOTT ... (*p.41*), n. 243, p.201
var. albo-marginata
MAKINO .... n. 243, p.203
var. expallida OHWI ..... n. 243, p.202
var. laxa OHWI ..... n. 243, p.202
var. virginea
FRANCH. et SAV. .... n. 243, p.202
C. Morrowii FRANCH. ..... n. 244, p.203
var. *crassicaulis* FRANCH. . n. 244, p.203
C. mosoynensis FRANCH. .... n. 214, p.182
C. Motoskei MIQ. ..... n. 232, p.194
C. multifiliculmis LÉV.
et VNT. .... n. 136, p.138
C. multifolia OHWI ... (*p.31*), n. 163, p.151
var. glaberrima OHWI ..... n. 163, p.151
var. globosa OHWI ..... n. 163, p.152
var. imbecillis OHWI ..... n. 163, p.152
var. pallidisquama OHWI .. n. 163, p.152
var. stolonifera OHWI ..... n. 163, p.152
C. muricata BOOTT ..... n. 18, p.59
C. muricata LEERS ..... n. 46, p.80
C. Myabei FRANCH. .. (*p.47*), n. 283, p.233
C. nagasakensis C. B.
CLARKE (*p.38*), n. 212, p.181
C. nambuensis FRANCH. ..... n. 162, p.150
C. nana BOOTT ..... (*p.7*), n. 12, p.55
C. nanella OHWI ..... n. 173, p.158
C. nankaiensis HONDA (*p.42*), n. 252, p.207
C. Naumanniana BOECK. ... n. 169, p.154
C. nemorensis J. F. GMEL. .. n. 255, p.209
C. nemostachys STEUD. (*p.39*), n. 227, p.190
C. nervata FR. et SAV. (*p.26*), n. 124, p.130
form. dissita FRANCH. .... n. 124, p.131
form. leiocarpa
MIYABE & KUDO .... n. 124, p.131

form. Vidalii
(FRANCH. et SAV.) .... n. 124, p.130
C. nervulosa FRANCH. ..... n. 93, p.108
C. neurocarpa MAXIM. . (*p.10*), n. 88, p.62
C. nexa BOOTT
var. *strictior* KÜKENTH. ... n. 241, p.200
C. niigatensis KOIDZ. ..... n. 244, p.203
var. *brevisquamosa* KOIDZ. n. 244, p.203
var. *crassicaulis* KOIDZ. .. n. 244, p.203
C. nikoensis FRANCH. et SAV... n. 53, p.84
C. niko-montana AKI. . (*p.38*), n. 213, p.181
C. nipponica FRANCH..... n. 33, p.70
C. norvegica WILLD. ... (*p.12*), n. 37, p.73
C. nubigena D. DON
var. *albata* KÜKENTH. ..... n. 25, p.63
form. *laxiuscula* KÜKENTH. . n. 25, p.64
var. *Franchetiana* OHWI .... n. 25, p.64
C. nutans HOST.
var. *japonica* FR. et SAV. . n. 280, p.230
var. platyrhyncha KÜK.(*p.46*),n. 280, p.230
var. *pumila* BOECK. ..... n. 279, p.228
C. oahuensis C. A. MEY.
var. Boottiana KÜK. (*p.42*), n. 245, p.204
var. robusta FR. et SAV. .. n. 245, p.204
C. ochrolepis FRANCH. ..... n. 257, p.211
C. odontostoma KÜK. . (*p.36*), n. 206, p.177
var. glab ior OHWI ..... n. 206, p.177
var. *sejuncta* KÜKENTH. ... n. 207, p.178
var. *variegata* KÜKENTH. .. n. 203, p.175
——— .. n. 203, p.175
C. Oederi RETZ.
var. viridula KÜK. .. (*p.44*), n. 265, p.217
C. Oederi FRANCH. ..... n. 265, p.218
C. Ogawai AKIYAMA . (*p.36*), n. 201, p.172
C. Okuboi FRANCH. .. (*p.34*), n. 189, p.166
C. Oldh mii CLARKE .... (*p.7*), n. 10, p.54
C. oligostachys MEINSH. ..... n. 260, p.214
var. *subsessilis* KÜKENTH. . n. 257, p.211
C. olivacea KÜKENTH. ..... n. 229, p.192
var. *angustior* KÜKENTH. . n. 229, p.192
C. omiana FRANCH. et SAV. (*p.13*), n. 47, p.80
C. Onoei FRANCH. ..... (*p.6*), n. 6, p.52
form. latifolia KÜKENTH. .... n. 6, p.52
var. *Krameri* KÜKENTH. ..... n. 7, p.53
form. *hakonensis* KÜK. ..... n. 8, p.53
C. Onoei KÜKENTH. ..... n. 8, p.54
C. ontakensis FR. et SAV. ..... n. 11, p.54
C. orbicularis BOOTT
var. brachylepis KÜK. . (*p.18*), n. 57, p.87
C. orthostachys MEY. . (*p.47*), n. 286, p.235
var. γ. *drymophila* MAXIM. n. 287, p.236
var. TURCZ. ..... n. 287, p.236
var. *genuina* MAXIM. ..... n. 286, p.235
var. *hirtaeformis* MAXIM. . n. 287, p.236
C. orthostachys TREV. ..... n. 287, p.236
C. oshimensis NAKAI . (*p.30*), n. 161, p.149
C. otaruensis FRANCH. . (*p.20*), n. 77, p.95
C. Otayai OHWI ..... (*p.19*), n. 71, p.94
C. oxyandra KUDO ... (*p.25*), n. 120, p.127
var. globosa AKIYAMA .... n. 120, p.128
var. lanceata OHWI ..... n. 120, p.127
var. pallidior OHWI ..... n. 120, p.127
C. pachinensis HAYATA ..... n. 221, p.187
C. pachygyna FR. et S. (*p.33*), n. 186, p.165
C. pallida C. A. MEY. ..... n. 22, p.61
C. panicea L.
var. *sparsiflora* WAHL. ... n. 182, p.163
C. paniculigena NAKAI ..... n. 236, p.197
C. papillaticulmis OHWI (*p.42*), n. 247, p.205
C. papulosa BOOTT ... (*p.43*), n. 256, p.209
form. laxiflora KÜKENTH. . n. 256, p.210
form. paupercula KÜKENTH. n. 256, p.210
C. parciflora BOOTT ... (*p.43*), n. 257, p.211
form. ochrolepis
MIYABE & KUDO .... n. 257, p.211
form. subsessilis OHWI .... n. 257, p.211
var. Vanioti OHWI ..... n. 257, p.211
C. patens FRANCH. ..... n. 235, p.196
C. patula HUDS. ..... n. 17, p.59
C. pauciflora LIGHTF. ... (*p.7*), n. 17, p.59
C. Paxi KÜKENTH.
var. *succedanea* OHWI ..... n. 26, p.65
C. pediformis C. A. MEY.
var. *floribunda* KORSHINSK. n. 172, p.157
var. *genuina* FR. SCHM. .. n. 172, p.157
var. *pedunculata* FR. SCHM. n. 130, p.134
var. *rostrata* FR. SCHM. ... n. 129, p.133
C. pediformis MATSUM. ..... n. 172, p.157
C. peniculacea LÉV. et VNT. ... n. 77, p.95
C. pensylvanica LAM.
var. *amblyolepis* KÜKENTH. n. 121, p.129
C. perangusta OHWI .. (*p.28*), n. 137, p.139
C. periculosa HONDA .. (*p.22*), n. 91, p.107
C. persistens OHWI ... (*p.40*), n. 230, p.193

var. Takeuchii OHWI ..... n. 230, p.193
C. petersii C. A. MEY. .....
C. phacota SPRENG. ..... (*p.21*), n. 82, p.98
C. phacota LÉV. et VNT. ..... n. 84, p.101
C. phacota FRANCH. ..... n. 87, p.104
C. picea FRANCH. ..... n. 105, p.114
var. *asoensis* LÉV. et VNT. n. 203, p.175
C. picta BOOTT ..... n. 83 p.100
C. Pierotii MIQ. ..... n. 277, p.226
C. pilosa SCOP. ..... (*p.43*), n. 255. p.208
var. auriculata KÜKENTH. . n. 255, p.209
β. *Beckeri* C. A. MEY. ..... n. 255, p.209
C. pilulifera WRIGHT. ..... n. 120, p.127
C. pisiformis BOOTT... (*p.30*), n. 156, p.147
form. *polyshoena* KÜKENTH. n. 158, p.148
var. *sachalinensis* KÜK. .. n. 160, p.148
C. pisiformis BAK. et MOOR. n. 158, p.148
C. pisiformis KÜKENTH. .... n. 159, p.148
C. planata FR. et SAV. .. (*p.11*), n. 34. p.71
C. planiculmis KOMAR.. (*p.40*), n. 236, p.197
C. platiphylla FRANCH. ..... n. 185, p.164
C. platycarpa HOCHST. ..... n. 82, p.98
C. platyrhyncha
FRANCH. et SAV. .... n. 280, p.230
C. pleiorhiza LÉV. et VNT. .. n. 257, p.211
C. plocamostyla MAXIM. .... n. 188, p.165
C. pocilliformis BOOTT. (*p.29*), n. 147, p.142
C. podogyna FRANCH. . (*p.35*), n. 195, p.169
form. aristodentata KÜK. . n. 195, p.170
C. pollens C. B. CLARKE ..... n. 228, p.191
C. polyantha FR. et SAV. ..... n. 89, p.106
C. polyrrhiza FRANCH. et SAV. n. 130, p.134
C. polyshoena
LÉV. et VNT. ..... (*p.30*), n. 158, p.148
C. ponmoshirensis
MIY. et KUD. ..... n. 34, p.71
C. praecox MIQ. ..... n. 124, p.130
var. *Vidalii* FR. et SAV. ... n. 124, p.130
C. praestabilis OHWI .. (*p.26*), n. 128, p.133
C. Prescottiana BOOTT.. (*p.22*), n. 89, p.105
var. *flabellata* OHWI ..... n. 89, p.105
var. fuscescens KÜKENTH... n. 89, p.106
var. fusco-cinnamomea
KÜKENTH. ..... n. 89, p.106
var. *kiotensis* KÜKENTH. ... n. 90, p.106
var. *otaruensis* KÜKENTH.... n. 77, p.95
var. *ployantha*
(FRANCH. et SAV.) .... n. 89, p.106
C. prinocarpa FRANCH. . (*p.23*), n. 98, p.110
C. pruinosa BOOTT
β. *aristata* O. KTZE. ..... n. 82, p.98
var. *Kinashii* MAKINO &
NEMOTO ..... n. 83, p.100
var. *levisaccus* MAKINO &
NEMOTO ..... n. 83, p.100
Ssp. *Maximowiczii* KÜK. .... n. 83, p.99
var. β. BOOTT ..... n. 83, p.100
C. pseudo-conica
FRANCH. et SAV. ... n. 160, p.148
C. pseudo-conica FRANCH. .. n. 163, p.151
C. pseudo-curaica FR. SCH. . (*p.9*), n. 20, p.66
C. pseudo-cyperus L. .. (*p.44*), n. 267, p.218
var. *brachystachya*
REGEL et MAACK ... n. 268, p.219
C. pseudo-hirta MEINSH. .... n. 287, p.236
C. pseudo-loliacea F. SCH. .(*p.13*), n. 44, p.79
form. *sejuncta* KÜKENTH. ... n. 44, p.79
C. pseudo-sadoensis AK..(*p.24*), n. 110, p.119
C. pseudo-strigosa
LÉV. et VNT. ... n. 154, p.145
C. pennsylvanica LAM. ...
var. *amblyolepis* KÜKENTH. n. 121, p.129
C. pseudo-Wrightii HOND.(*p.25*), n. 122, p.129
C. puberula BOOTT ..... n. 131, p.135
C. pudica HONDA ..... (*p.28*), n. 142, p.139
C. pulicaris L. ..... n. 17, p.59
C. pulla GOOD. ..... n. 275, p.226
C. pumila THUNB. .... (*p.46*), n. 279, p.228
Ssp. *littorea* KÜKENTH. ... n. 279, p.228
C. purpurascens KÜKENTH. . n. 231, p.193
C. pyrenaica WAHL. ..... (*p.7*), n. 15, p.57
var. altior KÜKENTH. ..... n. 15, p.58
C. Raddei KOMAR. ..... n. 286, p.235
C. Ramenskii KOMAR. . (*p.22*), n. 96, p.109
C. rara BOOTT
var. biwensis KÜKENTH. . (*p.7*), n. 9, p.54
Ssp. *capillacea* KÜKENTH. ... n. 11, p.54
var. *macrolepis* MATSUM. ... n. 11, p.55
form. *macrolepis* KÜKENTH. n. 11, p.55
var. *nana* KÜKENTH. ..... n. 12, p.55
C. rariflora SMITH .... (*p.32*), n. 176, p.158
form. brevipedunculata
KÜKENTH. ... n. 176, p.159
C. Reinii FR. et SAV. .. (*p.30*), n. 162, p.150
C. remota L.
Ssp. *Rochebrunii* KÜKENTH. . n. 51, p.28

var. *remotaeformis* KÜKENTH. ..... n. 51, p.82
C. remota FRANCH. et SAV. .... n. 51, p.83
C. remota THUNB. ..... n. 52, p. 84
C. remotaeformis KOMAR. ..... n. 51, p.82
C. reticulmis FRANCH. ..... n. 129, p.133
C. retrorsa BOECK. ..... n. 271, p.222
C. Retzii NEES. ..... n. 240, p.199
C. reversa GILIB. ..... n. 267, p. 218
C. rhizopoda MAXIM. ..... (*p.6*), n. 5, p. 51
var. longior MAXIM. ..... n. 5, p.51
form. *longior*KÜKENTH. ..... n. 5, p.51
C. rhynchophysa C. A. MEY. n. 272, p.223
C. rigens BOOTT ..... n. 224, p.188
C. riishirensis FRANCH. .... n. 114, p.124
C. Ringgoldiana BOOTT ..... n. 226, p.189
C. riparia CURT.
var. rugulosa KÜK. ..(*p.46*), n. 276, p.226
C. Rochebrunii FRANCH. et SAV. .(*p.13*), n. 51, p.82
var. remotaeformis (KOM.) .. n. 51, p.82
C. rostrata STOKES.
Ssp. *rotundata* KÜKENTH. . n. 273, p.224
C. rotundata WAHL. .. (*p.45*), n. 273, p.224
C. rotundata MIYABE et KUDO ... n. 278, p.228
C. Rouyana FRANCH. ..... n. 260, p.213
C. Royleana NEES. .... (*p.27*), n. 131, p.135
var. longearistata (KÜKENTH.) .... n. 131, p.136
form. *Wardiana* MIYABE et KUDO ..... n. 136 p.138
C. rubro-brunnea FRANCH. .... n. 82, p.98
C. ruesanensis KUDO ..... n. 273, p.224
C. rugulosa KÜKENTH. ..... n. 276, p.226
C. rupestris ALL. ..... (*p.6*), n. 2, p.48
C. sabynensis LESSING. (*p.27*), n. 129, p.133
C. sachalinensis FR. S. . (*p.30*), n. 160, p.148
C. sacrosancta HONDA..(*p.38*), n. 219, p.185
C. sadoensis FRANCH. ....(*p.20*), n. 79, p.96
var. integra OHWI ..... n. 79, p.96
C. saruensis FRANCH. ..... n. 283, p.233
C. satsumensis FRANCH. et SAV. ..... (*p.14*), n. 53, p.84
C. Savatieri FRANCH. .. (*p.35*), n. 199, p.171
C. saxatilis L. ..... (*p.45*), n. 275, p.226
C. scabrifolia STEUD. ..(*p.46*), n. 277, p.226
C. scabrinervia FRANCH. .... n. 114, p.124
C. scabro-aristata AKIY.(*p.28*), n. 145, p.141
C. Schkuhriana LÉV. et VNT. n. 87, p.104
C. Schmidtii MEINSH. ... (*p.19*), n. 64, p.89
C. Schmidtii BOECK. ..... n. 204, p.175
C. scita MAXIM. ..... (*p.25*), n. 114, p.123
var. *koraginensis* KÜKENTH. n. 115, p.124
form. *koraginensis* KUDO . n. 115, p.124
var. riishirensis KÜKENTH. n. 114, p.124
var. scabrinervia KÜKENTH. n. 114, p.124
C. scitaeformis KÜK. .. (*p.35*), n. 194, p.169
C. Sedakowii C. A. MEY. (*p.37*), n. 208, p.178
C. Sekimotoi HONDA ..... n. 256, p.209
C. semiplena KÜKENTH. . (*p.19*), n. 69, p.92
var. kirigaminensis OHWI ... n. 69, p.92
C. senanensis OHWI ..... (*p.13*), n. 49, p.81
C. sendaica FRANCH. ... (*p.38*) n. 216, p.183
C. sepulta R. PHIL. ..... n. 279, p.228
C. shakushizawaensis AKIYAMA .... (*p.35*), n. 190, p.168
C. sharensis FRANCH. .. (*p.35*), n. 197, p.171
C. shimidzensis FRANCH. (*p.22*), n. 93, p.107
form. longispicula AKIYAMA n. 93, p.108
var. nervulosa KÜKENTH. .. n. 93, p.108
C. shimotsukensis HON..(*p.31*), n. 165, p.152
C. shinanoana NAKAI ... (*p.22*). n. 92, p.107
C. siccata DEWEY ..... (*p.10*), n. 21, p.61
C. siccata BOOTT ..... n. 22, p.61
C. siderosticta HANCE . (*p.33*), n. 185, p.164
var. bracteosa FRANCH. ... n. 185, p.164
C. siderosticta KÜKENTH. ... n. 184, p.164
C. sikokiana FR. et SAV. (*p.30*), n. 154, p.145
var. arimensis OHWI ..... n. 154, p.146
var. aureo-brunnea OHWI .. n. 154, p.146
var. elongata OHWI ..... n. 154, p.146
var. tenuinervis OHWI .... n. 154, p.145
C. shikokiana MAKINO ..... n. 203, p.174
C. silvatica HUDS.
var. TURCZ. ..... n. 222, p.187
C. silvatica MAXIM. ..... n. 222, p.187
C. sinensis J. F. GMEL. ..... n. 240, p.199
C. siroumensis KOIDZ. . (*p.36*), n. 202, p.173
C. sociata BOOTT ..... (*p.41*), n. 241, p.200
C. soyaeensis KÜK. .... (*p.23*), n. 102, p.112
C. sparsiflora STEUD. .. (*p.33*), n. 182, p.163
C. sphaerostachya DEW. ..... n. 40, p.75
C. squamoidea AKIY. .. (*p.26*), n. 126, p.132

C. stellulata GOOD. ..... (*p.13*), n. 46, p.79
var. *Omiana* KÜKENTH. .... n. 47, p.80
C. stenantha FR. et S. . (*p.36*), n. 204, p.175
var. taisetzuensis AKIYAMA n. 204, p.176
var. yatsugatakensis AKIY. n. 204, p.177
C. stenantha KUDO ..... n. 204, p.177
C. stenantha C. B. CLARKE .. n. 211, p.180
C. stenolepis FRANCH. ..... n. 204, p.175
C. stenostachys
FR. et SAV. ... (*p.30*), n. 159, p.148
C. steriles A. GRAY ..... n. 46, p.80
C. stipata MUEHL. ..... (*p.10*), n. 27, p.65
C. stolonifera LÉV. et VNT. .. n. 129, p.127
C. striata MICHX.
var. *japonica* KOIDZ. ..... n. 284, p.234
C. striata R. BR. ..... n. 224, p.188
C. subanceps BOECK. ..... n. 228, p.191
C. subcernua OHWI .... (*p.21*), n. 86, p.103
C. subdita OHWI ..... (*p.43*), n. 250, p.206
C. suberea BOOTT ..... n. 277, p.226
C. subphacota NAKAI ... (*p.21*), n. 85, p.103
var. glauca HONDA ..... n. 85, p.103
C. subspathacea WORM. .(*p.22*), n. 95, p.108
C. subumbellata MEIN. .(*p.28*), n. 136, p.138
var. vercunda OHWI ..... n. 136, p.138
C. succedanea NAKAI .... (*p.10*), n. 26, p.65
C. tarumensis FRANCH. ..... n. 105, p.114
C. Tashiroana OHWI ... (*p.31*), n. 168, p.153
C. tegulata LÉV. et VNT. ..... n. 57, p.87
C. teiogyna BOOTT
var. scabriculmis KÜK. (*p.38*), n. 217, p.183
C. temnolepis FRANCH. .(*p.31*), n. 166, p.152
C. tenella SCHKUHR ..... (*p.12*), n. 41, p.76
var. brachycarpa KÜKENTH. . n. 41, p.77
var. misera FRANCH. ..... n. 41, p.77
C. tenuiflora WAHL. ..... (*p.12*), n. 42, p.77
var. *arrhyncha* KÜKENTH. .. n. 43, p.78
var. macilenta O. F. LANG... n. 42, p.78
C. tenuiformis LÉV. et. V.(*p.36*), n. 205, p.177
C. tenuinervis OHWI. ..... n. 154, p.146
C. tenuiseta FRANCH. ..(*p.35*), n. 196, p.170
var. brevisquama KOIDZ. .. n. 196, p.171
C. tenuispica STEUD. ..... n. 214, p.182
C. tenuissima BOOTT .. (*p.29*), n. 153, p.144
var. *Duvaliana* KÜKENTH. n. 155, p.147
var. *sikokiana* KÜKENTH. . n. 154, p.145
C. tenuistachya NAKAI. (*p.44*), n. 263, p.217
C. Thunbergii STEUD. ... (*p.18*), n. 60, p.87
var. *brachysandra* MIYABE
et KUDO .... n. 60, p.88
C. Thwaitesii HANCE ..... n. 281, p.230
C. Tobae HONDA ..... (*p.21*), n. 81, p.98
C. tokioensis BOECK. ..... n. 232, p.194
C. Tolmiei BOOTT ..... (*p.24*), n. 111, p.120
C. traiziscana FR. SCHM. .(*p.12*), n. 39, p.74
C. transversa BOOTT .. (*p.39*), n. 225, p.188
C. transversa MIQ. ..... n. 224, p.188
C. trappistarum FRANCH. ..... n. 74, p.94
C. tricarinata LÉV. et VNT. . n. 235, p.196
C. trichocarpa
var. *orthostachys* KÜK. .... n. 286, p.235
C. trichopoda FRANCH. ..... n. 188, p.166
C. trichostyles FR. et SAV. ... n. 232, p.194
C. tristachya THUNB. .. (*p.29*), n. 146, p.141
var. *pocilliformis* KÜK. ... n. 147, p.142
C. tristachya MATSUM. ..... n. 147, p.142
C. tsuishikarensis
KOIDZ. et OHWI . (*p.46*), n. 278, p.228
C. tumidula OHWI ..... (*p.29*), n. 148, p.142
C. tuminensis KOMAR...(*p.23*), n. 100, p.111
C. Turczanimowiana MEINSH. n. 222, p.187
var. *Beaurepairoei*
LÉV. et VNT..... n. 287, p.236
C. uber OHWI ..... (*p.41*), n. 242, p.201
C. uda MAXIM. ..... (*p.7*), n. 14, p.57
var. *sachalinensis*
FR. SCHM. ..... n. 11, p.54
C. umbrosa HOST.
Ssp. *sabynensis* KÜKENTH.. n. 129, p.133
var. *stolonifera* KÜK. ... n. 128. p.133
C. urostachys FRANCH. ..... n. 108, p.118
C. Urvillei BONGN. ..... n. 279, p.228
C. usta FRANCH. ..... n. 65, p.91
C. utriculata BOECK. ..... n. 272, p.223
C. uzenensis KOIDZ. ... (*p.35*), n. 193, p.168
C. vaginata TAUSCH. ..... n. 182, p.163
C. Vanioti LÉV. ..... n. 257, p.211
C. Vaseyi DEW. ..... n. 274, p.225
C. ventricosa FRANCH. ..... n. 274, p.225
C. verna CHAIX. ..... n. 123, p.130
C. vernicosa FRANCH. . (*p.44*), n. 266, p.218
C. vesicaria L. ..... (*p.45*), n. 274, p.224
α. *calcifoenum* LAEST. ..... n. 275, p.225
form. elatior ANDERS. .... n. 274, p.225
var. *jejuna* FERNALD. ..... n. 274, p.225
var. monile TUCKERM. .... n. 274, p.225
Ssp. *pulla* ANDERS. ..... n. 275, p.226
Ssp. *saxatilis* KÜKENTH. .. n. 275, p.226

var. tenuistachya KÜKENTH. .... n. 274, p.225
C. vesicaria FR. SCHM. ..... n. 274, p.226
C. vesicata MEINSH. ..... n. 274, p.225
C. villosa BOOTT ..... n. 262, p.215
var. straminea AKIYAMA .. n. 262, p.216
var. *Wrightii* FRANCH. et SAV. ... n. 262, p.216
C. villosa FR. et SAV. .(*p.44*), n. 155. p.147
C. viridula FRANCH. et SAV. n. 199, p.171
C. viridula MICHX. ..... n. 265, p.218
C. vitilis
var. β. BOOTT ..... n. 40. p.75
b. *sylvatica* MEINSH. ..... n. 40, p.75
C. vulgaris FRANCH. et SAV. . n. 60, p.87
C. vulgaris KOMAR. ..... n. 68, p.92
C. vulpi-caudata AKIYAMA ..... (*p.19*), n. 66, p.91
C. vul ina LAM. ..... n. 46, p.80
C. Wallichiana BOECK. ..... n. 281, p.230
C. Wallichiana PRESC.
var. *Miyabei* KÜKENTH. ... n. 283, p.233
form. *glabrescens* KÜKENTH. n. 285. p.235
C. Wardiana LÉV. et VNT. .. n. 136, p.138
C. wiluica MEINSH. .... (*p.18*), n. 62, p.89
C. Wrightii FRANCH. ..... n. 120, p.127
var. *lanceata* KÜKENTH. .. n. 120, p.127
C. Yabei LÉV. et VNT. ..... n. 277, p.226
C. yesanensis FRANCH. ..... n. 244, p.203
C. yesoensis KOIDZ. .. (*p.26*), n. 127, p.132
C. yezo-montana AKIYAMA .. n. 130, p.134
C. Yoshinoi OHWI ... (*p.32*), n. 174, p.158
Careyanae ..... (*p.16*), p.164
Circinatae MEINSH. ..... (*p.5*), p.49
Cryptocarpae TUCKERM. .... (*p.18*), p.108
Curvicolles KÜKENTH. ..... (*p.34*), p.171
Debiles CAREY. ..... (*p.37*), p.180
Decorae KÜK. ..... (*p.34*), p.172
Digamae NAKAI ..... (*p.8*), p.68
Digitatae FRIES ..... (*p.15*), p.155
Dioicae TUCKERM. ..... (*p.5*), p.48
Divisae CHRIST. ..... (*p.8*), p.60
Elongatae GOOD. ..... (*p.9*), p.79
Eucarex COSS. et GERM. ..... (*p.5*), p.86
Ferrugineae TUCKERM. ..... (*p.34*), p.174
Foetidae TUCKERM. ..... (*p.8*), p.59
Forficulae FRANCH. ..... (*p.17*), p.92
Frigidae FRIES ..... (*p.16*), p.165
Fuliginosae TUCKERM. ..... (*p.34*), p.173
Gibbae KÜKENTH. ..... (*p.9*), p.83
Graciles TUCKERM. ..... (*p.37*), p.182
Grallatoriae KÜKENTH. ..... (*p.5*), p.48
Griseae BAILEY ..... (*p.15*), p.163
Hirtae TUCKERM. ..... (*p.17*), p.230
Hymenochlaenae DREJER. ... (*p.16*), p.178
Indicae TUCKERM. ..... (*p.14*), p.85
Indocarex BAIL. ..... (*p.5*), p.84
Japonicae KÜKENTH. ..... (*p.13*), p.84
Lamprochlaenae DREJER .... (*p.15*), p.129
Limosae TUCKERM. ..... (*p.15*), p.158
Longirostres KÜKENTH. ..... (*p.37*), p.186
Lupulinae TUCKERM. ..... (*p.45*), p.220
Macrocephalae KUNTH ..... (*p.8*), p.67
Maximae ASCHERS. ..... (*p.15*), p.125
Mitratae KÜKENTH. ..... (*p.15*), p.129
Montanae FRIES ..... (*p.15*), p.126
Mucronatae NYMAN. ..... (*p.33*), p.165
Multiflorae KUNTH ..... (*p.8*), p.62
Mundae KÜKENTH. ..... (*p.14*), p.85
Ovales KUNTH ..... (*p.9*), p.69
Pachystylae KÜKENTH. ..... (*p.14*), p.126
Paludosae FRIES ..... (*p.17*), p.226
Paniceae TUCKERM. ..... (*p.15*), p.163
Paniculatae KUNTH ..... (*p.8*), p.66
Pauciflorae TUCKERM. ..... (*p.6*), p.58
Petraeae O. F. LANG ..... (*p.5*), p.48
Physocarpae DREJER ..... (*p.17*), p.220
Podogynae TH. HOLM. ..... (*p.34*), p.165
Praelongae KÜKENTH. ..... (*p.18*). p.98
Primocarex KÜKENTH. ..... (*p.5*), p.48
Pseudo-cypereae TUCKERM. . (*p.17*), p.218
Rhomboidales KÜKENTH. ... (*p.16*), p.198
Rigidae FRIES ..... (*p.17*), p.87
Schellhammeria KUNTH ..... (*p.9*), p.69
Scitae KÜKENTH. ..... (*p.15*), p.118
Spirostachyae DREJER ..... (*p.16*), p.217
Stenorhynchae TH. HOLM. .... (*p.8*), p.65
Tentaculatae TUCKERM. .... (*p.45*), p.222
Tenuiflorae KUNTH ..... (*p.9*), p.76
Tumidae KÜKENTH. ..... (*p.16*), p.188
Unciniaeformes KÜKENTH. ... (*p.5*), p.52
Vesicariae TUCKERM. ..... (*p.45*), p.223
Vignea NEES. ..... (*p.5*), p.59
Vulgares ASCHERS. ..... (*p.17*), p.87

Index of Japanese Names

Aburashiba ..... n. 53, p.85
Aizu-suge ..... n. 223, p.188
Akan-kasa-suge ..... n. 287, p.236
Akan-suge ..... n. 45, p.79
Aki-kasa-suge ..... n. 227, p.190
Aoba-suge ..... n. 247, p.205
Ao-hie-suge ..... n. 250, p.206
Ao-juzu-suge ..... n. 259, p.213
Aomori-hari-suge ..... n. 12, p.55
Ao-suge ..... n. 131, p.136
Arnel-suge ..... n. 222, p.187
Asama-suge ..... n. 23, p.62
Ashiboso-suge ..... n. 196, p.170
Awabo-suge ..... n. 224, p.188
Awa-suge ..... n. 88, p.104
Aze-naruko-suge ..... n. 87, p.104
Aze-suge ..... n. 60, p.88
Azuma-naruko ..... n. 93, p.108
Azuma-suge ..... n. 171, p.156

Beni-hime-kan-suge ..... n. 169, p.155
Beni-kan-suge ..... n. 169, p.154
Birôdo-suge ..... n. 283, p.234

Chabo-gôso ..... n. 83, p.101
Chabo-minoboro-suge ..... n. 25, p.63
Chairo-tanuki-ran ..... n. 113, p.123
Chishima-miyama-kuro-suge . n. 111, p.120
Chishima-naruko-suge. ..... n. 275, p.226
Chishima-shiba-suge ..... n. 123, p.130
Chishima-suge ..... n. 176, p.159
Chôsen-awo-suge ..... n. 129, p.134
Chôsen-suge ..... n. 210, p.180
Chûgoku-snge ..... n. 249, p.206
Chûzenji-suge ..... n. 263, p.217

Da'sen-suge ..... n. 264, p.217
Dake-suge ..... n. 179, p.162

Enashi-higo-kura ..... n. 233, p.195
Fude-kusa ..... n. 29, p.67
Fuiri-hikage-suge ..... n. 172, p.158
Fuiri-kan-suge ..... n. 243, p.203
Fuiri-kan-suge ..... n. 169, p.155
Fuiri-kinokuni-suge ..... n. 239, p.200
Fusa-nakiri-suge ..... n. 217, p.183
Fusa-suge ..... n. 221, p.187
Futamata-kuro-suge ..... n. 113, p.122

Glehn-suge ..... n. 257, p.211
Gongen-suge ..... n. 160, p.149
Gôso ..... n. 83, p.100
Gyôja-sô ..... n. 185, p.164

Hababiro-suge ..... n. 244, p.203
Hagakure-suge ..... n. 139, p.139
Haiiro-suge ..... n. 72, p.94
Hakusan-suge ..... n. 38, p.73
Hama-kugu ..... n. 277, p.228
Hama-mugi ..... n. 29, p.67
Hanabi-suge ..... n. 55, p.86
Hanamagari-suge ..... n. 255, p.209
Harigane-suge ..... n. 11, p.54
Harigane-suge ..... n. 12, p.55
Hari-suge ..... n. 6, p.52
Hari-tama-suge ..... n. 43, p.79
Hatabe-suge ..... n. 2 2, p.216
Hidaka-suge ..... n. 106, p.116
Hie-suge ..... n. 248, p.206
Hige-suge ..... n. 245, p.204
Higo-kusa ..... n. 232, p.195
Hikage-hari-suge ..... n. 8, p.54
Hikage-shira-suge ..... n. 236, p.197
Hikage-suge ..... n. 172, p.157
Hime-ao-suge ..... n. 134, p.137
Hime-ao-suge ..... n. 136, p.138
Hime-gôso ..... n. 84, p.102
Hime-iwa-suge ..... n. 204, p.177
Hime-juzu-suge ..... n. 261, p.215
Hime-kansuge ..... n. 169, p.154
Hime-kasa-suge ..... n. 163, p.151
Hime-kawazu-suge ..... n. 40, p.76
Hime-kesuge ..... n. 152, p.144
Hime-nakiri-suge ..... n. 218, p.184
Hime-naruko-suge ..... n. 82, p.99
Hime-shira-suge ..... n. 237, p.198
Hime-suge ..... n. 120, p.127
Hime-tanuki-ran ..... n. 188, p.166
Hime-tekiri-suge ..... n. 91, p.107
Hime-ushio-suge ..... n. 95, p.108

Hina-suge ..... n. 3, p.49
Hiragishi-suge ..... n. 103, p.113
Hiroba-hakusan-suge ..... n. 38, p.74
Hiroba-no-hari-suge ..... n. 6, p.52
Hiroba-no-tanigawa-suge ..... n. 81, p.98
Hiroba-no-yawara-suge ..... n. 226, p.190
Hiroba-suge ..... n. 246, p.205
Hiroba-yachi-suge ..... n. 256, p.210
Hiromi-kuro-suge ..... n. 113, p.122
Hiruzen-suge ..... n. 76, p.94
Hokkai-suge ..... n. 127, p.133
Hoki-kasa-suge ..... n. 100, p.111
Honaga-ao-gôso ..... n. 85, p.103
Honaga-hime-gôso ..... n. 85, p.103
Honmonji-suge ..... n. 156, p.148
Horomui-kugu ..... n. 278, p.228
Horomui-suge ..... n. 99, p.111
Hoshinashi-gôso ..... n. 83, p.100
Hosoba-hakusan-suge ..... n. 38, p.74
Hosoba-hikage-suge ..... n. 173, p.158
Hosoba-minoboro-suge ..... n. 25, p.63
Hosoba-no-kuro-kawazu-suge . n. 19, p.60
Hosoba-tagane-sô ..... n. 246, p.205
Hosobo-naruko-suge ..... n. 274, p.226
Hosoe-no-mugi-suge ..... n. 260, p.213
Hoso-kawazu-suge ..... n. 21, p.61
Hoso-shirako-suge ..... n. 5, p.51
Hoso-suge ..... n. 41, p.77
Ho-suge ..... n. 50, p.81

Iburi-suge ..... n. 126, p.132
Idsu-kan-suge ..... n. 166, p.152
Iso-suge ..... n. 245, p.204
Ito-ao-suge ..... n. 133, p.136
Itoba-birôdo-suge ..... n. 282, p.233
Itohiki-suge ..... n. 51, p.83
Ito-kin-suge ..... n. 4, p.51
Ito-naruko-suge ..... n. 181, p.163
Ito-suge ..... n. 153, p.144
Iwa-kan-suge ..... n. 203, p.174
Iwaki-suge ..... n. 108, p.118
Iwa-suge ..... n. 204, p.176

Jingû-suge ..... n. 219, p.185
Jizogatake-suge ..... n. 59, p.87
Jôrô-suge ..... n. 268, p.219
Juzu-naruko-suge ..... n. 274, p.225
Juzu-suge ..... n. 226, p 190

Kabu-suge ..... n. 65, p.90
Kakuremi-suge ..... n. 11, p.55
Kamikawa-suge ..... n. 129, p.134
Kamikôchi-suge ..... n. 183, p.163
Kanchi-suge ..... n. 1, p.48
Kan-suge ..... n. 243, p.202
Karafuto-hoso-suge ..... n. 41, p.77
Karafuto-iwa-suge ..... n. 2, p.48
Karafuto-kasa-suge ..... n. 273, p.224
Karafuto-miyama-kuro-suge. n. 112, p.120
Karafuto-suge ..... n. 37, p.73
Karafuto-yachi-suge ..... n. 178, p.160
Karafuto-yarame-suge ..... n. 98, p.110
Kasa-suge ..... n. 228, p.191
Kasuga-suge ..... n. 82, p.99
Kata-suge ..... n. 254, p.208
Katta-suge ..... n. 190, p.168
Kawara-suge ..... n. 80, p.98
Kawazu-suge ..... n. 46, p.80
Kayatsuri-suge ..... n. 31, p.69
Ke-hie-suge ..... n. 251, p.207
Kekasa-suge ..... n. 286, p.235
Ke-suge ..... n. 155, p.147
Ke-suge ..... n. 255, p.209
Ke-tagane-sô ..... n. 184, p.164
Keyari-suge ..... n. 182, p.163
Kibana-suge ..... n. 203, p.174
Kibi-no-minoboro-suge ..... n. 26, p.65
Kinashi-suge ..... n. 67, p.92
Kinchaku-suge ..... n. 108, p.118
Kinki-kasa-suge ..... n. 230, p.193
Kinokuni-suge ..... n. 239, p.199
Kin-suge ..... n. 15, p.58
Kirigamine-suge ..... n. 69, p.93
Kishiu-suge ..... n. 239, p.199
Kita-aze-suge ..... n. 69, p.92
Kita-chishima-suge ..... n. 115, p.124
Kita-tanukiran ..... n. 192, p.168
Ko-aze-suge ..... n. 56, p.86
Kôbô-mugi ..... n. 29, p.67
Kôbô-shiba ..... n. 279, p.230
Kogome-suge ..... n. 220, p.186
Ko-hakusan-suge ..... n. 38, p.74
Ko-hari-suge ..... n. 7, p.53
Ko-jiku-suge ..... n. 16, p.59
Ko-juzu-suge ..... n. 258, p.212
Ko-kan-suge ..... n. 162, p.151

Kokan-suge-modoki ..... n. 201, p.173
Koke-suge ..... n. 8, p.53
Komoro-suge ..... n. 262, p.216
Konuma-suge ..... n. 273, p.224
Korai-aze-suge ..... n. 64, p.90
Ko-tanuki-ran ..... n. 188, p.166
Kotsubu-hoso-suge ..... n. 41, p.77
Kuju-suge ..... n. 154, p.146
Kumoma-shiba-suge ..... n. 136, p.139
Kurobo-suge ..... n. 107, p.117
Kuro-hina-suge ..... n. 119, p.126
Kuro-kawazu-suge ..... n. 18, p.60
Kuro-me-suge ..... n. 65, p.91
Kuro-o-suge ..... n. 65, p.90
Kuroshima-suge ..... n. 239, p.199
Kuro-suge ..... n. 99, p.111
Kusa-suge ..... n. 138, p.139

Mame-suge ..... n. 142, p.140
Manshiu-suge ..... n. 117, p.126
Marumi-no-hime-suge ..... n. 120, p.128
Marumi-suge ..... n. 57, p.87
Mashike-suge ..... n. 114, p.124
Mashike-suge-modoki ..... n. 194, p.169
Masu-kusa ..... n. 52, p.84
Matsuba-suge ..... n. 9, p.54
Matsumae-suge ..... n. 248, p.206
Me-ao-suge ..... n. 132, p.136
Michinoku-hari-suge ..... n. 12, p.55
Michinoku-honmonji-suge ..... n. 157, p.148
Migaeri-suge ..... n. 17, p.59
Mikoshi-gaya ..... n. 24, p.63
Mikuri-suge ..... n. 271, p.223
Mitake-suge ..... n. 269, p.220
Mito-suge ..... n. 94, p.108
Mitsumata-suge ..... n. 100, p.111
Miyama-ao-suge ..... n. 213, p.181
Miyama-higo-kusa ..... n. 234, p.196
Miyama-juzu-suge ..... n. 54, p.85
Miyama-kan-suge ..... n. 163, p.151
Miyama-kuro-suge ..... n. 113, p.121
Miyama-naruko-suge ..... n. 93, p.108
Miyama-shira-suge ..... n. 229, p.192
Miyama-shira-suge ..... n. 238, p.199
Miyama-tekiri-suge ..... n. 92, p.107
Moegi-suge ..... n. 146, p.142
Mugi-suge ..... n. 257, p.211
Mugi-suge ..... n. 260, p.214
Mujina-suge ..... n. 282, p.233
Murasaki-hime-kan-suge ..... n. 174, p.158
Musen-suge ..... n. 180, p.162

Nagabo-naruko-suge ..... n. 93, p.108
Nagae-kawazu-suge ..... n. 28, p.67
Nagae-suge ..... n. 71, p.94
Nagahono-kojuzu-suge ..... n. 257, p.211
Nagami-gôso ..... n. 83, p.100
Nagami-kuro-suge ..... n. 65, p.90
Nagasaki-suge ..... n. 212, p.181
Nago-suge ..... n. 149, p.143
Naibuchi-suge ..... n. 62, p.89
Najima-gôso ..... n. 86, p.103
Nakiri-suge ..... n. 214, p.183
Nambu-suge ..... n. 162, p.151
Nankai-suge ..... n. 252, p.207
Nebuka-suge ..... n. 63, p.89
Nemuro-suge ..... n. 106, p.116
Nikkô-hari-suge ..... n. 13, p.56
Nikkô-hime-suge ..... n. 120, p.128
Nishida-suge ..... n. 34, p.72
Nishino-honmonji-suge ..... n. 159, p.148
Noge-nuka-suge ..... n. 143, p.141
Norge suge ..... n. 37, p.73
No-suge ..... n. 168, p.153
Nuka-suge ..... n. 143, p.141
Nuiwo-suge ..... n. 121, p.129
Numa-kurobo suge ..... n. 104, p.114

Ô-awo-suge ..... n. 141, p.139
Ô-aze-suge ..... n. 60, p.88
Ô-hari-suge ..... n. 14, p.57
Ô-ito-suge ..... n. 160, p.149
Ô-kan-suge ..... n. 244, p.203
Ô-kasa-suge ..... n. 272, p.223
Ô-kawadsu-suge ..... n. 27, p.66
Okinawa-suge ..... n. 151, p.144
Ô-kin-suge ..... n. 15, p.58
Ô-kugu ..... n. 276, p.226
Okuno-kansuge ..... n. 244, p.203
Ô-kuro-me-suge ..... n. 65, p.90
Oku-tanuki-ran ..... n. 193, p.169
Oldham-suge ..... n. 10, p.54
Ô-miyama-kansuge ..... n. 165, p.152
Ô-miyama-suge ..... n. 104, p.114
Ô-nakiri-suge ..... n. 215, p.183
Oni-naruko-suge ..... n. 274, p.225

Oni-suge ..... n. 271, p.223
Onoe-suge ..... n. 210, p.108
Osenuma-suge ..... n. 39, p.75
Ôshima-kan-suge ..... n. 161, p.150
Ô-tanukiran ..... n. 113, p.123
Otaru-suge ..... n. 77, p.95
Ô-tsuru-suge ..... n. 44, p.79
Ô-yabu-suge ..... n. 51, p.82

Paramushiro-suge ..... n. 32, p.70
Prescott-suge ..... n. 89, p.105

Ramensk-suge ..... n. 96, p.106
Rebun-suge ..... n. 205, p.177
Rishiri-suge ..... n. 114, p.124
Riukiu-suge ..... n. 231, p.194
Ruesan-suge ..... n. 273, p.224

Sado-suge ..... n. 79, p.97
Sadosuge-modoki ..... n. 110, p.120
Sanagi-suge ..... n. 3, p.49
Sapporo-suge ..... n. 255, p.209
Sasanoha-suge ..... n. 186, p.165
Sasa-suge ..... n. 185, p.164
Sashisoe-suge ..... n. 68, p.92
Satsuma-kan-suge ..... n. 170, p.155
Satsuma-suge ..... n. 281, p.231
Sawa-hina-suge ..... n. 187, p.165
Sawa-suge ..... n. 233, p.195
Schmidt-suge ..... n. 64, p.90
Sedakow-suge ..... n. 208, p.179
Seitaka-kin-suge ..... n. 15, p.58
Seitaka-kôbô-shiba ..... n. 280, p.230
Seitaka-tsuru-suge ..... n. 000, p.79
Sendai-suge ..... n. 216, p.183
Sengen-suge ..... n. 30, p.68
Senjô-suge ..... n. 101, p.112
Shari-suge ..... n. 197, p.171
Shiba-suge ..... n. 124, p.130
Shikoku-ito-suge ..... n. 154, p.145
Shikoku-suge ..... n. 203, p.174
Shikotan-suge ..... n. 114, p.124
Shima-kan-suge ..... n. 243, p.203
Shima-tanuki-ran ..... n. 189, p.167
Shina-suge ..... n. 240, p.200
Shio-kugu ..... n. 277, p.228
Shirakawa-suge ..... n. 104, p.114
Shirako-suge ..... n. 5, p.51
Shira-suge ..... n. 235, p.197
Shiro-gôso ..... n. 83, p.101
Shiro-hari-suge ..... n. 42, p.78
Shiro-honmonji-suge ..... n. 158, p.148
Shiro-ito-suge ..... n. 145, p.141
Shiro-juzu-suge ..... n. 253, p.208
Shirouma-hime-suge ..... n. 122, p.129
Shirouma-suge ..... n. 196, p.170
Shôjô-suge ..... n. 130, p.135
Shotai-sô ..... n. 51, p.83
Sobosan-suge ..... n. 206, p.177
Sôya-suge ..... n. 102, p.112
Sunaji-suge ..... n. 285, p.235
Suna-suge ..... n. 135, p.138
Susuya-shiro-suge ..... n. 160, p.149
Susuya-suge ..... n. 36, p.72

Tachi-gôso ..... n. 83, p.100
Tachikawa-suge ..... n. 154, p.145
Tachi-kawazu-suge ..... n. 48, p.81
Tachi-suge ..... n. 116, p.125
Taisetsu-iwa-suge ..... n. 204, p.177
Taiwan-suge ..... n. 150, p.143
Takane-hari-suge ..... n. 17, p.59
Takane-masu-kusa ..... n. 34, p.72
Takane-naruko-suge ..... n. 202, p.174
Takane-shiba-suge ..... n. 209, p.179
Takane-shôjô-suge ..... n. 130, p.135
Takane-sô (Tagane-sô) ..... n. 185, p.164
Takane-suge ..... n. 204, p.176
Takane-yagami-suge ..... n. 35, p.72
Tama-tsuri-suge ..... n. 260, p.213
Tamatsuri-suge ..... n. 118, p.126
Tanigawa-suge ..... n. 78, p.96
Tani-suge ..... n. 80, p.98
Tanuki-ran ..... n. 195, p.170
Tarumai-suge ..... n. 105, p.115
Tateyama-suge ..... n. 70, p.93
Tekiri-suge ..... n. 90, p.107
Tenjiku-suge ..... n. 281, p.231
Tenjiku-yoshi ..... n. 281, p.231
Toda-suge ..... n. 89, p.106
Tomari-suge ..... n. 99, p.111
Tonakai-suge ..... n. 118, p.126
Tsukuba-suge ..... n. 207, p.178
Tsukushi-minoboro-suge ..... n. 25, p.64
Tsukushi-suge ..... n. 242, p.201
Tsurugisan-suge ..... n. 73, p.94
Tsuru-ito-suge ..... n. 154, p.146

Tsuru-kamikawa-suge ..... n. 128, p.133
Tsuru-kawazu-suge ..... n. 20, p.61
Tsurunashi-ô-ito-suge ..... n. 154. p.146
Tsuru-suge ..... n. 20, p.61
Tsushima-suge ..... n. 240 p.200

Uma-suge ..... n. 270, p.222
Ushio-suge ..... n. 61, p.88
Usuiro-suge ..... n. 22, p.62

Watari-suge ..... n. 167, p.153

Yabu-suge ..... n. 51, p.83
Yachi-kawazu-suge ..... n. 47, p.81
Yachi-kugu ..... n. 284, p.235
Yachi-suge ..... n. 178, p.161
Yagami-suge ..... n. 33, p.71
Yakushima-ito-suge ..... n. 137, p.139
Yakushima-kan-suge ..... n. 243, p.202
Yama-aze-suge ..... n. 74, p.94
Yamaji-suge ..... n. 211, p.181
Yama-ke-suge ..... n. 155. p.147
Yama-naruko ..... n. 200, p.172
Yama-naruko-suge ..... n. 199, p.172
Yama-ôbako ..... n. 185, p.164
Yama-tanuki-ran ..... n. 109, p.119
Yarame-suge ..... n. 97, p.109
Yashima-suge ..... n. 164, p.152
Yashima-yachi-suge ..... n. 177, p.159
Yawara-suge ..... n. 225, p.188
Yezo-hari-suge ..... n. 42, p.78
Yezo-kan-suge ..... n. 244, p.203
Yezo-kasa-suge ..... n. 287, p.236
Yezo-kawazu-suge ..... n. 22, p.62
Yezo-matsuba-suge ..... n. 11, p.54
Yezo-no-kôbô-mugi ..... n. 29. p.67
Yezo-sawa-suge ..... n. 265, p.218
Yezo-shiba-suge ..... n. 125, p.132
Yezo-suge ..... n. 97, p.109
Yezo-takane-sô ..... n. 185, p.165
Yezo-tsuri-suge ..... n. 256, p.210
Yezo-yachi-suge ..... n. 66, p.92

Plate I.

Carex pseudo-sadoensis AKIYAMA.

× ca. 2/5.

Plate II.

Carex Ogawai AKIYAMA.

× ca. 1/3.