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## Species Novae Caricum Japonicarum

Auctore

SHIGEO AKIYAMA

(With Plates VII–XV).

### *Carex kasugayamensis* AKIYAMA sp. nov.

Rhizoma abbreviatum lignosum. Culmus 25–35 cm altus triquetro-filiformis superne vix scabriusculus inferne foliatus. Folia culmo breviora 1–3 mm lata plana marginibus et nervis aspera; vaginae basilares aphyllae fusco-brunneae fissae. Spiculae singulae vel binae androgynae (partibus masculinis breviores quam femineis) lineari-cylindricae 1.5–2.5 cm longae laxiflorae remotae inaequaliter longe pedunculatae erectae, pedunculis capillaribus scabris. Bractee superiores setaceae inferiores foliaceae canaliculatae 1–5 cm longae culmum longe vaginantes. Squamae lanceolato-ovatae cinnamomeae acuminatae saepe mucronulatae dorso viridi carinatae. Utriculi squamas superantes suberecti membranacei ovato-elliptici 4.5 mm longi plano-convexi cinnamomeo-brunnei, marginibus et in nervis numerosis hispidi, medio-criter longe stipitati, apice in rostrum tenue ore marginibus viride bidentatum abrupte contracti. Nux utriculorum explens ovata. Styli basis subinbrassata. Stigmata 2, vix 3 mm longa.

Nom. Jap. Hime-nakirisuge.

Hab.

Hondo: in colle Kasugayama, prov. Yamato (K. Inagaki, anno 1928).

This species has much resemblance to *C. teiogyna* BOOTT, but the plant is much feebler, flowers are distant and stigmata are shorter.

### *Carex grandilimosa* AKIYAMA sp. nov.

Rhizoma caespitosum? Culmus 30–40 cm altus rigidus anguste triquetrum strictus superne parce scaber inferne foliatus. Folia culmum superantia 3–5 mm lata plana rigida marginibus superne e medio scabra

inferne septato-nodosa; vaginae basillares aphyllae subcarinatae parce fissae. Spiculae 4 remotiusculae, apice 1-3 masculinae breviter pedunculatae anguste oblongae subclavatae 0.5-2.5 cm longae erectae, basi 3-1 femineae; spiculae femineae saepissime apice masculinae ovatae vel oblongo-ovatae 2-3 cm longae longe pedunculatae, pedunculis capillaribus laevibus, densiflorae pendulae vel suberectae. Bracteae foliaceae inflorescentia breviores basi culmum vix vaginantes, vaginis atro-fuscis. Squamae femineae oblongo- vel lanceolato-ovatae apice cuspidatae vel mucronulatae atro-fuscae dorso viride trinerviae (2-nervis lateralibus obsoletis), masculinae minores obtusae. Utriculi squamas superantes et iis latiores suberecti coriacei ovati compresso-trigoni 5-6 mm longi stramineo-coesii purpureo-punctulati papilloso glabri plurinervi, basi subrotundati obconico-stipitati, marginati, apice in rostrum mediocre ferrugineum marginibus scabrum ore integrum desinentes. Nux late obovata. Stylus exertus basi aequalis. Stigmata 3.

Nom. Jap. Yashima-yachisuge.

Hab.

Hondo: in limo palustri Yashima-taira, Kirigamine, prov. Shinano (K. Okada, anno 1927).

No doubt, this belongs to the Section, Limosae; but is different from any other species belonging to the latter. It is in every respect robust, its spikelets are longer and broader, its utricles much longer, and its bracts nearly non-vaginate.

*Carex scabro-aristata* AKIYAMA sp. nov.

Rhizoma parce caespitosum et longe repens. Culmus 25-30 cm altus tenuis triqueter laevis inferne foliatus. Folia culmea breviora, sterilia culmum aequantia vel superantia, longe attenuata gracilia 1-2 mm lata plana supra marginibus aspera; vaginae basillares albo-brunneae aphyllae fissae. Spiculae 3-4 remotae, terminalis masculina linearis vel lineari-cylindrica 1.5-3 cm longa  $\pm$  pedunculata erecta, laterales 2-3 femineae lineari-cylindricae 1.5-2 cm longae subclaviflorae erectae vel vix patentes subsessiles. Bracteae foliaceae 2-3 cm longae superne non supra 2 cm longae culmum longe vaginantes patentes asperrimae. Squamae femineae ovatae albo-stramineae apice parce repando-denticulatae scarbo-carinatae evidentius aristatae, masculinae longiores argentic-stramineae mucronatae. Utriculi squamis aequilongi suberecti membranacei ovato-oblongi 2.5 mm longi trigoni brunneo-

virides multinervi glabri, basi stipitati, marginati, apice in rostrum longum marginibus scabrum excurvum latum ore hyalino leviter bidentatum desinentes. Nux obovato-oblonga. Stylus fere e basi trifidus basi tortuosus bulbosus. Stigmata 3.

Nom. Jap. Shiro-itosuge.

Hab.

Hondo: Tajimahara, prov. Musashi (S. Akiyama, anno 1929).

Closely related to *C. mitrata* FRANCHET, but differs from it in the conspicuously scabrous margin on the beak of the utricules and not evidently mitrated nuts.

*Carex Doiana* AKIYAMA sp. nov.

Rhizoma parce caespitosum et stolones longos emittens. Culmus 30 cm altus obtuso-angulatus parce scabrus strictus inferne foliis vaginantibus obsitus. Folia culmum subsuperantia 2-4 mm lata plana marginibus scabra acuminata subrigida; vaginae basiales purpureo-brunneae parce fissae. Spiculae 4 remotae, terminalis masculina oblongo-cylindrica 2.5 cm longa densiflora longe exerta erecta, laterales 3 androgynae cylindricae 1-1.5 cm longae apice breviter masculinae basi femineae subdensiflorae longe pedunculatae erectae, pedunculis capillaribus parce scabris. Bractee spathaceae subaphyllae culmum longe vaginantes purpureae. Squamae femineae ovatae albo-stramineae e dorso trinerves scabro-aristatae, masculinae castaneae vel fusco-brunneae. Utriculi squamis parum minores suberecti membranacei oblongo-ovati 2-2.5 mm longi stramineo-brunnei obtuse trigoni plurinervi parcissime pubescentes, basi in stipitem obliquum attenuati, margine scabri, apice breve rostrati ore integri saepe excurvi. Nux ovata. Stylus basi pyramidalis. Stigmata 3.

Nom. Jap. Satsuma-kansuge.

Hab.

Kiushiu: in oppido Miyano-shiro, prov. Satsuma (T. Doi, anno 1926).

The present species somewhat resembles *C. Reini* FRANCHET in having androgynous spikelets, but distinguishable from it by its albo-stramineous female scales and very small utricules.

*Carex stenantha* FRANCHET et SAVATIER, Enum. pl. japon. II (1879) 146 et 573; Franchet in Nouv. Arch. Mus. Paris, 3. sér. X. (1898) 50 t. 3, fig. 20.

var. *taisetsuensis* AKIYAMA var. nov.

Rhizoma caespitosum oblique elongatum. Utriculi oblongo-lanceolati nervis 6-8 (nervis marginalibus inclusis) percursi, superficies e medio adpresso-hirti.

Nom. Jap. Taisetsu-iwasuge.

Hab.

Hokkaido: in monte Taisetsu, prov. Ishikari (S. Akiyama, anno 1928).

It seems to me that the species is distributed on high mountains in Hokkaido.

var. *yatsugatakensis* AKIYAMA var. nov.

Rhizoma valde caespitosum. Culmus 10-20 cm altus. Spiculae erectae vel subcernuae. Spicula masculina basi saepe 1-flore feminea instructa.

Nom. Jap. Hime-iwasuge.

Hab.

Hondo: in monte Yatsugatake, prov. Shinano (S. Akiyama, anno 1928).

*Carex villosa* BOOTT, in A. Gray, Narr. Exped. Perry II. 327 et Illustr. IV. (1867) 203.

var. *straminea* AKIYAMA var. nov.

Spiculae 3, laterales 2 femineae brevissime pedunculatae. Bractae omnes evaginantes. Squamae femineae aristatae marginibus superne ciliatae. Utriculi stramineo-olivacei; rostris 2-fidis, segmentis intus scabris.

Nom. Jap. Komoro-suge.

Hab.

Hondo: in oppido Komoro, prov. Shinano (K. Ohki, anno 1927?),

*Carex squamoidea* AKIYAMA sp. nov.

Rhizoma stolones longos tenues emittens. Culmus 20-40 cm altus gracilis sed firmus obtuse triqueter laevis superne curvatus inferne foliis mortuosis cinctus. Folia culmo breviora 15-30 cm longa parce

curvata canaliculato-plana 1-2 mm lata margine scabra subrigida. Spiculae 2-3, terminalis masculina, longe exerta pedunculata cylindrica basi attenuata 1-2 cm longa, laterales femineae, oblongae vel cylindricae subdensiflorae breviter pedunculatae, pedunculis scabris, erectae 1-2 cm longae. Bracteae spathaceae aphyllae brunneae vel sordidae amplexicaules superne saepe squamiformes longe aristatae scabrae. Squamae femineae ovatae castaneae obsolete uninerviae apice muticae vel mucronulatae mox caducae, masculinae vix aristatae. Utriculi squamis aequilongi obovales inflati 2.5-3 mm longi albo-straminei trigoni nervosi parce adpresso-hirti, basi attenuati obconici vix stipitati, marginati, apice in rostrum breve ore ferrugineum integrum apiculati. Nux utriculorum explens obovalis apice constricto dilatato-annulata. Stigmata 3.

Nom. Jap. Iburi-suge.

Hab.

Hokkaido: in arene Tomakomai, prov. Iburi (S. Akiyama, anno 1930).

The species grows on sandy plain (perhaps of volcanic origin) near Tomakomai. It is related to *C. nervata* FRANCHET et SAVATIER belonging to the Mitratae-Eu-mitratae, but is different from the latter in having much longer and fewer spikelets and much more swollen utricules.

*Carex conica* BOOTT, in A. Gray, Narr. Exped. Perry II. (1857) 325.

var. *lanceolata* AKIYAMA var. nov.

Squamae rubescentes lanceolatae rarissime ovato-lanceolatae. Utriculi nervis rubentibus percursi.

Nom. Jap. Beni-himekansuge.

Hab.

Hondo: in monte Yatsugatake, prov. Shinano (S. Akiyama, anno 1928).

The present variety differs from the type in having much narrower scales of flowers; but in other characters it is almost the same as *C. conica* BOOTT, forma *rubens* KÜENTHAL.

*Carex gagaensis* AKIYAMA sp. nov.

Rhizoma caespitosum. Culmus 20-30 cm altus gracilis triqueter laevis inferne foliatus. Folia culmum subaequans vel io breviora

2-4 mm lata plana obsoletissime septato-nodosa parce scabra; vaginae basiliares brunneae vel albo-brunneae demum dissolutae fissae. Spiculae 3-5, terminalis masculina lineari-cylindrica 1-2 cm longa sessilis vel brevissime pedunculata, laterales 2-4 femineae, superiores 1-3 approximativim insitae cylindricae 0.5-2 cm longae pauci- et laxi-florae subsessiles, inferior 1 subradicalis longissime pedunculata erecta 1-3 cm longa laxiflora, ceterae lineari-cylindricae apice sublaxi-basi laxi-florae; pedunculi capillares laeves. Bractee foliaceae ima culmo breviores vel longiores culmum longe vaginantes. Squamae femineae ovato-oblongae albo-stramineae brunneo-viridi-tricostatae apice attenuatae mucronatae, masculinae albo-brunneae. Utriculi squamas duplo vel triplo superantes suberecti membranacei ovato-lanceolati 5 mm longi brunneo-virides trigoni plurinervi basi vix attenuati obconico-stipitati apice in rostrum longissimum excurvum ore bidentulum sensim abeuntes. Nux laxe inclusa obovata. Stimata 3.

Nom. Jap.

Hab.

Honshu: Gaga, ad pedem montis Zaô (S. Akiyama, anno 1929).

*Carex yezo-montana* AKIYAMA sp. nov.

Rhizoma lignosum elongatum caespitans. Culmus 10-15 cm altus obsolete triqueter parcissime scaber inferne foliatus. Folia culmum vaginantia brevia, sterilia accrescentia culmum longe superantia saepe 20-30 cm longa 2 mm lata rigida parce septato-nodosa viridia glaucescentia; vaginae basiliares subaphyllae atro-fuscae fissae obtectae. Spiculae 3-4, terminalis masculina obovato-oblonga 1.3 cm longa 0.4 cm lata pedunculata erecta, laterales 2-3 femineae cylindricae 1-1.5 cm longae subdensiflorae brevipedunculatae erectae. Bractee spathaceae subaphyllae culmum longe vaginantes margine atro-castaneae apice acute attenuatae. Squamae femineae late obovatae imbricatae castaneae stramineo-carinatae in carina parce scabrae mucronatae apice parce hyalinae repando-denticulatae. Utriculi ovato-oblongi compresso-trigoni straminei hirtelli basi contracti marginati margine dense hirti apice in rostrum longum ore grosse bifurcatum intus scabrum attenuati. Nux oblongo-ovata, Stigmata 3 longa.

Nom. Jap. Takane-shôjôsuge.

Hab.

Hokkaido: in monte Ashibetsu, prov. Ishikari (Y. Yagisawa, anno 1930).

The present species belongs to the Frigidae-Ferrugineae. It allies perhaps mostly to *C. tenuiformis* LÉVEILLÉ et VANIOT.

*Carex vulpi-caudata* AKIYAMA sp. nov.

Rhizoma densissime caespitosum. Culmus 40-70 cm altus numerosus strictus gracilis acutangulus latere parce concaviusculus angulis parce scabrus. Folia culmum superantis, 2-3 mm lata complicata parce septato-nodosa supra aspera subrigida basi vaginis aphyllis atro-fuscis nitidis carinatis cincta. Spiculae 3-4, terminalis masculina linearis vel lineari-cylindrica pedunculata parce curvata 4-5 cm longa subdensiflora, laterales 2-3 femineae apice saepissime brevissime masculinae cylindricae vel lineari-cylindricae erectae 2-4 cm longae densiflorae basi vix attenuatae laxioresque sessiles. Bracteae foliaceae superne saepe squamiformes inferne 1-2 inflorescentias superantes culmum vaginantes. Squamae femineae oblongo-ovatae mucronatae clarius viridicarinatae uninerviae margine angustissime albo-hyalinae, masculinae fuscae angustiores. Utriculi squamas superantes erecti 3 mm longi ovati membranacei straminei superne stramineo-virides subplanoconvexi plurinervi glabri dense papilloso basi contracti, apice rostrati, rostris ore hyaline bidenticulatis. Nux laxa inclusa obovalis biconvexa. Styli basis aequalis. Stigmata 2.

Nom. Jap. Yezo-yachisuge.

Ham.

Hokkaido: in palustris Tomakomai, prov. Iburi (S. Akiyama, anno 1930).

This species seems to be allied to the Caespitosae, and perhaps it will be the neighbourhood of *C. stricta* LAM., but is distinguishable from the latter in having much longer bracts and the terminal spikelet which consists exclusively of male flowers.

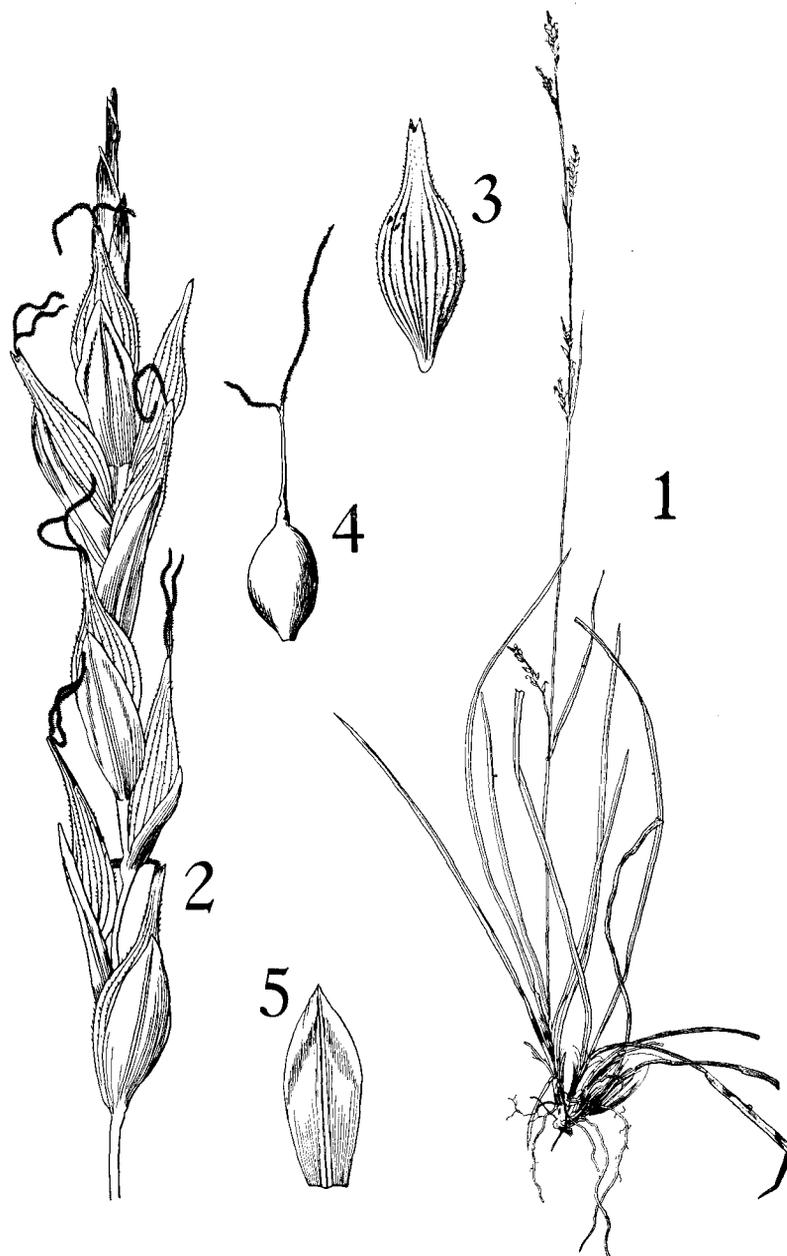


Fig. 1. *Carex kasugayamensis* AKIYAMA

1. Habitus  $\times 3/5$     2. Spicula  $\times 8$     3. Utriculus  $\times 8$   
4. Nux  $\times 8$     5. Squama  $\times 8$ .

Akiyama: Species Novae Caricum Japonicarum

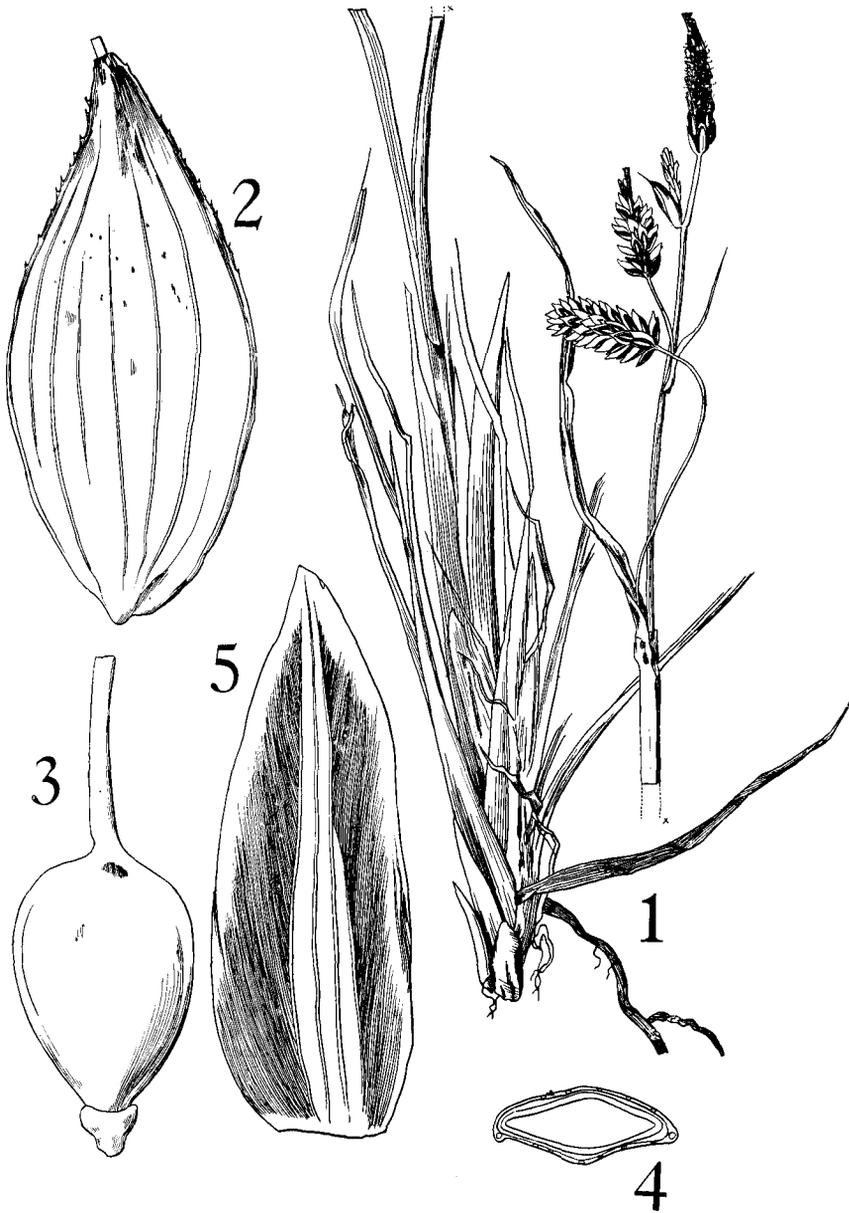


Fig. 2. *Carex grandilimosa* AKIYAMA

1. Habitus×4/5      2. Utriculus×14      3. Nux×14  
4. Utriculus cum nuce transversim sectus×14      5. Squama×14.

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Fig. 3. *Carex scabro-aristata* AKIYAMA

- |                           |                              |                       |
|---------------------------|------------------------------|-----------------------|
| 1. Habitus $\times 1/2$   | 2. Inflorescentia $\times 1$ | 3. Squama $\times 16$ |
| a latere visa $\times 16$ | 4. Utriculus $\times 16$     | 5. Nux $\times 16$ .  |

Akiyama: Species Novae Caricum Japonicarum



Fig. 4. *Carex Doiana* AKIYAMA

1. Habitus  $\times 1/2$     2. Inflorescentia  $\times 1$     3. Utriculus  $\times 14$   
4. Nux  $\times 14$     5. Squama  $\times 14$ .

Akiyama: Species Novae Caricum Japonicarum

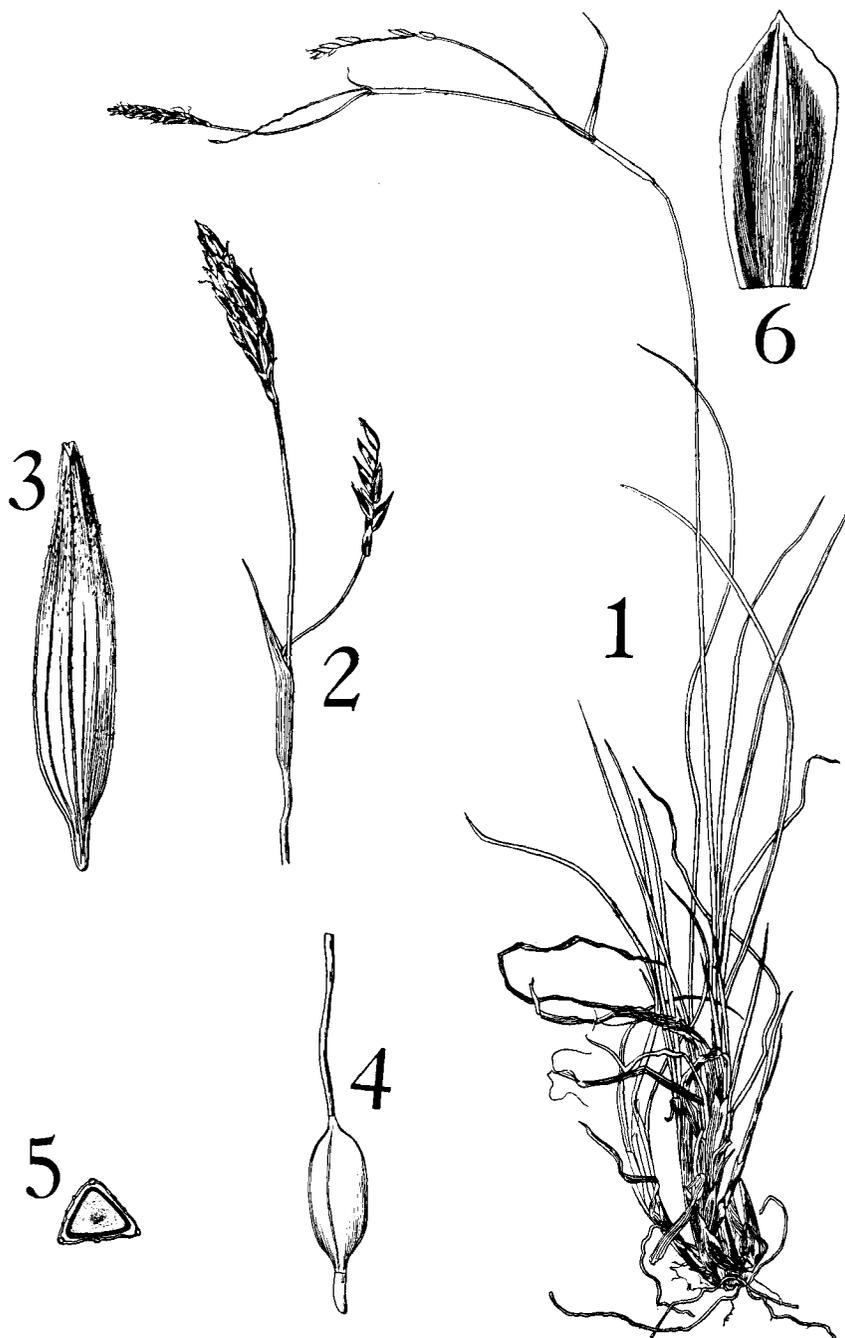


Fig. 5. *Carex stenantha* FRANCHET et SAVATIER  
var. *taisetsuensis* AKIYAMA

1. Habitus  $\times 4/5$     2. Inflorescentia  $\times 1$     3. Utriculus  $\times 10$   
4. Nux  $\times 10$     5. Utriculus cum nuce transversim sectus  $\times 10$   
6. Squama  $\times 10$ .

Akiyama: Species Novae Caricum Japonicarum

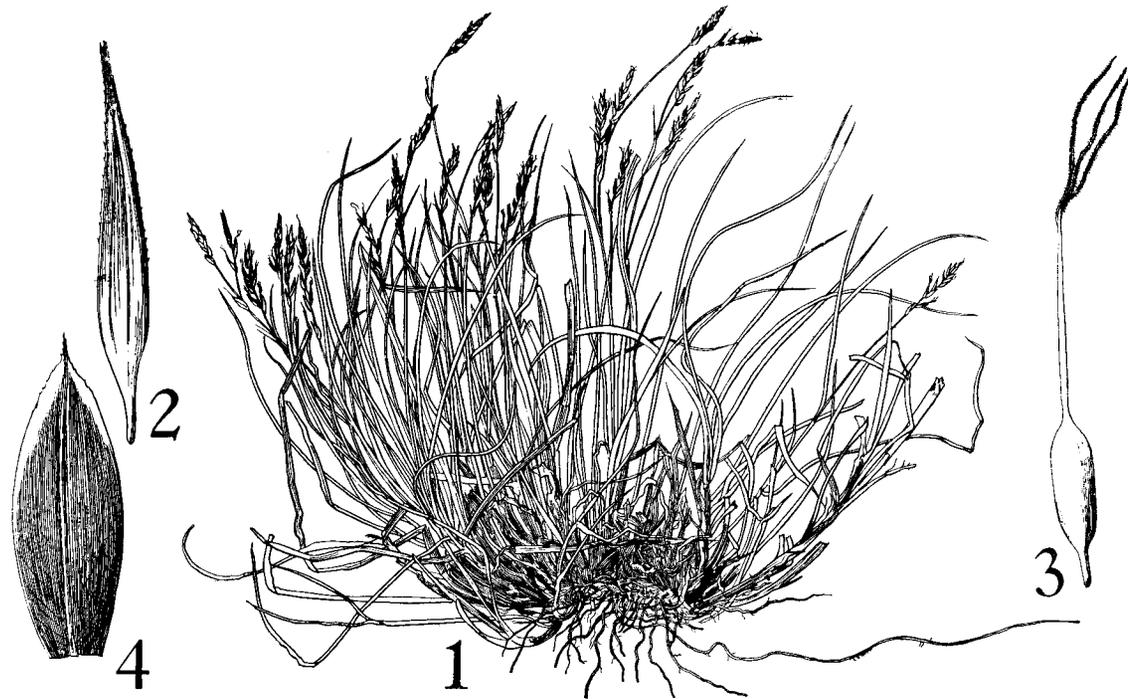


Fig. 6. *Carex stenantha* FRANCHET et SAVATIER var. *Yatsugatakensis* AKIYAMA

1. Habitus×3/5 2. Utriculus×10 3. Nux×10 4. Squama×10.

Akiyama: Species Novae Caricum Japonicarum

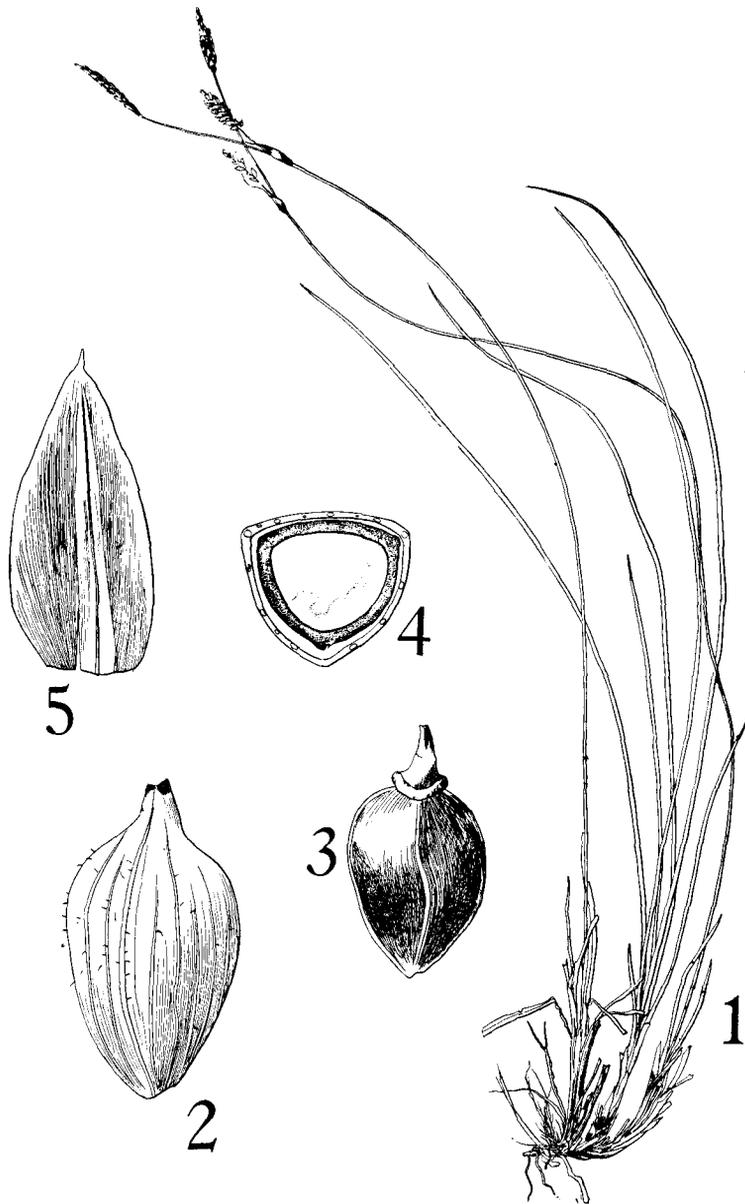


Fig. 7. *Carex squamoidea* AKIYAMA

1. Habitus×1/2      2. Utriculus×16      3. Nux×16  
4. Utriculus cum nuce transversim sectus×16      5. Squama×16.

Akiyama: Species Novae Caricum Japonicarum

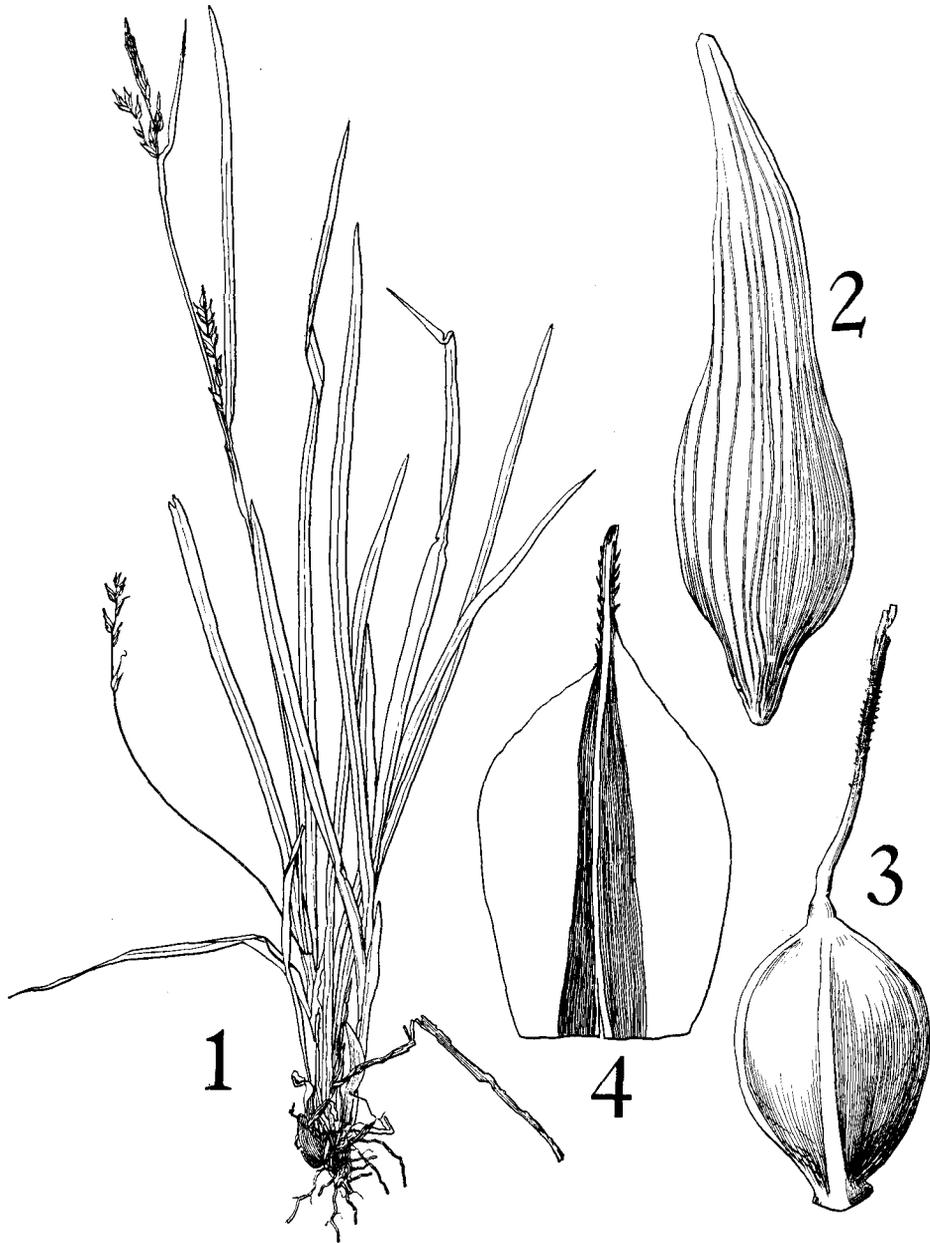


Fig. 8. *Carex gagaensis* AKIYAMA

1. Habitus×3/5 2. Utriculus×20 3. Nux×20 4. Squama×20

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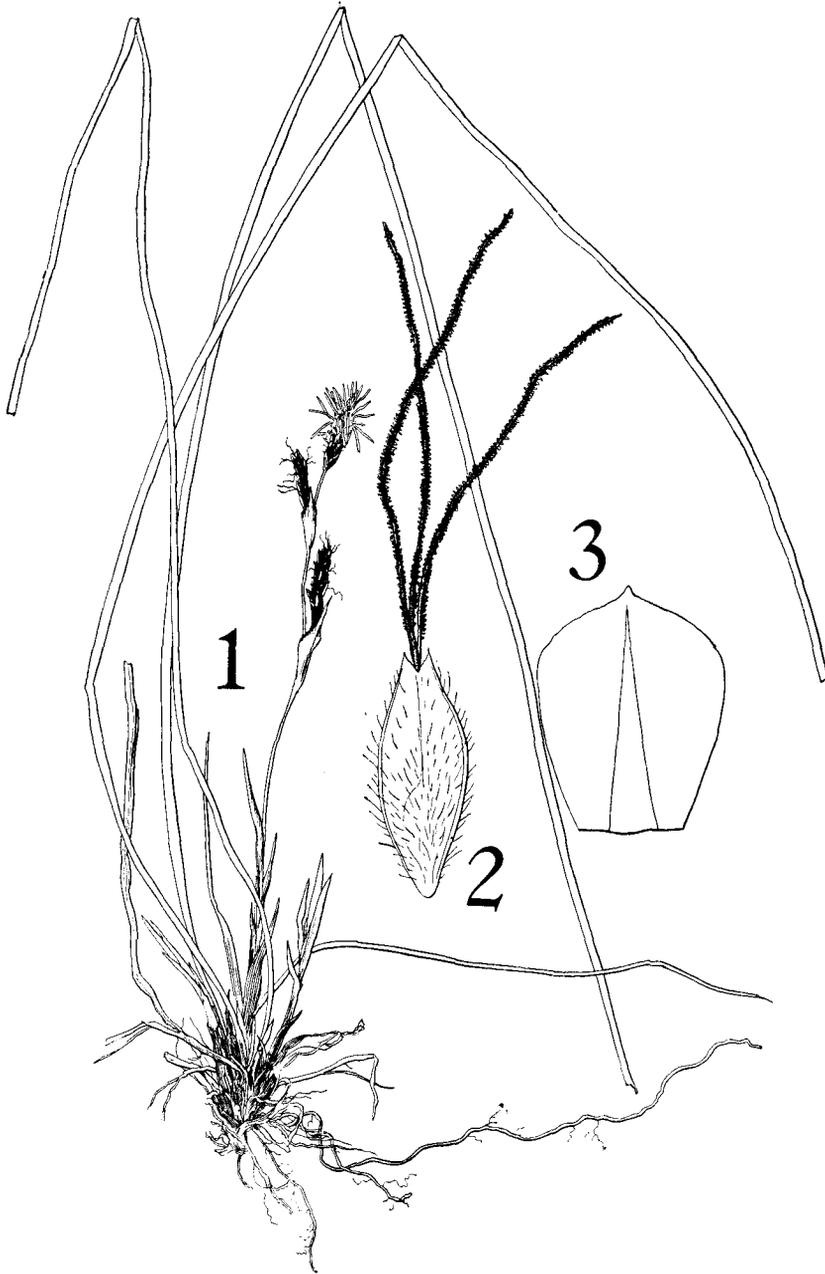


Fig. 9. *Carex yezo-montana* AKIYAMA

1. Habitus  $\times 3/5$     2. Utriculus  $\times 16$     3. Squama  $\times 16$ .

Akiyama: Species Novae Caricum Japonicarum