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Contributiones ad Caricologiam Asiae Orientalis

Pars Prima

By

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Japanese sedges were entirely unknown to science until THUNBERG wrote in 1784 his *Flora Japonica*, in which he mentioned seven species of *Carices* indigenous to Japan. MIQUEL, about eighty years later, described six species in his *Prolusio Florae Japonicae* (1865-67) and after about ten years more BOOTT reported in the publication of ASA GRAY¹⁾ several species from Japan. There are also a few authors²⁾ who worked on eastern Asiatic *Carices* before FRANCHET's elaborate work "Carex de l'Asie Orientale" appeared in the years 1896-98, in which all the eastern Asiatic species known in his time were thoroughly treated. Later, a large number of sedges were added by CLARK³⁾, KOMAROV⁴⁾ MEINSHAUSEN⁵⁾, LÉVEILLÉ and VANIOT⁶⁾ etc. from Formosa, the Loochoo

¹⁾ BOOTT, in ASA GRAY, *On the Botany of Japan*. (1859).

BOOTT, in ASA GRAY, *Account of the botanical specimens. -List of dried plants collected in Japan by S. WILLIAMS, Esq. and Dr. JAMES MORROW* (1856).

²⁾ BÜCKELER, *Die Cyperaceen des Königlichen Herbariums zu Berlin*. (*Linnaea*, vol. 35-41. (1868-77).

MAXIMOWICZ, *Mélang. Biol.* XII. (1887).

FRANCHET et SAVATIER, *Enumeratio Plantarum Japonicarum*, vol. II. (1876-79).

OLIVER, in *Journ. Linn. Soc.* IX. (1864).

FR. SCHMIDT, *Reisen im Amur und auf der Insel Saghalin* (1868).

³⁾ C. B. CLARKE, in *Journ. Linn. Soc.* XXXVI. (1903-05).

C. B. CLARKE, *Kew Bull. add. ser.* VIII. (1908).

⁴⁾ KOMAROV, *Flora Manchuriae* (1901) et in *Acta Horti Petrop.* XVIII. (1901).

⁵⁾ LÉVEILLÉ et VANIOT, in *Bull. Acad. Intern. Geogr. Bot.* (1901-09).

LÉVEILLÉ et VANIOT, in *Fedde Repert.*

⁶⁾ MEINSHAUSEN, in *Acta Horti Petropolitani*, XVIII. (1901).

Islands, Korea, Saghalin and the main island of Japan. In the year 1909, part 38 of ENGLER'S *Pflanzenreich* was published, in which KÜKENTHAL endeavoured to revise and classify all the species known to him, enumerating 182 species from eastern Asia. After him a few Japanese systematists made some important contributions to the knowledge of the caricology of the eastern Asia.

In eastern Asia, sedges are not so important and useful plants as grasses, but the blades of some of them are used for textile materials. Some are also cultivated for ornamental purposes owing to their beautiful leaves.

The present studies were based principally on the materials preserved in the Herbarium of the Botanical Institute, faculty of Science, Kyoto Imperial University, which embraces an extraordinarily rich collection of sedges made by URBAIN FAURIE. Here the writer wishes to express his cordial thanks to Dr. G. KOIDZUMI under whose direction and at whose suggestion the present work has been carried on, and through whose kindness all facilities have been given. His best thanks are also due to Mr. Z. TASHIRO for his kindness in allowing him to use his rich collections.

Carex Gotoi OHWI sp. nov.

Eucarex—§ Paludosae.

Rhizoma laxè caespitosum et stolones tenues teres 2 mm. crassos agens. Culmus 40-50 cm. altus tenuis triqueter laeviusculus firmus. Folia culmo breviora laete viridia rigidula 2-2.5 mm. lata saepe con-duplicata margine scabra, vaginis saepe rubescentibus. Inflorescentia 10-15 cm. longa 4-spiculifera; spiculis duabus superioribus masculis approximatis breviter pedunculatis (sed spicula laterali sessili et duplo minore) erectis anguste lanceolatis ca. 2.5 cm. longis 4-5 mm. latis; femineis duabus inter se et a masculis remotis cylindraccis vel breviter cylindraccis 6-8 mm. latis erectis, superiore 2-2.5 cm. longa, apice raro

breviter masculâ, subsessili; infima 3-5 cm. longâ basin versus laxiflora longius (1-3 cm) pedunculata; pedunculis axequae scabris. Bractee foliaceae inflorescentia paullo breviores vel eam aequantes, ima breviter (2-10 mm.) vaginans. Squamae masculae oblanceolatae castaneo-fuscescentes subcutae 5-6 mm. longae, dorso uninerviae pallidioresque; femineae anguste ovatae concolores 5 mm. longae margine dilutiores, nervis 1 vel obscuriter 3, ultra apicem acuminatae in mucrone scabro desinentes. Utriculi ovato-elliptici squamis breviores oblique patentes glaberrimi coriacei brunneo-virides demum fuscates tenuiter (sed non impresso-) plurinervioli obsolete trigoni, basi spongiosa contracti, apice in rostrum breve latum glaberrimum rectum, ore rigide bidentatum abrupte contracti, cum rostro vix 4 mm. longi. Nux laxe inclusa obovata trigona, basi obliqua, stylo firmo basi oblique incrassato persistente terminata. Stigmata 3.

Nom. Jap. Korai-yawarasuge. (nov.)

Type locality: Kwainei in North-eastern Korea (SEISHI GOTO, 30. VI. 1929) Hb. Kyoto Imperial University.

Species dicata in honorem SEISHI GOTO.

Carex persistens OHWI sp. nov.

Eucarex—§ Tumidae.

Rhizoma crassum, stolones validos longos agens. Culmus acute triqueter strictus crassiusculus 30-70 cm. altus laevis vel ad apicem versus parce scaber, basi vaginis laminiferis emortuis vix fibrillosis brunnescentibus duriusculis tectus. Folia culmo breviora vel longiora pallide viridia mollia obscure septato-nodosa, plana, margine parum revoluta scaberula, utrinque fere laevia, supra 2- subtus 1-costata, 4-7 mm. lata basi pallida vel dilute straminea. Inflorescentia 10-20 cm. longa erecta; spiculâ masculâ terminali longius (1,5-2,5 cm.) pedunculatâ erecta lineari vel lineari-cylindricâ 2,5-5 cm. longâ 2-3 mm. latâ; femineis 3-5, erectis, superioribus sessilibus, imis distincte (2-4 cm.)

pedunculatis, omnibus cylindraceis subdensifloris vel ad basin versus laxiusculis, 3-7 cm. longis ca. 4 mm. latis; pedunculis axeque parce scabris. Bractee inferiores foliaceae inflorescentiâ paullo breviores evaginantes. Squamae masculae anguste lanceolatae obtusae purpurascens margine anguste hyalinae, 5 mm. longae, dorso laete virides demum lutescentes et obscure 3-nerviae; femineae 3,5-4 mm. longae, anguste ovatae purpurascens, margine dilutiores, dorso laete virides demum lutescentes, nervis 3 laevibus; apice anguste truncatae vel emarginatae saepe ciliatae, in mucrone scaberulo excurrentes. Utriculi suberecti membranacei lutescentes rhombeo-ovati vere trigoni nec inflati, glabri obscure pauci-nervati praeter nervos 2 laterales prominentes, basi contracti, apice in rostrum longum lineare antice saepe coloratum ore purpureo intego demum bidentulo abrupte desinentes. Nux utriculorum explens sed dimidio aequilonga late elliptica trigona, faciebus planis. Stylus cum nuce articulatus, stigmatibus 3 tenuibus brunneis quam utriculus longioribus, persistentibus.

Nom. Jap. Kinki-kasasuge. (nov.)

Type locality: Hondô; Kumoga-hata in Prov. Yamashiro (26. V. 1921. N. KINASHI)—in Hb. Kyoto Imperial University.

Ranges: Hondô; Kibune in Prov. Yamashiro (29. IV. 1928. J. OHWI), Seriutoge in Prov. Yamashiro (13. VI. 1928. J. OHWI), Harukitoge in Prov. Tajima (4. VII. 1927. J. OHWI), Kawakamigori in Prov. Bitchu (VI. 1924. Z. YOSHINO).

var. **Takeuchii** OHWI var. nov.

Culmus medio uninodus. Utriculi parce granulosi, rostro glabro, ore fimbriato.

Nom. Jap.

Type locality: Hondô; Sammata in Minami-kuwadagori, Prov. Tamba (16. V. 1912. K. TAKEUCHI)—in Hb. Kyoto Imp. University.)

Carex autumnalis OHWI sp. nov.

Eucarex—§ Hymenochlaenae—Graciles.

Rhizoma laxè caespitosum lignosum. Culmus 70–80 cm. altus subtenuis sed firmus triqueter laevis, ex fasciculi foliorum alte vaginantium gerens, basi squamis aphyllis fusco-brunneis coriaceis integris vel antice in fibras anastomosantis solutis obtectus. Folia culmo parum breviora rigidula scaberrima conduplicato-plana subtus unicastata, utrinque striata 2,5–3 mm. lata apice longe acuminato-attenuata. Inflorescentia ca. 20 cm. longa subcernua; spicula terminali toto masculâ filiformi subsessili ca. 2–3 mm. latâ 15–20 mm. longâ; spic. lateralibus ca. 8–10, femineis vel apice brevissime masculis cylindræis laxi- et plurifloris (1–)2–3 cm. longis ca. 2,5 mm. latis, inferioribus geminatis et inaequaliter (altera longe v. sublonge, altera incluse) pedunculatis, superioribus subsessilibus; pedunculis filiformibus vix scabris. Bractæe omnes tubuloso-vaginantès virides, ima vaginâ 1,5 cm. longâ apice breviter (spiculam non superante) setaceo-laminatâ. Squamæ masculæ late oblanceolatae obtusæ 2,5 mm. longæ brunneæ apice albidae, dorso uninerviae; femineæ late ovatae, basin utriculi amplectentes, brunneæ 1,5 mm. longæ, dorso late pallidae et nervo centrali ante apicem obtusum evanescente, marginibus hyalinis. Utriculi squamis duplo longiores suberecti membranacei pallide virides vel fulvescentes compresso-biconvexi elliptici vix 3 mm. longi tenuiter multinervi, praesertim superne prope margines parcissime hispiduli vel subglabri, basi cuneatim attenuati, apice in rostrum longum margine scabrum ore emarginatum demum bidentulum abrupte contracti. Nux elliptica, utriculum explens, brunnescens compressa. Stylus brevis inclusus, basi eximie incrassatus, stigmatibus 2, tenuibus 2 mm. longis.

Nom. Jap.

Type locality: Sikoku; ad pedem Mt. Tsurugisan in Prov. Awa (4. X. 1926. Z. TASHIRO)—in Hb. Kyoto Imperial University.

This is a species allied to *Carex brunnea* THUNB. from which it is

easily distinguishable by having loosely flowered female spikelets and the male (never androgynous) terminal spikelet.

Carex hondoensis OHWI sp. nov.

Carex Arnellii (non CHRIST) MATSUM. Ind. Plant. Jap, II. i. (1905) p. 100; KUKENTH. Cyper. Caric. (1909) p. 609 (pro parte! tantum planta e Japonia!).

Rhizoma obliquum crassum. Culmus sesqui- vel bipedalis gracilis laevis triqueter apice subcernuus praeter basin longe nudus, basi vaginis in fibras parallelas dissonutis copiose vestitus. Folia culmo breviora plana mollia scabra 3-4 mm. lata apice attenuata acuminata. Spiculae 4-6; superiores 2 masculae cylindricae 1-2,5 cm. longae (terminalis pedunculata, lateralis brevis sessilis vel subsessilis), reliquae femineae subclavato-cylindricae pendulae 2-6 cm. longae basin versus laxiflorae, approximatae pedunculatae, pedunculis quam spicula brevioribus vel illam aequantibus scabris. Bractee foliaceae, quam inflorescentia paullo breviores virides breviter (3-5 mm.) vaginantes; superiores decrescentes vix vaginantes. Squamae masculae lutescentes vel fulvae obovato-lanceolatae dorso 1- vel obscure 3-nerviae 5 mm. longae acuminatae; femineae lanceolato-ovatae pallide fulvae vel pallidae dorso obscure 3-nerviae acuminato-aristatae. Utriculi squamas aequantes 4 mm. longi membranacei glabri nitidi trigoni, nec inflati elliptici praeter nervos 2 laterales fere enervii, viriduli, demum lutescentes, apice in rostrum longum ore oblique sectum abrupte contracti. Nux utriculorum explens sed illo dimidio brevior trigona obovata, faciebus superne subconvexis, medio et inferne planis. Stylus basi aequalis rectus. Stigmata 3 tenuia longissima (utriculo duplo longiora) persistentia.

Nom. Jap. Aidzu-suge.

Type locality: Hondô; Mt. Hakusan in Prov. Kaga (VII. 1921.

G. KOIDZUMI)—in Hb. Kyoto Imperial University.

Ranges: Hondô; Ose in Prov. Iwashiro (J. OHWI), Abotoge

in Prov. Shinano (G. KOIDZUMI), Mt. Hakusan
in Prov. Kaga (J. OHWI).

Within our Japan Archipelago, true *Carex Arnellii* CHRIST is found only from Sachalin.

Carex odontostoma KUKENTH. in Bull. Herb. Boiss. 2 Ser. V. (1905) p. 1162 et. Cyper. Caric. (1909) p. 571.

Carex stenantha (non FRANCH. et SAVAT.) LÉVL. et VANT. in Bull. Acad. Intern. Geog. Bot. (1902) p. 105, partim.

var. **glabrior** OHWI var. nov.

Squamae femineae paullo angustiores. Utriculi secundum nervos marginales hispidos tantum parce adpresse pilosuli.

Nom. Jap.

Type locality: Hondô; Mt. Sanjogatake in Prov. Yamato (14. VII. 1922. G. KOIDZUMI)—in Hb. Kyoto Imperial University.

Ranges Hondô: Mt. Shakagatake in Prov. Yamato (17. VII. 1922. G. KOIDZUMI), Mt. Hyônosen in Prov. Tamba (6 VII. 1927. J. OHWI).

Carex levicuspis OHWI sp. nov.

Eucarex—§ Frigidac—Podogynae.

Rhizoma caespitosum, radicibus crassis longis luteo-villosis. Culmus erectus 40-50 cm. altus, alte foliatus, acute triqueter laevis, facie 1,2 mm. latus, basi vaginis aphyllis purpurascens ecarinatis subintegris obtectus. Folia accrescentia culmum aequantia viridia mollia 3-4 mm. lata acuminata, supra nervis 2 prominulis, subtus unicastata, margine et utrinque laevia, basi alte vaginata, ligulâ ovatâ pallide cinnamomeâ antice concavâ, dorso adnatâ. Inflorescentia 5-7 cm. longa. Spicula terminalis mascula lanceolata 10-15 mm. longa pedunculata; spic.

laterales 3 femineae configuae, infima pedunculata (pedunculus 15-25 mm. longus) paullo remota, superiores subsessilis, omnes breviter cylindricae vel oblongae erectae vel pendulae. Bractea ima foliacea inflorescentiam aequans evaginans, basi levi.er auriculata; superiores filiformes spiculam superantes basi saepe dilatatae. Squamae masculae fusco-purpureae lanceolatae acuminatae, e dorso pallido obscure 3-nervio in aristam laevem 1 mm. longam productae 4-5 mm. longae; femineae fusco-purpureae late lanceolatae acuminatae 4 mm. longae, nervo uno dorsali pallido laevi, excurrento in aristam laevem 1-2 mm. longam. Utriculi squamis paullo breviores et vix latiores suberecti membranacei, in sicco straminei, anguste ovati compressi glabri, ad apicem versus minute papilloso, praeter nervos 2 marginales vix scabros enervii, basi rotundati et sessiles, apice in rostrum sublongum abrupte attenuati, ore bifido, cruribus subdivergentibus subulatis rigidulis, intus vix scabris, 0.5 mm. longis concoloribus. Nux matura ignota. Stylus 4 mm. longus rectus basi aequalis, stigmatibus 2,3 mm. longis.

Nom. Jap.

Type locality: Hondô; Mt. Hakkoda at 1500 m. (13. VIII. 1904. FAURIE n. 5524)—Hb. Kyoto Imperial University.

Carex mira KUKENTH. in Bull. Herb. Boiss. 2 ser. V. (1905) p. 1161 et Cyper. Caric. (1909) p. 534.

Nux trigona vix compressa utriculum subexplens basi attenuata stipitata, apice in stylo basi aequali desinens.

Nom. Jap. Sawa-hinasuge. nov.

Type locality: Hondo: Kamitsuge (FAURIE n. 2758).

Ranges: Hondô; Kawa-ai in Prov. Yamato (21. V. 1928. J. OHWI), Obatani in Prov. Yamato (19. V. 1928. J. OHWI).

var. **obovato-oblonga** OHWI var. nov.

Spiculae masculae obovato-oblongae vel rarius oblongae pallidiores.

Folia cinereo-viridia rigidiora.

Nom. Jap. Korai-hinasuge. nov.

Type locality: Oucensan in Korea (FAURIE n. 1335)—in Hb.
Kyoto Imperial University.

Carex arisanensis HAYATA Icon. Plant. Formos. VI. (1916) p.
130. t. 18.

var. **tremula** OHWI var. nov.

Carex filipes (nonFRANCH. et SAVAT.) LÉVL. et VANT. in Bull. Acad.
Intern. Geogr. Bot. (1902) p. 112.

Rhizoma abbreviatum, radicibus fibrillosis. Culmus ad 40 cm.
altus folios 3-6 mm. latos paullo superans, spiculis 3-4, terminali masculâ
late lanceolatâ vel oblongâ 5-7 mm. longâ 1,5 mm. latâ apice subobtusâ,
breviter pedunculatâ, spiculam sequentem (femineam) sessilem paullo
superante vel vix aequante; spiculâ imâ subradicali, longe pedunculatâ;
bracteis foliaceis spiculam superantibus apice breviter acuminatis;
antheris 2 mm. longis.

Nom. Jap. Hime-juzusuge. nov.

Type locality: Kiushiu; insl. Tsushima (15. V. 1909. Z. TASHIRO)
—in Hb. Kyoto Imperial University.

Ranges: Kiushiu; in Kikuchigori, Prov. Higo (12. V. 1929.
S. TOKUNAGA), Yunotaira-goe, Prov. Bungo (13.
V. 1921. Z. TASHIRO).

Sikoku; Yakushidani in Uwajima, Prov. Iyo (VI.
1922 lg.?), Mt. Tsurugisan (FAURIE n. 4390).

Carex macrandrolepis LÉVL. in FEDDE Repert. V. (1908) p. 241;
KUKENTH. Cyp. Caric. p. 766; NAKAI, Flor. Koreana II. (1911) p. 330.

Carex distantiflora NAKAI in FEDDE Repert. (1914) p. 245 et in
Bot. Mag. Tokyo. XXVIII (1914) p. 518 (Jap. art).

Nom. Jap. Katasuge.

Hab. Korea; in herbidis Quelpaert (FAURIE n. 2285).

Kiushiu; Kamimatsukuma in Yatsushirogori, Prov. Higo (8. IV. 1927. K. MAYEBARA), Kawamura in Prov. Higo (30. III. 1923. K. MAYEBARA), Shimo-ishuin in Prov. Satsuma (3. V. 1926. Y. DOI), Hamajiri, Prov. Osumi (31. III. 1913. Z. TASHIRO), Kajiki in Prov. Osumi (12. IV. 1913. Z. TASHIRO), Shimabara in Prov. Hizen (1. VII. 1907. K. OH-SHIMA), Takashima in Prov. Bungo (IV. 1926. Z. TASHIRO), Tamagawamura in Miikegori, Prov. Bungo (VI. 1921. Z. TASHIRO), Kashiimura in Isl. Iki (19. IV. 1910. Z. TASHIRO).

Hondô; Mt. Kasugayama in Prov. Yamato (7. VI. 1925. Z. TASHIRO), Tanabe in Prov. Kii (3. V. 1911. N. UI), Yawata in Shizuoka, Prov. Suruga (1. V. 1927. J. SUGIMOTO).

Carex laticeps C. B. CLARKE ex FRANCH. *Carex* Asië-orient. (1897) n. 177 et in Journ. Linn. Soc. XXXVI (1903) p. 293; KUKENTH. Cyper. Caric. p. 635.

Carex Hancei C. B. CLARKE in Journ. Linn. Soc. XXXVI (1903) p. 288.

Nom. Jap.

Hab. Hondô; Tajima in Numakumagori, Prov. Bingo (Z. TASHIRO), in Prov. Bitchiu (S. SATO!).

Korea: Mokpo (FAURIE n. 2263).

Carex Mayebarana OHWI sp. nov.

Eucarex—§ Rhomboidales.

Rhizoma laxè caespitosum et stolones tenues agens. Culmus tenuis

compresse triqueter laevis ca 20 cm. altus basi vaginis emortuis brunnescentibus parce obtectus. Folia caulina pauca breviter lamini-fera; innovationis (demum elongata?) culmo breviora cinereo-viridia mollia acuminata 2-3 mm. lata plana supra 2- subtus 1-costata laeviuscula; vaginis pallidioribus membranaceis pubescentibus, ore antice truncato ciliato albido. Inflorescentia 7-10 cm. longa remote 3-4—spiculifera, pedunculis axeque laevibus sub lente minutissime papillosis. Spicula terminalis mascula lineari-lanceolata 1-1,5 cm. longa, basi saepe floribus femineis 1-2 instructa, longe pedunculata erecta; spiculae laterales omnes femineae 6-15 mm. longae laxae 2-7-florae paullo exserte pedunculatae erectae. Bracteae virides vaginantes; vaginis 5-8 mm. longis, praesertim superne antice pubescentibus, ore antice truncato; laminis foliaceis spiculam superantibus 2-3 cm. longis. Squamae masculae lanceolatae acuminatae pallidae 6 mm. longae viriditricostatae; femineae anguste obovatae concolores cuspidato-mucronatae 3,5-4 mm. longae. Utriculi (immaturi) squamis longe superantes suberecti membranacei, praeter nervis 2 lateralibus enerviis, pallide virides glabri, 6 mm. (rostrum incl.) longi, obovati, basi in stipitem abrupte attenuati, apice in rostrum longum (ca. 3 mm.) lineare laeve ore albido, (antico profunde) bidentato contracti. Nux (immatura) trigona obovata, sub lente minute papillosa. Stylus basi paullo incrassatus. Stigmata 3, utriculo paullo breviores.

Nom. Jap. Ke-hiesuge. nov.

Type locality: Kiushu; Prov. Higo, Mt. Ichifusa (K. MAYEBARA, 20. V. 1928)—in Hb. Kyoto Imperial University.

The new species is near to *Carex subdita* J. OHWI and *Carex rhynchophora* FRANCH.

***Carex papillaticulmis* OHWI sp. nov.**

Carex Fauriei FRANCH. *Carex* Asie-orient. n. 200 (quoad pl. ex Tsuruga) et pl. 6. fig. 1a.; KUKENTH. Cyp. Caric. p. 632 (tantum

planta FAURIEANA n. 2832).

Rhizoma obliquum lignosum. Culmus 20–40 cm. altus triqueter glaber, sub lente minute papillosus, basi vaginis breviter laminiferis obtectus. Folia culmo breviora longiorave plana supra laete viridia, submollia, supra 2- subtus 1-costata, utrinque laeviuscula. Spiculae 3–4, terminalis mascula lineari-lanceolata utrinque acuta 2–3 cm. longa, longius (2–3 cm.) pedunculata erecta; ceterae femineae oblongae vel obovatae 1–2 cm. longae 1 cm. latae subdensiflorae (5–10-florae) erectae pedunculatae, apice saepe flores masculos paucos gerentes. Bractearum vaginac tubulosae paullo inflatae virides 5–20 mm. longae, pedunculum subaequant, laminae brevibus spiculam subaequantibus. Squamae masculae lanceolatae fulvae 6 mm. longae margine albo-hyalinae, dorso virides trinerviae, apice mucronatae; femineae ovatae pallidae e dorso viridi 3-nervio ultra apicem obtusum in mucronulo excurrentes. Utriculi squamas longe superantes obovati virides parce pubescentes obsolete trigoni tenuiter multinervi subcoriacei basi attenuati, apice in rostrum longum ore albido leviter bidentato contracti, cum rostro 7 mm. longi. Nux explens late obovata obtuse trigona brunnescens, sub lente papilloso-punctata 2.5–3 mm. longa, facie inferne concava, medio ad angulos constricta basi breviter obliqua et stipitata, apice in discum oblique stipitatum dilatata. Stylus brevis basi incrassatus. Stigmata 3.

Nom. Jap. Aoba-suge. nov.

Type locality: Hondô; Mt. Hiragatake in Prov. Omi (27. V. 1929. J. OHWI)—in Hb. Kyoto Imperial University.

Ranges: Hondô; Mt. Hiei in Prov. Yamashiro (13. V. 1928. et 2. VI. 1929. J. OHWI), Mt. Odaigahara in Prov. Yamato (VI. 1929. J. OHWI), Nara (FAURIE n. 2832).

Sikoku; Mt. Odamiyama in Prov. Iyo (20. V. 1927. K. YAMASHITA).

Kiushu; Mt. Seburiyama (8. V. 1927. ISHIKAWA).

This species is closely related to *Carex insanae* KOIDZ. in Fl.

Symb. Orient. Asia (1930) p. 44, (*Carex Fauriei* FRANCH. non. Fr. 1879)
Carex Asie-orient. n. 200. 1897. from which it differs in having narrower leaves, slender male spikelets and longer beaked utricles.

***Carex subdita* OHWI sp. nov.**

Eucarex—§ Rhomboidales.

Planta gracilis. Rhizoma oblique ascendens lignosum. Culmus 10-25 cm. altus triqueter flaccidus decumbens sub lente minute papilloso-punctulatus, basi vaginis breviter laminiferis albidis obtectus. Folia sterilia culmo longiora patentia pallide viridia flaccida plana 2-4 mm. lata, parce scabra demum glabrescentia supra 2-nervia. Spiculae 2-3 remotae; terminalis mascula lineari-lanceolata 5-10 mm. longa 1-1,5 mm. lata, pedunculo 2-3 cm. longo; laterales femineae oblongo- vel subgloboso-ovatae ca. 1 cm. longae et latae pauciflorae, pedunculis 5-15 mm. longis. Vaginae bractearum virides tubulosae 5-15 mm. longae breviter (5-10 mm.) laminatae. Squamae masculae pallidae vel dilute fulvescentes lanceolatae 4-5 mm. longae apice saepe mucronatae; femineae ovatae vel late ovatae pallidae dorso virides trinerviae apice obtusae vel truncatae mucronatae 3-3,5 mm. longae 2-2,5 mm. latae. Utriculi obovati oblique patentis virides, subcoriacei parce pubescentes obsolete trigoni tenuiter nervosi 5-6 mm. longi, basi attenuati, apice in rostrum longum subcylindricum ore abido leviter bidentatum abrupte contracti. Nux utriculum arcte explens late obovata fusca obtuse trigona 2,5-3 mm. longa, medio non constricta, (faciebus inferne concavis), basi oblique stipitata, apice in collum brevem albidum quam basis styli angustiore desinens. Stylus brevis rectus basi incrassatus, stigmatibus 3.

Nom. Jap. Ao-hiesuge. nov.

Type locality: Hondô; Susami in Prov. Kii (10. V. 1929, J. OHWI)—in Hb. Kyoto Imperial University.

Ranges: Sikoku; Akataki, Kiyomitsumura in Kitauwagori,

Prov. Iyo (7. VIII. 1925. M. OGATA).

Kiushiu; Uchinouramura in Prov. Osumi (Y. DOI).

It seems to be the nearest ally of *Carex lateralis* KÜKENTH.

Carex Morrowii BOOTT in A. GRAY, NATT. EXP. PERR. II. (1857)
p. 326.

Carex tenuissima Hort. ex L. H. BAILEY, Stand. Cycl. Hortic.
ed. 2. II. (1917) p. 662.

var. **laxa** OHWI var. nov.

Folia elongata 2,5–5 mm. lata rigida. Culmus tenuis laeviusculus remote 4–5–spiculiferus. Spicula terminalis mascula fusca lineari-filiformis 4–5 cm. longa ca. 1,5 mm. lata, squamis anguste oblanceolatis; spic. femineae anguste cylindricae 1,5–2,5 cm. longae 3–4 mm. latae laxiflorae. Utriculi 4,5 mm. longi fusiformes stipitati utrinque attenuati, rostro longo recurvo, marginibus parce scabro, squamâ pallidâ anguste ovatâ longiores.

Nom. Jap. Yakushima-kansuge. nov.

Type locality: Kiushiu; Ins. Yakushima (31. V. 1927. J. SUGIMOTO n. 7440)—in Hb. Kyoto Imperial University.

var. **expallida** OHWI var. nov.

? *Carex tenuissima* var. *expallida* MIQ. Prol. Flor. Jap. (1866–67)
p. 81.

Folia coriacea scaberrima, supra sulcata subtus unicastata, albomarginata vel albo-striata, ca. 5–8 mm. lata acuminatissima.

Nom. Jap. Furi-kansuge.

Hab. in Hortis culta.

Hondô: Sendai (FAURIE n. 1098 et 5320).

Kiushiu; Miikegori in Prov. Chikugo (T. SUGINO!).

Carex uber OHWI sp. nov.

Eucarex—§

Rhizoma caespitosum pluriceps, ad collum vaginis emortuis in fibras parallelas atro-brunneas dissolutis dense obtectum. Culmus 30-40 cm. altus obtuse triqueter laevis striatus. Folia culmo longiora mollia graminea plana utrinque laevia et viridia, margine parce scabra, 4-7 mm. lata. Spiculae 5; terminalis mascula lineari-lanceolata, 2- fere 3 cm. longa 2-3 mm. lata, apice obtusiuscula, basi breviter (0,5-1,5 cm.) pedunculata; laterales femineae, apice saepe squamas minores vacuas gerentes, omnes remotae densiflorae breviter cylindricae ca. 4 mm. latae 15-25 mm. longae incluse pedunculatae erectae. Bracteae inferiores foliaceae inflorescentiam superantes virides longe (2-4 cm.) tubuloso-vaginantes; superioribus decrescentes. Squamae masculae pallidae anguste lanceolatae 4-5 mm. longae mucronulatae, dorso virides et trinerviae; femineae anguste oblongae pallidae, 1,7-2 mm. longae, apice truncatae, dorso virides trinerviae, longe aristatae, cum aristis scabris ca. 3-3,5 mm. longae. Utriculi oblique patentes rhombeo-ovati trigoni 2 mm. longi virides membrancei parce puberuli plurinervi, basi in stipitem attenuati, apice in rostrum mediocre ore bidentulo subabrupte abeuntes. Nux utriculum explens rhombeo-ovata vix 1,5 mm. longa trigona, facie superne et inferne subconcava, apice annulata. Stylus brevis basi incrassatus, stigmatibus 3.

Nom. Jap. Tsukushi-suge. nov.

Type locality: Kiushu; Mt. Takakumayama in Prov. Osumi (IV. 1923. G. KOIDZUMI)—in Hb. Kyoto Imperial University.

Ranges: Kiushu; Tarumizu-machi in Prov. Osumi (18. IV. 1927. Z. TASHIRO), Nishi-kokubumura in Airagori, Prov. Osumi (24. IV. 1923. Z. TASHIRO), Kajiki in Prov. Osumi (12. IV. 1920. Z. TASHIRO), Ibusuki in Prov. Satsuma (Z. TASHIRO), Odaira in Prov. Higo (2. IV. 1921. K. MAYEBARA),

Kawamura in Prov. Higo (6. V. 1918), Mt. Kinpusan in Prov. Higo (29. IV. 1906. H. KOZUMA), Kohama in Prov. Hizen (15. V. 1922. Z. TASHIRO), Kabashimā in Prov. Hizen (12. V. 1912. Z. TASHIRO).

Shikoku; Fuwa in Hatagori, Prov. Tosa (20. IV. 1913. H. YAMAMOTO).

Carex sociata BOOTT, in Mem. Americ. Acad. n. ser. VI (1859). p. 420 et III. Carex IV (1867). p. 200; FRANCH. Carex Asie-orient. n. 231; C. B. CLARKE in Journ. Linn. Soc. XXXVI (1904). p. 311; MATSUM. Ind. Plant. Jap. II. i. (1905) p. 133.

Carex nexa var. *strictior* KÜKENTH. ex. MATSUM. I. c. p. 122, nom. nud. et. in MATSUM. et HAYATA Enum. Plant. Formos. (1906). p. 496. nom. nud.

Carex ligata var. *strictior* KÜKENTH. Cyper. Caric. (1909). p. 474.

Carex chinensis (non Retz) KÜKENTH. I. c. (1909) pro min. parte; HAYATA Material. Fl. Formos. (1911) p. 381 et Icon. Plant. Formos. VI. (1916). p. 131.

Carex atromucula HAYATA Mater. Fl. Formos. p. 379.

Hab: Formosa: Kelung (3. IV. 1913. T. ITO), Okaseki (FAURIE n. 27), Urai (FAURIE n. 10 et 30), Mt. Arisan 2500 m. (FAURIE n. 29 et 32), ? Bunkiko (FAURIE n. 35), Mt. Kwannonsan (T. ITO), Taitum (FAURIE n. 824), loc. non indic. (FAURIE anno 1902: E. MATSUDA).

Liukiu: Kunchan (XI. 1922. leg.?), Ins. Okinawa (T. TAMAGUSUKU).

Amami-oshima: Nase (III. 1924. Z. TASHIRO), ibid. (sine dat. et leg.), South western part of the island (III. 1924. Z. TASHIRO).

Kiushiu: Ins. Yakushima, Prov. Osumi (G. MASAMUNE).

Carex chinensis RETZ "Observ. III. (1783) p. 42"; BOOTT, Ill. Carex I. (1858) pp. 13 et. 74. t. 36; KÜKENTH. Cyp. Caric. (1909) p. 625.

var. **tsushimensis** OHWI var. nov.

Spiculae femineae 15-30 mm. longae. Utriculi brevius rostrati.

Nom. Jap. Tsushima-suge. nov.

Type locality: Kiushu; Prov. insl. Tsushima, northern part of the island (9. V. 1909. Z. TASHIRO)—in Hb. Kyoto Imperial University.

Clavis Specierum Gregis *Caricis chinensis*

- | | | |
|---|---|---|
| 1 | { | Spiculae comosae semper ad nodos solitariae; laterales femineae basi floribus ♀ perpaucis instructae omnes remotae, bracteis breviter laminatis. Utriculi multi-costati. |
| | | <i>Carex chinensis</i> var. <i>tsushimensis</i> . |
| | | Spiculae nec comosae. Utriculi multi-nervosi.....2 |
| 2 | { | Spiculae laterales basi flores ♀ perpaucos gerentes; mediae plerumque geminatae ternatae vel basi ramosae; superiores approximatae; terminalis mascula raro gynaeandra. <i>Carex sociata</i> . |
| | | Spiculae sexu distinctae, laterales apice saepe squamas minores vacuas gerentes, semper singulae simplices, bracteis longe lamini-feris. <i>Carex uber</i> . |

Carex nanella OHWI nom. nov.

Carex lanccolata FRANCH. Carex Asie-orient. n. 165. pro minimâ parte. (non BOOTT).

Carex lanccolata var. *nana* LÉVL. et VANT. in Bull. Acad. Intern. Geogr. Bot. (1901) p. 269; KÜKENTH. Cyper. Caric. (1909) p. 493.

Folia angustissima. Culmus 3-6 cm. altus intrâ foliâ absconditus.

Spicula terminalis mascula femineam supremam semper conspicue superans longius pedunculata; laterales femineae 2-3, brevissimae 5-7 mm. longae 2-5-florae incluse pedunculatae; pedunculis axequae parce scabris vel fere laevibus. Utriculi praeter nervis 2 conspicuis fere enervii, subtriquetri, facie plani vel subconcaui, ad angulos subacuti, squamâ ovatâ acutiusculâ vix vel non mucronatâ paullo breviores.

Nom. Jap.

Type locality: Korea; Suinandô in Kwainci (15. V. 1929. S. Goro)—in Hb. Kyoto Imperial University.

Ranges: Korea; Mt. Diamond (Mt. Kongosan)(FAURIE n. 1357).
Hondô; Prov. Mutsu, Aomori (FAURIE n. 5540).
Yeso; Mori in Prov. Oshima (FAURIE n. 637), Shakotan in Prov. Shiribeshi (FAURIE n. 9872).

Carex multifolia OHWI nom. nov.

Carex foliosissima (non Fr. SCHMD.) FRANCH. *Carex* Asië-orient. n. 232; KÜKENTH. *Cyper. Caric.* p. 478; MATSUM. *Ind. Plant. Jap.* II. i. p. 110.

Carex pseudoconica FRANCH. *Carex* Asië-orient. n. 167. partim.

Nom. Jap. Miyama-kansuge.

Hab. Yezo; Hakodate (FAURIE n. 5548), Mori (FAURIE n. 424).

Hondô; Mt. Hakkoda (FAURIE n. 842), Aomori (FAURIE n. 5174 et 5546), Hirosaki (FAURIE n. 5547 et 41), Shichinohe (FAURIE n. 726), Matsushima (FAURIE n. 1094), Kinkasan (FAURIE n. 5165), Mt. Togakushi (12. VII. 1927. J. OHWI), Ibaraki (FAURIE n. 4415), Mt. Kibune in Prov. Yamashiro (29. IV. 1928. J. OHWI), Yunoyama in Prov. Ise (14. V. 1929. J. OHWI), Chiimura in Prov. Tamba (22. V. 1922. G. KOIDZUMI).

Sikoku; Mt. Tsurugisan in Prov. Awa (FAURIE n. 4417).

Kiushu; Mt. Inugatake in Prov. Buzen (3. V. 1925. T.

YAMAZAKI).

var. **glaberrima** OHWI var. nov.

Utriculi glaberrimi. Cetera ut in typo.

Type locality: Hondô; Mt. Nachi in Prov. Kii (12. V. 1929.

J. OHWI)

Carex geantha OHWI sp. nov.

Carex breviculmis Ssp. *Royleana* var. *Kingiana* KÜKENTH. Cyper. Caric. (1909) p. 470. pro parte (tantum planta Fauricana n. 6533).

Rhizoma caespitosum estoloniferum. Culmus debilis 7-15 cm. altus compressus triqueter laevis. Folia culmum aequantia pallide viridia flaccida acuminata 2 mm. lata, utrinque margineque parce scabra, supra 2-, subtus 1-costata, vaginis pallide brunnescentibus. Inflorescentia ad 15 cm. longa, 5-7-spiculifera. Spicula terminalis mascula brevis lanceolata vel lineari-lanceolata 6-7 mm. longa breviter pedunculata vel subsessilis; spiculae laterales femineae inferiores 1-2 subradicales pedunculatae et saepe intra foliâ absconditae; suprema spiculam masculam subaequans raro geminata subsessilis; reliquae remotae plus minus exserte pedunculatae; omnes oblongae vel angustiores 6-10 mm. longae ca. 3 mm. latae erectae sublaeve 7-15-florae. Bractee (excl. subradic.) foliaceae vaginantes virides, vaginis 5-15 mm. longis laxiusculis ore truncatis; laminis 2-5 cm. longis 1-1,5 mm. latis spiculam longe superantibus. Squamae masculae lanceolatae acutae vel acuminatae 4-5 mm. longae pallide fulvae, nervo centrali ultra apicem non producto; femineae obovatae pallidae vel pallide fulvescentes vix ultra 2 mm. longae, nervis 3 viridibus demum concoloribus ultra apicem obtusissimum vel rotundatum vel subacutum in cuspidem brevem desinentibus. Utriculi squamis longiores suberecti tenuiter membranacei pallide virides oblongo-fusiformes fere glabri trigoni (nec obtuse trigoni) 3 mm. longi

tenuiter plurinervi, basi stipitati, apice in rostrum breve conicum marginibus raro parce setuloso-scabrum, ore hyalino emarginato-bidentulum subabrupte contracti. Nux arcte explens anguste oblonga vere trigona 1,5 mm. longa brunnea, apice in discum minutum brevissime stipitatum contracta. Stylus brevis basi conico-incrassatus, stigmatibus 3 tenuibus.

Nom. Jap. Hagakure-suge. nov.

Type locality: Hondô; Mt. Hakusan in Prov. Kaga (9. VII, 1929 J. OHWI)—in Hb. Kyoto Imperial University.

Ranges: Hondô; Mt. Hakusan (VIII. 1928. S. YASUDA), Mt. Iwagisan (FAURIE n. 4759) Ubayu (FAURIE n. 5552), Takayu (FAURIE n. 5559).

Yeso; Mt. Iwanobori (FAURIE n. 8232), in sylvis montium Tokachi (FAURIE n. 6533).

Carex tenuinervis OHWI sp. nov.

Eucarex—§ Mitratae.

Rhizoma caespitosum estoloniferum, foliis emortuis griseo-brunneis subintegris paucis vestitum. Culmus pluriceps 20–30 cm. altus erectus obtuse triqueter laevis vel ad apicem versus parce scaber, tenuis. Folia accrescentia demum culmo logiora cinereo-viridia mollia scaberula, apice acuminata, margine scabra, plana vel complicato-plana 2–2,5 mm. lata, suberecta, basi straminea. Inflorescentia erecta 3–8 cm. longa 3-spiculifera; spicula terminali masculâ pallide stramineâ lineari 2–3 cm. longa 2 mm. lata pedunculata; lateralibus femineis remotis vel superioribus ad masculam contiguâ, omnibus incluse pedunculatis cylindricis laxifloris 10–15 mm. longis 2–2,5 mm. latis. Bractee virides vaginantes; ima vaginâ 0,5–1,0 cm. longa ad orem truncata, lamina setacê 3–4 cm. longa scabrâ; superioribus diminutis. Squamae masculae pallide stramineae anguste obovatae, e dorso late trinervio

concolori breviter mucronatae 5 mm. longae; femineae late obovatae pallidae rotundatae 2 mm. longae, dorso late viride trinervio mucronatae. Utriculi squamis longiores suberecti membranacei virides obovati glabri tenuissime nervosi obtuse trigoni 2,5 mm. longi, basi paullo attenuati, apice in rostrum breve margine scabrum abrupte desinentes, ore albido bidentato. Nux obovata trigona, facie convexa, apice discoidea truncata, stylo basi paullo incrassato persistente. Stigmata 3.

Nom. Jap. Tsurunasi-ôitosuge. nov.

Type locality: Kiushu; Watari in Prov. Higo (2. V. 1926. K. MAEBARA)—in Hb. Kyoto Imperial University.

Ranges: Kiushu; Mt. Fukabayama in Prov. Higo (21. V. 1916. K. MAEBARA), Riu-mon in Kikuchigori (16. V. 1916. S. TOKUNAGA).

This species differs from *C. alterniflora* FRANCH. in having densely caespitose and not stoloniferous habit, glabrous utricles.

Carex Tashiroana OHWI sp. nov.

Eucarex—§ Mitratae.

Rhizoma caespitosum estoloniferum, ad collum vaginis emortuis subintegris atrobrunneis vestitum. Culmus 20–30 cm. altus gracilis triqueter laevis basi vaginis breviter laminiferis pallide lutescentibus paucis cinctus. Folia sterilia culmum aequantia vel superantia 1,5–2,0 mm. lata conduplicato-plana supra margineque parce scabra subtus laevia, basi lutescentia. Inflorescentia 4–6 cm. longa. Spiculae 2–3 remotiusculae, terminalis mascula linearis acuta 1,5– fere 2 cm. longa 2 mm. lata, pedunculo 5–15 mm. longo; laterales femineae lineari-cylindricae laxae 5–10-florae erectae, incluse pedunculatae vel superiores subsessiles, omnes 2,5 mm. latae 1–2,5 cm. longae. Bractearum vaginae 4–8 mm. longae virides antice ad orem truncatae, laminis setaceo-involutis scabris spiculam paullo superantibus. Squamae masculae pallide lutescentes 1- vel obscure 3-nerviae; femineae obovatae pallidae,

nervo 1 viridi in aristam brevem scabriusculam utriculum paullo superantem excurrento. Utriculi squamas (excl. aristas) subaequantes late obovati obtuse trigoni membranacei virides tenuiter nervosi puberuli cum rostro 2 mm. longi, apice in rostrum breve latum ore leviter bidentato contracti. Nux obovata 1,5 mm. longa apice in discum parvum dilatata. Styli basis incrassata,

Nom. Jap.

Type locality: Hondô; Kuritanimura in Saegigori, Prov. Aki (8. V. 1927. Z. TASHIRO)—in Hb. Kyoto Imperial University.

Species dicta in honorem ZENTARO TASHIRO.

Carex kiusiuana OHWI sp. nov.

Eucarex—§ Mitratae.

Rhizoma dense caespitosum et stoloniferum. Culmus obtuse triqueter gracilis erectus laevis 10–20 cm. altus, basi foliis emortuis brunneis demum in fibras parallelas solutis dense obtectus. Folia culmo breviora mollia viridia linearia 1,5–2,5 mm. lata, margine et subtus ad costas scaberula. Inflorescentia 2–3 cm. longa. Spiculæ 3 approximate; terminalis mascula lineari-lanceolata subsessilis, 1,5–2,5 mm. lata fulva; laterales femineae oblongo-lanceolatae rufo-fulvae subdensiflorae ca. 1 cm. longae ad 3 mm. latae, inferiores incluse pedunculatae, superiores subsessiles. Bractea ima tubuloso-vaginans brevissime (2–5 mm.) setaceo-laminata, vaginâ viridi vel plus minus fulvescente 5–8 mm. longâ; superiores squamaeformes. Squamae masculae late oblanceolatae 4 mm. longae acutae, margine dilutiores; femineae obovatae 3 mm. longae acutae, margine saepe hyalinae, nervo dorsali fere laevi apice non vel vix excurrento. Utriculi suberecti membranacei 4–4,5 mm. longi fulvescentes oblongi, dorso rotundati, ventre convexi, ad basin versus attenuati et tenuiter nervosi, glaberrimi praeter nervos 2 laterales superne scabros, apice in rostrum sublongum coloratum

rectum ore leviter bidentatum abrupte attenuati. Nux obtuse trigona oblonga 2,5 mm. longa, basi longe stipitata, apice vix annulata. Stylus brevis basi haud hincrassatus, stigmatibus 3.

Nom. Jap. Tsukushi-shôjôsuge. nov.

Type locality: Between Yutsubo and Kanjigoku in Mts. Kujusan, Prov. Bungo (12. V. 1927. Z. TASHIRO)—in Hb. Kyoto Imperial University.

This species is near to *Carex blepharicarpa* FRANCH. and *Carex chrysolepis* FRANCH. et SAVAT.

Carex blepharicarpa FRANCH. et SAVAT.

var. **stenocarpa** OHWI var. nov.

Utriculi longe rostrati.

Nom. Jap.

Type locality: Hondô; Mt. Yatsugatake (8. VII. 1928. J. OHWI)—in Hb. Kyoto Imperial University.

Carex mitrata FRANCH. var. **aristata** OHWI var. nov.

Carex Kingiana LÉVL. et VANT. in Bull. Acad. Intern. Geogr. Bot. (1901) p. 272 p.p.

Rhizoma dense caespitosum estoloniferum. Folia angusta dorso basi plus minus carinato-conduplicata, vaginis clare brunneis subintegris. Spicula mascula inconspicua 4-6 mm. longa, squamis obtusis vel subrotundatis, nervo dorsali plerumque ante apicem evanido. Squamae femineae longe aristatae. Utriculi glabrescentes.

Nom. Jap. Noge-nukasuge. nov.

Type locality; Kitashirakawa in Kyoto, Prov. Yamashiro (5. V. 1929. J. OHWI)—in Hb. Kyoto Imperial University.

Ranges: Hondô; Shirakawa in Kyoto (20. IV. 1921. N. KINASHI), Kôbe in Prov. Settsu (FAURIE n. 5326), Tajima in Numakumagori, Prov. Bingo (3. VI. 1929. Z. TASHIRO).

Shikoku; Mt. Tsurugi (FAURIE n. 4430 p.p.), Odzu in Kitagori, Prov. Iyo (19. IV. 1924. K. YAMASHITA).

Kiushiu; Kokura in Prov. Chikuzen (FAURIE n. 5336), Yamae in Prov. Higo (29. IV. 1923. K. MAEBARA).

Carex lutchuensis OHWI spec. nov.

Rhizoma caespitosum, ad collum copiose brunneo-fibrillosum, radices crassas emittens. Culmus 20-30 cm. altus strictus obtuse triqueter ca. 1,5 mm. crassus, basi foliatus. Folia culmo duplo triplove longiora lacte viridia erecta submollia, inferne conduplicata superne plana, 5-7 mm. lata, breviter acuminata, supra margineque parce scabra, subtus sublaevia, basi brunneo-striata. Inflorescentia 8-13 cm. longa erecta; spiculis 5-7 subfastigiatis; terminali masculâ lineari subsessili vix 2 cm. longâ, ca. 1 mm. latâ, femineas superiores vix vel non superante; lateralibus femineis anguste cylindricis erectis laxifloris ad nodos solitariis, incluse pedunculatis vel subsessilibus, inferioribus inferne ramosis; pedunculis axeque scabris. Bractee inferiores 2-3 foliaceae culmum multo superantes ad 40 cm. longae, basi longius (1-2,5 cm.) vaginantes, vaginis parum ampliatis pallide viridibus brunneo-striatis, ore antice membranaceis oblique truncatis. Squamae masculae pallide stramineae obovatae obtusissimae 3 mm. longae, nervo centrali ante apicem evanido; femineae oblongae 3 mm. longae sordide stramineae, margine anguste hyalinae, nervo medio ante apicem rotundatum evanido. Utriculi squamas superantes suberecti membranacei praesertim superne parce puberuli pallide virides multinervi rhomboidei 4 mm.

longi trigoni, basi attenuati et distincte stipitati, apice late truncatim contracti in rostrum breve conicum rectum marginibus scaberulum, ore bidentatum. Nux trigona utriculum explens rhomboidalis faciebus inferne et superne excavata, basi breviter stipitata, apice late truncata et styli basin paullo incrassatam insidens. Stigmata 3, tenuia fere 2 mm. longa.

Nom. Jap.

Type locality: Liukiu; Isl. Okinawa, Mt. Ibedake in Kunchan (29. I. 1924. Z. TASHIRO)—in Hb. Kyoto Imperial University.

This species seems to be an ally of *Carex breviscapa* C. B. CLARKE.

Carex formosensis LÉVL. et VANT. in "Mem. Soc. Sci. Nat. Cherbourg XXXV. (1906) p. 216" et in FEDDE Repert. V. (1908) p. 31.

Carex ligata var. *formosensis* (LÉVL. et VANT.) KÜKENTH. Cyp. Caric. (1909) p. 474; HAYATA, Icon. Pl. Formos. X. (1920) p. 64.

Carex kelungensis HAYATA, l.c. (1920) p. 63.

Nom. Jap. Taiwan-suge.

Hab. Formosa; Kelung (FAURIE n. 31 et 827), *ibid.* (6. III. 1912. T. ITO).

Kiushiu; Kajikimachi in Prov. Osumi (29. IV. 1917. Z. TASHIRO), Chôsa, Prov. Osumi (IV. 1917. Z. TASHIRO), Hazamamura in Kikuchigori, Prov. Higo (20. IV. 1918. S. TOKUNAGA), Insl. Tsushima (FAURIE n. 4946).

var. ***vigens*** (KÜKENTH.) OHWI nom. nov.

Carex mitrata var. *vigens* KÜKENTH. Cyp. Caric. (1909) p. 471.

Nom. Jap.

Hab. Korea; Mokpo (FAURIE n. 2271).

Kiushiu; Insl. Tsushima (FAURIE n. 4946 bis.), Mt. Kuro-

kamiyama, Prov. Hizen (3. V. 1920. YAMASHITA).

var. **kabashimensis** OHWI var. nov.

Folia paullo latiora, vaginis atro-fuscis opacis subintegris. Spicula terminalis mascula brevis, squamis apice rotundatis plus minus fulvescentibus albomarginatis.

Nom. Jap.

Type locality: Kiushiu; Kabashima in Prov. Hizen (12. V. 1912. Z. TASHIRO)—in Hb. Kyoto Imp. University.

Carex cucullata (KÜKENTH.) OHWI. comb. nov.

Carex ligata (non BOOTT) FRANCH. *Carex Asiic-orient.* n. 161. (T. IX. pl. 7.).

Carex ligata var. *cucullata* KÜKENTH. *Cyper. Caric.* (1909) p. 474.

I have not seen the specimens of *Carex ligata* BOOTT var. *cucullata* KÜKENTH., but FRANCHET's excellent figure of *C. ligata* (loc. cit.) which has been reduced by KÜKENTHAL as his variety, greatly differs from real *Carex ligata* BOOTT and its allies in several important points, as shown in the following key.

Carex ligata var. *cucullata* KÜKENTH. mentioned in MATSUMURA & HAYATA's *Enumeratio Plantarum Formosanarum* (1906) p. 495 (nom. nud.), is a quite different plant, resembling *Carex multifolia* OHWI (= *C. foliosissima* FRANCH.).

Clavis Specierum Gregis *Caricis cucullatae*

- | | |
|---|--|
| { | Bractea ima inflorescentiam non superans. Spiculae vulgo
singulae simplices.2. |
| | Bracteae inferiores 2-3 culmum multo superantes. Spiculae
basi ramosae. Utriculi latiores et paullo longiores.
..... <i>Carex lutchuensis</i> . |

- 2 { Spicula terminalis 3-6 cm. longa. Vaginae bractearum plerumque coloratae. Nux (in *C. nexa* non certe) ad angulos non constricta.3.
 { Spicula terminalis 1-2 cm. longa. Vaginae bractearum virides. Nux medio ad angulos profunde constricta.5.
- 3 { Folia latiora. Spicula terminalis sessilis, laterales superiores geminatae. Squamae masculae cucullatae.....*Carex cucullata*.
 { Folia 4-5 mm. lata. Spiculae omnes pedunculatae semper solitariae.4.
- 4 { Spicula terminalis anguste cylindrica 4-6 cm. longa. Squamae mucronatae vel cuspidatae. Folia rigidiora subinvoluta conduplicata.*Carex nexa*.
 { Spicula terminalis filiformis 3-4 cm. longa. Squamae apice rotundatae. Folia plana vel marginibus revoluta. ...*Carex ligata*.
- 5 { Foliolorum vaginae brunneae vel fuscescentes striatae demum in fibras parallelas solutae.
 { { Utriculi anguste ovato-fusifformes, medio ad angulos conspicue constricta.*Carex formosensis*.
 { Utriculi latiores brevius rostrati...*Carex formosensis* var. *vigens*.
 { Foliolorum vaginae atro-fuscae subintegrae.
 {*Carex formos.* var. *kabashimensis*.

Carex perangusta OHWI sp. nov.

Eucarex—§ Mitratae.

Rhizoma stoloniferum. Culmus 5-10 cm. altus pergracilis capillaris obtuse triqueter laevis. Folia culmo paullo longiora capillaria 1/3 mm. lata revoluta laevia vel margine basin versus parce scabra, mollia, basi brunnescentia striolata. Inflorescentia 1 cm. non attingentia 2-3-spiculifera. Spicula terminalis mascula linearis pauciflora ca. 5 mm. longa, pedunculo 2-3 mm. longo; spiculae femineae laterales globoso-ovatae subdensi- et pauci (2-5)—florae 3-4 mm. longae ca. 2-3 mm. latae subsessiles.

Bracteae virides setaceae 5-7 mm. longae scaberulae, ima vagina 1 mm. longa. Squamae masculae anguste lanceolatae acuminatae 3 mm. longae pallidae, dorso superne scaberulae; femineae anguste ovatae vix 2 mm. longae pallidae obtusae, dorso late virides, apice scabro-cuspidatae. Utriculi squamas superantes suberecti membranacei pallide virides pubescentes obtuse trigoni obovati multinervi paullo ultra 2 mm. longi, basi late cuneati, apice in rostrum breve conicum integrum contracti. Nux arcte explens trigona fusca 1,5 mm. longa obovata, apice styli basin conico-incrassatam insidens. Stigmata 3 tenuia fusca.

Nom. Jap. Yakushima-itosuge. nov.

Type locality: Kiushiu; Tsudzitoge in Insl. Yakushima (24. V. 1927. J. SUGIMOTO)-in Hb. Kyoto Imperial University.

Range: Kiushu; Isl. Yakushima (26. VII. 1917. K. NAGAO).

An ally of *Carex breviculmis* R. BR.

***Carex lonchophora* OHWI sp. nov.**

Eucarex—§ Mitratae.

Rhizoma caespitosum. Culmus 60 cm. altus tenuis compresso-triqueter laevis alte foliatus. Folia culmo breviora plana viridia mollia subtus uncostata 4 mm. lata, praesertim ad apicem versus parce scabra, vaginis stramineis integris; ligulis membranaceis ore subtruncatis, dorso fere toto adnatis. Bracteae virides tubuloso-vaginantibus foliaceae; ima vagina 2-2,5 cm. longa; ligula antice truncata; laminae 7-10 cm. longae. Inflorescentia 10-15 cm. longa; spiculae 4, terminalis mascula linearis vel raro gynaeanda et claviformis, basi setaceo-bracteatis, ca. 3 mm. lata 3 cm. longa breviter pedunculata erecta; laterales femineae erectae breviter cylindraceae 2-3 cm. longae ca. 5 mm. latae, superiores incluse pedunculatae approximatae; ima remota longe (4-5 cm.) pedunculata; pedunculis axeque parce scabris. Squamae masculae lanceolatae pallidae 5 mm. longae, dorso virides trinerviae, apice acutae vel mucronatae;

femineae anguste obovatae pallidae, dorso angustius virides, nervo media ultra apicem acutum in aristam longam scaberulam utriculum superantem excurrento. Utriculi squamis longiores oblique patentibus obovati obtuse trigoni pallide virides membranacei multicostati puberuli, basi attenuati et substipitati, apice contracti in rostrum breve ore emarginato-bidentulum. Nux obovata utriculum explens trigona, apice in discum minutum brevissime stipitatum dilatata. Stylus brevis basi conico-incrassatus, stigmatibus 3, tenuibus brevibusque.

Nom. Jap.

Type locality: Hondô; Iwakuni in Prov. Suwô (V. 1925, legitor? - in Hb. Kyoto Imperial University.

Range: Hondô; ca. Hamamatsu in Prov. Tôtômi (NAOICHI OHYE).

This species has the general habits of *Carex chinensis* RETZ. var. *tsushimensis* OHWI, while the utricles are essentially like those of *Carex fibrillosa* FRANCH. et SAV.

Carex oxyandra (FRANCH. et SAVAT.) KUDO Report on the Vegetation of Northern Saghalien (1923) p. 72.

Carex montana var. *oxyandra* FRANCH. et SAVAT. Enum. Plant. Jap. II. (1879) pp. 141, 565.

Carex pilulifera (non LINN.) FRANCH. et SAVAT. l. c. p. 141.

Carex Wrightii (non DEW.) FRANCH. in "Bull. Soc. Philom. Paris 8 ser. VII. (18-95) p. 47" et *Carex* Asie-orient. n. 194; LÉVL. et VANT. in Bull. Acad. Intern. Geogr. Bot. (1901) p. 279; MATSUM. Ind. Plant. Jap. II. i. p. 138; KÜKENTH. Cyper. Caric. p. 443.

Carex stolonifera LÉVL. et VANT. l. c. (1902) p. 27.

Carex lagopina (non WAHLENB.) LÉVL. et VAN. l. c. (1902) p. 186.
forma **pallidior** OHWI

Squamae pallidiores, dorso late virides.

Hab. Kiushiu; Nakano-onsen in Mt. Kujusan, Prov. Bungo (12. V. 1921, Z. TASHIRO). Typus! in Hb.

Kyoto Imperial University.

Hakkenotoge in Prov. Bungo (9. VIII. 1926. K. IKEBE), Mt. Aso in Prov. Higo (H. KOHZUMA. 21. V. 1916), Mitate-kôzan in Prov. Hiuga (17. V. 1913. M. OGATA), Mt. Higashi-kirishimayama (23. V. 1913. Z. TASHIRO), Mt. Kirishima in Prov. Osumi (Z. TASHIRO).

var. **lanceata** (KÜKENTH.) OHWI comb. nov.

Carex Wrightii var. *lanccata* KÜKENTH. Cyper. Caric. (1909) p. 443.

Nom. Jap.

Hab. Hondô: Mt. Yatsugatake in Prov. Shinano (9. VIII. 1928. J. OHWI), Mt. Ohdaigahara (VI. 1929. J. OHWI).

Carex Hidewoi OHWI sp. nov.

Eucarex—§ Atratae.

Rhizoma breviter stoloniferum. Culmus compresso-triqueter gracilis 20-30 cm. altus laevis, basi vaginis aphyllis rubescentibus in fibras parce solutis cinctus. Folia culmo breviora vel paullo longiora plana flaccida graminea apice acuminata, subtus ad costas et margine parce scabra, cetera glabra, ad 4 mm. lata. Spiculae 3-4 contiguæ, densifloræ, inferiores longius vel brevius (0,5-1,5 cm.) pedunculatæ (pedunculi ancipites ad angulos superne scabri) superiores sessiles, omnes oblongæ vel ellipticæ 6-8 mm. longæ ca. 5 mm. latæ; terminalis gynæcandra, parte masculâ valde brevi fere inconspicuâ; reliquæ omnes femineæ. Bractea ima foliacea, sæpe basi conspicue auriculata, ad 6 cm. longâ 3 mm. latâ, inflorescentiam duplo triplove superantia, superiores setaceæ valde reductæ. Squamæ masculæ femineam conformes; femineæ late vel deltoideo-ovatae acutiusculæ atro-fuscæ vix albo-marginatæ l-nerviæ, 1,5 mm longæ. Utriculi squamas conspicue superantes, horizontaliter patentes elliptici 2 mm.

longi subcoriacei valde inflati aurantiaci vel flavidi minute punctulati, tenuiter paucinervi (nervis 2 marginalibus conspicuis), basi rotundati subsessiles, apice rostro brevissimo fusco ore emarginato apiculati. Stylus brevis basi aequalis, stigmatibus 3 brevibus (0,5 mm) fuscis patentibus. Nux sublate explens late obovata trigona, facie subconcava.

Nom. Jap. Senjo-suge.

Type locality: Hondô; Mt. Senjô in Prov. Shinano (22. VIII. Shinano 1929. J. OHWI)—in Hb. Kyoto Imperial University.

Range: Hondô; Mt. Senjogatake (4. VII. 1922. H. KOIZUMI).

This plant seems to be an ally of *Carex Lehmannii* DREJER, a central Asiatic species. It differs from *Carex Lehmannii* DREJER in having horizontally patent nerved utricles and short, thick, reflexed stigmas. Species dicata in honorem HIDEWO KOIZUMI.

***Carex Maximowiczii* MIQ. var. *levisaccus* OHWI var. nov.**

Utriculi luteo-virides epapilloso.

Nom. Jap. Hoshinashi-gôzo. nov.

Type locality: Hondô; Tateishi near Tsuruga in Prov. Echizen (J. OHWI)—in Hb. Kyoto Imperial University.

Ranges: Hondô; Uzimura in Uzigôri, Prov. Yamashiro (K. TAKEUCHI!), Tottori in Prov. Inaba (29. V. 1917. N. KINASHI), Kubuya in Higashimurogori, Prov. Kii (12. V. 1929. T. KOIDE), Fukuchiyama in Prov. Tamba (19. V. 1928. Z. TASHIRO), Insl. Awajishima (V. 1927. S. SAKAGUCHI), Akahomura in Kami-inagôri, Prov. Shinano. (19. V. 1927. H. SUZUKI).

var. **Kinashii** OHWI var. nov.

Utriculi elongato-ovati sparsius papilloso distinctius plurinervi.

Nom. Jap. Nagami-gôzo. nov.

Type locality: Hondô; Manzekitôge in Prov. Hôki (23. V. 1920.
N. KINASHI)—in Hb. Kyoto Imp. University.

Carex subcernua OHWI sp. nov.

Eucarex—§ Acutae—Praelongae.

Rhizoma breve lignosum caespitosum. Culmus 40-60 cm. altus acute triqueter subtenuis, sursum scaber subphyllopodus, foliorum vaginis interioribus stramineis foliiferis, exterioribus subaphyllis atro-fuscis parce fibrillosis. Folia culmo paullo breviora pallide viridia submollia, margine revoluta et scabra, supra bicostata, subtus subglauca, ligulâ antice subtruncatâ, dorso deltoideâ fere toto adnatâ. Inflorescentia 7-15 cm. longa 4-spiculifera. Spicula terminalis gynaeandra (pars mascula quam feminea longior ca. 2,5 mm. lata) ca. 3 cm. longa, breviter (1-1,5 cm.) pedunculata subcernua; spic. laterales femineae saepe basi brevissime masculae, superiores sessiles et approximatae, ima longe (1,5-3 cm.) pedunculata et remota, omnes cylindricae 2,5-4 cm. longae 5-6 mm. latae subcernuae. pedunculis setaceis scabris. Bractee inferiores 2 foliaceae inflorescentiam superantes 1,5-2,5 mm. latae evaginatae, basi antice membranaceo-auriculatae. Squamae masculae late oblanceolatae fuscescentes dilutius marginatae fusco-maculatae 3,5 mm. longae, dorso late pallido trinerviae, apice subacutae; femineae anguste ovatae fuscescentes, apice acutae vel acutiusculae vel e dorso pallido trinervio in mucronulum laevem brevissime productae. Utriculi squamis paullo longiores et fere duplo latiores suberecti membranacei glabri elliptici brunneo-virides dense papilloso marginati, utrinque 4-5-nervi, compresso-biconvexi 3-3,5 mm. longi, basi truncati et brevissime stipitati, apice rostro brevissimo integro apiculati. Nux laxè inclusâ compresso-biconvexa rotundata 1,5 mm. lata. Stylus rectus, basi aequalis.

Nom. Jap.

Type locality: Kiushiu; Najima in Kasuyagori, Prov. Chikuzen
(T. ICHIKAWA)—in Hb. Kyoto Imp. University.

Ranges: Kiushiu; Oh-sadamura in Shimokegori, Prov. Buzen
(13. VI. 1925), Miyazaki in Prov. Hiuga (1. VII.
1924. T. ICHIKAWA).

An intermediate species between *Carex cernua* BOOTT and *Carex cincta* FRANCH.

***Carex mitoensis* OHWI sp. nov.**

Eucarex—§ Acutae—Praelongae.

Rhizoma ignotum. Culmus (probabiliter) aphyllopus, ca. 60 cm. altus acute triqueter, superne scaber, ad basin versus tantum foliatus. Folia culmo breviora glaucescentia mollia, supra glabra. subtus margineque parce scabra, apice acuminato-attenuata ca. 4 mm, lata plana; vaginis pallide ferrugineis antice in fibras anastomosantes solutis, membranaceis. Inflorescentia ca. 20 cm. longa subnutans, 4-5-spiculifera; bracteis superioribus fere filiformibus (0,3-1,0 mm. latis) scabris, infimis foliaceis inflorescentiam superantibus 3-3,5 mm. latis basi ferrugineo-auriculatis. Spicula terminalis mascula filiformis longe (4-5 cm.) pedunculata 6-7 cm. longa 2 mm. lata; spic. laterales omnes femineae superiores sublonge (2-5 cm.)—, ima longe (ca. 10 cm.)-pedunculatae, pendulae vel subcernuae cylindricae 3-5 cm. longae 4-5 mm. latae, pedunculis filiformibus scabris. Squamae masculae spathulatae, apice obtusissimae, pallidae, nervo dorsali viridi ad apicem non attingente, 3,5 mm. longae; femineae late oblanceolatae 2,5 mm. longae pallidae, dorso obscuriter trinerviae, nervis viridibus ultra apicem obtusum vel acutum brevissime mucronatis. Utriculi squamis longiores et subduplo latiores 3 mm. longi, plano-convexi membranacei compressi pallide virides ferrugineo-maculati glabri, praeter marginem enervii, e basi obovata distincte stipitata in rostrum sublongum latum compressum conspicue recurvo-tortuosum ore albido emarginato brevissime fimbriato

sensim contracti. Nux obovata compresso-biconvexa, quam utriculi parum angustior et dimidio brevior. Stigmata deciderata.

Nom. Jap. Mito-suge (nov).

Type locality: Hondô; ca. Mito in Prov. Hitachi (VI. 1920. TSURUMACHI)—in Hb. Kyoto Imperial University.

This plant resembles *Carex olarucensis* FRANCH. and *Carex shimidzuensis* FRANCH., but differs from the former in having softer culms and leaves, longer male spicules and matulate utricles with broad, tortuous, recurved beak, like those of the North-American *Carex torta* BOOTT.

It is easily distinguishable from *Carex shimidzuensis* FRANCH. by the fibrillose bases of the leaves, the naked culms and the invariably male terminal spikelet.

Carex Maackii MAXIM. Prim. Flor. Amur. (1859). p. 308; FRANCH. *Carex* Asie-orient. n. 55; MEINSH. in Acta Horti Petrop. XVIII. (1901) p. 318; KOMAROV, Flor. Manshur. I p. 357; MATSUM. Ind. Plant. Jap. II. i. p. 119; KÜKENTH. Cyper. Caric. p. 201 ex parte; NAKAI Flor. Korean. II. p. 306.

Spica ca 1 cm. crassa, spiculis globosis 5-6 mm. crassis ac longis, simplicibus. Utriculi anguste alatis.

Nom. Jap.

Hab: Korea; Syou-ouen (FAURIE n. 900 et 1309), Kan-ouen-to (FAURIE n. 908).

var. **nipponica** (FRANCH) comb. nov.

Carex nipponica FRANCH. in Bull. Soc. Bot. France (1879) p. 89 et *Carex* Asie-orient. n. 36; MATSUM. Ind. Plant. Jap. II. i. p. 122.

Carex lagopodioides (non SCHK) FRANCH. et SAV. Enum. Plant. Jap. II. p. 125; FRANCH. *Carex* Asie-orient. n. 54; MATSUM. Ind. Plant. Jap. II. i. p. 117.

Carex calcitrapa FRANCH. in "Bull. Soc. Philom. Paris, 3 ser. VII. p. 30" et *Carex* Asie-orient, n. 53.

Carex vulpinoidea (non MICHX.) LÉVL. et VANT. in Bull. Acad. Intern. Geogr. Bot. (1901) p. 123.

Spica crassior, spiculis globoso-ovatis 6–8 mm. longis, inferioribus interdum basi ramosis. Utriculi latiores margine latius alati.

Nom. Jap. Yagami-suge.

Hab. Yezo; Saruru in Prov. Hidaka (FAURIE n. 10385), Sorachi in Prov. Ishikari (FAURIE n. 1610).

Hondo; Akita in Prov. Ugo (FAURIE n. 5506), Shiobara in Prov. Mutsu (FAURIE n. 4096), Nuttari in Prov. Yechigo (12. VI. 1926. E. YAWATA).

Kiushiu; Kurategori in Prov. Chikuzen (15. V. 1922. HIDAKA), Miyakigori in Prov. Hizen (3. V. 1924. S. ONO).

***Carex Kobomugi* OHWI sp. nov.**

Carex macrocephala (non WILLD.) A. GRAY in Perry Exped. (1856) p. 328; MIQ. Prol. Flor. Jap. p. 79; FRANCH. et SAVAT. Enum. Plant. Jap. II p. 120; FRANCH. *Carex* Asie-orient. n. 63 partim; LÉVL. et VANT. in Bull. Acad. Intern. Geogr. Bot. (1901) p. 127; MATSUM. Ind. Plant. Jap. II. i. p. 119; KÜKENTH. Cyper. Caric. p. 187 partim.

Rhizoma longe repens. Culmus validus humilis obtuse trigonus laevissimus, basi fibris brunneis liberis dense obtectus. Folia coriacea rigida, pallide viridia plana 4–6 mm. lata ad 20 cm. longa, apice attenuata, margine et subtus ad costas crebre serrulato-scabra; vaginis pallidis vel brunnescentibus. Inflorescentia dioica; spiculis femineis ovatis 1,2–1,5 cm. longis, in spicam amplam oblongam vel ovatam 4–6 cm. longam 2 cm. latam dense congestis. Bractee squamiformes breves. Squamae femineae ovatae vel anguste ovatae pallidae vel pallide sulphureae, marginibus latissimae, nervis dorsalibus pluribus (ca. 9–13) apicem versus convergentibus et in aristam latissimam brevem scabram productis. Utriculi squamis fere toto occultati suberecti nec patententes coriacei, pallide virides demum fuscescentes nitidi glabri 1 cm. longi

dorso rotundati, ventre subconcaui, utrinque multi-(dorso ca. 30-, ventre 12-13-) nervosi, marginibus (nec e basi) anguste alati et irregulariter dentato-scabri, basi contracti et sessiles, apice in rostrum longum parum incurvum marginibus alato-scabrum ore oblique bifidum abrupte attenuati. Nux anguste obovata brunnea vix nitidula obtuse et compresse trigona, ca. 5 mm. longa, utriculum basin versus spongiosum fere explens, apice stylum basi incrassatum oblique insidens. Stylus exsertus, stigmatibus 3.

Nom. Jap. Kôbômugi.

Type locality: Hondô; Isshikikei in Prov. Ise (12. VI. 1922. G. KOIDZUMI)—in Hb. Kyoto Imperial University.

Ranges: Hondo; Aomori in Prov. Mutsu (FAURIE n. 1050 et 5512), Nambu (FAURIE n. 5164), Mera in Prov. Awa (4. IV. 1928. J. OHWI), Tateishi near Tsuruga in Prov. Echizen (27. V. 1928. J. OHWI), Shizuoka in Prov. Suruga (FAURIE n. 1620), Haguï, Prov. Noto (9. VII. 1929. S. KITAMURA).

Yeso; Oshamanbe (G. KOIDZUMI).

forma **longibracteata** (OLIVER) OHWI nov.

Carex macrocephala var. *longibracteata* OLIVER in Journ. Linn. Soc. IX. (1866) p. 170.

Bracteae omnes elongatae inflorescentiam superantes.

Hab. Ouen-san in Korea (FAURIE n. 943).

This species has been long confused with *Carex macrocephala* WILLD. which grows in Yeso and Sachalien northward to Kamtschatka and also in N-America.

Carex Paxii KÜKENTH. Cyp. Caric. (1909) p. 765.

Carex Kengii KÜKENTH. in FEDDE Repert. (1929) p. 108.

Nom. Jap. Chôsen-minoborosuge. nov.

Type locality: Korea; Taikou (FAURIE n. 1310).

var. **succedanea** (NAKAI) OHWI. nom. nov.

Carex succedanea NAKAI in FEDDE Repert. XIII (1914) p. 244 et in Bot. Mag. Tokyo. XXVIII (1914) p. 517 (Japan. art.).

Culmus robustior, foliis latioribus, spiculis plurifloris inferioribus interdum compositis.

Nom. Jap. Kibino-minoborosuge.

Hab. Hondô; Ichinomiya in Prov. Bitchu (V. 1920. Z. YOSHINO), Kibitsu in Prov. Bitchu (VI. 1920. Z. YOSHINO).

Carex nubigena D. DON var. **Franchetiana** OHWI var. nov.

Carex albata (non BOOTT) MEINSH. in Acta Horti Petrop. XVIII. (1901) p. 322 cf. FRANCH. Car. Asie-orient. n. 33; KOMAROV, Flor. Manshur. I. (1901) p. 358; PALIB. in Acta Horti Petrop. XIX. (1902) p. 121.

Carex nubigena var. *albata* KÜKENTH. Cyper. Caric. (1909) p. 146 p. p.; NAKAI, Flora Korean. II. p. 305.

Carex nubigena var. *planiuscula* KÜKENTH. ex MATSUM. Ind. Plant. Jap. II. i. (1905) p. 123 pro minima parte.

Culmus compresso-triqueter laeviusculus. Spica 2-4 cm. longa laxiuscula vel densa. Utriculi anguste ovati 4,5 mm. longi basin versus plus minus inflati, apice in rostrum mediocre (quam in var. *albata* multo brevior) marginibus superne vix tantum scabrum abruptius attenuati.

Nom. Jap. Tsukushi-minoborosuge. nov.

Type locality: Mt. Ichifusa, Prov. Higo in Kiushiu (20. V. 1928. K. MAEBARA)—in Hb. Kyoto Imperial University.

Ranges: Kiushiu; Prov. Buzen (MATSUMURA in FAURIE n. 15568), Mt. Futagoyama in Prov. Bungo (17. V. 1921. Z. TASHIRO), Mt. Sobosan (24. VIII.

1911, Z. TASHIRO), Kasahara in Yamegori, Prov. Chikugo (26. VI. 1912. Y. NABESHIMA), Mt. Kanatateyama in Prov. Hizen (26. V. 1920. K. YAMASHITA), Mt. Aso (21. V. 1916 H. KODZUMA), Ibidem (VIII. 1924. Z. TASHIRO), Tahara in Nishi-usukigori, Prov. Hiuga (20. V. 1912. M. OGATA).

Korea; Southern, loc. non indic. (Z. TASHIRO!).

FAURIE's specimen no. 2732, which LÉVEILLÉ and VANOT identified with *Carex pterolepta* FRANCH. (cf. KÜKENTH. Cyper. Caric. p. 146, nota, sub *C. nubigena* var. *fallax* C. B. CLARKE) is quite another plant belongs to the subgenus *Eucarex*.

Though the strict identification is impossible owing to its spikelets being wholly deformed by a disease, it is possibly a form of *Carex breviculmis* R. BR. judging from its general appearances.

***Carex spongiosa* OHWI sp. nov.**

Carex Paxii KÜKENTH. Cyper. Caric. (1909) p. 765. ex parte.

Carex distichoidea LÉVL. et VANT. fide manuscript. FAURIE. (non LÉVL. et VANT. in Bull. Acad. Intern. Geogr. Bot. 1901, p. 108).

Rhizoma internodiis breviusculis repens cylindraceum striatum, squamis aphyllis brunnescentibus demum in fibras atro-brunneas dissolutis cinctum. Culmus solitarius vel geminatus triqueter tenuis scaber 30-50 cm. altus, basi vaginis aphyllis intergrīs obtectus. Folia culmea pauca brevia; sterilia ad apicem versus conferta accrescentia culmum aequantia vel superantia scaberula 1,5-2,0 mm. lata plana mollia subtus unīcostata, apice in acumen subulato-triquetrum longe sensimque attenuata; ligula ad orem oblique truncata brunnescens dorso fere toto adnata. Spiculae 6-9, androgynae ovatae vel ovato-lanceolatae demum squarrosae 6-8 mm. longae pauci (7-15)-florae, spicam ovato-oblongam vel ovatam laxiusculam (nec interruptam) 1,5-2,5 mm. longam formantēs.

Bractea nulla vel aristato-squamiformis ima quam spicâ multo brevior. Squamae homomorphae late ovatae acutae membranaceae brunneofulvae, margine late albo-hyalinae, dorso anguste virides et uninerviae, 3 mm. longae. Utriculi squamis longiores suberecti demum reflexi, membranacei anguste ovati plano-convexi fulvescentes glabri 5 mm. longi utrinque tenuiter plurinervi, marginibus parum incrassati et e medio scabri, basi rotundati valdissime spongiosi et sessiles et antice sulcati, apice in rostrum recurvum latum, ore oblique sectum attenuati. Nux 2,5 mm longa ovata plano-convexa utriculum fere explens nec lucida.

Nom. Jap.

Type locality: Chemulpo in Korea (FAURIE n. 904)—in Hb. Kyoto Imperial University.

Range: Korea; Syou-ouen (FAURIE n. 1306 et 901).

This species belongs to the same group as *Carex arcnicola* FR. SCHMIDT. from which it differs in its narrower, longer sterile leaves, sessile, reflexed utricles strongly spongy at the base, and paler scales.

Carex hakonensis FRANCH. et SAVAT. Enum. Plant. Jap. II. (1876) p. 123 et (1879) p. 550; FRANCH. *Carex* Asie-orient. n. 11 tab.; MATSUM. Ind. Plant. Jap. II. i. p. 113.

Carex Kramerii FRANCH. et SAVAT. l. c. pp. 124 et 550; FRANCH. l. c. n. 12 tab.; LÉVL. et VANT. in Bull. Acad. Intern. Geogr. Bot. (1901) p. 53.

Carex heleochariformis LÉVL. et VANT. in Bull. Soc. Bot. France (1904) p. 202.

Carex Onoci var. *Kramerii* KÜKENTH. Cyper. Caric. (1909) p. 101 (cum form.); MATSUM. Ind. Plant. Jap. II. i. p. 124.

Nom. Jap. Koharisuge.

Hab. Yezo, Hondô, Kiushiu.

var. **Onoei** (FRANCH. et SAVAT.) OHWI com. nov.

Carex Onoci FRANCH. et SAVAT. Enum. Plant. Jap. II (1879) p.

551; KÜKENTH. Cyp. Caric. p. 101; MATSUM. Ind. Plant. Jap. II. i. p. 124; FRANCH. Carex Asie-orient. n. 13 tab.

Carex capituliformis MEINSH. ex MAXIM. in Mel. Biol. XII. (1887) p. 563 et in Acta Horti Petrop. (1901) p. 310; KOMAROV, Flor. Manchur. I. (1901) p. 354.

Nom. Jap. Harisuge

Hab. Yezo, Hondô, Shikoku, Kiushiu, Korea.

Distr. Manchuria, Amur, Ussuri.

Carex oahuensis C. A. MEY. in "Mem. Acad. St.-Petersb. I. (1831) p. 218"; KUNTH. Enum. Plant. II. p. 515; BOOTT, III. Carex III. p. 111, t. 351; HILLEBR. Flor. Hawaiian isls. p. 487; KÜKENTH. Cyp. Caric. p. 631.

Carex nuptialis BOOTT, l.c. IV. p. 175, t. 591.

Carex wahuensis var. *Meyeri* FRANCH. et SAVAT. Enum. Plant. Jap. II. p. 563.

Utriculi validius et praesertim ad basin versus permultinervi, squamis ovatis vel late ovatis saepe fulvo-ferrugineis raro pallidis.

Hab. Sandwich islands.

Ins. Oahu: Honolulu (FAURIE n. 1210).

Ins. Molokai: Pukoo (FAURIE n. 1208), Kamolo (FAURIE sine num.).

Ins. Kauai: Koloa (FAURIE n. 1223), Waimoa (FAURIE sine num.), Hanalei (FAURIE n. 1203), Holokele (FAURIE n. 1200).

Ins. Maui: in cratere Haleakala (FAURIE n. 1212).

Ins. Hawaii: in littore Halowa (FAURIE n. 1213), in littore Hilo (FAURIE n. 1214), in volcano Kilauea (FAURIE n. 1216), Maunakea 2000 m. (FAURIE n. 1217).

Ins. Kipukai (FAURIE sine num.).

var. **Boottiana** (HOOK. et ARN.) KÜKENTH. Cyp. Caric. (1909)

p. 632, partim.

Carex Boottiana HOOK. et ARN. Botan. BEECH. Voy. (1836-40) p. 273; C. B. CLARKE in Journ. Linn. Soc. XXXVI (1903). p. 275 (non BENTHAM 1845).

Carex Bongardi BOOTT in Trans. Linn. Soc. XX (1846). p. 144 et Ill. Carex IV. p. 160. t. 531; NAKAI in Bot. Mag. Tokyo XXXVIII (1924). p. 153 (Jap. art.).

Carex wahuensis var. *Bongardi* FRANCH. et SAV. Enum. Plant. Jap. II (1879). p. 563.

Carex Boottiana var. *bracteosa* C. B. CLARKE in Journ. Linn. Soc. (1903). p. 275.

Carex oahuensis var. *angustior* KÜKENTH. Cyp. Caric. (1909) p. 632.

Carex boninensis KOIDZUMI in Bot. Mag. Tokyo XXXII (1918). p. 55.

Spiculae laterales androgynae remotae, squamis femineis ovatis vel ellipticis pallidis, utriculis multinervosis, in textura parum tenuioribus quam typica.

Hab. Bonin isl.: sine loc. (MATSUMURA in FAURIE n. 15587).

Kiushu: Tsukishima in Prov. Hiuga (2. V. 1922. Z. TASHIRO).

Loochoo: Insl. Amami-oshima: loc. non indic. (III. 1924. Z. TASHIRO), Kominato (Z. TASHIRO).

Insl. Utchina; Kunchan (3. II. 1924. Z. TASHIRO).

var. **robusta** FRANCH. et SAVAT. l.c. p. 563.

Carex Bongardi (non BOOTT) MIQ. Prol. Flor. Jap. p. 82.

Carex Bongardi var. *robusta* FRANCH. et SAV. l.c. p. 561.

Carex oahuensis var. *Bottiana* KÜKENTH. Cyper. Caric. p. 632, partim.

Carex stupenda LÉVL. et VANT. in Bull. Acad. Intern. Geogr. Bot. (1901) p. 195; NAKAI in Bot. Mag. Tokyo XXXVIII (1924). p. 153 (Jap. art.),

Carex Wilfordii C. B. CLARKE in Journ. Linn. Soc. XXXVIII (1904). p. 318.

Spiculae laterales subremotae femineae vel apice breviter masculae ;
 sp. terminalis crassior. Squamae femineae obovatae saepe bifidae,
 plerumque coloratae. Utriculi tenuiter multinervi, in textura tenuiores
 quam typicae, apice in rostrum longum abruptius contracti.

Nom. Jap. Hige-suge, Iso-suge.

Hab. Hondo : Katsuyama in Prov. Awa (5. IV. 1928. J. OHWI),
 Isl. Nijima (S. OKUBO in FAURIE n. 15588).

Kiushiu : Birojima, Prov. Osumi (26. VII. 1913. Z. TA-
 SHIRO), Kagoshima (FAURIE n. 4383), Oshima,
 Prov. Higo (V. 1925. K. MAYEBARA), Takashima
 in Prov. Bungo (2. IV. 1921. Z. TASHIRO), Ins.
 Tsushima (T. HARA), Ins. Yakushima (27. V.
 1927. J. SUGIMOTO).

Korea : Quelpaert (FAURIE n. 2259), ibid. (TAQUET n.
 4940).

Liukiu : Insl. Utchina, Kunchan (30. I. 1924. Z. TASHIRO).

Carex villosa BOOTT, in A. GRAY, Narr. Exped. PERRY, II. (1857)
 p. 327 et Illustr. Carex, IV. (1867) p. 203; KÜKENTH. Cyper. Caric.
 p. 641.

Carex villosa var. *Wrightii* FRANCH. et SAVAT. Enumer. Plant.
 Japon. II. p. 567.

Carex drymophila var. *reducta* KÜKENTH. Lc. p. 755.

Nom. Jap. Hatabesuge (nov.).

Hab. Yezo : Washibetsu (FAURIE n. 10268), Mombetsu
 (FAURIE n. 722, cf. FRANCH. Carex Asie-orient. n.
 264 sub *Carex vesicaria*), Yesashi (FAURIE n.
 3905), Yesan (FAURIE 8051), plain de Yupari
 (FAURIE n. 8126), Shibetcha (FAURIE n. 5334),
 Famikawa (FAURIE n. 6547 et 8130), Sapporo
 (FAURIE n. 2831), Muroran (FAURIE n. 1700),
 Hakodate (FAURIE n. 5287).

Kiushiu: Kojo-mura in Asogori, Prov. Higo (29. V. 1927. H. KODZUMA).

Korea: Kan-ouen-to (FAURIE n; 932).

Carex confertiflora BOOTT, in Proc. Linn. Soc. I. (1845). p. 286 et in Trans. Linn. Soc. XX. (1846). p. 138 et in ASA GRAY, on the Bot. Jap. (1859). p. 418.; FRANCH. et SAVAT. Enum. Plant. Japon. II. pp. 151 et 578; FRANCH. Carex Asiic-orient. n. 253.

Carex olivacea (non BOOTT) KÜKENTH. Cyper. Caric. (1909). p. 617. quoad plant. ex Japonia; MATSUM. Ind. Plant. Japon. II. i. p. 124.

Carex olivacea var. *angustior* KÜKENTH. l.c. p. 618.

This species is characterised by its wholly smooth culms, axis and peduncles, glaucous under surfaces of the leaves, greenish sheaths and erect shorter female spicules which are never androgynous, subtended by a narrow scale produced into a smooth cusp at the apex.

The nearest allied species is *Carex olivacea* BOOTT, a central Asiatic plant, in which "Culmus superne scaber. Vagina intus atropurpurea. Spiculae superiores (vel omnes) apice masculae. Squamae femineae inferiores longe hispido-cuspidatae".

Nom. Jap. Miyama-shirasuge.

Hab. Yezo: Hakodate (FAURIE n. 5567), Nayoro (FAURIE n. 5568), Jirafu (FAURIE n. 6551).

Hondo: Forêts de l'Osorezan (FAURIE n. 4589), Hayachinesan (FAURIE n. 13164), Akita (FAURIE n....), Sendai (VI. 1918. A. YASUDA), Matsushima (FAURIE n. 1140), Miharu in Prov. Iwaki (11. X. 1914. Y. HATTORI), in Gujôgori, Prov. Mino (15. VI. 1928. K. SHIODA), Nara (21. V. 1922. Y. OKAMOTO), Ryô-an-ji in Omuro, ca. Kyoto (19. V. 1922. G. KOIDZUMI), Arima in Prov.

- Settsu (Z. TASHIRO), Ins. Prov. Awaji (VII. 1923. M. ISHIGAKI), Taishaku-kei in Prov. Bizen (I. VI. 1929. Z. TASHIRO), in Prov. Aki (D. SHIRAKAMI), Yanai in Prov. Suwô (V. 1915. T. YAMAHARA).
 Shikoku: in Prov. Sanuki (1915. leg. ?).
 Kiushiu: Mt. Seburiyama in Prov. Chikuzen (S. ADZUMA), Koishiwara in Prov. Chikuzen (4. VIII. 1924. Z. TASHIRO), ca. Nagasaki (Z. TASHIRO).

Carex parciflora BOOTT in Mem. Amer. Acad. n. ser. VI. (1858-59). p. 418; FRANCH. et SAVAT. Enum. Plant. Japon. II. (1879). p. 575; KÜKENTH. Cyper. Caric. p. 638 (sub *C. Jackiana* ssp.).

var. **macroGLOSSA** KÜKENTH. l.c. p. 638.

Carex macroGLOSSA FRANCH. et SAVAT. Enum. Plant. Japon. II. (1876). p. 148 et (1879). p. 576; FRANCH. Carex Asie-orient. n. 212, t. 2, f. 2. (not 1); LÉVL. et VANT. in Bull. Acad. Intern. Geogr. Bot. (1902). p. 103.

Carex Jackiana var. *macroGLOSSA* KÜKENTH. ex MATSUM. Ind. Plant. Japon. II. (1905). p. 115.

Carex jaccens C. B. CLARKE in Kew Bull. add. ser. VIII. (1908). p. 80.

forma **subsessilis** (KÜKENTH.) OHWI, nov. comb.

Carex oligostachys var. *subsessilis* KÜKENTH. ex MATSUM. Ind. Plant. Japon. II. i. (1905). p. 123, nom. nud.

Folia latiora ad 9 mm. lata. Utriculi 7-8 mm. longi nuce fere triplo longiores.

Nom. Jap. Mugi-suge.

Hab. Honto; Ishioka in Prov. Hitachi (1912. Y. TSURUMACHI).

var. **Vanioti** (LÉVL.) OHWI, nov. comb.

Carex Vanioti LÉVL. in Bull. Soc. Agric. Sarthe (1901). p. 17 et in Bull. Acad. Intern. Geogr. Bot. (1902). p. 108.

Carex filipes var. *Vanioti* (LÉVL.) KÜKENTH. *Cyper. Caric.* (1909).
p. 641.

? *Carex Jackiana* var. *parviflora* KÜKENTH. apud MATSUM. *Ind.*
Plant. Japon. II. i. (1905). p. 115.

Nom. Jap. Nagahono-kojudzusuge, (nov.)

Hab. Honto: Sommet du Ganju (FAURIE n. 1701), Mt. Hakko-
dake (FAURIE n. 1152) et 6492), Mt. Chokaisan
(FAURIE n. 2733), Mt. Gassan (FAURIE n. 1121),
Mt. Hakusan (10. VII. 1929. J. OHWI).

Carex pleiorhiza LÉVL. et VANT. has been transferred to this species
by KÜKENTHAL in his *Monogr.* (l.c. p. 638), but its original descrip-
tion as well as its cotype specimens preserved in our herbarium,
agrees very well with *Carex scila* MAXIM.

Carex papulosa BOOTT, in *Mem. Amer. Acad. n. s. VI.* (1858-
59) p. 418; FRANCH. et SAV. *Enum. Plant. Japon.* II. p. 575; KÜKENTH.
Cyp. Caric. p. 637.

Carex flectens BOOTT, *Illustr. Carex, IV* (1867). p. 171, t. 581.

Carex grandisquama FRANCH. in *Bull. Soc. Philom. Paris.* 8 ser.
VII. (1895) p. 51 et *Carex Asie-orient.* n. 206.

Carex Sekimotoi HONDA in *Bot. Mag. Tokyo, XI.III.* (1929) p.
543.

Nom. Jap. Yezo-tsurisuge, Hiroha-yachisuge.

Hab. Yezo: Kuroiwa (FAURIE n. 6488), Hakodate (FAURIE n.
5565), Yubutsu (FAURIE n. 6489), Jirafu (27.
VI. 1905. FAURIE), Muroran (FAURIE n. 1698).

Honto: Aomori (FAURIE n. 5561-5562), Adzuma (FAURIE
n. 10358), Nishitakahashi, Prov. Shimotsuke
(V, 1929. H. SEKIMOTO), Tamatsukuri, Prov.
Hitachi (26. VI. 1912 Y. TSURUMACHI).

Kiushiu: Kojomura in Asogori, Prov. Higo (29. V.
1913), Tano in Kudzugori, Prov. Bungo (13.

JISABURO OHWI:—

V. 1921. Z. TASHIRO), Senchoo-mura in Prov. Higo (5. V. 1907. H. KODZUMA), in Kudzugori, Prov. Bungo (10. VI, 1921. TACHIKAWA).

Korea: Seoul (FAURIE n. 898), Kan-ouen-to (FAURIE n. 940).
