Contributio ad Floram Asiaticam Novam-Guineam incluse

acutore Tetsuo KOYAMA*

小山鉄夫: アジアの植物への寄与

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Carex hypolytrifolia T. Koyama, spec. nova ad sectionem *Mapaniifoliae*; omnibus speciebus in hac sectione huc usque descriptas habitu multo minore, foliis brevioribus angustioribusque flaccidis tenuibus, paniculis partialibus laxioribus ita rachi visibili valde dissimilis est. (Fig. 1)

Perennis haud caespitans, *rhizomate* crassiusculo lignoso collo ascendente squamis fuscis oblecto, radicibus validis. *Folia* omnia radicularia ex unico rhizomate circa 7 fascicularia late linearia usque linearioblanceolata 28-52 cm longa medio 15-20 mm lata laete viridia flaccida plana praeter margines minute scabres laevia apice

Fig. 1. *Carex hypolytrifolia*, n. sp. a. spicula; b. bracteola spiculae; c. prophyllum basis spiculae; d. squama floris foeminei; e. utriculus; f. nux cum stylo; g. os rostri utriculi.

subsensim breviuscule acuta basi in vaginas breves antice fulvohyalinas dorso purpurascentinervatas gradatim attenuantia. *Vaginae* basillares aphyllae vaginiformes membranaceae fuscae non fibrososolutae. *Culmus* centralis e fasciculo foliorum solitarius erectus 4-5 dm altus graciles 1-1.5 mm crassus obtuse trigonus laevissimus. *Inflorescentia* erecta paniculata decomposita subcontigua oblonga 15 cm longa 4 cm lata; *paniculae partiales* 3 singulae ovoideae erectae 3-6 cm longae 2.5-4 cm latae densiusculae 3-5-spicatae longe exsertopedunculatae, *pedunculis* acute triquetris ad

* Botanical Institute, Faculty of Science, University of Tokyo. 東京大学理学部植物学教室

angulo hirtoscabris, *rachi* acute triquetra scabrangula; *bracteae* vaginantes inferior subfoliaceae, laminâ ad 8 cm longâ 6 cm latâ paniculam secundariam suam superante, vaginâ ad 2.5 cm longâ, superior subspathacea paniculâ suâ multo previor. *Spicae* ellipsoideae pluri-(3-7-)spiculosae patentes subsessiles, *rachi* e prophylo ochreiforme tenuimembranaceo enatâ hispidangulâ, *bracteolis* squamiformibus dorso breviter hispidis apice scabroaristatis. *Spiculae* androgynae rectangulariter divergentes ovoideae 8-10 mm longae maturitate 5-7 mm crassae dense multiflorae, parte foemineâ 3-6-florâ eâ masculâ ellipsoideâ multiflorâ brevior; *prophylla* spathaceoutriculiformia membranacea fulva superne sparsim hispidula, *bracteolis* eae spicarum similibus. *Squamae* foemineae lanceolatae vel oblongolanceolatae 3.8-4.5 mm longae 0.8-1.2 mm latae membranaceae inferne glabrae superne minute hirsutae dilute fulvae a basi ad apicem acutiusculam hyalinam utrinque sensim attenuantes dorso subaequaliter pluri-(ad 17-) nerviae. *Utriculi* maturitate patentes squamam superantes 6-7 mm longi 1.5 mm lati membranacei olivaceovirentes praeter costas 2 tenuiter multinervi a medio ad apicem hispidi, e parte inferiore rhomboideo-ovale vere trigonâ basi subito cuneatocontractâ subestipitatâ apice etiam subito attenuatâ in *rostrum* gracile perlongum 3-3.5 mm longum 0.2 mm latum primo erectum demum plerumque fluosum ad angulos sparasim spinulosohispidum transeuntes, *ore* hyalino scabrido profunde oblique fisso. *Nux* arcte inclusa late rhomboidea 2-2.2 mm longa 1.5 mm lata vere triquetra facie concaviuscula atrofusca ad angulos prominentes flavida apice basique abrupte cuneatocontracta; *stylus* longus gracilis flexuosus basi breviter conicoincrassatus, stigmatibus 3 recurvis brevibus papulosis.

A N N A M: Bun Mo, 800m. alt Leg. B. Hayata, sin. num.! —holotypus in TI.

Fig. 2. *Carex megacarpa*, n. sp. a, squama floris foeminei; b. utriculus; c. nux. (Kostermans, 6231)

Carex megacarpa T. Koyama, spec. nova in sectione *Graciles*; proxime ad hanc speciem accedit *C. nachiana* Ohwi ex Japonia descripta, tamen a planta javanensi utriculis late ovalibus 3.5-4 mm longis, habitu elatiore etc. satis distinguitur, et *C. autumnalis* Ohwi, etiam planta Japoniae australis, est valde distincta ab hac spiculis sexu distinctis, utriculis vix 3 mm longis.—? *C. brunnea* Thunb. var. *dolichocarpa* Nemes in Kew Bull. 1950: 201 (1950), e descriptione. (Fig. 2)

Perennis, *rhizomate* abbreviato lignoso perdense caespitoso, radicibus validis. *Culmi* erecti 60-100

cm alti vere triquetri sursum scabridi nutantes inferne laeviusculi remote 1-3-foliati basi vaginis obtecti. *Vaginae* basillares aphyllae vel laminatae fuscobrunneae dorso demum in fibras sparse solutae antice membranaceae dein in fibras reticulatim fissae. *Folia* radicalia culmorumque linearia 1/2-2/3-culmo aequilonga 2-3 mm lata plana vel subconduplicata scabrida apice longissime acuminata basi

in vaginas longas (5-7 cm in foliis culmorum) antice tenuimembranaceas fulvas reticulatim nervulosas vix attenuata. *Spiculae* 8-13 superiores singulae geminaeve inferiores in paniculis secundariis per laxis dispositae paniculam gracilem formantes, omnes androgynae oblongo- vel vere cylindricae 1.5-3 cm longae maturitate 3-4 mm crassae densiuscule pluriflorae, parte foeminea ea mascula 2-4-plo superante, *pedunculo* gracili scabro longe exserto. *Bracteae* inferiores subfoliaceae panicula partiali sua paullo longiores basi longe vaginantes, caeterae bracteolaeque spathaceae margine anguste fulvomembranaceae apice interdum aristatae. *Squamae* foemineae ovato-ellipticae vel ellipticae 3-3.5 mm longae ca. 1.5 mm latae tenuiter membranaceae medio minute fuscolineolatae latere fuscotinctae margine per anguste hyalinae apice acutiusculae obtusiusculaeve, *carina* late virente uninervia. *Utriculi* squama longiore latioreque suberecti ovato-oblongi vel oblongo-elliptici 4-5.5 (-6) mm longi medio 1.3-1.5 mm lati planoconvexi vel biconvexi membranacei distincte plurinervioli maturitate fulvi, praecipue supra medium marginibusque versus apicem hispiduli, deorsum subsensim contracti in stipitem glabrum 1/2-2/3 mm longam, sursum sensim contracti in *rostrum* rectum 1.5-2 mm longum antrorsim hispiduloscabrum, *ore* hyalino oblique fisso. *Nux* arcte inclusa ovalis 2.5-3 mm longa 1.4-1.7 mm lata biconvexa flavens apice basique rotunda mucronulata, *stylo* longo recto basi subaequali, stigmatibus 2 rostro paullo longioribus.

J A v A: in sylva montis, Lawn super Tjimcrosewu, Sarangan. Leg. J. H. Kern, 8672!—holotypus in TNS. Sine loco speciali. Leg. Kostermans, 6231!.

Carex (*Ischnostachyae*) **ischnostachya** Steudel

var. **fastigiata** T. Koyama, var. nova, a typo diversa utriculis non vel brevissime rostratis 2.8-3.5 mm longis, spiculis superioribus 3-5 apice culmi fastigiatis. *C. subtumida* Ohwi ab hac recedit habitu robustiore, culmo valde scabro, rhizomate longe stolonifero etc.

R y u k y u: m. Tanimadake, Hajimura in ins. Okinawa. Leg. T. Amano, 7586!—hyiotypus in TI.

Carex (*Stellulatae*) **omiana** Franchet et Savatier

var. **perileia** (S. T. Blake) T. Koyama, stat. nov.—*C. perileia* S. T. Blake in Journ. Arn. Arbor. 28: 102 (1947); Nemes in Reinwardtia 1: 441 (1951). Distrib. in Nova-Guinea endemica.

Eriocaulon Omuranum T. Koyama, spec. nova e sectione *Spathopeplus*; *E. Takae* Koidz. et *E. hondoensi* Satake proximum videtur, tamen ab hoc bracteis involucri apice acutissimis non dentatis floribus duplo superantibus medio latiuscule viridibus et ab illo habitu multo minore, petalis intus glaberrimis recedit. (Fig. 3)

Annuum gracile acaulescens, *radicibus* fibrosis albis transverse septatis. *Folia* pauca linearia 1/2-1 mm lata 5.5-12 cm longa flaccida circiter 4-nervata sep-

tatonodulosa versus apicem longe acuminatam gradatim attenuantia. *Pedunculi* 1-4 ex unica planta erecti capillares 10-15 cm alti vix torti 4-costati, *costis* anguste membranaceis. *Vaginae* basilares basem pedunculi perlaxe circumdantes cylindricae 1.5-4.5 cm alti 1-1.7 mm lati septatonodulosae apice hyalinae oblique fissae. *Capitulum* turbinatum 4.5-5.5 mm altum 4-6 mm in diametro omnino glaberrimum 9-17-florum; *bracteae* involucrantes (4-) 5-6 erectopatentes lanceolatae vel anguste lanceolatae 2.5-6 mm longae 0.8-1.2 mm latae sursum gradatim attenuatae apice longe subulatuspidatae medio late virides membranaceae marginibus utrinque latiuscule albohyalinae; *receptacrum* glabrum. *Flores foeminei* marginales cum stipite circiter 1/2 mm longo 3.7 mm longi; *bractea* lanceolata oblongolanceolatae hyalina pallida 2.5 mm longa apice acutiuscula; *calyx* ovalis 2.3 mm longus hyalinus pallidus obsoletissime trinervulosus ex toto glaberrimus apice contractus tridentatus, dentibus deltoideis centrale quam laterales 2 brevior angustioreque omnibus glabris; *petala* 3 libera lanceolata vel ovato-lanceolata alba 3.5 mm longa calycem paullo excedentia basi subabrupte contracta stipitata intus extraque glabra apice acutiuscula mucronata glandula unica coronata; *ovarium* trilobulare, *stilo* longo recto, *stigmatibus* 3. *Flores masculi* centrales 1.7 mm longi; *bractea* oblongolanceolata hyalina pallida flore paullo brevior apice rotunda; *calyx* spathiformis hyalinus pallidus apice obtusus vel leviter emarginatus omnino glaber; *corolla* subteres apice trilobata, *lobis* aequalibus oblongis obtusis; *stamina* 6 lobis corollae longiora, *antherae* globosae nigrae.

JAPONIA: circa lacum Shirakabako, Honshu. Leg. Toshiro Omura, 6 aug., 1951 !—holotypus in TNS.

Fig. 3. *Eriocaulon Omuranum*, n. sp. a. bractea involucri; b. flos foemineus cum bractea sua; c. ejusdem calyx; d. ejusdem petalum; e. pistilum; f. bractea floris masculi; g. calyx floris masculi; h. corolla floris masculi cum staminibus. Omnes e typo delineabantur.

Scirpus Ohwianus T. Koyama, spec. nova e vicinia *Scirpi juncoidei* Roxb. a qua nuce obovata non orbiculare, spiculis pluribus densius floriferis culmis robustioribus ample distinctus—‘*S. juncoideus* (non Roxb.)’: Ohwi in Mem. Coll. Sci. Kyoto Imper. Univers. ser. B, 18 (1):113 (1943), pro parte, excl. var. *Hotarui* Ohwi. (Fig. 4)

Herba annua caespitans fere erhizomata, *radicibus* fibrosis multis fuscescentibus. *Culmi* erecti 3-6 dm alti 1.2-4 (raro ad 5) mm crassi tereti obscure pluricostulati laeves laete virides opaci basi vaginis paucis obsiti. *Folia* omnia in vagias aphyllas reducta. *Vaginae* basilares inferiores tenuiter membranaceae fuscae squamiformes usque subspathaceae apice profunde oblique fissae obtusae vel plus minus emar-

ginatetae, superiores cylindricae, summa ad 13 cm longa dorso viridis antice hyalina ore oblique secta mucronata. *Inflorescentia* pseudolateralis capitatocontracta (1-) 2-9 (-12)-spiculosa. *Bractea* unica teres culmum continuans erecta 5-15 cm longa inferne antice unisulcata. *Spiculae* oblongocylindricae radiantes 9-18 mm longae 3.5-5 mm in diametro dense pluriflorae fulvovirentes. *Squamae* imbricatim dispositae spissae ovaes 3.5-4 mm longae 1.8-2.7 mm latae valde naviculares membranaceae latere utrinque fulvotinctae apice rotundatae otusae vel emarginatae mucronatae margine latiuscule albohyalinae inferne aequaliter tenuinerviae, *costa* late viridi 1-3-nervia. *Nux* obovata subbiconvexa 1.8-2 mm longa circiter 1.5 mm lata basi abrupte attenuata obdeltoidea apice rotundocontracta mucronata facie

Fig. 4. *Scirpus Ohwianus*, n. sp. a. squama; b. stamen; c. nux cum setis, filamentis et stylo, postice visa; d. eadem cum setis styloque a dorso visa; e. sectio transversalis nucis (e typo).

nitida plus minus zonatorugulosa maturitate nigricans. *Setae* hypogynae 4-6 tenues flavescentes praeter partem basilem retrorsim subdense spinuloscabrae, 4 nucem aequantes paullo superantesve, ceterae cum 1/2-2/3-nuce aequilongae. *Stylus* rectus 2-2.2 mm longus basi aequalis sub stigmatibus subcompressus, *stigmatibus* 2 sed saepe cum rudimento brevi unico ita ut videtur trifidis. *Stamina* 3, *filamentis* planis, *antheris* 1.3 mm longis, *connectivo* deltoideo breve.

JAPONIA: circa Yatsumi, Prov. Kadzusa. Leg. T. Koyama, 14591!—holotypus

in TNS. Distrib. sp. Japonia (Honshu, Kyushu), Ryukyus.

Nota: Haec species cum *Scirpo Hotarui* Ohwi saepissime confusa est, tamen ab illo funditus diversa est:

A. Culmus crassior obsolete pluricostulatus; spiculae 3-7; oblongae breviter cylindricaeve; nux biconvexa, styli ramis 2. *S. Ohwianus*, n. sp.

AA. Culmus gracilior laevis non costulatus nec angulatus in vivo plus minus nitidulus; spiculae 1-3 ovoideae globoso-ovoideaeve; nux adpresse triquetra, facie postica concaviuscula, styli ramis semper 3. *S. Hotarui* Ohwi

Poa finitima T. Koyama, spec. nova ad seriem *Pratenses*, a *Poa shinanoana* Ohwi lemmate antherisque brevioribus et habitu minore praecipue distat. (Fig. 5)

Gramen perenne, *stolonibus* gracilibus perlongis horizontaliter repentibus fibris fuscis sparse obtectis. *Culmus* ex unico rhizomate solitarius erectus 45-55 cm altus 2-3-nodosus basi geniculatus circ. 1 mm crassus vaginis fuscis fulvisve obsitus, remote pauci-(saepissime 2)-foliatus laevis plus minus nitidulus. *Folia* linearia, *laminis* glabris vagina brevioribus 2-2.5 mm latis usque ad 6 cm longis, *vaginis* infra medium antice connatis 5-12 cm longis internodio brevioribus, *ligulis* hyalinis rotundis fere 1 mm longis. *Panicula* oblongo-ovata vel oblonga densiuscula sub-

erecta 6-12 cm longa 3.5 cm lata, *ramis* (2-) 3-5-nis capillaribus flexuosis scabriusculis post anthesi patulis 3-5-spiculatis basi nudis. *Spiculae* compressae 3-4-florae cine.

Fig. 5. *Poa finitima* n.sp. Spicula (e typo).

reovirentes vel purpurascenticinereae 5.5-7 mm longae; *glumae steriles* lanceolate acuminate 3-3.5: 3.7-4 mm longae trinervatae, *nervis* 2/3-3/4-glumae attingentibus, *carina* sursum minute scabra; *lemmata* anguste oblonga vel lanceolato-oblonga 4-4.5 mm longa apice latiuscule hyalina acutiuscula praeter carinam minute scabram latere utrinque 2-nervosa basi cuneatoangustata lana longa cincta, carina ad 1/2 nervis marginalibus ad 1/3 proprius usque pilosis, nervo intermedio nudo; *paleae* lemmate paullo breviores 3.5-4 mm longae hyalinae apice rotundotruncatae; *antherae* lineares 1.5-1.7 mm longae.

J A P O N I A: in resione alpina montis Kiso-Komagatake, prov. Shinano. Leg. K. Machida, s. n. !—holotypus in TI.

Uncinia Ohwiana T. Koyama, spec. nova distinctissima ex affinitate *U. caespitosae* quae spiculis multo longioribus perlaxe florentibus valde dissimilis est. Sectio *Stenandrae*. (Fig. 6)

Perennis laxe caespitans, *rhizomate* breviuscule repente estolonifero. *Culmi* erecti 4-5.5 cm alti graciles rigidi acute triquetri striati supra medium scabri. *Folia* anguste linearia rigida 1.5-2 mm lata culmum aequantia vel paullo superantia plicata canaliculata margine scaberrima apice sensim attenuata longe acuminata. *Vaginae* basillares fuscae fusciorubentesve rigidae aphyllae inferiores subsquamiformes. *Spicula* solitaria anguste linearia 5-7 cm longa 2 (-3) mm lata perlaxe florens apice in *partem masculam* 10-15 (-20) mm longam vix attenuata, *rhachi* saltem infra medium visibili. *Bractea* nulla. *Squama foeminea* ovato-oblonga 5-6 mm longa rigida brunnea fuscave partim castanea apice acutiuscula basi fere angustata utriculum amplexens, *costa* latiuscula 1-3-nervosa resinosolineolata. *Utriculus* erectus linearioblongus vel lanceolatus squamam paullo superans 6-6.5 (-7) mm longus adpresse trigonus glaberrimus maturitate fuscatus tenuiter plurinervulosus basi sensim attenuatus in *stipitem* longiusculum apice subsensim attenuatus in *rostrum* breviusculum conicocylindricum, *ore* oblique secto margine anguste albohyalino. *Nux* arcte inclusa linearioblonga 3-3.5 mm longa obtuse trigona apice basique subito contracta, *stylo* brevi basi paullo incrassato subconico supra medium usque trifido. *Racheola* setiformis utriculum duplo superans recta apice hamata. *Filamenta* filiformia elongata.

Fig. 6. *Uncinia Ohwiana*, n. sp. a. spicula; b. squama floris foeminei; c. utriculus cum racheola et stigmatibus; d. nux cum parte racheolae (e typo).

N O V A-G U I N E A: sine loco speciali. TNS. no. 92552 !—holotypus.

Summary

In the present paper, five species and one variety of sedges, grass and pipewort were newly proposed and one sedge was reduced to a varietal rank. A special mention is necessary for a new sedge of *Garciles* from Java. So far as Thunberg's type, *Carex brunnea* is characterised by somewhat yellowish-green leaves and very small perigynia 2.5-2.7 mm long, hence Dr. Kükenthal once considered true *C. brunnea* to be a variety of *C. gentilis*. Although the species of *Graciles* have very wide deviation, the above plant from Java is not *C. brunnea*. Further, Malaysian plants treated so may possibly be quite different from *C. brunnea*. The abbreviations TI and TNS are used for the herbaria of the University of Tokyo and of the National Science Museum, Tokyo, respectively.

Physiological Changes in the Germinating Seeds during Low Temperature Treatment II On the Activity of Catalase and Peroxidase

by Shôjirô INOUE* and Masaki YAHIRO**

井上昭治郎・八尋正樹：低温処理間の発芽種子の生理的变化 II
カタラーゼ及びペルオキシダーゼについて

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Introduction

Many biennial plants, which initiate into the reproductive growth by the long day-length of spring, require chilling of a certain days in the early stage of seedling.

It is considered that the study of the physiological changes in the seedling during the progress of vernalization is a basic matter for dissolving the problem of the reproductive growth.

On the relation between the vernalization and the enzymes, Oveckin and others⁽¹⁾ made researches in the winter wheat, Sapoznikova⁽²⁾ in *Lupinus angustifolius*; and B. Sen⁽³⁾ investigated diastase and phosphatase in the wheat and lipase, catalase and phosphatase in the mustard and diastase in the barley.

In the present experiment the authors dealt with the determination of some enzyme activity, above all, catalase and peroxidase that may have a considerable connection with the respiration.

It is their great pleasure to record here a debt of gratitude to Professor Hitoshi Kojima for his very valuable advice during the work and the authors also wish to express their thanks to Professor Shirakawa for his very helpful suggestions.

* Botanical Laboratory, Faculty of Agriculture, Kyûshû University. 九州大学農学部植物学教室

** Sericultural Laboratory, Faculty of Agriculture, Kagoshima University. 鹿児島大学農学部養蚕学教室