

Contributions to the Knowledge of the Systematics of *Morus* in Japan. IV

Morus in Cultivation. (II)

日本産桑属の分類學的知見 (四)

[Continued from Trans. Sapporo Nat. Hist. Soc. XIV. p. 278, (1936).]

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Key to the species, varieties and forms of *Morus* found in cultivation here reported

1. Style long, stigma divided into two parts at its apex. Sect. I. *Dolichostylae* KOIDZ.
..... (Morus bombycis KOIDZ.) 2
Style none or very short with sessile or subsessile stigmadivided into two parts.
..... Sect. II. *Macromorus* KOIDZ. 7
2. Teeth of the leaf are dentate, serrate or rarely dentate crenate. 3
Teeth of leaf is subtruncate. var. *subtruncifolia* HOTTA
3. Apex of the leaf long caudate. 4
Apex of the leaf usually acuminate or long acuminate. 5
4. Leaf usually variously lobate. var. *shiragiku* HOTTA
Leaf lobate or non lobate. var. *caudatifolia* KOIDZ.
5. Upper surface of the leaf scabrous or more or less smooth. Leaf lobate or not lobate. In
the former case the segments are usually broader. var. *typica* HOTTA
Upper surface of the leaf asperate. Leaf is quinquepalmate or subquinquepalmate.
..... var. *quinquepalmata* HOTTA
6. Leaf lobate or not lobate. In former case usually the length of the lobe is about half-way
between the margin and midrib. f. *normalis* HOTTA
Lobes are usually rather deep, and the segments are very anormal. ... f. *anormalis* HOTTA
7. Upper surface of the leaf is even and lustrous or not lustrous. Cystolith of mesophyll is
obtuse or rarely acute at the apex. *M. alba* LINN ... 8
Upper surface of the leaf is rugose and has a strong lustre. Cystolith of mesophyll is obtuse
and papillate, and deeply placed in tissue. *M. latifolia* POIRET 12
8. Branches usually rather erect, leaf usually 2-4 lobate or non lobate.
..... var. *typica* HOTTA 9
Branches are pendulous, leaf variously lobate or non lobate. *pendula* DIPPEL
9. Upper surface of the leaf has no spots, base cordate or rarely truncate. 10
Center of the leaf is maculated, base is cuneate. f. *Hagoromo* HOTTA
10. Leaf petiolate 3-9 cm. in length. 11
Leaf usually sessile or subsessile. f. *sessilifolia* HOTTA
11. Petiole and young shoots are greenish-blue' f. *normalis* HOTTA
Young shoot bluish-white, betiole bluish-white or rather bluish-white.
..... f. *albicaerulea* HOTTA
12. Teeth of the leaf argute or pentate, its apex incurve, apex usually long acuminate.
..... f. *Tsudaroso* HOTTA
Teeth of the leaf usually crenate dentate or more or less dentato-serrate. 13
13. Apex of the leaf emarginate or duple emarginate rarely obtuse. 14

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- Apex of the leaf acute rarely obtuse or rotundate or emarginate. f. *typica* HORTA
 14. Leaf usually pendulous. It has usually small lobe near the base. Areas around the pulvinus
 are usually blackish-brown. f. *rotundiloba* HORTA
 Leaf usually not pendulous or rarely pendula. Areas around the pulvinus are brown or
 reddish-brown. f. *Okumurai* HORTA

Sect. I. *Dolichostylae* KOIDZUMI

Imp. Sericult. Exp. Stat., II, 1, p.3 (1923).

(1) *Morus bombycis* KOIDZUMI, Bot. Mag. (Tokyo), XXIX, p.313 (1915).

Nom. Jap. *Yamagurwa*: *Kagemorimaruba** (*Benten, Iwatebonburi*),**
Mamono, Marubaakagi, Marumewase, Matamaru, Matasuke, Matsumoto, Meguro, Mikawanakashima, Mikarwakashima, Mikarawase, Mishima, Mitsuyasu
asujyo (Mitsuyeda), Mitsuyeda, Miyoso, Mizuguchi-gurwa, Mizusawa (Mizusawawase), Mizusawawase, Mizunuchi-gurwa, Mogami, Moheikobore, Mokugurwa
(Kiura-gurwa, Mokuwase, Mokuziro, Unetaoshi, Yorishima-gurwa), Mokukuroki, Mokuwase, Mokuziro, Morikiyo-gurwa, Moritawase, Motojin, Motnojyo, Motoyamato, Motoyemon, Mukashiyamoto, Murasakiwase, Nagai, Naganuma-gurwa
(Ohata-gurwa), Nagoya, Nakagurwa, Nakajimawase, Namishidare, Nanjyowase, Nanori-gurwa, Nawo-gurwa, Nezumigayeshi (Shironezumigayeshi, Shiroyotsume, Yotsume), Niigatanishiki Ninzin-gurwa, Nirayama-gurwa, Nodagurwa, Nodawase, Obata, Obatanaka, Odate-gurwa (Date-gurwa, Shimizugurwa, Shimizuwase), Ogami, Ogamirwase, Okane-gurwa, Okudawase, Onibanto, Oniwase, Onnakunitomi, Oshimawase, Oshyuakagi, Oshyukaneko, Oshyutanaka, Otanirwase, Otawase, Owaritakasuke, Oyamoto, Ozuna (Ogamimiya-hashi), Rihachi, Rokuotakasuke, Rokuowase.

Hab. Japonia: in hortis culta.

Distr. Saghalien, Yezo, Honshu, Shikoku, Kiushiu, Korea, Manchuria et China

var. *subruncifolia* HORTA, var. nov.

Folium cordatum vel ovato-ellipticum, apice caudato subtricuspidato, margine fere subruncinata, basi truncata vel aperte cordata.

Nom. Jap. *Toryu*.

Hab. Japonia: in hortis culta.

Remarks. Leaf is cordate or ovato-elliptical, apex is caudate and subtricuspidate, margin is rather runcinate, base is truncate or shallowly cordate, *Shioyasen* is closely related to this form.var. *Shiragiku* HORTA, var. nov.

Folium varie lobatum, supra valde scabrum, apice caudato leviter incurvo petiolo 2-3 cm. longo.

* Japanese names written in Italic are of the cultivated races.

** Japanese names written in parentheses are synonyms or vernacular names of the cultivated races.

Nom. Jap. *Shiragiku*.

Hab. Japonia : in hortis culta.

Remarks. Leaf is variously lobate, upper surface of the leaf vary scabrous, apex is caudate and curvate to one side, petiole is 2–3 cm. at length.

var. **caudatifolia** KOIDZUMI, *Kuwazoku, Shokubutsu Kô*, p. 33 in nota sub. *M. bombycis* (1919); Bull. Imp. Sericult. Exp. Stat., VI, 3, p. 92 (1921) & III, 1, p. 33 (1917) & II, 1, p. 12 (1923)–NAKAI, Fl. Syl. Koreana, XIX, p. 102 (1932).

Syn. *Morus caudatifolia* KOIDZUMI in MATSUMURA, Icon. Pl. Koishikawensis, III, 4, p. 79, Pl. 185 (1916)–MAKINO & NEMOTO, Fl. Jap. p. 219 (1921).

Folium; apice caudato subito elongato.

Nom. Jap. *Onaga-guwa*; *Akameyentaka Ichimurasaki* in Hokkaido, *Inabeyentaka*, *Isema-guwa (Isama-guwa)*, *Oshima-guwa*, *Yenshutakasuke (Binzi, Fuzimiwase, Goura, Higanwase, Kurokiwase, Kurokiyentaka, Nagayewase, Oshima, Shima-guwa, Shintaka, Tosayomo, Tsuruta)*.

Hab. Japonia; in hortis culta. Saghalien et Hokkaido : inculta.

Remarks. Sericulture in Hamana district, Prov. Suruga, has been carried on since the era of Bunroku (1592–95) and a race called *Oshima* appeared in about Kansei (1789–1800). In 1988 T. YAMAMOTO called it *Yenshutakasuke*. *Maruba* and *Yanagiyeda* in Hokkaido are closely related to this variety. Prof. T. NAKAI mentions the present variety in his report on the wild mulberrytree in Korea, I have ascertained that this variety also grows in Saghalien and Hokkaido*. *Oshima-guwa* originated from the seedling of *Roso* in 1893 by G. ITAGAKI in Misato village, Saba district, Prov. Kozuke. The name *Ohshima-guwa* was given by the sericultural Experiment Station of the Province in 1916.

Distr. Saghalien, Hokkaido, Honshu, Korea.

var. **quinquepalmata** HOTTA, var. nov.

Folium quinquepalmatum vel subquinquepalmatum supra fere asperatum, lobis angustis, petiolo omnino fere pubescente.

Nom. Jap. *Shibayama-guwa*.

Hab. Japonia : in hortis culta.

Remarks. Leaf is quinquepalmate or rather quinquepalmate and the segments are very slender. Upper surface of the leaf is rather asperate, petiole has on whole surface rather conspicuous white hairs.

* Prov. Oshima : Nanaye (T. HOTTA, no. 232); Kamiiso (T. OCHYAI, no. 299).

Prov. Iburi : Abuta (T. HOTTA, no. 1225); Tomakomai (T. HOTTA, no. 1255); Shikotsu-muu (M. NAGAI, no. 1437).

Prov. Shiribeshi : Yoichi (T. HOTTA, no. 33).

Prov. Ishikari : Kotoni (T. HOTTA, no. 450, cult.); Soyen, Sappoto (T. HOTTA, no. 1230); Moiwa (T. HOTTA, no. 265); Toyohira (T. HOTTA, no. 334, *typus*); Makomanai (T. HOTTA, no. 1126); Jyozankei (T. HOTTA, no. 2077); Iwamizawa (T. HOTTA, no. 1234).

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form. **anormalis** HORTA, Trans. Sapporo Nat. Hist. Soc. XIV, 3, p. 203 (1936).

Segmenta folii valde anormalia, petiolo plerumque sulco vel omnino fere insigniter pubescente.

Nom. Jap. *Okina-yamagurwa* : *Harasato-gurwa* (*Genri-gurwa*, *Okuni-gurwa*, *Taishyo-gurwa*, *Taishyowase*), *Oto-gurwa*, *Shigohachi*.

Hab. Japonia : in hortis culta. Hokkaido : inculta.

Remarks. *Harasato-gurwa* was originally cultivated in Kawashimada, Harasato village, Shinto district, Prov. Suruga. The name *Harasato-gurwa* was given to it after the name of the village in 1915 by T. NAGASERISAWA and Y. SERISAWA of the village *Shigohachi* was originally cultivated in Kamiyamada village, Sarashina district, Prov. Shinano. A villager called S. KONISHI originated from the wild mulberry trees and cultivated it in the era of Koka (1844-87).

Sect. II. **Macromorus** KOIDZUMI

Imp. Sericult. Exp. Stat., II, 1, p. 4 (1923).

(2) **Morus alba** LINN.

Morus alba LINN., Sp. Pl, ed 1, p. 986 (1753).

Nom. Jap. *Karayama-gurwa Akameichibei Akanezumigayeshi*, *Akane-taoshi*, *Akitsuamaru*, *Amoi No. 1*, *Awohata*, *Awoichi* (*Awoikiichibei*, *Awoikiwase*), *Awoki* (*Awoiki-gurwa*, *Awokikobore*, *Nokogiriba*), *Awoki No. 2*, *Awoikiichibei* (*Awoichi*, *Azumiichibei*, *Fushimagariichibei*), *Awokikobore*, *Awokishodo* (*Awoshodo*), *Awokiyotsume* (*Awoyotsume*, *Yotsume*), *Awomerokuro*, *Azumiichibei*, *Fukuju*, *Fukushimaohz* (*Ohawase*), *Fuyeiso* (*Obakairyonezumigayeshi*, *Tomioka*), *Gunmahagoromo*, *Gunmashirome*, *Hagiu-gurwa*, *Heijiro*, *Hiroe-gurwa*, *Hosoye*, *Ichinose* (*Hagyu-gurwa*, *Shimizu-gurwa*, *Shironezumigurwa*), *Inakurwa*, *Ishiokajumonji*, *Izuwase* (*Sakigakewase*), *Josen*, *Joshuwase*, *Junonji* (*Futsujumonji*, *Karikura-gurwa*, *Marubajumonji*, *Mokujirowase*, *Renge*, *Sayemon*, *Shimokuguri*, *Shimooyogi* *Shimoshirazu*, *Uragare*, *Yokaichi*, *Yosetori*), *Kairyojumonji* (*Ishiokajumonji*, *Marubajumonji*) *Kairyonezumigayeshi* (*Kensuinezumigayeshi*, *Kikusui*, *Kumamotonezumi*, *Kumamotonezumigayeshi*, *Kumamotyotsume*, *Obanezumigayeshi*), *Kairyoshironezumi-gayeshi*, *Kairyowase-jumonji* (*Ishiokajumonji*, *Kairyojumonji*, *Kairyosunakarawase*, *Kawanajumonji*, *Kuniichi*, *Sunakarawajumonji*, *Waju*, *Waseju*, *Wasejumonji*, *Wasuke*, *Wasukejumonji*), *Kankichi*, *Kannikobore*, *Kasehon*, *Kataneo* (*Itaria No. 1*, *Takaneo*, *Taisho-gurwa*), *Keikan-gurwa*, *Kinbakobore*, *Kinchakurwase*, *Kinoshitase*, *Kinso*, *Kobanwase*, *Komukiarwoki* (*Kobanwase*), *Konya*, *Koyawase*, *Kubotewase*, *Kumamotokairyo-gurwa*, *Kuniichi*, *Kuninishiki*, *Kurokobore*, *Kurokurwa*, *Kurowase*, *Kurwaichi*, *Kyuichi* (*Kairyoshihozaki*), *Kyuma*.

var. **pendula** DIPPEL, Lauholz., I. s. 238 (1906) — ASCHERS et GRABN, Syn. Mitteleurop, Fl. IV, s. 580 (1911) — KOIDZUMI, Bull. Imp. Sericult. Exp.

Stat, III, p. 54 (1917) et II, I, p. 30 (1923) — MAKINO & NEMOTO, Fl. Jap., p. 219 (1931).

Ramus pendulus, foliis varie lobatis.

Nom. Jap. *Shidare-guwa*.

Hab. in hortis culta.

Remarks. This variety originated from seedling of *M. alba* var. *tatarica* M. a. BIEB. in mulberry garden of J. C. TEAS of Carthage in Missouri, North America in 1883*.

Akashidare is closely related to this variety.

form. **Hagoromo** HORTA, f. nov.

Folium plerumque valde diversiforme parte media versicolore, margine lacera vel non lobata, apice acuminato vel fere lineariattenuato, basi cuneata.

Nom. Jap. *Hagoromo*.

Hab. Japonia : in hortis culta.

Remarks. Leaf generally very unusual, center of the leaf is spotted, apex acuminate or more or less lineariatteuuate, margin is irregurally lobate, base is cuneate.

form. **sessilifolia** HORTA, f. nov.

Ramulus tenuis erectus. Folium ovato-cordatum plerumque sessile vel subsessile, apice acuminato, margine fere arguta, basi cordata.

Nom. Jap. *Yenashi* (*Zikunashi*).

Hab. Japonia : in hortis culta.

Remarks. Branch is rather slender and erect. Winter buds are slender and long. Leaf is ovate-cordate, usually sessile or subsessile, apex acuminate, base is cordate.

This variety originated as a bud mutation from *Dateichibei-guwa*.

form. **albicaerulea** HORTA, f. nov.

Juventus albicaerulescens. Petiolus albicaeruleus vel fere albicaeruleus.

Nom. Jap. *Shiroe-guwa* (nov.) : *Hakutainishiki*, *Shinshiro* (*Shirokobore*), *Shirasaya*, *Shirodogi*.

Hab. Japonia : in hortis culta.

Remarks. Young shoot is bluish-white, petiole is bluish-white or rather bluish-white. *Fuyoso* is closely related to this form.

(3) *Morus latifolia* POIRET

Morus latifolia POIRET in LAMARCK, Encycl. Bot. IV. p. 381 (1796).

Nom. Jap. *Roso* : *Akamekeiso*, *Akamekoboshi*, *Akita* (*Shinshiroichibei*), *Asahinishiki*, *Awokawakoso*, *Awokawaroso*, *Awoshodo* (*Aworoso*), *Azumi-*

*YENDO, Y. et. HIGUCHI, T. : — Traité sur la Culture du Mûrier au Japon, p. 33 (1930)

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guwa, *Bake-guwa*, *Benikawakeiso* *Benikawaroso* (*Akakawaroso*), *Chikameroso*, *Chukoso*, *Daifuku-guwa*, *Daihatsushu*, *Daimyo-guwa*, *Daiomaru*, *Dairui-guwa* (*Kimuraroso*), *Eeji* (*Kozukewase*), *Ehimeroso*, *Eihichi*, *Eijuroso*, *Eitokuakameroso* (*Akameroso*, *Eitoku*, *Kairyoroso*), *Fujisakioha* *Fujisakizase*, *Fujiyamaroso*, *Fukko-guwa*, *Fukkoku-ru* (*Fukkoku No. 1*, *Dainonishiki*, *Senku No. 1*), *Fukushima*, *Furukawaoha*, *Fuso*, *Ginbasho*, *Ginryu*, *Gonnojyo*, *Goshoyerami* (*Gosho*, *Goshomaru*, *Taisho-guwa*), *Gunko-roso* (*Gunko-guwa*, *Gunkooha*), *Gunzeroso*, *Hachiheiji*, *Hasumi-guwa*, *Hayakuwa*, *Hayataguwa*, *Hekikaioha*, *Hinode*, *Hiroye-guwa*, *Hojumaru*, *Hokoku*, *Homare*.

form, **Tsudaroso** Hotta, f. nov.

Apex folii plerumque fere longiacuminatus ; margine valde vel leviter arguta, apice leviter incurvo.

Nom. Jap. *Tsudaroso*.

Hab. Japonia : in hortis culta.

Remarks. Apex of the leaf is usually rather long acuminate, teeth are acuto-serrate, and its apex is more or less incurved.

form. **rotundiloba** Hotta, f. nov.

Folium 2-4 lobatum vel non lobatum, pendulum, propter basin plerumque parvilobatum, apice emarginato vel duplo-emarginato rare obtuso.

Nom. Jap. *Koshuroso* (nov.) : *Kosen* (*Onoroso*), *Kotengu*.

Hab. Japonia : in hortis culta.

Remarks. Leaf is usually pendulous, 2-4 lobate or not lobate, it has small lobe near the base, apex is emarginate or double emarginate rarely obtuse, margin is dentate-serrate or crenate-dentate. Areas around the pulvinus is usually blackish-brown.

Kosen was originally cultivated in Komatsu, Kasugai village, Higashiyanashi district, Prov. Kai. K. TSUKAHARA called *Kosen* upon the fact it. *Kai-guwa* is closely related to this form.

form. **Okumurai** Hotta, f. nov.

Folium ovatum vel ovato-oblongum, apice emarginato vel duplo-emarginato rare obtuso.

Nom. Jap. *Kubomiroso* (nov.) : *Daikokuko*, *Dainonishiki*, *Fukukko No. 1*, *Kokubu*, *Ruh*, *Seigi-guwa*, *Tenkei*.

Hab. Japonia : in hortis culta.

Remarks. Leaf is ovate or ovate-oblong, apex is emarginate, double emarginate or rarely obtuse. *Daikokuko* was originally cultivated in Niso village, Kodama district, Prov. Musashi. *Asumahomare* and *Suzuka* are closely related to this form.

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摘 要

邦産桑属の分類學的知見(四)

Morus bombycis KOIDZ., var. *subruncifolia*, var. *Shiragiku*, 並に var. *quinquepalmata* の三新變種を創定し又 var. *caudatifolia* 及 f. *anormalis* に新しく二三の栽培種を加へ尙 *Morus alba* LINN. に f. *Hagoromo* f. *sessilifolia*, f. *albicaerulea* の三新品種を創定し又 *Morus latifolia* POIRET に f. *Tsu-daroso*, f. *rotundiloba*, f. *Okumurai* の三新品種を創定した。

即栽培種に三新變種、六新品種並に新しく栽培種を加へた一變種及一品種並に DIPPEL の var. *pendula* を合し五變種、七品種を記載した。

尙 *Morus bombycis* KOIDZ. に包含すべき栽培種七十一種 *Morus alba* LINN. に包含すべき栽培種五十九種同様に *Morus latifolia* POIRET に於て四十九種を確認した。

更に各種類の變種及品種に屬する起源も可及的報告した。

序に邦産桑属の分類學的短見第一報は札幌博物學會報第十四卷第三號(1936)に於て北海道及樺太産に就て述べ、又衣笠蠶報第三百六十六號(1937)に於ては臺灣及琉球産に就て第二報を試み更に札幌博物學會報第十四卷第四號(1936)に於て栽培種の一部を第三報として既に公にした。今其要約を記せば

第一報には

Morus yoshimurai HOTTA (赤材桑) 奥尻島産、

Morus bombycis KOIDZ. var. *armatica* HOTTA カブトグハ

var. *Tozuana* HOTTA タカトモグハケ

var. *rugosa* HOTTA チマレグハ

var. *tsurikakensis* HOTTA ツリカケグハ

f. *albicaerulea* HOTTA シロエグハ

var. *pubescens* HOTTA ケヤマグハ

var. *illinita* HOTTA ヨゴノカミ

var. *sachalinensis* HOTTA ヒメヤマグハ

f. *anormalis* HOTTA オキナヤマグハ

Morus latifolia POIRET, var. *nervigracilis* HOTTA ミウラロサウ

第二報は琉球、臺灣の桑にして(本誌抄録欄参照)

Morus formosensis HOTTA タイワングハ

var. *ouchiensis* HOTTA オホウチグハ

Morus australis POIRET, var. *kagiensis* HOTTA カハバグハ

var. *obtusa* HOTTA ヒメグハ

var. *Nakazawai* HOTTA ケザラグハ

f. *quinquepalmata* HOTTA モミヂバラナガグハ

f. *laevis* HOTTA サ、キグハ

var. *Tokunagai* HOTTA オグハ

var. *pubescens* HOTTA ケヲナガグハ

f. *scabra* HOTTA ザラツキグハ

Morus atropurpurea ROXB. var. *jamguwa* HOTTA ジヤムグハ

var. *nitida* HOTTA テリハムラサキ

f. *Akaziku* HOTTA カントンアカゲク

第三報にて

Morus bombycis KOIDZ. var. *yamabe* HOTTA ヤマベグハ

var. *Tachibanawase* HOTTA タチバナワセ

f. *conduplicata* HOTTA チマミグハ

Morus alba LINN. var. *Kasasagi* HOTTA カサ、ギグハ

var. *duplicata* HOTTA リヤウメングハ

f. *flavoviridia* HOTTA キバジウモンヂ

Morus latifolia POIRET, var. *spirata* HOTTA フセリウ、タイヘイグハ

var. *ohzu* HOTTA オホズグハ

var. *planifolia* HOTTA ヒラバロサウ