

## Contributions to the Knowledge of the Systematics of *Morus* in Japan. IX.

邦産桑屬の分類學的知見, IX.

*Morus* in Honshiu (本州産桑屬)

(Continued from Trans. Sapporo Nat. Hist. Soc. XV. p. 73)

by

Teikichi HOTTA 堀田 禎吉

Various papers have hitherto been reported on *Morus* in Honshiu by T. MAKINO<sup>2)</sup>, G. KOIDZUMI<sup>3), 4)</sup>, T. NAKAI<sup>5)</sup>, G. MASAMUNE<sup>6)</sup>, and G. KASHIWAGI<sup>7)</sup>, and likewise by S. HATSUSHIMA<sup>8)</sup>. They have, however, dealt with *Morus bombycis* KOIDZ. and its variety *caudatifolia* KOIDZ., and form *dissecta* NAKAI, *Morus tiliaefolia* MAKINO, *Morus Kagayamai* KOIDZ., and *Morus boninensis* KOIDZ.

### Key to the species, varieties and forms of *Morus* found in Honshiu

1. Style long, stigma divided into two parts at its apex. Sect. I. *Dolichostylae* KOIDZ. 2  
Style none or very short with sessile or subsessile stigma divided into two parts. Sect. II. *Macromorus* KOIDZ. 15
2. Leaf cordate, teeth of the leaf undulate or crenate, upper surface asperate or scabrous and rather pubescent, under surface pubescent. Style rather short. Cystolith of mesophyll ovate with conico-papillate obtuse or more or less acute at apex. *M. cordatifolia* HOTTA  
Leaf ovate or ovato-elliptical, teeth usually regularly or irregularly dentate-serrate. Style long.

1) Deep acknowledgement is due to Prof. Emer. K. MIYABE and Prof. S. ITO who have given constant guidance, and to Prof. Y. TOCHINAI and Dr. M. TATEWAKI who have rendered kind advices, to Prof. T. NAKAI, Dr. M. HONDA, Prof. G. KOIDZUMI and Prof. Y. TANAKA who helped the writer in many ways, as well as to the authorities of the Bureau of Imperial Household, Forestry Bureau and other Institutions who were kind enough to send specimens at his request.

2) MAKINO, T.:—On the flora of Japan, in Bot. Mag. (Tokyo), XXIII, p. 88 (1909).

3) KOIDZUMI, G.:—Two new species of MORUS in Japan, in Imp. Sericult. Exp. Stat., I, 3, p. 210-211 (1916). nom. seminud.

4) KOIDZUMI, G.:—Synopsis Specierum Generis Mori, in Bull. Imp. Sericult. Exp. Stat., II, I, p. 10, 16, 19, 22 (1923).

5) NAKAI, T.:—*Moraceae* in Flora Sylvatica Koreana, For. Exp. Stat., Gev. Gen. Chosen, XIX, p. 96-97 (1932).

6) MASAMUNE, G.:—*Moraceae* in Floristic and Geobotanical Studies on the Island of Yakushima, Prov. Csumi, in Mem. Fac. Sc. Agricult. Taihoku Imp. Univ., XI, 4, p. 149. (1934).

7) KASHIWAGI, G.:—Florula Sanrikuensis, p. 90 (1935).

8) HATSUSHIMA, S.:—*Moraceae* in Report Experimental Forest Faculty Agriculture, Kyushiu Imp. Univ., p. 54-55 (1934).

- Cystolith of mesophyll rather acute at apex, rarely crooked. *M. bombycis* KOIDZ. 3
3. Leaf quinquepalmate or subquinquepalmate or rather testudiniform, and the segments are slender or rather broader. .... 4  
 Leaf lobate or not lobate. In the former case the segments are usually broader. .... 8
4. Leaf lobate or not lobate. In the former case the segments are usually broader. .... 5  
 Leaf quinquepalmate or subquinquepalmate, and the segments are slender.  
*var. quinquefolia* HOTTA  
 Leaf testudiniform, and the segments are rather broader. *var. testudiniformis* HOTTA
5. Leaf with conspicuous hairs on both surfaces or only on the under surface. .... 6  
 Both surfaces with a few short hairs, rarely hairless only on the under surface. .... 7
6. Both surfaces with conspicuous hairs. *var. Tozuana* HOTTA  
 Under surface with conspicuous hairs. *var. pubescens* HOTTA  
 Both surfaces of the leaf glabrous and upper surface very smooth. *var. glaberrima* HOTTA
7. Apex of the leaf caudate or long acuminate or subulate. .... 8  
 Apex of the leaf abruptly acuminate or acuminate rarely long acuminate. .... 11
8. Apex of the leaf caudate or long acuminate. .... 9  
 Apex of the leaf subulate, base cuneate or truncate or shallowly cordate.  
*var. subulata* HOTTA
9. Leaf lobate or not lobate. In the former case segments are broader. .... 10  
 Lobes are narrower, and rather anormal, apex of the leaf caudate. *var. sagamiensis* HOTTA
10. Upper surface of the leaf scabrous or somewhat smooth, apex caudate.  
*var. caudatifolia* KOIDZ.  
 Upper surface of the leaf very smooth, apex subtricuspidate. *var. laevissima* HOTTA  
 Upper surface of the leaf very asperate or rarely scabrous, apex long acuminate.  
*var. asperata* HOTTA
11. Teeth of the leaf usually irregular dentate. .... 12  
 Teeth of the leaf large and very irregularly dentate, leaf cordate in shape.  
*var. irregularidentata* HOTTA
12. Branches usually brown or brownish-grey. *var. typica* HOTTA 13  
 Branches reddish-brown. Upper surface of the leaf very asperate, under surface with conspicuous hairs on the veins. *var. iwakiensis* HOTTA
13. Upper surface of the leaf evenly greenish-blue. .... 14  
 Leaf has white maculation. *f. Kawaiiana* HOTTA
14. Base of the leaf shallowly cordate or rounded, apex shortly acuminate or acuminate. .... 15  
 Base of the leaf truncate, apex long acuminate. *f. Kagiyaana* HOTTA.
15. Leaf lobate or not lobate. In the former case usually the length of the lobe is about half-way between the margin and midrib. *f. normalis* HOTTA  
 Leaf is pinnatisect or pinnatifid and the segments are narrow and rather regular.  
*f. dissecta* NAKAI  
 Lobes are irregular, and the segments are very anormal. *f. anormalis* HOTTA
16. Apex of the leaf very long caudate, upper surface smooth and glabrous, under surface glabrescent and yellowish-green. *M. Kagayamai* KOIDZ. 17  
 Apex of the leaf abruptly short acuminate, under surface light green colour. .... 18
17. Leaf 3-5 lobate or not lobate. In the latter case long or broad ovate. *var. typica* HOTTA  
 Leaf variously doubly lobate. *var. hachijoensis* HOTTA
18. Perianth roundish, with dense hairs at the lower part on the outside. Under surface of the leaf with rather dense white hairs. *M. tiliaefolia* MAKINO. .... 19  
 Perianth ovate, with a few hairs at the lower part on the outside. Under surface of the leaf with a few hairs only or principal veins. *M. boninensis* KOIDZ. .... 20
19. Upper surface of the leaf more or less scabrous. *var. typica* HOTTA  
 Upper surface of the leaf very scabrous. *var. scaberrima* HOTTA

20. Apex of the leaf abruptly acuminate.  
Apex of the leaf caudate.

var. *typica* HOTTA  
var. *caudatifolia* HOTTA

Sect. I. **Dolichostylae** KOIDZUMI (1923)

(1) **Morus cordatifolia** HOTTA, sp. nov.

*Morus bombycis* KOIDZUMI, var. *Yamabe* HOTTA. Trans. Sapporo Nat. Hist., XIV, 4, p. 274 (1937).

Arbor: cortice fusca vel cinereofusca, lenticellis brunneis rotundis vel ovalibus irregulariter dispersis. Gemmae ovoideae vel triangulatae acutae, perrulis 5-6 rarissime 7, acutis utrinque glabris vel fere glabris, coriaceis. Folium non lobatum subcordatum, supra fere pubescens, asperatum vel fere scabrum, non nitidum, subtus pubescens, apice 1-1.3 cm. longiacuminato vel fere longiobtusum, margine repanda vel crenato-dentata. Lamina circ. 18-20 cm. longa, 16-18 cm. lata, nervis axillaribus 6-7; cystolitho breve obtuso vel acuto petiolo pro lamina valde breve, circ. 2 cm. longo, glabro, vel sulco petioli solum pubescente, sed non conspicuo. Stipulae linearilanceolatae caducae subtus sericeae. Amenta mascula pendula circ. 7-15 mm. longa; 4-5 floribus remotis, pediculis fere pilosis filiformibus circ. 12 mm. longis. Amenta feminea ex lateribus depressa cylindrica vel ellipsoidea, 6-10 mm. longa, paucipluriflora: rachidibus fere pubescentibus.

Perianthii masculi tepala 4 lanceolato-oblonga fere rotunda extus supra leviter fere ciliolata, circ. 1.8 mm., staminibus 4 filamentosis fere tepala superantibus. Tepala feminei perianthii ovario approximata. Ovarium ovatum circ. 0.8 mm. longum. Stylus fere brevis 0.7-1.0 mm., stigmatibus 2 eum sessilibus, intus densissime longipuberulis. Spicae fructiferae circ. 3-9 mm. longae.

Nom. Jap. *Yamabe-guwa*.

Hab. Honshiu. Prov. Yechigo; Oziya, Uonuma (cult.)

*Remarks.* Bark is brown or greyish-brown. Leaf is subcordate, upper surface is asperate or scabrous, non lustrous, and are rather pubescent, under surface are pubescent, apex is long acuminate or rather long obtuse, margin undulate or crenato-dentate. Buds scales are 5-6 rarely 7. Cystolith are broad ovate with conicopapillate acute tip. Petiole is short, 2 cm. in length. Style is rather short 0.7-1.0 mm. and stigma has small pallate hairs on the inside

This species was founded by IKUTARO SEKI in Yamabe, Kitauonuma district, Prov. Yechigo.

(2) **Morus bombycis** KOIDZUMI

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

Nom. Jap. *Yama-guwa*.

Distr. Sachalin australis insula Tontomushiri (ex Koidz.), Hokkaido, Shikoku, Kiushiu, Korea.

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var. **testudiniformis** Hotta, var. nov.

Folium varie profunde lobatum fere testudiniforme, apice longicaudato vel dupludentato-serratum, subtricuspidatum, basi truncata vel aperte cordata.

Nom. Jap. *Kameba-guwa* (nov.).

Nom. vern. *Mata-guwa*.

Hab. Prov. Mutsu: Koji, Kamikita (T. SASAKI, no. 5972). Prov. Sagami: Miho, Ashigara (K. SATO, no. 9018, typus.).

*Remarks.* Leaf is deeply lobate rather testudiniform, apex is long acuminate or doubly dentato-serrate, and its base truncate or shallowly cordate. I have ascertained that this variety is found also in wild condition.\*

Distr. Kiusiu.

var. **quinqfolia** Hotta, var. nov.

Folium quinquepalmatum vel subquinquepalmatum, supra scabrum vel asperatum, petiolo plerumque gracile.

Nom. Jap. *Momijibayama-guwa* (nov.).

Hab. Prov. Iwagi: Fukayumada, Kamitoono (Y. NIWA, no. 30392.). Prov. Sagami: Okamoto, Ofuna (T. Hotta, no. 10036). Prov. Hida: Kawanishi, Hagiwara (T. Hotta, no. 121-D, typus); Sakurabora, Hagiwara (T. Hotta et S. YASUYE).

*Remarks.* Leaf is quinquepalmate or subquinquepalmate, upper surface is scabrous or asperate, petiole is usually slender.

var. **Tozuana** Hotta, Trans. Sapporo Nat. Hist. Soc., XIV, 3, p. 201 1936.

Folium utrinque insigniter pubescens, margine crenato-serrata vel dentato-serrata

Nom. Jap. *Takatomo-guwa*.

Hab. Prov. Uzen: Tsugawa, Nishioitama (K. KITAURI, no. 2-D). Prov. Mimasaka: Oyamoto (T. Hotta, no. 115-A, typus).

Distr. Hokkaido.

var. **pubescens** Hotta, Trans. Sapporo Nat. Hist. Soc., XIV, 3, p. 201, t. VI, c (1936).

*Morus japonica* AUDUB, var. *pubescens* YENDO, Traité sur la Cult. du Mûr. au Jap., p. 17 (1930) nom. seminud.

Ramulus plerumque tenuis, fere declinatus. Folium subtus insigniter pubescens.

Nom. Jap. *Keyama-guwa*.

Hab. Prov. Mutsu: Rokukasho, Kamikita (T. SASAKI, no. 6006, fl. ♀); Yeboshi, Kamikita (T. SASAKI, no. 5991); Koji, Kamikita (T. SASAKI, no. 5984, fl. ♀); Yokohama, Kamikita (no. 6007, fr. ♀); Higashidowori,

\* Prov. Ishikari: Nopporo (S. IMAI, no. 6018, typus).

Prov. Teshio: Yendomari, Rishiri (G. HANEDA, no. 10861, fl. ♀).

Shimokita (T. SASAKI, no. 6013, fl. ♀); Awomori (T. HOTTA, no. 5873, fl. ♂). Prov. Iwagi: Iritowono, Iwagi (Y. NIWA, no. 30262); Yumoto (T. HOTTA, no. 5881). Prov. Kozuke: Haraichi (T. HOTTA, no. 241-B, typus). Prov. Hida: Takehara, Masuda (H. TANAKA, no. 30400); Hagiwara (K. FUJITA, no. 10718).

Distr. Yeso, Shikoku Kiusiu.

var. **glaberrima** HOTTA, var. nov.

Folium utrinque glabrum, supra valde laeve, apice breviacuminato vel obtuso rare acuto; petiolo glabro. Stylus fere brevis 1.5 mm. longus.

Nom. Jap. *Masuno-guwa*. (nov.)

Nm. vern. **Hida-guwa**.

Hab. Prov. Namaru, Masuda (T. KAGIYA et T. HOTTA, no. 10-C, fr. ♀, typus).

*Remarks.* Both surfaces of the leaf are glabrous and upper surface is very smooth, apex of the leaf shortly acuminate or obtuse rarely acute; petiole glabrous. Style is rather short, 1.5 mm. in length.

Distr. Honshiu.

var. **subulata** HOTTA.

Folium 2-4 lobatum vel non lobatum, apice subulato vel rare caudato; margine dentato-serrata, apice leviter breviapiculato; basi cuneata vel truncata vel rare aperte cordata, petiolo 2.5-4 cm. longo.

Nom. Jap. *Kirisakiyama-guwa*.

Hab. Prov. Hida; Utsuye, Kokubu (S. ISHIWARA, no. 102-A), Namaru, Masuda (T. Kagiya et T. HOTTA, no. 14-C).

Distr. Kiusiu, Shikoku et in hortis culta.

var. **sagamiensis** HOTTA, var. nov.

Segmenta folii valde anormalia; apice caudato.

Nom. Jap. *Onagaokinayama-guwa* (nov.).

Hab. Prov. Sagami: Okamoto, Ofuna (T. HOTTA, no. 10071, typus).

*Remarks.* Lobes are usually narrow, and segments are very anormal, apex is caudate.

var. **caudatifolia** KOIDZUMI.

Folium; apice caudato subito elongato.

Nom. Jap. *Onaga-guwa*.

Hab. Prov. Mutsu: Yokohama, Kamikita (T. SASAKI, no. 5985, fl. ♀). Prov. Iwagi: Fukushima (T. HOTTA, no. 5879). Prov. Totomi: Hatsusawa, Suchigun (M. SANNOHE, no. 30344); Omata, Suchigun (M. SANNOHE, no. 30342), Hagiwara, Masuda (T. KAGIYA et T. HOTTA, no. 95-C). Prov. Hida: Takane, Masuda (K. SHIMOGAKIUCHI, no. 30347, fl. ♀); Asahi, Masuda (R. NISHIDA, no. 30210); Maze, Masuda (T. KAGIYA et T. HOTTA, no. 20-C); Namaru, Masuda (T. KAGIYA et T. HOTTA, no. 12-C, fr. ♀). Prov. Kii:

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Kawamata, Mazuma (H. YOSHIZAKI, No. 30007, typus).

Distr. Hokkaido, Kiushiu, Korea.

var. **laevissima** HOTTA, var. nov.

Folium supra valde laeve, apice caudato vel longiacuminato rare subtricuspidato, margine dentato-serrata vel duplodentato-serrata.

Nom. Jap. *Terihayama-guwa* (nov.).

Nom. Vern. *Hichiei-guwa*.

Hab. Prov. Mutsu: Rokukasho, Kamikita (T. SASAKI, no. 6002). Prov. Sagami: Miho, Ashigara (K. SATO, no. 9021, typus), Prov. Shinano: Shin-kai, Nishichikuma (S. NAKAZONO, no. 9979).

*Remarks.* Upper surface of the leaf is very smooth, apex is caudate or long acuminate rarely subtricuspidate, margin is dentato-serrate or doubly dentato-serrate.

var. **asperata** HOTTA, var. nov.

Folium supra valde asperatum rare scaberrimum, apice longiacuminato.

Nom. Jap. *Zaraba-guwa* (nov.).

Hab. Prov. Mutsu: Nobeji (T. HOTTA, no. 393-A). Prov. Shimotsuke: Shiobara, Shioyagun (S. HATTORI, no. 39819). Prov. Etsuchu: Tateyama, Nakashinkawa (K. YAMADA, no. 39952). Prov. Yechigo: Tatekoshi, Iwafunegun (S. SUZUKI, no. 30443, typus). Prov. Hida: Hagiwara, Masuda (T. HOTTA, no. 94-C).

*Remarks.* Upper surface of the leaf is very asperate rarely very scabrous, apex long acuminate. I have ascertained that this variety is found and also wild condition in Hokkaido.\*

Distr. Kiusiu, Shikoku.

var. **irregularidentata** HOTTA, var. nov.

Folium cordatum, apice plerumque tricuspidato, margine valde magna irregularidentata, basi plerumque aperte cordata.

Nom. Jap. *Midareha-guwa* (nov.).

Nom. Vern. Akakashiha, Awokashiba, Genjyuwase(cult.?).

Hab. Prov. Mutsu: Koji, Kamikita (T. SASAKI, no. 6020). Prov. Shinano: Bandokoro, Narai (T. ISHIKAWA, no. 5879, typus); Fushimagari (T. ISHIKAWA, no. 5878); Nishimachi, Narai (T. ISHIKAWA, no. 5876). Prov. Hida: Yuya, Kosaka, Masuda (T. HOTTA, no. 102-E).

*Remarks.* Leaf is cordate, apex is usually truncate, margin is very large and irregulari-dentate, base is usually shallowly cordate.

Distr. Kiusiu.

var. **iwakiensis** HOTTA, var. nov.

\* Prov. Ishikari: Yebetsu (T. HOTTA, no. 118); Nopporo (T. HOTTA, no. 237; typus); Sapporo (T. HOTTA, no. 89).

Ramulus rufus. Folium supra valde asperatum, subtus venis insigniter pubescentibus.

Nom. Jap. **Kezarayama-guwa** (nov.).

Hab. Prov. Iwagi: Iritowono, Iwagi (H. NIWA, no. 30262, typus).

*Remarks.* Branches are reddish-brown. Upper surface of the leaf is very asperate, under surface has conspicuous hairs on the veins.

form. **Kawaiana** HOTTA, f. nov.

Folium plerumque albimaculatum.

Nom. Jap. *Fuiriyama-guwa* (nov.).

Hab. Prov. Hida: (ex A. KAWAI, no. 9997, typus).

*Remarks.* Leaf has usually white maculations.

form. **Kagiyaana** HOTTA, f. nov.

Apex folii longiacuminatus basi truncata, subtus laevis; petiolo 1-2 cm. longo.

Nom. Jap. *Tsutaye-guwa*.

Hab. Prov. Hida; Maze, Masuda (T. KAGIYA et T. HOTTA, no. 18-C).

*Remarks.* Apex of the leaf is longiacuminate, base is truncate, under surface of the leaf is smooth; petiole is 1-2 cm. in length.

Distr. Honshiu.

form. **dissecta** NAKAI, Fl. Sylv. Korea., XIX, p. 101, t. 29 B (1932)-HOTTA, Trans. Sapporo Nat. Hist. Soc. XIV, 3 p. 203 (1936); Bot. Mag. (Tokyo), LI, 611, p. 838 (1937).

*Morus alba* var. *stylosa* form. *dissecta* NAKAI, Veget. Isl. Quelpaert, p. 39, no. 5176 (1914), nom. nud.

Folium pinnatifidum vel bipinnatifidum, lobis angustis.

Nom. Jap. *Hosoba-yamaguwa*.

Hab. Prov. Mutsu: Koji, Kamikita (T. SASAKI, no. 6003). Prov. Totomi: Jitoho, Mizukubo (K. MIYAKE, no. 30294). Prov. Hida: Namaru, Masuda (T. KAGIYA et T. HOTTA, no. 11-C). Prov. Ise: Nishibetsusho, Inabe (T. HOTTA, no. 10052, cult.). Prov. Kii: Mt. Koya, Koya (S. UYEBARA, no. 30264); Mt. Sekayasu, Futagawa, Nishimuro (K. YOSHIMOTO, no. 30014). Prov. Awa: Mt. Kiyozumi (T. NAKAI, fl. ♀, ex herb. Univ. Tok.).

Distr. Yezo, Shikoku, Kiusiu, Korea.

form. **anormalis** HOTTA, Trans. Sapporo Nat. Hist. Soc. XIV, 3, t. VI, d. (1936). (New to Honshiu).

Segmenta folii valde anormalia; petiolo plerumque omnino fere insigniter pubescente, rare sulco tantum pubescente.

Nom. Jap. *Okina-yamaguwa*.

Hab. Prov. Totomi: Toyooka, Kitamura (N. SUGIURA, no. 25010). Prov. Mikawa: Mt. Ishizuchi, Toyohashi (T. HOTTA, no. 10557). Prov. Hida: Ochiai, Kosaka (K. YOSHIDA, no. 30362). Prov. Ise: Suzukatoge (T. HOTTA,

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no. 10561, typus).

Distr. Hokkaido, Kiusiu.

(3) *Morus Kagayamai* KOIDZUMI

*Morus Kagayamae* KOIDZUMI in MATSUM. Icon. Pl. Koisikav. III, 1, t. 151 (1915) et Bull. Imp. Sericult. Exp. Stat., Jap. 1, 3, t. VII, fig. 2, t. VIII, fig. 1, 2 (1916) et III, 1, p. 36 (1917) et II, 1, p. 16 (1923) et Bot. Mag. (Tokyo), XXX, p. 35 (1917).-YENDO et HIGUCHI, Traité sur la Cult. du Mûr au Jap. p. 22 (1930)-MAKINO et NEMOTO, Fl. Jap. p. 220 (1931).

Nom. Jap. *Hachijogurwa*: *Itaria* et *Itowase* (cult.).

Hab. Prov. Izu: Insula Hachijiyo; Chichijima (S. IMAI, no. 39875); Oshima (T. NAKAI, fl. ♀, ex herb. Univ. Tok.); Mitsunemura et Ogago (S. ITO, S. IMAI et K. HINO, no. 39875 et 39917); (S. KITAMURA, fr. ♀, et T. AZAI, ex herb. Univ. Tok.).

*Remarks.* Cystolith are conico-papillate and acute tip.

Distr. Japonia; Prov. Izu, insula Hachijo et insula Miake.

var. *hachijoensis* HOTTA, var. nov.

Folium multilobatum, vel duplo-lobatum.

Nom. Jap. *Gunbaigatahachizyo-gurwa* (nov.).

Hab. Prov. Izu: Insula Hachijo: Mitsunemura (S. ITO, S. IMAI et K. HINO, typus).

*Remarks.* Leaf is variously or doubly lobate.

*Ikurawase* was cultivated in Tokyo High Sericultural College, and *Menugataitaria* is closely related to this form.\*

Distr. Insula Hachijo.

Sect. II. *Macromorus* KOIDZUMI (1923)(4) *Morus tiliaefolia* MAKINO

*Morus tiliaefolia* MAKINO, Bot. Mag. (Tokyo), XXIII, p. 88 (1909)-C. K. SCHNEIDER in SARGENT Pl. Wils., III, 2, p. 302 (1916) et III. Handb. Laubholz., II, s. 905 (1912)-NAKAI, Bot. Mag. (Tokyo), XXVI, p. 169 (1912), Fl. Sylv. Koreana XXI, p. 96, Pl. I, A, B, tab. 28 (1932)-KOIDZUMI, Bull. Imp. Sericult. Exp. Stat., III, 1, p. 40 (1917) et II, 1, p. 19 et II, 1, p. 19 (1923); *Kuwazoku Shokubutsu Kō*, p. 40, Pl. VI (1919)-MAKINO et NEMOTO, Fl. Jap., p. 1086 (1925) et ed. 2, p. 220 (1931)-YENDO et HIGUCHI, Traité sur la Cult. du Mûr au Jap. p. 27 (1930)-HATSUSIMA, Report Exp. For., Fac. Agr., Kyusiu Imp. Univ., 5, p. 54 (1934).

*Morus nigra* Matsum. (non LINN.), Bot. Mag. (Tokyo), XVI, p. 18 (1902).

*Morus rubra* var. *japonica* MAKINO, Bot. Mag. (Tokyo), XIX, p. 134 (1905)-C. K. SCHNEIDER III. Handb. Laubholz. II. s. 905 (1912).

*Morus cathayama* HEMSLE., var. *japonica* KOIDZ., Bot. Mag. (Tokyo), XXXI, p. 39 (1917).Nom. Jap. *Kegurwa*.Nom. Vern. *Chimi-gurwa*, *Nogurwa*, *Tsimigurwa*, *Yama-gurwa*.

Hab. Honshiu. Prov. Bingo: Taishakukyo (Z. TASHIRO, fl. ♀, ex herb. Univ. Kyo.); Asezaka, Aburagichyo (Z. TASHIRO, ex herb. Univ. Kyo.). Prov. Kii: Mt. Katsuragi, Nakagori (ex KOIDZ.); Insula Kuroshima (ex herb. Univ. Kyo.). Prov. Inaba: Okuni, Tsumagun (R. KISHINO, ex herb. Univ. Kyo.). Prov. Iwami: Mt. Yairoishi (T. HOTTA, no. 10509). Prov. Mimasaka: Katsuyama, Mabagun (T. KONDO, no. 10969). Prov. Mimasaka: Katsuyama (S. KONDO, no. 10969.) Prov. Bittsiu: Itaka, Atetsugōri (ex KOIDZ.), Ishikarimura (T. MAKINO, ex herb.



Univ. Kyo.); Gongen, Takayamamura (Z. TASHIRO, ex herb. Univ. Kyo.); Yugawa et Higashiyuno, Kawakamigori (ex KOIDZ.); Kusamamura, A tetsgun (T. AKAGI, fl. ♀, ex herb. Univ. Tok.); Kaibe (T. HOTTA, no. 114-A); Tanagase, Jobogori (ex KOIDZ.). Prov. Izumo: Insula Ushirojima. Oki (G. KOIDZUMI et Y. OKAMOTO, fl. ♀); Chujo, Sekiyoshi (fl. ♀, ex herb. Univ. Tok.), Prov. Iwami: Sawaya (R. KISHINO, ex herb. Univ. Kyo.). Mt. Yairoishi (T. HOTTA, no. 10509); Ichiki (T. HOTTA, no. 10794). Prov. Suo: Iwajima (ex herb. Univ. Kyo.). Prov. Nagato: Insula Futai (Z. TASHIRO, ex herb. Univ. Kyo.); Misumi, Osawagun (no. 704, ex herb. Univ. Tok.). Prov. Oki et Tsushima (ex NAKAI).

Distr. Honshiu, Shikoku, Kiusiu, Korea.

var. **scaberrima** HOTTA, var. nov.

Folium supra scaberrimum, apice fere longiacuminato vel subito acuminato, margine plerumque irregularidentata.

Nom. Jap. *Kezaraba-guwa* (nov.)

Hab. Prov. Bitchu: Sugan, Atetsugun (S. IKENAGA, no. 30174, typus); Arami, Atetsugun (S. IKENAGA, no. 30171).

*Remarks.* Upper surface of the leaf is very scabrous, apex is rather long acuminate or abruptly acuminate, margin is usually irregulari-dentate.

(5) **Morus boninensis** KOIDZUMI

*Morus boninensis* KOIDZUMI, Bot. Mag. (Tokyo), XXXI, p. 38 (1917) et Bull. Imp. Sericult. Exp. Stat., III, 1, p. 44 (1917) et II, 1, p. 22 (1923)—YENDO et HIGUCHI, Traité sur la Cult. du Mêr. au Jap. p. 24 (1930).

Nom. Jap. *Ogasawaraguwa*.

Hab. Bonin. Prov. Bonin: Mt. Kuwanoki, Hahajima (T. TSUYAMA, ex herb. Univ. Tok.); Chichijima (fl. ♀, ♂, ex herb. Univ. Tok.); Kimura, Chichijima (S. ITO, S. IMAI et K. HINO, no. 349); Mt. Kuwanoki, Hahajima (S. ITO, S. IMAI, et K. HINO, no. 360); Ogiura, Chichijima (S. ITO, S. IMAI et K. HINO, no. 185); Kiyose, Chichijima (S. ITO, S. IMAI et K. HINO no. 98, fl.).

*Remarks.* Cystolith is depressed glabular, and abrupt acute or more or less acute at the apex.

Distr. Japonia: Insulae Boninenses.

var. **caudatifolia** HOTTA, var. nov.

Folium; apice fere caudato subito elongato, basi truncata vel aperte cordata, petiolo 9 cm. longo.

Nom. Jap. *Onaga-ogasawaraguwa* (nov.).

Hab. Prov. Insula Bonin: Mt. Kuwanoki, Hahajima (S. ITO, S. IMAI et K. HINO, ex herb. Univ. Hokk.).

*Remarks.* Apex of the leaf is rather caudate, base is truncate or shallowly cordate; petiole is 9 cm. in length.

摘 要

邦産桑屬の分類學的知見 (九)

本州に産する桑屬は従來報告せられたる *Morus bombycis* の var. *caudatifolia* f. *dissecta* を合し五種類十四變種四品種となる、尙 *Morus cordatifolia* HOTTA の組織の檢定等をも附記した。又葉肉部の房状体は種類に依つて略特有の形態あることも確め得た。