Observations on the Flora of Japan.

(Continued from Vol. XXVIII. p. 30.)

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***Sasa bitchuensis* MAKINO, sp. nov.**

Culms attaining about $3\frac{3}{4}$ m. in height, about 6–11 mm. in diameter, slender, terete, fistulose, often slightly flexuous, glabrous, finely striate, green, but sometimes more or less purpurascenscent in sun, with white waxy substance below the node when young, loosely ramose, or subdensely so in age; node more or less prominent; internode attaining about 30 cm. long; branches slender, erect, 1 to a node, but false-fasciculately few-ramulose at the base in age. Culm-sheath usually shorter than the internodes, striate when dry, lanceolate or oblong-lanceolate, coriaceous, spreadingly villosociliated on margin, spreadingly villosotomentose with pale soft hairs at the very base; microphyll linear-lanceolate or lanceolate, spinulosociliated. Leaves (normal) towards the top of branches, approximate, flabellately arranged, several to a branch, but fewer and pendent in age, narrowly oblong, acuminate with a very sharp point, rounded or obtuse and shortly decurrent at the base, ciliato-spinulated on margin, coriaceous-chartaceous, but coriaceous in age, glabrous, green above, paler beneath, 11–34½ cm. long, 3–7½ cm. wide; midrib slender, prominent beneath, paler; veins 6–11 on each side, delicate; veinlets finely tessellate; petiole short, 2–6 mm. long, glabrous dorsally, minutely tomentose towards the base internally; ligule very short, truncate, subcoriaceous, minutely and densely ciliated, shortly tomentose dorsally; sheath long,

terete, obscurely carinate dorsally towards the top, closely striate, coriaceous, light green, glabrous, but spreadingly villosa-ciliated on margin (cilia long and dense and manifest towards the mouth), villosa-tomentose with white long hairs at the base, auricles at the mouth radiato-fimbriate with long setæ which attain about 12 mm. long. Flower unknown.

Nom. Jap. *Jôbô-zasa* (nov.).

Hab. Prov. BITCHÛ: Sayodani in Jôbô-gôri (T. MAKINO! August 1913).

A rare bamboo. It is allied to *Sasa paniculata* MAKINO ET SHIBATA, but the former differs from the latter in having the erect and much slender culm, thinner and narrower leaves, manifestly fimbriate mouth-auricles, and the sheath densely villosa-tomentose at the base. It is now only known growing in the above-cited locality.

Solanum lyratum THUNB. Fl. Jap. p. 92.

Solanum Dulcamara var. *lyrata* SIEB. ET ZUCC. in Abhand. Akad. Muench. IV. 3, p. 147.

var. ***xanthocarpum*** MAKINO, var. nov.

Berry sphærical, yellow.

Nom. Jap. *Kimi-no-hiyodorijôgo*.

Hab. Prov. BIZEN (NAOJIRÔ WATANABE! 1913).

Very rare. The type has the sphærical scarlet berry.

Carpinus Tanakaeana MAKINO, sp. nov.

Shrubby, or small tree, attaining 7 m. height; branches often cinereous on account of the attachment of the various lichens; branchlets dense and gracile, glabrous, but adpressed-villosa-pubescent with white hairs when young, fuligineo-castaneous but badio-ferruginous above, dispersedly verruculose with minute lenticels. Leaves small, very dense, deciduous, alternate, petiolate, subcoriaceo-chartaceous, ovate, elliptical-ovate, oblong-ovate, acute or shortly acuminate, with a mucronato-acute tip at the apex, obtuse or rounded towards the base and usually subcordate at the very base, mucronately duplicato-ser-

rate, adpressed-pubescent between veins (minutely resinoso-punctate under lens) and subdensely pubescent with pale hairs on the midrib on the upper surface, thinly adpressed-pubescent with pale hairs on veins and midrib and tomentose in the axil of veins beneath, very minutely resinoso-punctate under lens between veins on the under surface, 12–46 mm. long, 8–30 mm. wide; midrib prominent beneath; veins about 5–12 on each side, erect-patent, parallel, reaching to the teeth on margin; veinlets minutely reticulated, the reticulation more conspicuous on the upper surface; petiole gracile, puberulent with pale hairs, 2–17 mm. long; stipules subulato-linear, or linear-lanceolate, puberulent, usually shorter than the petiole, attaining about 7 mm. long, membranaceous, longitudinally close-veined, deciduous or marcescent. Strobile 1 at the top of the branchlets, small, ovoid or oval, 2–6-flowered, 13–16 mm. long, peduncled; rachis short, gracile, flexuous, hairy as in the peduncle, about 4–7 mm. long; bracts small, subulato-deltoid, membranaceous; peduncle gracile, straight or arcuate, pubescent with adpressed pale hairs, about 7–15 mm. long; fructiferous bracts subaxially placed, ascending, obliquely ovate, mucronato-acute at the apex, irregularly mucronato-inciso-serrate, often sub-bilobed, strongly vertically prominent-several-veined, with fine reticulated veinlets between them, slightly involute and semi-embracing the nut at the base, 9–11 mm. long, green, coriaceous-chartaceous, very minutely resinoso-punctate on veins and very thinly puberulent above, very minutely resinoso-punctate and very thinly puberulent on veins beneath. Nut green, ovate, compressed, tapering and densely pubescent towards the top, often with marcescent 2 setaceous-filiform styles, 3–4 mm. long, $2\frac{1}{3}$ –3 mm. broad; adnate perianth longitudinally 10–11-ribbed, irregularly and shortly deltoid-denticulate on the mouth.

Nom. Jap. *Iwa-shide* (nov.).

Hab. Prov. TOSA: Mt. Yokogura (T. MAKINO!).

This species is found abundantly growing on the lime-stone at the top of the mountain above-quoted. It is very closely allied to *Carpinus stipulata* H. WINKL., of Central-China with a slight discrepancy between them. It also comes near to

Carpinus yedoensis MAXIM., but the trunk, leaves and strobiles are much smaller.

I have named this species in dedication to Count MITSUAKI TANAKA, the former Minister of the Imperial Household Department.

Melia Azedarach LINN. Sp. Pl. p. 384.

var. japonica (G. DON) MAKINO.

Melia japonica G. DON, Gen. Syst. I. (1831), p. 680; HASSK. Cat. Hort. Bogor. (1844), p. 219; WALP. Repert. V. p. 373, et Ann. IV. p. 336; MIQ. Prol. Fl. Jap. p. 212; FRANCH. ET SAV. Enum. Pl. Jap. I. p. 75; CAS. DC. in DC. Monogr. Phanerog. I. (1878), p. 456; MAXIM. in Bull. Soc. Nat. Mosc. (1879), p. 7, et Pl. Chin. Potan. (1889), p. 96; DIPP. Handb. Laubholz. II. (1892), p. 362.

Melia Azedarach var. *subtripinnata* MIQ. l. c.; FRANCH. ET SAV. l. c.

Nom. Jap. *Sendan*. *Ôchi* (old name).

Hab. JAPAN, cultivated and spontaneous.

This differs from the typical one by having the irregularly inciso-lacinate staminal-tube.

forma albiflora MAKINO, nov.

Melia japonica var. *albiflora* MAKINO in Sched. Herb. Sc. Coll. Imp. Univ. Tokyo.

Flower white. Otherwise as in those of the genuine form of var. *japonica*.

Nom. Jap. *Shirobana-sendan* (nov.).

Hab. Prov. TOSA : Sakawa, cultivated (T. MAKINO!).

Very rare.

subvar. semperflorens MAKINO.

Melia japonica var. *sempperflorens* MAKINO in Bot. Mag., Tokyo, XVIII. (1904), p. 67.

Nom. Jap. *Kusa-sendan*, *Issai-sendan*.

Hab. Prov. MUSASHI : Tokyo, cultivated (T. MAKINO! July 20, 1903).

subvar. Toosendan (SIEB. ET ZUCC.) MAKINO.

Melia Toosendan SIEB. ET ZUCC. in Abhandl. Akad. Muench. IV. 2 (1845), p. 159; MIQ. Prol. Fl. Jap. p. 211; FRANCH. ET SAV. Enum. Pl. Jap. I. p. 75; CAS. DC. in DC. Monogr. Phanerog. I. p. 453; DIELS in ENGL. Bot. Jahrb. XXIX. p. 426.

M. japonica var. *Toosendan* MAKINO in Sched. Herb. Sc. Coll. Imp. Univ. Tokyo.

Leaflets entire, but often mixed with subcrenate ones. The laciniation of the staminal-tube similar to that of var. *japonica*.

Nom. Jap. *Tô-sendan* (meaning Chinese *Melia*).

Hab. Prov. TOSA: Gyûkô in Kôchi, cultivated (T. MAKINO! June 1893, Nov. 1895, Sept. 1913).

There exist a hybrid (*subvar. intermedia* MAKINO) between this and var. *japonica* in neighbourhood of the tree of *Toosendan* in the above-cited locality, and var. *japonica* is very common in its vicinities.

Daphne Miyabeana MAKINO, sp. nov.

Daphne chinensis var. *flore brevior* MAXIM. ex K. MIYABE.

A small evergreen shrub, about 5 decim. high; roots ramose. Stem erect, laxly di- or sub-tri-chotomously ramose above, terete, glabrous, castaneous above but fulvo-castaneous below; bark textile; branches erect-patent or ascending, young one of this year often puberulent. Leaves sparse, rather dense, erect-patent or spreading, shortly petiolate, angustately oblanceolate, gradually cuneato-attenuated to the petiole at the base, acutish, or shortly acuminate or acuminate with an obtuse or acutish tip at the apex, entire and very narrowly revolute beneath when dried on margin, glabrous, smooth, shining above, green and concolorous, chartaceo-coriaceous or membranaceo-coriaceous, living during 3 years on the stem, about 4–9 cm. long, 9–23 mm. wide; midrib prominent beneath; veins inconspicuous superficially, delicate, several on each side, erect-patent; veinlets fine, invisible superficially; petiole 3–10 mm. long, glabrous. Inflorescence solitary and terminal at the top of the branchlets of this year, several-subnumerous-flowered, peduncled,

erect; peduncle erect, puberulent, remaining during several years on stem, 3–13 mm. long. Flowers capitate, small, 5–6 mm. long, very shortly pedicellate, white; pedicel puberulent, 1–3 mm. long. Perigone glabrous; limb 4-divided, patent, 5 mm. across; segment ovate, acute or obtuse at the apex, entire, 3-nerved, the lateral nerves with a few venules outside; tube oblong-cylindrical, about 2 mm. in diameter, longitudinally 8-nerved. Stamens 8, inserted on the upper portion of the perigone-tube, the superior 4 slightly exerted beyond the throat; filament extremely short; anther linear-oblong, 1 mm. or less long. Ovary ellipsoid, glabrous, smooth, very shortly stipitate, about $2\frac{1}{2}$ mm. long; stigma sessile, rounded, dilated. Berry oval, glabrous, smooth, about 8 mm. across, succulent, scarlet when mature. Seed ovoid, acutish at the apex, smooth, 4 mm. across.

Nom. Jap. *Karasu-shikimi*, *Yama-shikimi*.

Hab. JAPAN: Hokkaidô and northern Honshû.

This boreal species bears an outward appearance to *Daphne kiusiana* Miq. of the central and southern Japan, but the latter differs from my species by having the larger broader and thicker leaves, larger flowers, pubescent perigone-tube, and inflorescence terminating the branchlets of the last year.

I have named this new species in dedication to Prof. Dr. KINGO MIYABE of the Tôhoku Imperial University of Sapporo, Hokkaidô.

(To be continued.)